Bard®
SINCE 1914

MODELS
RPMA 30 and RPMA 36

ROOF MOUNT
PACKAGED AIR CONDITIONER

INSTALLATION INSTRUCTIONS

SPECIALLY DESIGNED FOR ROOFTOP HEATING / COOLING APPLICATIONS

BARD MANUFACTURING CO. • BRYAN, OHIO 43506
Dependable quality home equipment... since 1914

Bard
SINCE 1914

ENERGY CONSERVING
ROOF MOUNT
PACKAGED AIR CONDITIONERS

MODELS
RPMA30
RPMA36

COOLING CAPACITIES: 29,400 to 35,000 BTU
SEER: 8.00

ENGINEERED FEATURES

UPFLOW CONDENSER AIR DISCHARGE allows more freedom of unit placement. Condenser fan is less susceptible to wind effect than horizontal discharge models.

COPPER TUBE aluminum finned coil surface provides maximum heat transfer.

GAUGE PORTS are standard equipment for easier maintenance.

EASY TO SERVICE because all components and controls are accessible for inspection.

THREE-SPEED BLOWER MOTOR provides airflow adjustments for both high or low static operation. Standard on both models.

ELECTRIC HEAT STRIPS with automatic limit and thermal cutoff are available as a built-in option.

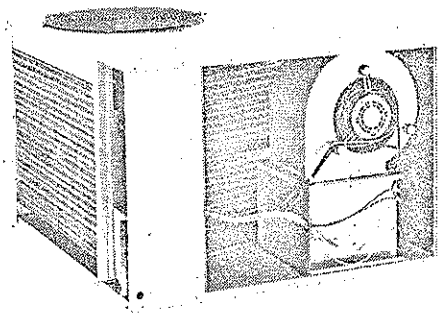
INTERNAL FUSING with single power circuit eliminates extra field wiring.

COMPRESSOR is equipped with crankcase heater and is protected with internal overload, high-pressure relief valve and an anti-slug device.

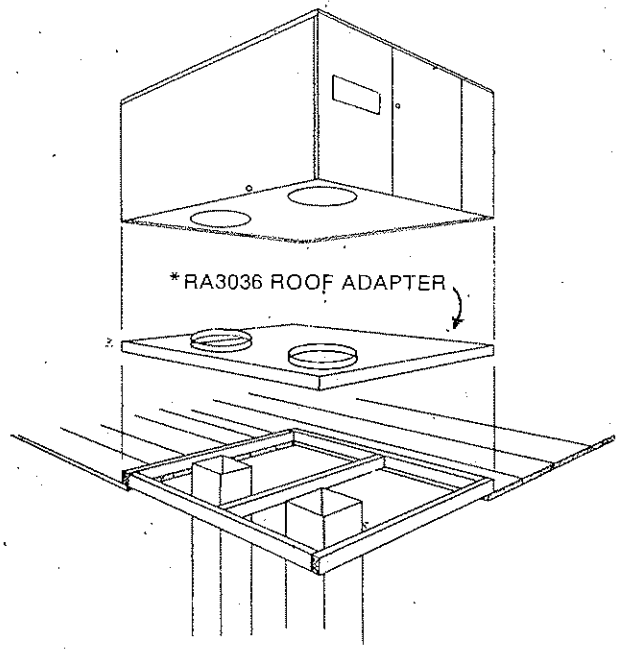
ROOF ADAPTER permits installer to rough-in the duct work.

BUILT-IN THROWAWAY FILTER

OPTIONAL FRESH AIR INLET



RPMA SERIES
PACKAGED ROOF MOUNT UNITS



*Painted galvannealed steel adapter permits installer to rough-in the duct work at the job site and install the RPM unit later.

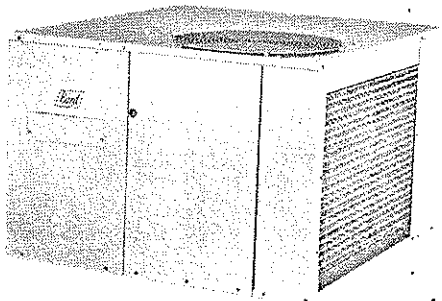
CAPACITY AND EFFICIENCY RATINGS ⚠1

MODEL	RATED CFM/"H_2O	COOLING BTU/HR ⚠2	SEER	EER 82°F	EER 95°F
RPMA30	1050/.21	29400	8.0	9.1	
RPMA30-3 (3-ph) ⚠3	1050/.21	31000		9.0	8.0
RPMA36	1300/.20	35000	8.0	9.1	
RPMA36-3 (3-ph) ⚠3	1300/.20	35000		9.3	8.0

⚠1 All capacity, efficiency and cost of operation information is with fresh air cover plate. Cover plate is recommended for use to obtain maximum energy efficiency where fresh air opening is not required.

⚠2 Capacity based on 80°db/67°wb return air and 95° outdoor ambient and rated evaporator air flow.

⚠3 Capacity and EER rating at 460V same as 230V.



LISTED CERTIFIED

APPLICATION RATINGS — Outdoor Temperatures °F*

MODEL	BTU/HR	65°	70°	75°	80°	85°	90°	95°	100°	105°	110°	115°
RPMA30	Total Cooling	38280	36720	35160	33600	32040	30440	29400	27400	25840	24240	22640
	Sensible Cooling	24280	23440	22600	21760	20920	20060	19500	18320	17520	16660	15820
RPMA30-3	Total Cooling	39880	38320	36760	35200	33640	32040	31000	29000	27440	25840	24240
	Sensible Cooling	25280	24440	23660	22760	21920	21060	20500	19320	18580	17760	16940
RPMA36	Total Cooling	46660	44620	42580	40540	38500	36440	35000	32300	30180	28100	26020
	Sensible Cooling	30740	29780	28820	27860	26900	26020	25300	24200	23260	22360	21460
RPMA36-3	Total Cooling	46660	44620	42580	40540	38500	36440	35000	32300	30180	28100	26020
	Sensible Cooling	30740	29780	28820	27860	26900	26020	25300	24200	23260	22360	21460

*All values based on 80 db/67°wb Return Air and Rated Evaporator Air Flow.

SPECIFICATIONS • Packaged Air Conditioning

MODEL	RPMA30	RPMA30–3	RPMA30–3	RPMA36	RPMA36–3	RPMA36–3
Cooling Capacity BTU ⚠1	29400	31000	31000	35000	35000	35000
Electrical – Less KW	230/208–1–60	230/208–3–60	460–3–60	230/208–1–60	230/208–3–60	460–3–60
Operating Voltage Range	197–253	187–253	414–506	197–253	187–253	414–506
Min. Circuit Ampacity	24	18	15	29	20	15
Field Wire Size ⚠2	No. 10	No. 12	No. 14	No. 10	No. 12	No. 14
Delay Fuse – Max.	40	25	15	45	30	15
Total Unit Amps ⚠1	20.3	15.3	8.1	24.3	17.3	9.1
Compressor – Circuit A						
Volts	230/208	230/200	460	230/208	230/200	460
Rated Load	16.0	11.0	6.0	20.0	13.0	7.0
Lock Rotor Amps	68	65	32	83.5	66	35
Fan Motor & Condenser						
Fan Motor – HP/RPM	1/5 H. P. – 1075 RPM			1/5 H. P. – 1075 RPM		
Fan Motor – Amps	1.5	1.5	.8	1.5	1.5	.8
Fan – Dia/CFM	18"/1900	18"/1900	18"/1900	18"/1900	18"/1900	18"/1900
Face Area - Sq. Ft.	5.04	5.04	5.04	5.04	5.04	5.04
Row/Fins per in.	3/16	3/16	3/16	3/16	3/16	3/16
Motor & Evaporator						
Blower Motor – HP/RPM	1/3 H. P. – 1075 RPM – 3 Speed			1/3 H.P. – 1075 RPM – 3 Speed		
Blower Motor – Amps	2.8	2.8	1.3	2.	2.	1.3
CFM (Rated)	1050	1050	1050 ⚠3	1300	1300	1300
Face Area – Sq. Ft.	3.17	3.17	3.17	4.17	4.17	4.17
Row/Fins per in.	3–14	3–14	3–14	3–15	3–15	3–15
Refrigerant 22 (oz.)	65½	63	63	69½	67	67
Shipping Weight Lbs.	410	410	410	415	415	415

⚠1 Deduct 400 BTU for 208 V operation.
⚠2 60° Copper Wire Size.
⚠3 Basic unit only – does not include supplemental heaters from Table No. 1. Refer to Table No. 2 for heater amps.

INDOOR BLOWER PERFORMANCE
CFM Dry Coil With Filter

E.S.P. in H_2O	RPMA30			RPMA36		
	High Speed	Medium Speed	Low Speed	High Speed	Medium Speed	Low Speed
0	1275	1205	1140	1425	1225	1130
.1	1225	1155	1085	1385	1190	1115
.2	1155	1080	1025	1330	1150	1085
.3	1070	1010	955	1275	1100	1050
.4	980	930	870	1205	1050	1005
.5	895	805	.770	1130	995	950
.6				1060	935	890

ELECTRIC HEAT TABLE NO. 1

Model	KW	VOLTS	PHASE	*BTUH
RPMA30 and RPMA36	5	240	1	19000
	**10	240	1	36000
	15	240	1	53000
	20	240	1	70000
RPMA30–3 and RPMA36–3	6	240 or 460	3	22000
	** 9	240 or 460	3	33000
	15	240 or 460	3	53000
	18	240 or 460	3	63000

*Includes blower motor with fresh air cover plate.
**Standard KW.

ELECTRIC HEAT TABLE NO. 2

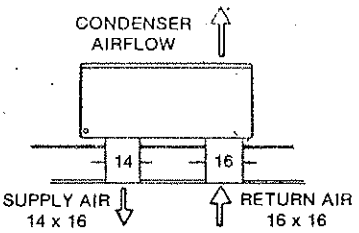
MODEL	Rated Volts & PH	Heater KW @ 240V	Max. Unit Amps	No. Field Power Circuits	Maximum Fuse or Circuit Breaker* Ckt. A	Minimum Circuit Ampacity Ckt. A	Field Power ⚠1 Wiring Ckt. A	Ground ⚠2 Wire Size Ckt. A
RPMA30	230/208 1	5	23.6	1	40	30	10	10
		10	44.4	1	60	56	4	10
		15	65.3	1	**90	82	2	8
		20	86	1	**110	108	1	6
RPMA30–3	230/208 3	6	17.2	1	25	22	10	10
		9	24.5	1	35	31	8	10
		15	39.0	1	50	49	6	10
		18	46.2	1	60	58	4	10
RPMA30–3	460 3	6	8.5	1	15	15	14	14
		9	12.1	1	15	15	14	14
		15	19.3	1	25	24	10	10
		18	23	1	30	29	10	10
RPMA36	230/208 1	5	24.3	1	45	30	10	10
		10	44.4	1	60	57	4	10
		15	65.3	1	**90	82	2	8
		20	86	1	**110	108	1	6
RPMA36–3	230/208 3	6	17.3	1	30	22	10	10
		9	24.5	1	35	31	8	10
		15	39.0	1	50	49	6	10
		18	46.2	1	60	58	4	10
RPMA36–3	460 3	6	9.1	1	15	15	14	14
		9	12.1	1	15	15	14	14
		15	19.3	1	25	24	10	10
		18	23.0	1	30	29	10	10

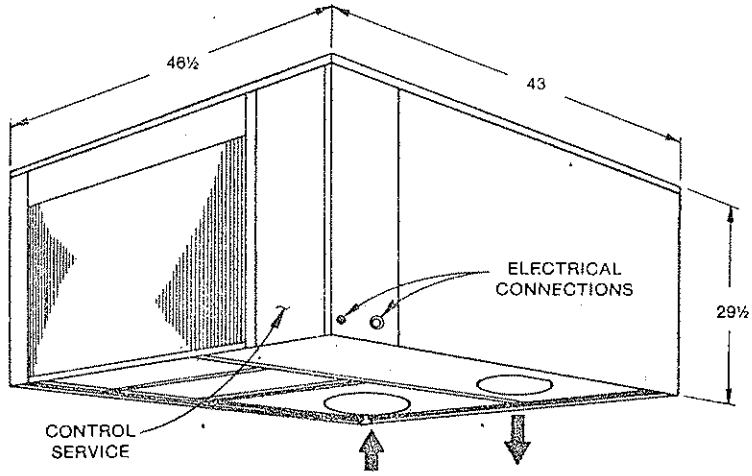
*Circuit Breakers 60A or smaller must be "HACR Type".
**Time delay type fuse or circuit breaker.
⚠2 Based on 60°C copper wire.

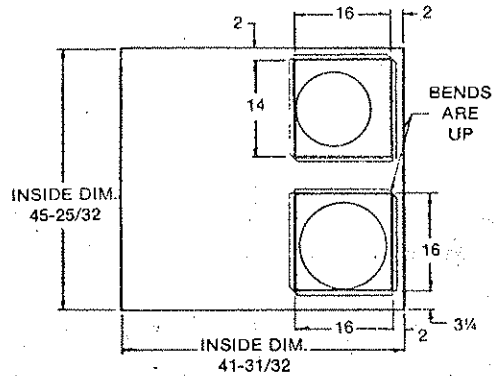
BEFORE PURCHASING THIS APPLIANCE, READ IMPORTANT ENERGY COST AND EFFICIENCY INFORMATION AVAILABLE FROM YOUR RETAILER.

IMPORTANT

While this electrical data is presented as a guide, it is important to electrically connect, properly size fuses and conductor wires in accordance with the National Electrical Code and all existing local codes.







Bottom view
RA3036 ROOF ADAPTER

All Specifications Subject To Change Without Notice

BARD MANUFACTURING CO. • **BRYAN, OHIO 43506**

FORM RPMA-781

DEPENDABLE QUALITY EQUIPMENT . . . SINCE 1914

IMPORTANT

The equipment covered in this manual is to be installed by trained, experienced service and installation technicians. Any heat pump is more critical of proper op- ing, charge and an adequate duct system than a ght air conditioning unit. All ductwork, supply return, must be properly sized for the design air flow requirement of the equipment. NESCA is an excellent guide to proper sizing. All duct work or portions thereof not in the conditioned space should be properly insulated in order to both conserve energy and prevent condensation or moisture damage.

SHIPPING DAMAGE

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

GENERAL

The refrigerant system is completely assembled and charged. All internal wiring is complete.

These instructions explain the recommended method to install the air cooled self-contained unit and the electrical wiring connections to the unit.

These instructions and any instructions packaged with any separate equipment required to make up the entire air conditioning system should be carefully read before beginning the installation. Note particularly "Starting Procedure" and any tags and/or labels attached to the equipment.

While these instructions are intended as a general recommended guide, they do not supersede any national and/or local codes in any way. Authorities having jurisdiction should be consulted before the installation is made.

ALLATION

Size of unit for a proposed installation should be based on heat loss calculation made according to methods of National Warm Air Heating and Air Conditioning Association. The air duct should be installed in accordance with the Standards of the National Fire Protection Association for the Installation of Air Conditioning and Ventilating Systems of Other Than Residence Type, NFPA No. 90A, and Residence Type Warm Air Heating and Air Conditioning Systems, NFPA No. 90B. Where local regulations are at a variance with instructions, installer should adhere to local codes.

DUCTWORK

Design the ductwork according to methods given by the National Warm Air Heating and Air Conditioning Association. When duct runs through unheated spaces, it should be insulated with a minimum of two inches of insulation. Use insulation with a vapor barrier on the outside of the insulation. Flexible joints should be used to connect the ductwork to the equipment in order to keep the noise transmission to a minimum.

LOCATING THE UNIT

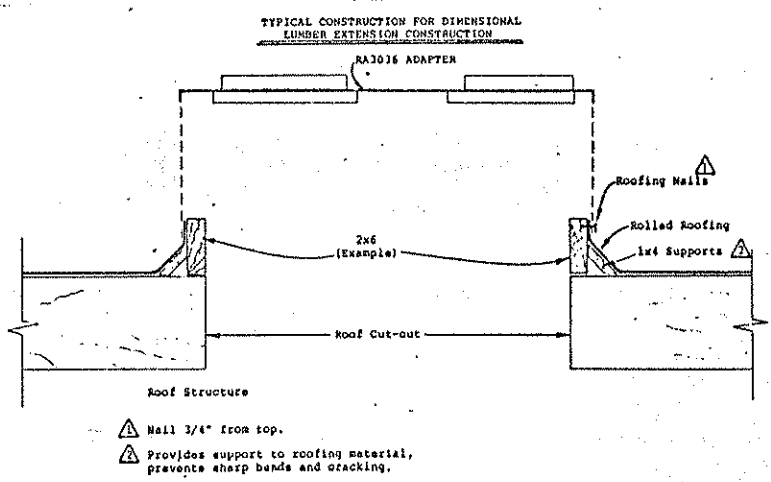
A location on the roof must be chosen that will provide adequate support to the unit, while at the same time allowing clearance for the supply air and return air duct connections to the RA3036 roof adapter—see layout and dimensions. NOTE: The RA3036 Roof Adapter MUST BE USED to assure a leak-free installation, and the U.L. approval contingent upon the use of this mating adapter.

ROOF CURB FABRICATION

The roof curb (extension section between actual roof and RA3036 roof adapter) could be fabricated from either sheet steel or nominal dimensional lumber. In either case, the O.D. dimension of the extension section must be sized to fit the RA3036 adapter dimensions as shown.

All corners, seams or joints must be sealed to assure a leak-free installation. The height of the curb section is determined by installation requirements such as degree slope of roof, direction that the outdoor (exposed) coil faces, and geographic location. The unit MUST SET LEVEL when installed, and should be high enough to provide proper defrost drainage from outdoor coil during heating cycle.

A suggested design for a wood frame type construction is shown below:



CONDENSATE AND DEFROST DRAINAGE

A 3/4" FPT coupling is provided to connect a condensate drain line to, and is located on side opposite outdoor coil. See illustration.

An optional accessory outdoor coil drain pan, DP3036, is available to collect normal condensate run-off and defrost cycle condensate in applications where it may not be desirable to drain on to mounting surface, or may not be permitted by local codes.

There is a space beneath the outdoor coil for the DP3036 to slide in without unit modification, and the DP3036 is also supplied with a 3/4" FPT coupling for drain line connection.

AIR FILTER

A 24" x 24" x 1" disposable fiberglass type filter is located inside the unit for air filtration of both return air from structure and for optional fresh air intake (see below).

Access to the filter is by removing the corner panel where either the fresh air blank off panel or fresh air intake hood is located.

OPTIONAL FRESH AIR INTAKE

The optional fresh air intake cover is a manual damper operated device to allow intake of fresh air whenever the indoor blower is operating. The damper position can be manually set and locked in position with a wing nut. It is held in place by two screws and has a hardware cloth screen to prevent entry of birds or rodents.

WIRING - MAIN POWER

Refer to the unit rating plate for wire sizing information and maximum fuse or "HACR Type" circuit breaker size. Each outdoor unit is marked with a "Minimum Circuit Ampacity." This means that the field wiring used must be sized to carry that amount of current. Depending on the installed Kw of electric heat, there may be two field power circuits required. If this is the case, the unit serial plate will so indicate. Some models are suitable only for connection with copper wire, while others can be wired with either copper or aluminum wire. Each unit and/or wiring diagram will be marked "Use Copper Conductors Only" or "Use Copper or Aluminum Conductors." These instructions MUST BE adhered to. Refer to the National Electrical Code for complete current carrying capacity data on the various insulation grades of wiring material.

The electrical data lists fuse and wire sizes (60°F copper) for all models, including the most commonly used heater sizes. Also shown are the number of field power circuits required for the various models with heaters.

The unit rating plate lists a "Maximum Time Delay Fuse" or "HACR Type" circuit breaker that is to be used with the equipment. The correct size must be used for proper circuit protection and also to assure that there will be no nuisance tripping due to the momentary high starting current of the compressor motor.

PRESSURE SERVICE PORTS

High and low pressure service ports are installed on all units so that the system operating pressures can be observed. Pressure curves can be found later in the manual covering all models on both cooling and heating cycles. It is imperative to match the correct pressure curve to the unit by model number.

REFRIGERANT CHARGE

The correct system R-22 charge is shown on the unit rating plate. Optimum unit performance will occur with a refrigerant charge resulting in a suction line temperature (6" from compressor) as shown in the following table:

Model	Rated Airflow	95°F O.D. Temp.	82°F O.D. Temp.
RPMA30	1050	47 - 49	59 - 61
RPMA36	1300	49 - 51	56 - 58

The above suction line temperatures are based upon 80°F dry bulb/67°F wet bulb (50% R.H.) temperature and rated airflow across the evaporator during cooling cycle.

CRANKCASE HEATERS

All units are provided with some form of compressor crankcase heat. Some single phase units utilize the compressor motor start winding in series with a portion of the run capacitor to generate heat within the compressor shell to prevent liquid refrigerant migration.

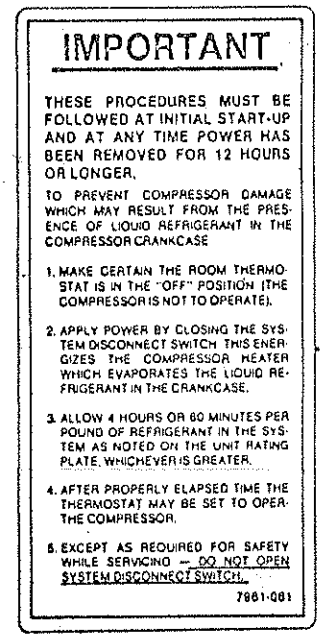
Some three phase units utilize a wraparound type of crankcase heater that warms the compressor oil from the outside.

Some single and three phase models have an insertion well-type heater located in the lower section of the compressor housing. This is a self-regulating type heater that draws only enough power to maintain the compressor at a safe temperature.

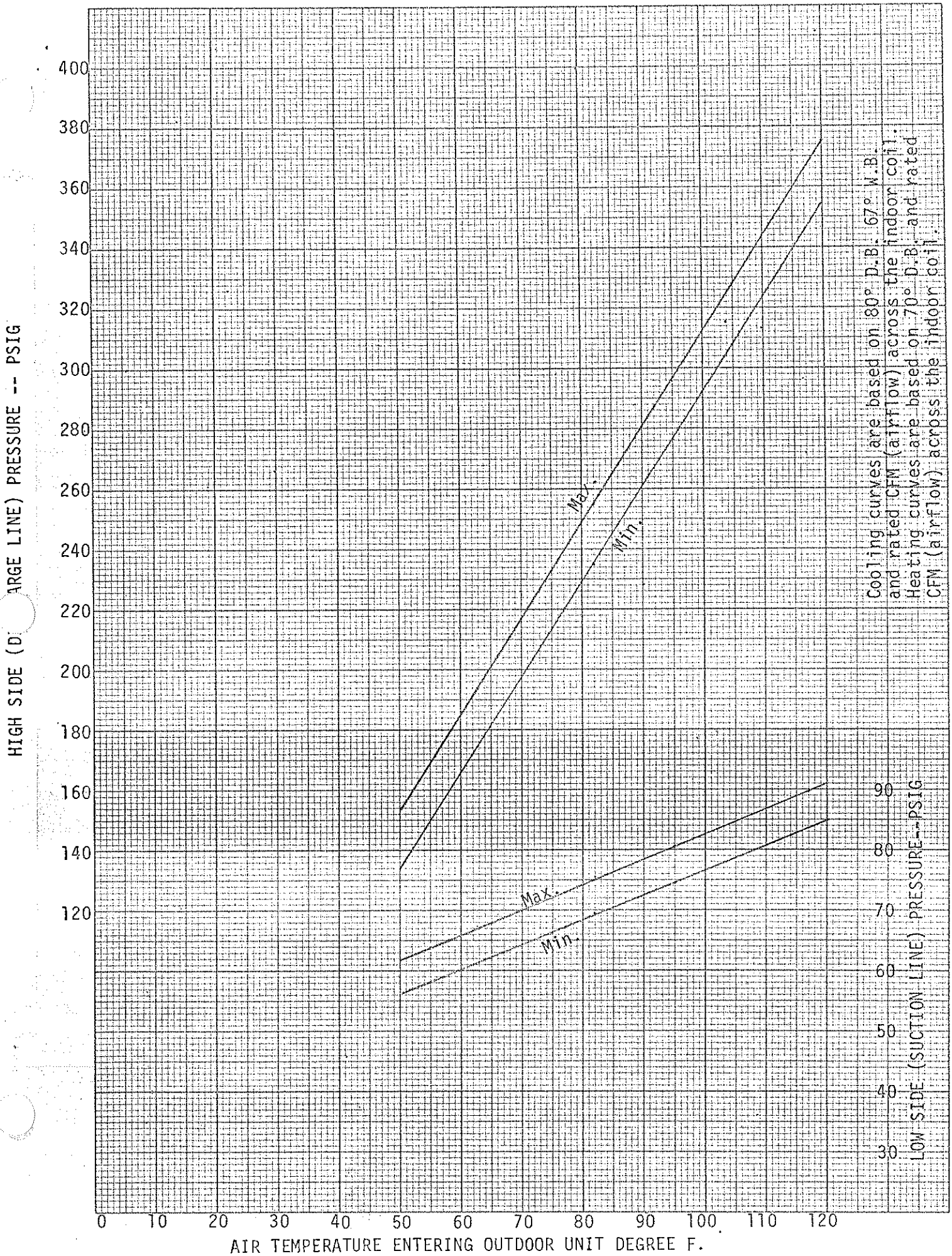
Some form of crankcase heat is essential to prevent liquid refrigerant from migrating to the compressor, causing oil pump out on compressor start-up and possible valve failure due to compressing a liquid.

Refer to unit wiring diagram to find exact type of crankcase heater used.

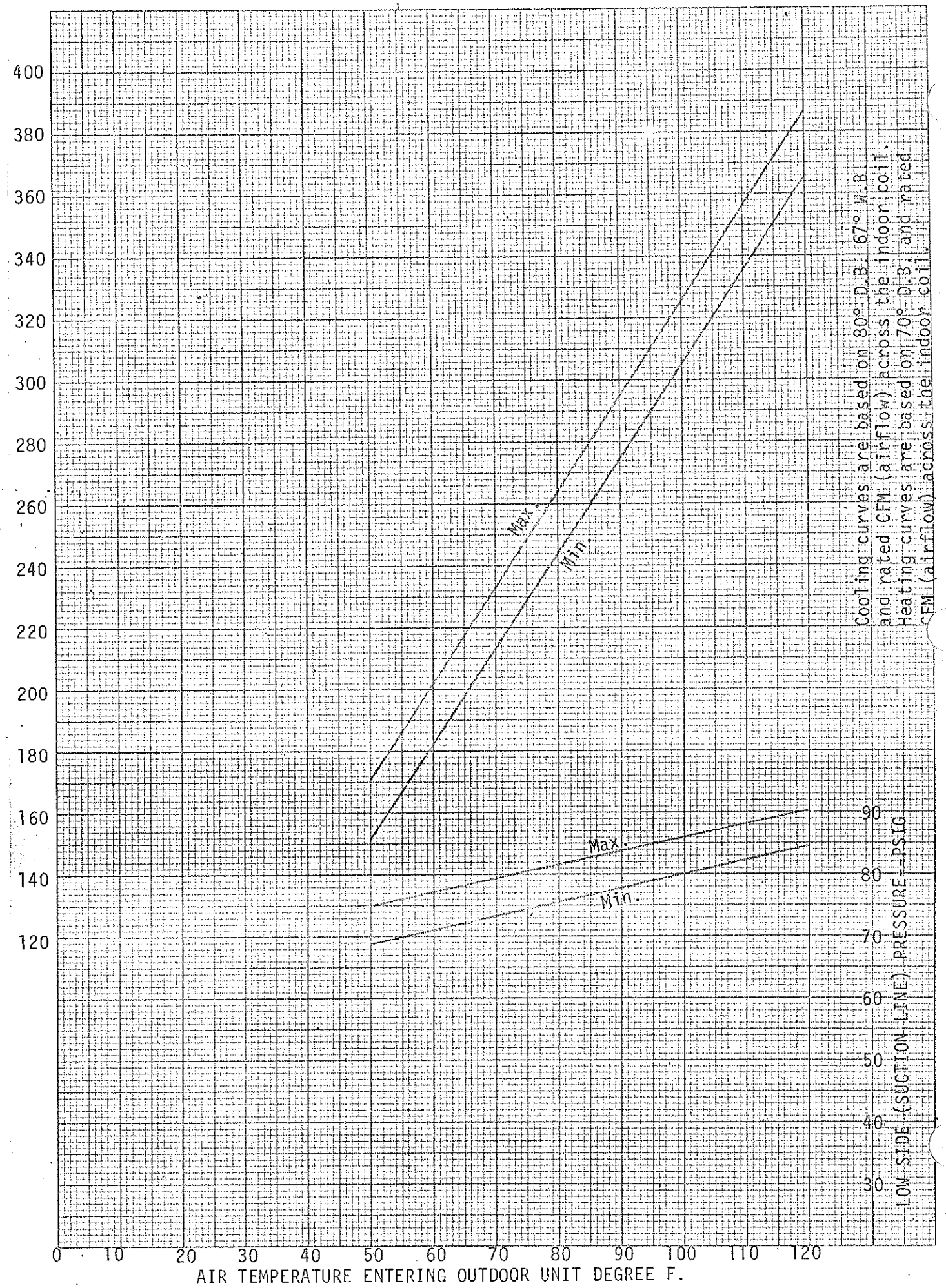
The following decal is affixed to all outdoor units detailing start-up procedure. This is very important. Please read carefully.



BARD MANUFACTURING COMPANY
MODEL RPMA30



BARD MANUFACTURING COMPANY
MODEL RPMA36



PARTS LIST

SINGLE PACKAGE AIR CONDITIONERS

Effective Date 12-9-81
Supersedes 10-15-81

	PART NO.	DESCRIPTION	RPMA30	RPMA30-3	RPMA36	RPMA36-3	RPMA30-3 460V	RPMA36-3 460V
	*	Blower Housing	x	x	x	x	x	x
	5152-005	Blower Wheel DD9-8A	x	x			x	
	5152-010	Blower Wheel DD10-7A			x	x		x
	8552-032	Capacitor-Comp. 35/370V	x					
	8552-033	Capacitor-Comp. 20/370V	x		x			
	8552-019	Capacitor - Blower 5/440V	x	x	x	x	x	x
	8552-002	Capacitor - Fan 5/370V	x	x	x	x	x	x
	8552-035	Capacitor - Comp. 40/370V			x			
	5811-031	Capillary Tube	(3)	(3)			(3)	
	5811-017	Capillary Tube			(2)	(2)		(2)
	8000-042	Compressor 700411-06-0265	x					
	8000-053	Compressor CRG1-0250-TF5-270		x				
	8000-054	Compressor CRG1-0250-TFD-270					x	
	8000-055	Compressor CRH1-0275-PFV-270			x			
	8000-056	Compressor CRH1-0275-TF5-270				x		
	8000-057	Compressor CRH1-0275-TFD-270						x
	5051-023	Condenser Coil	x	x	x	x	x	x
	8401-007	Contactor 1P25A	x		x			
	8401-002	Contactor 3P25A		x		x	x	x
**	8401-006	Contactor (Heat)	x	x	x	x		
	5060-012	Evaporator Coil	x	x			x	
	5060-022	Evaporator Coil			x	x		x
	5151-024	Fan Blade A-1831-5 ccw	x	x	x	x	x	x
	7051-014	Fan Guard	x	x	x	x	x	x
	8614-017	Fuse Block	x		x			
	8614-018	Fuse Block	x		x			
	8614-006	Fuse OT30	x		x			
	8614-007	Fuse OT60	x		x			
	8614-022	Fuse TR60	x		x			
	8604-023	Heat Strip 5Kw	x		x			
	8604-024	Heat Strip 10Kw	x		x			
	8604-025	Heat Strip 15Kw	x	x	x	x		
	8604-064	Heat Strip 6Kw		x		x		
	8604-035	Heat Strip 9Kw		x		x		
	8604-036	Heat Strip 12Kw		x		x		
	8604-065	Heat Strip 6Kw					x	x
	8604-032	Heat Strip 9Kw					x	x
	8604-033	Heat Strip 12Kw					x	x
	8402-020	Limit Switch 135°-120°	x	x	x	x	x	x
**	8105-010	Motor - Blower 1/3 hp	x	x	x	x	x	x
**	8103-007	Motor - Fan 1/5 hp	x	x	x	x	x	x

*Please order by model number . **Denotes change.

PARTS LIST

SINGLE PACKAGE AIR CONDITIONERS

Effective Date 12-9-
Supersedes 10-15-

	PART NO.	DESCRIPTION	RPMA30	RPMA30-3	RPMA36	RPMA36-3	RPMA30-3 460V	RPMA36-3 460V
	8200-003	Motor Mount - Blower	X	X	X	X	X	X
	8200-022	Motor Mount - Fan	X	X	X	X	X	X
	5451-009	Motor Mounting Parts - Fan	X	X	X	X	X	X
	5451-011	Motor Mounting Parts	X	X	X	X	X	X
	5153-022	Rain Shield	X	X	X	X	X	X
*	8201-009	Relay - Blower	X	X	X	X	X	X
	5210-003	Strainer	X	X			X	
	5210-004	Strainer			X	X		X
	8607-006	Terminal Board	X	X	X	X	X	X
	8607-001	Terminal Block	X		X			
	8607-002	Terminal Block		X		X	X	X
*	8402-030	Thermal Cutoff	X	X	X	X	X	X
	8407-007	Transformer 40VA	X		X			
*	8407-015	Transformer 55VA		X		X	X	X
*	8407-003	Transformer 1.5 KVA					X	X
	7004-015	Filter 24x24x1	X	X	X	X	X	X
	8604-034	Heat Strip 15Kw					X	X

*Denotes change

Minimum Net Billing $15.00. Supersedes all previous lists.
Subject to change without notice. F.O.B. Bryan, Ohio.