



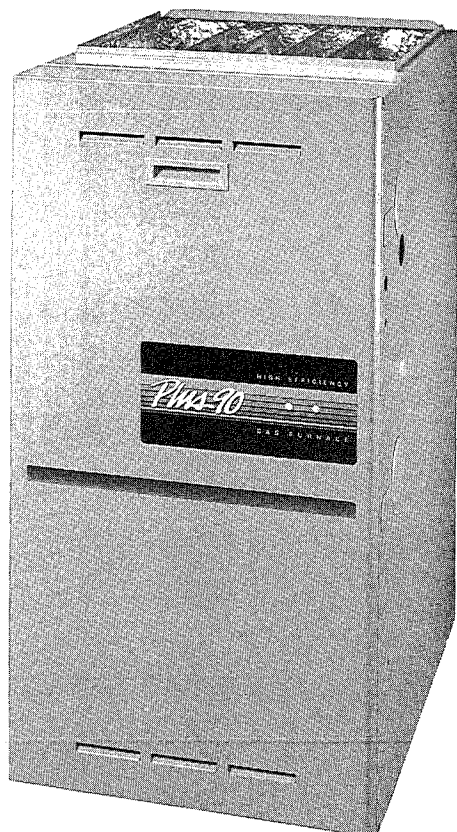
Bryant
Air Conditioning

Indianapolis, IN

DELUXE 4-WAY MULTIPOISE FIXED-CAPACITY GAS-FIRED CONDENSING FURNACE

MODEL 350MAV

Sizes 040 through 120
Series A



4-WAY MULTIPOISE DELUXE GAS-FIRED CONDENSING FURNACE

Utilizing the extensive resources available to Bryant, a new standard of excellence has been achieved with the model 350MAV 4-Way Multipoise Furnace.

The model 350MAV was designed around requirements established by customer focus groups. The result is a unique 4-way multipoise condensing furnace with features like no other product in its class. The 350MAV builds on the many Bryant successes in the furnace industry and establishes a new standard for all high-efficiency gas furnaces.

FEATURES

4-Way Multipoise Design—Allows a 350MAV model to be installed in an upflow, downflow, or horizontal orientation. Simple changes in the drain connections are all it takes to change to any of the 4 possible positions.

The model 350MAV is available in 10 heat/airflow combinations and, when combined with the 4-way design, allows for 40 different application types.

Sealed Combustion (Direct Vent) System—Enclosed burner assembly isolates operating noise without the expense of sound deadening devices. The sealed combustion (direct vent) system brings outdoor air directly into the combustion chamber, cutting cold air infiltration into the structure and reducing heat loss.

3-Pass Primary Heat Exchangers—This design accelerates heat transfer and extracts heat that conventional heat exchangers waste up the flue. The primary heat exchanger is made of aluminized steel for corrosion resistance.

Flow-Through Secondary Heat Exchangers—Each cell is laminated with our patented Everlastic™ polypropylene for greater resistance to corrosion. This breakthrough in heating technology helps extend the life of the furnace for years of trouble-free Plus 90 performance. The heat exchanger is positioned in the furnace to extract additional heat from the combustion products regardless of furnace orientation.

Warranty—Limited Lifetime Warranty on the heat exchangers for the lifetime of the original owner in single family residence; 20 years in other residential and commercial applications. Contact your dealer for details. Three-year warranty on microprocessor control, hot surface ignitor, and inducer motor.

Monoport Inshot Burners—Produce precise air-to-gas mixture which gives a clean burn.

The large monoport on the inshot (or injection-type) burners seldom, if ever, need cleaning.

Microprocessor Control Center—The printed-circuit board and all internal wiring are factory installed. Convenient terminals permit quick-connecting of a thermostat, a humidifier, an air cleaner, and air conditioning control circuits.

The control has adjustable blower off delay switches. As an added feature, the control has a built-in status indicator and self-test feature. The status indicator flashes to indicate a problem condition and assists the servicer in diagnosis. The component test allows for a complete check of the control circuits in only seconds.

Combustion Air and Ventilation—The 350MAV advanced design allows Schedule 40PVC, PVC-DWV, SDR-21 PVC, SDR-26 PVC (not approved in Canada), ABS-DWV, or ABS-F628 Schedule 40 pipe to bring outdoor air into the furnace for combustion. The extracted heat lowers the temperature of the combustion products (typically below 115°) to a point that PVC pipe can also be used for venting combustion products outside the structure. The combustion-air and vent pipes can terminate through a side wall or through the roof when using 1 of our approved vent termination kits.

Fully-Insulated Casing—Foil-faced insulation in the heat exchanger section cuts the heat loss, and insulation in the blower section reduces noise levels. The casing also has the required openings for left- or right-side connection of gas, electric, drain, and vent connections.

Certifications—The 350MAV units are A.G.A. and C.G.A. design certified for use with natural and propane gases, as well as GAMA efficiency rating certified. The model 350MAV exceeds California minimum seasonal efficiency requirements by a wide margin, and meets the oxides of nitrogen (NO_x) emission levels set by South Coast and Bay Area Air Quality Management Districts in California.

Form No. PDS 350M.40.1B

SPECIFICATIONS

SIZE	024040		036040	036060	048060	036080	048080	060080	048100	060100	060120
RATINGS AND PERFORMANCE											
Input Btuh*	40,000		40,000	60,000	60,000	80,000	80,000	80,000	100,000	100,000	120,000
Output Capacity†	Nonweatherized (ICS)‡		37,200	37,200	55,800	55,800	74,400	74,400	74,400	93,000	111,600
AFUE%†	Nonweatherized (ICS)‡		92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0	92.0
California Seasonal Efficiencies (CSE)†			85.0	85.1	86.7	87.0	87.8	87.1	87.0	87.6	88.2
Certified Temperature Rise Range °F			30—60	15—45	30—60	20—50	40—70	30—60	20—50	40—70	30—60
Certified External Static Pressure	Heating	0.10	0.10	0.12	0.12	0.15	0.15	0.15	0.20	0.20	0.20
	Cooling	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Airflow Cfm**	Heating	760	1305	1305	1380	1345	1285	1950	1190	1705	1650
	Cooling	900	1250	1250	1545	1190	1525	1910	1550	1935	2040
ELECTRICAL											
Units Volts—Hertz—Phase	115—60—1										
Minimum Wire Size	14		14	14	14	14	14	12	14	12	12
Maximum Wire Length (ft)††	52		38	38	29	39	28	35	27	35	32
Maximum Unit Amps	7.1		9.7	9.7	12.7	9.5	13.1	16.1	13.3	16.1	17.6
Operating Voltage Range Min—Max‡‡	104—127										
Maximum Fuse Size or Ckt Bkr Amps***	15		15	15	15	15	15	20	15	20	20
Transformer (24v)	40VA										
External Control	Heating	12VA									
Power Available	Cooling	21VA									
Air Conditioning Blower Relay	Standard										
CONTROLS											
Limit Control	SPST										
Heating Blower Control (Off Delay)	Selectable 90, 135, 180, or 225 seconds										
Burners (Monoport)	2	2	3	3	4	4	4	5	5	6	
Gas Connection Size	1/2-in. NPT										
GAS CONTROLS											
Gas Valve (Redundant)	Manufacturer	White-Rodgers									
	Min Inlet Pressure (in. wc.)	4.5 (Natural Gas)									
	Max Inlet Pressure (in. wc.)	13.6 (Natural Gas)									
Ignition Device	Hot Surface										
BLOWER DATA											
Direct-Drive Motor HP—Type (PSC)	1/5	1/3	1/3	1/2	1/3	1/2	3/4	1/2	3/4	3/4	
Motor Full Load Amps	4.9	5.8	5.8	7.9	5.8	7.9	11.1	7.9	11.1	11.1	
RPM (Nominal)—Speeds	1075—3	1075—4									
Blower Wheel Diameter x Width	10 x 6	10 x 7	10 x 7	11 x 8	10 x 7	11 x 8	11 x 10	11 x 8	11 x 10	11 x 10	
Filter Size—Permanent Washable	(1) 16 x 25 x 1						(1) 20 x 25 x 1			(2) 16 x 25 x 1	
FACTORY-AUTHORIZED AND LISTED, DEALER-INSTALLED OPTIONS											
Twinning Kit	N/A							KGATW0201HSI	N/A	KGATW0201HSI	
Side Filter Rack (With Washable Filter)	KGAFR0106ALL										
Return Filter Plenum (With Washable Filters)	KGARP0101ALL										
Downflow Base	KGASB0201ALL										
Return-Air Duct Flange Kit	KGARF0110ALL (Used on Downflow or Horizontal)										
Vent Termination Kit (Bracket Only for 2-Pipes)	2-in.—KGAVT0101BRA					3-in.—KGAVT0201BRA					
Concentric Vent Termination Kit (Single Exit)	2-in.—KGAVT0501CVT					3-in.—KGAVT0601CVT					
Side-Wall Vent Termination Cover	2-in.—KGAVT0301COV					3-in.—KGAVT0401COV					
Gas Conversion Kit—Natural-to-Propane	KGANP2001ALL										
Gas Conversion Kit—Propane-to-Natural	KGAPN1601ALL										

* Gas input ratings are certified for elevations to 2000 ft. For elevations above 2000 ft, reduce ratings 4 percent for each 1000 ft above sea level. In Canada, from 2000 to 4500 ft above sea level, derate the unit 10 percent.

† Capacity and AFUE in accordance with U.S. Government DOE test procedures. California Seasonal Efficiencies based on California-specified procedures.

‡ ICS—Isolated Combustion System.

** Air delivery above 1800 cfm requires that both sides, a combination of 1 side and bottom, or bottom only, of the furnace be used for return air. A filter is required for each return-air supply.

†† Length shown is measured 1 way along wire path between unit and service panel for maximum 2 percent voltage drop.

‡‡ Permissible voltage limits for proper furnace operation.

*** Time-delay fuse is recommended.

PSC—Permanent Split Capacitor



MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

COMBUSTION-AIR AND VENT PIPING
MAXIMUM ALLOWABLE PIPE LENGTH (FT)

ALTITUDE ABOVE SEA LEVEL (FT)	UNIT SIZE	TERMINATION TYPE	PIPE DIA (IN.)	NUMBER OF 90° ELBOWS					
				1	2	3	4	5	6
0 to 2000	040	2 Pipe or 2-In. Concentric	1*	5	5	0	0	0	0
			1-1/2	70	70	70	70	70	70
	060	2 Pipe or 2-In. Concentric	1-1/2	35	30	20	15	15	10
			2	70	70	70	70	70	70
	080	2 Pipe or 2-In. Concentric	1-1/2	10	5	0	0	0	0
			2	65	60	55	45	40	35
			2-1/2	70	70	70	70	70	70
	100	2 Pipe or 2-In. Concentric	2	10	5	0	0	0	0
		2 Pipe or 3-In. Concentric	2-1/2	65	60	50	45	35	25
	120	2 Pipe or 3-In. Concentric	3	70	70	70	70	70	70
			2-1/2	10	5	5	0	0	0
			3	40	35	30	15	5	0
2001 to 3000	040	2 Pipe or 2-In. Concentric	1-1/2	70	70	70	70	66	61
			1-1/2	31	26	16	11	11	6
	060	2 Pipe or 2-In. Concentric	2	70	67	66	61	61	61
			2	58	53	48	39	34	29
	080	2 Pipe or 2-In. Concentric	2-1/2	70	70	70	70	70	70
			2-1/2	58	53	44	39	29	20
	100	2 Pipe or 3-In. Concentric	3	70	70	70	70	70	70
			3	35	30	25	11	2	0
			3*	63	62	62	61	61	61
	040	2 Pipe or 2-In. Concentric	1-1/2	70	70	67	66	61	56
			1-1/2	29	24	15	10	9	0
	060	2 Pipe or 2-In. Concentric	2	68	63	62	57	57	56
			2	55	50	45	36	31	26
3001 to 4000	080	2 Pipe or 2-In. Concentric	2-1/2	70	70	70	70	70	70
			2-1/2	55	50	41	36	26	17
	100	2 Pipe or 3-In. Concentric	3	70	70	70	70	70	70
			3	33	28	23	10	0	0
	120	2 Pipe or 3-In. Concentric	3*	59	59	58	57	57	56
			3*	59	59	58	57	57	56
4001 to 5000†	040	2 Pipe or 2-In. Concentric	1-1/2	70	67	62	62	57	52
			1-1/2	27	22	13	8	7	0
	060	2 Pipe or 2-In. Concentric	2	64	59	58	53	52	52
			2	52	47	42	33	28	23
	080	2 Pipe or 2-In. Concentric	2-1/2	70	70	70	70	70	70
			2-1/2	52	47	38	33	24	15
	100	2 Pipe or 3-In. Concentric	3	70	70	70	70	70	70
			3	31	26	21	8	0	0
	120	2 Pipe or 3-In. Concentric	3*	56	55	54	53	52	52
			3*	56	55	54	53	52	52
5001 to 6000†	040	2 Pipe or 2-In. Concentric	1-1/2	68	63	58	57	52	47
			1-1/2	26	21	12	7	6	0
	060	2 Pipe or 2-In. Concentric	2	60	55	54	49	48	47
			2	49	44	39	30	25	20
	080	2 Pipe or 2-In. Concentric	2-1/2	70	70	70	70	70	70
			2-1/2	49	44	35	30	21	12
	100	2 Pipe or 3-In. Concentric	3	70	70	70	70	70	70
			3	29	24	19	7	0	0
	120	2 Pipe or 3-In. Concentric	3*	53	52	50	49	48	47
			3*	53	52	50	49	48	47
6001 to 7000†	040	2 Pipe or 2-In. Concentric	1-1/2	64	59	54	53	48	43
			1-1/2	24	19	10	5	0	0
	060	2 Pipe or 2-In. Concentric	2	57	52	50	45	44	43
			2	46	41	36	27	22	17
	080	2 Pipe or 2-In. Concentric	2-1/2	70	70	68	67	66	64
			2-1/2	46	41	32	27	18	10
	100	2 Pipe or 3-In. Concentric	3	70	70	68	67	66	64
			3	27	22	17	5	0	0
	120	2 Pipe or 3-In. Concentric	3*	49	48	47	45	44	43
			3*	49	48	47	45	44	43

MAXIMUM ALLOWABLE PIPE LENGTH (FT)

ALTITUDE ABOVE SEA LEVEL (FT)	UNIT SIZE	TERMINATION TYPE	PIPE DIA (IN.)	NUMBER OF 90° ELBOWS					
				1	2	3	4	5	6
7001 to 8000†	040	2 Pipe or 2-In. Concentric	1-1/2	60	55	50	48	43	38
	060	2 Pipe or 2-In. Concentric	1-1/2	22	17	8	0	0	0
			2	53	48	46	41	40	38
	080	2 Pipe or 2-In. Concentric	2	42	37	32	24	19	14
			2-1/2	66	65	63	62	60	59
	100	2 Pipe or 3-In. Concentric	2-1/2	42	37	29	24	16	7
			3	66	65	63	62	60	59
	120	2 Pipe or 3-In. Concentric	3	25	20	15	0	0	0
			3*	46	44	43	41	40	38
8001 to 9000†	040	2 Pipe or 2-In. Concentric	1-1/2	55	50	45	44	39	34
	060	2 Pipe or 2-In. Concentric	1-1/2	20	15	7	0	0	0
			2	49	44	42	37	35	34
	080	2 Pipe or 2-In. Concentric	2	39	34	29	21	16	11
			2-1/2	62	60	58	56	55	53
	100	2 Pipe or 3-In. Concentric	2-1/2	39	34	26	21	13	5
			3	62	60	58	56	55	53
	120	2 Pipe or 3-In. Concentric	3	23	18	13	0	0	0
			3*	43	41	39	37	35	34
9001 to 10,000†	040	2 Pipe or 2-In. Concentric	1-1/2	51	46	41	39	34	29
	060	2 Pipe or 2-In. Concentric	1-1/2	18	13	5	0	0	0
			2	45	40	38	33	31	29
	080	2 Pipe or 2-In. Concentric	2	36	31	26	18	13	8
			2-1/2	57	55	53	51	49	47
	100	2 Pipe or 3-In. Concentric	2-1/2	36	31	23	18	10	2
			3	57	55	53	51	49	47
	120	2 Pipe or 3-In. Concentric	3	21	16	11	0	0	0
			3*	39	37	35	33	31	29

* Wide radius elbow

† Vent sizing for Canadian installations above 4500 ft (1370 m) above sea level are subject to acceptance by the local authorities having jurisdiction.

NOTES:

1. Do not use pipe size greater than those specified in table or incomplete combustion, flame disturbance, or flame sense lockout may occur.
2. Size both the combustion-air and vent pipe independently, then use the larger diameter for both pipes.
3. Assume two 45° elbows equal one 90° elbow. Long radius elbows are desirable and may be required in some cases.
4. Elbows and pipe sections within the furnace casing and at the vent termination should not be included in vent length or elbow count.
5. The minimum pipe length is 5 ft for all applications.

MAXIMUM ALLOWABLE PIPE LENGTH (FT) IN WINTER DESIGN TEMPERATURE AMBIENT*

UNIT SIZE	WINTER DESIGN TEMP °F	MAXIMUM PIPE DIA (IN.)	INSULATION THICKNESS (IN.)†				
			0	3/8	1/2	3/4	1
024040 and 036040	20	2	31	56	63	70	70
	0	2	16	34	39	47	54
	-20	2	9	23	27	34	39
024060 and 036060	20	2	45	70	70	70	70
	0	2	25	51	58	70	70
	-20	2	16	36	42	51	60
036080, 048080, and 060080	20	2-1/2	55	70	70	70	70
	0	2-1/2	31	61	69	70	70
	-20	2-1/2	20	43	49	61	70
048100 and 060100	20	3	61	70	70	70	70
	0	3	33	65	70	70	70
	-20	3	20	45	52	65	70
060120	20	3	70	70	70	70	70
	0	3	40	70	70	70	70
	-20	3	26	55	64	70	70

* Pipe length (ft) specified for maximum vent pipe lengths located in unconditioned spaces. Vent pipes located in unconditioned space cannot exceed the total allowable pipe length as specified in maximum allowable pipe length table.

† Insulation thickness based on R value of 3.5 per in.

This unit complies with CAN/CGA 2.3 M86, CAN/CSA C22.2 No. 0-M91, CSA C22.2 No.3-1988 standards.

This appliance is equipped only for altitudes 0 - 2,000 ft (0-610 m) for use with natural gas and propane. A conversion kit, supplied by the manufacturer, shall be used to convert to the alternate fuel or elevation.

This direct-vent, forced-air furnace is for indoor installation in a building constructed on site. For installation in alcove or closet at minimum clearances from combustible material as shown below, minimum front clearance for service is 30 inches. (762 mm).

Upflow furnace only: For installation on combustible flooring.

Downflow furnace only: For installation on non-combustible floors only. For installation on combustible floors only when installed on special base No. KGASB0201ALL.

Horizontal position: Line contact is permissible only between lines formed by intersections of top and two sides of furnace jacket, and building joists, studs, or framing. This furnace is for use with schedule-40 PVC, PVC-DWV, or ABS-DWV pipe, and must not be vented in common with other gas-fired appliances. Construction through which vent/air intake pipes may be installed is maximum 24 inches (600 mm), minimum 3/4 inches (19 mm) thickness (including roofing materials).

Special venting system required. In Canada use certified venting system provided by furnace manufacturer. See Installation Instructions provided with furnace. Flue gas temperature 131°F (55°C) vent pressure positive.

MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL

INCHES

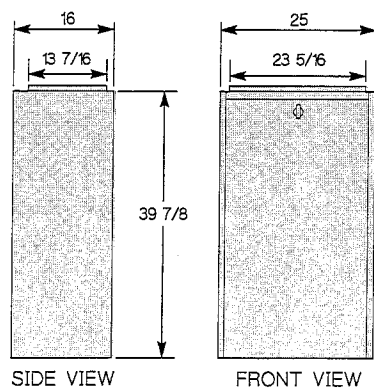
TOP	SIDES	BACK	FRONT	VENT
1	0	0	3	0
1	0	0	3	0
1	1*	0	3	0

UPFLOW

DOWNFLOW

HORIZONTAL

* Clearance shown is for air inlet and air outlet end.



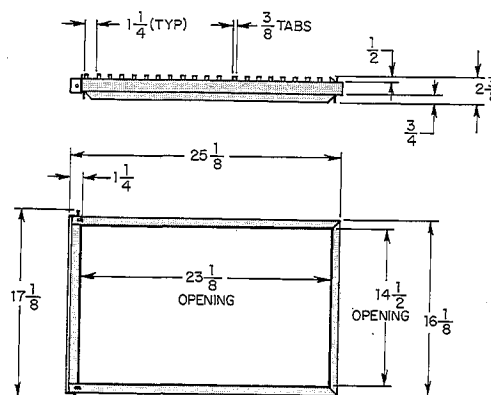
*Includes 2 framed washable filters.

ACCESSORIES

RETURN-AIR
FILTER PLENUM*

←
SIDE
FILTER
RACK*
→

A93078



*Includes a framed washable filter.

A80199

AIR DELIVERY—CFM* (WITH FILTER)

UNIT SIZE	BLOWER MOTOR HP	EXTERNAL STATIC PRESSURE (in. wc)								
		SPEED	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
024040	1/5 PSC	High	1085	1045	995	945	900	830	755	665
		Med-High	870	825	785	740	695	645	570	500
		Med-Low	760	715	675	630	575	510	455	395
036040	1/3 PSC	High	1505	1445	1385	1320	1250	1170	1090	1005
		Med-High	1415	1360	1295	1235	1170	1100	1010	920
		Med-Low	1270	1230	1170	1120	1050	985	905	810
036060	1/3 PSC	Low	1080	1045	1005	965	915	855	785	705
036060	1/3 PSC	High	1505	1445	1385	1320	1250	1170	1090	1005
		Med-High	1415	1360	1295	1235	1170	1100	1010	920
		Med-Low	1270	1230	1170	1120	1050	985	905	810
048060	1/2 PSC	Low	1080	1045	1005	965	915	855	785	705
048060	1/2 PSC	High	1700	1695	1640	1580	1545	1450	1380	1310
		Med-High	1500	1465	1435	1385	1355	1300	1250	1185
		Med-Low	1325	1295	1265	1230	1190	1150	1105	1050
048080	1/2 PSC	Low	1205	1170	1145	1110	1080	1035	990	950
048080	1/2 PSC	High	1485	1415	1340	1270	1190	1110	1010	930
		Med-High	1400	1340	1265	1220	1125	1040	950	855
		Med-Low	1285	1220	1170	1115	1050	975	900	810
060080	3/4 PSC	Low	1140	1105	1050	1005	945	875	800	715
060080	3/4 PSC	High	1750	1685	1635	1575	1525	1445	1380	1310
		Med-High	1495	1455	1405	1355	1305	1250	1185	1120
		Med-Low	1310	1260	1225	1170	1125	1095	1040	980
060100	3/4 PSC	Low	1135	1105	1075	1040	995	955	910	860
060100	3/4 PSC	High	2285	2185	2095	2010	1910	1810	1705	1590
		Med-High	2085	2005	1940	1865	1770	1685	1580	1485
		Med-Low	1810	1750	1705	1605	1575	1505	1415	1330
060120	3/4 PSC	Low	1585	1555	1520	1485	1425	1345	1270	1200
060120	3/4 PSC	High	1760	1705	1655	1610	1550	1450	1385	1300
		Med-High	1470	1445	1410	1370	1320	1270	1175	1115
		Med-Low	1255	1190	1175	1135	1090	1065	1005	955
060120	3/4 PSC	Low	1110	1075	1050	1030	985	955	895	840
060120	3/4 PSC	High	2270	2170	2095	2020	1935	1855	1750	1640
		Med-High	2035	1985	1920	1830	1750	1675	1585	1480
		Med-Low	1750	1705	1655	1600	1515	1450	1380	1305
060120	3/4 PSC	Low	1410	1395	1390	1365	1335	1280	1215	1150
060120	3/4 PSC	High	2345	2260	2190	2125	2040	1995	1865	1720
		Med-High	1970	1910	1865	1805	1735	1655	1585	1470
		Med-Low	1705	1650	1600	1570	1505	1465	1390	1290
060120	3/4 PSC	Low	1470	1445	1425	1390	1340	1280	1225	1160

*Air delivery above 1800 cfm requires that both sides, a combination of 1 side and bottom, or bottom only of the furnace be used for return air. A filter is required for each return-air supply.



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS