

**IMPORTANT**

1. Always include complete heater model and serial number so that any specification change can be considered for parts shipment. It can save time and expense.
2. Check temperature setting on control being replaced.
3. We reserve the right to substitute functional replacements.
4. Specifications are subject to change without notice.



**Functional Replacement Fan and Limit Controls**

**Parts Form RGM 713 (Version T)**  
**Obsoletes Form 713-S**

**REZNOR Thomas & Betts**

**APPLIES TO:** Replacement Parts/Service

Table of Contents	P/N List	SECTION Page
	Specific Instructions	List of Functional Replacement Controls by Heater Model & Series ..... 1 ..... 1-3
	Installing a Replacement Fan Control Kit on a Model	
	XL, CXL, EEXL, CEEXL, XLB, CXLB, EEXLB, CEEXLB ..... 2 ..... 3	
	Installation/Operation of Replacement Fan Control P/N 10357 ..... 3 ..... 4	
	Installation/Operation of Replacement Fan Relay Kit P/N 63254 ..... 4 ..... 4	
	Wiring Model US without a Fan Control ..... 5 ..... 4	

**SECTION 1 - Functional Replacement Controls by Heater Model and Size**

Model	Size	Applies To	Fan Control	Replaces	Limit Control	Replaces
① US-F, LUS-F	25 - 200	1950-56 only ①	1472 (350°F)	892	1473 (555°F)	893
① AFA	All except 4660	1950-51 only ①				
① FM	All	1952-3/55 only ①				
① PAC, D, DBF	All	Mfgd prior to 1995			③	8027, 5177
① DS, LDS	All	All			④ 7256	2753
UA; UB; RCG 7-1/2 and 10 Ton	All	Mfgd prior to 1994	⑤ 10357 (125°F)		50417 (125°F)	11305, 12936, 26303
RCG	75	All	Combination fan and limit	Cemco CTC-105-1A200FCD, P/N 49411		
	100, 125, 150	All		Cemco CTC-100-1A200FCD, P/N 43815		
XA, XB, XC, XD, XJ, XR, DFAH; PV②, PVA, PVB, PVE, PDFAH; X, XE, RX, REB⑥, RXE, RXJ, RXG, RXR, RPV, RPBE, RPVE, RPVJ prior to Series 6 (except (H)-CRPV-5); SC prior to Series 3; SCA, SCB, SCD, SCE, HSC Also applies to above models with prefix letter "C", "H" or "HC" (except where specifically noted)	All	All with exceptions indicated in Model column	⑤ 10357 (125°F)		50418 (145°F)	11305, 18183
(H)-X, CX, XE, CXE, RX, CRX, REB, CREB, RPV, CRPV, RPVE, RPBE Series 6 and 7; (H)-CRPV Series 5 and 6; SC Series 3, 5, and 6; (H)-RG, CRG, RP, CRP, RGB, CRGB, RPB, CRPB	All	As indicated in Model column	⑤ 10357 (125°F)		50417 (125°F)	
ECO Limit Control for (H) - X, CX, XE, CXE	All Standing Pilot only	Starting 4/83; Serial No. Code AID			131450 (306°F)	82414
ECO Limit Control for SC, SCA, SCB, SCE Series 6	All	Series 6			82414 (306°F)	
(C)-PAK, RPAK, RPVAK ⑥ prior to Series 6	1	As indicated in Model column	⑤ 10357 (125°F)		50418 (145°F)	11305,
(C)-PAK, RPAK, RPVAK ⑥ Series 6	1				50417 (125°F)	15183
⑤ (C)-RGL, RPBL mfgd prior to 12/96	400					
⑥ (C)-PAK, RPAK, RPVAK	2	As indicated in Model column	⑤ 10357 (125°F)		⑧ 50417 (125°F)	11305, 12936, 26303
⑥ (C)-RGL, RPBL mfgd prior to 12/96	500/600/700/800				⑨ 57953 (170°F)	12937
⑥ (C)-PAK, RPAK, RPVAK	3	As indicated in Model column	⑤ 10357 (125°F)		⑧ 50417 (125°F)	11305, 12936, 26303
⑤ (C)-RGL, RPBL mfgd prior to 12/96	1050, 1200				⑨ 19080 (155°F)	57952
					⑩ 57953 (170°F)	12937
(C)-RGL, RPBL, PGBL and SSCBL mfgd beginning 12/96	400	As indicated in Model column	⑤ 10357 (125°F)		50418 (145°F)	None
	500/600/700/800				⑧ 50418 (145°F)	⑧ 50417 (125°F)
					⑨ 57953 (170°F)	
	1050/1200				⑨ 148588 (270°F)	
					⑧ 50417 (125°F)	
					⑧ 50418 (145°F)	
		⑨ 57953 (170°F)				
		⑨ 148588 (270°F)				

**SECTION 1 (cont'd)**

Model	Size	Applies To	Fan Control	Replaces	Limit Control	Replaces
(H)EDU	All	All	① 147611		45602 (180°F)	
<b>XL, EEXL</b>	30-400	All	147676 (135°F)	48706 (150°F), ⑤ 63555	45602 (180°F)	
<b>CXL</b>	140-400					
<b>CEEXL</b>	30, 200-250					
<b>XLB</b>	30, 45	All	147677 (150°F)	⑤ 93629 (150°F)	45602 (180°F)	
<b>CXLB</b>	30-105					
<b>EEXLB</b>	30, 45, 125-400					
<b>CEEXLB</b>	30-105, 300-400					
<b>CXL</b>	30-105	All	147676 (135°F)		85449 (200°F)	
<b>CEEXL</b>	45-170, 300-400					
<b>XLB</b>	60-105, 300-400	All	147677 (150°F)	93629 (150°F)	82091 (160°F)	
<b>EEXLB</b>	60-105					
<b>CXLB</b>	300-400					
<b>XLB, CXLB</b>	200-225	All	147677 (150°F)	93631 (170°F)	45602 (180°F)	
<b>XLB, CXLB</b>	125-170				85449 (200°F)	
<b>CEEXLB</b>	125-250					
<b>XLB, CXLB</b>	250				82091 (160°F)	
<b>ECO Limit Control for XL, CXL, XLB, CXLB</b>	All Standing Pilot only	Starting 4/83; Serial No. AID			82414 (306°F)	
<b>F</b>	25	All	123974 (135°F)	96387	85449 (200°F)	④ 82091
	50, 75 ⑤, 100 ⑥		123976 (135°F)	114009,	85449 (200°F)	
	125		123976 (135°F)	96387	45602 (180°F)	
	130, 165		123976 (135°F)		82091 (160°F)	
	200		123974 (135°F)	96387	85449 (200°F)	
	250, 300, 400		123974 (135°F)		45602 (180°F)	
<b>FE</b>	25	All	123974 (135°F)	96387	85449 (200°F)	
	50		123976 (135°F)	114009,	85449 (200°F)	
	75, 100, 125		123976 (135°F)	96387	45602 (180°F)	
	130, 165		123976 (135°F)		82091 (160°F)	
	200		123974 (135°F)	96387	85449 (200°F)	
	250, 300, 400		123974 (135°F)		45602 (180°F)	
④ <b>ECO Limit Control for F and FE</b>	25-50	All			131449 (228°F)	96513 (228°F)
	75-400				82414 (306°F)	
<b>B</b>	25	All	123975(150°F)	100857 (170°F)	45602 (180°F)	
	50 ⑤, 75 ⑥, 100 ⑥	All			85449 (200°F)	
	125-400	All			100799 (150°F)	
<b>BE</b>	25-100	All	123975(150°F)	100857 (170°F)	45602 (180°F)	
	125-400	All			100799 (150°F)	
④ <b>ECO Limit Control for B, BE</b>	25-50	All			131449 (228°F)	96513 (228°F)
	75-400				131450 (306°F)	
<b>RDF</b>	All Sizes	All			86979 (135°F) Auto Limit 82610 (150°F) Manual Limit 82414 (306°F) Flame Safety Limit	
<b>ADF</b>	All Sizes	All			122856 (130°F) Auto Limit 122858 (135°F) Manual Limit 82414 (306°F) ECO Device	
<b>ADFH</b>	All Sizes	All			19080 (155°F) Auto Limit 122990 (175°F) Manual Limit 82414 (306°F) ECO Device	
<b>DV</b>	109-122	All			161437 (190°F) Manual Limit	
	125				161433 (205°F) Manual Limit	
	All Sizes				82414 (306°F) ECO Device	
<b>DFAH/DFAV</b>	All Sizes	All			(2)163133 (180°F) Manual Limit 121275 (275°F) ECO Device	
<b>EUH</b>	All	All	Time Delay Relay P/N 40994		50417 (125°F) 35-60 KW require 2	
<b>AEUH</b>	3 KW	All	Time Delay Relay, P/N 46382, for 120 volt only; P/N 46386 for all other voltages		45534 (120°F)	
	5KW	All		45535 (140°F)		
	7 KW	All		45536 (170°F)		
	10 KW	All		45537 (210°F)		
	12 KW	All		45538 (230°F)		
<b>OUD, OUE</b>	140, 200	All			Cemco #TC108A-250, P/N 50186	
<b>OUE, OUB, OUE, ROUE</b>	95, 140, 185, 200	All	Combination Fan & Limit, M/H #L4064-1592-4, P/N 36559			
<b>OH, OB</b>	95	All	Fan and Limit Control Assy, P/N 123977			120679
	140, 190		Fan and Limit Control Assy, P/N 123973			104837

Model	Size	Applies To	Fan Control	Limit Control	Replaces
FT	30	All	On these models, fan control is a function of the ignition control module.	Flame Rollout Limit, P/N 121275, (275°F)	
	45			45602 (180°F)	
				Flame Rollout Limit, P/N 112752, (225°F)	
	60			45602 (180°F)	
				Flame Rollout Limit, P/N 121275, (275°F)	
	75			45602 (180°F)	
				155764 (220°F)	96512 (220°F)
100-200	Fan Back Limit, P/N 100799 (150°F)				
250-300	155765 (200°F)	85449 (200°F)			
	45602 (180°F)				
SFT	45-75	All		Flame Rollout Limit, P/N 157282 (180°F)	
	100-200			155764 (220°F)	96512 (220°F)
	250-300			155765 (200°F)	85449 (200°F)
CAUA	150, 200	All		148588 (270°F) w/60" capillary	
	250, 300		Flame Rollout Limit, P/N 112752, (225°F)		
			164792 (300°F) w/54" capillary		
	350, 400		Flame Rollout Limit, P/N 121275, (275°F)		
			148588 (270°F) w/60" capillary		
	Flame Rollout Limit, P/N 112752, (225°F)				

## SECTION 1 Notes:

① Replacement parts will be discontinued when stock is depleted. For installing Fan Relay Kit on older US Models, see Section 4, page 4. For information on US Models with 115V controls, see Section 5, page 4.

**IMPORTANT:** "Applies To" column indicates dates of manufacture. Do not rely solely on manufacture date code. Always verify temperature setting of original control.

② PV Series also used a post purge relay, P/N 11886.

③ W.R. 5A75-10 combination fan and limit is no longer available from Reznor.

④ W.R. 484-14 adjustable limit, 0 to 350°F.

⑤ For operation and wiring of replacement fan control P/N 10357, see Section 3, page 4.

⑥ Manual reset limit, P/N 82610 (replaces P/N 20140), is located in the blower compartment of Models REB, RXG, RXE, RXJ, RPBE, RPVE, RPAK1,2,3, RPVAK1,2,3. Effective 1/3/90, manual reset limit in the blower cabinet was replaced by auto reset limit, P/N 103323, is used on Models RGB, RPB, RGLB and RPBL. Also applies to any of the above listed Models with prefix "C", "H", or "HC".

⑦ Spring loaded fan control assembly

⑧ Furnace next to the blower.

⑨ Second furnace from the blower

⑩ Third furnace from the blower.

① Effective 6/96, control is Honeywell L4064A1347 which will functionally replace previous control.

② Replacement kit with spring-loaded fan control assembly. To install, follow instructions in Section 2, below.

① If you have P/N 63555 in stock, it can be used on XL Series units manufactured through January 1987, Serial No. Code AMA.

② P/N 82091 is not obsolete; limit control standardized with Model FE25, effective 4/93.

③ These units mfgd prior to 9/96 use limit P/N 45602 (180°F).

④ Models B and F with match lit pilot manufactured after 9/99 do not have an ECO limit control.

Other Available Limit: Oven temperature control, W/R 1002-L with 72" capillary, 100-500°F, P/N 7257 - special order not stocked at Mercer.

## SECTION 2 - Installing Replacement Fan Control on Models (C)XL, (C)EEXL, (C)XLB, & (C)EEXLB

- Turn off the gas and the electric.
- Disconnect and remove the defective fan control. If the fan control is on a spring-loaded bracket as illustrated in the photos, remove the entire bracket assembly. Ear-
- Refer to the illustration below that applies to the Size of heater being serviced; follow the instructions.
- Re-connect the fan control wires and re-assemble the heater.
- Light the heater and check for proper operation.

### Instructions for Sizes 30-105

Locate the replacement fan control bracket assembly at the **first heat exchanger tube**. Position to the right of the tube seam as illustrated. Attach with the screws in the kit. It is important that the spring action of the fan control bracket allow the fan control to contact the heat exchanger tube.

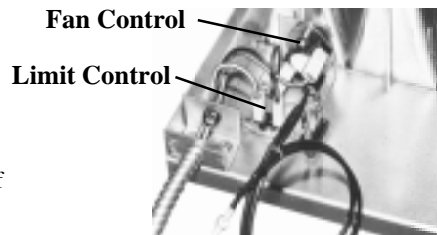
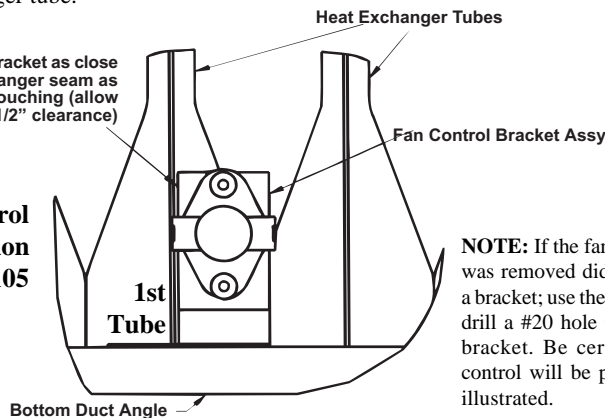


Illustration Showing Location of Original Equipment Fan Control - Sizes 30-105

Place fan control bracket as close to heat exchanger seam as possible without touching (allow about 1/2" clearance)

Fan Control Position  
Sizes 30-105

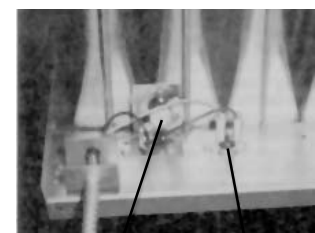


**NOTE:** If the fan control that was removed did not include a bracket; use the left hole and drill a #20 hole to attach the bracket. Be certain the fan control will be positioned as illustrated.

### Instructions for Sizes 125-400

Locate the replacement fan control bracket assembly at the **second heat exchanger tube**. Position to the left of the tube seam as illustrated. Attach with the screws in the kit. It is important that the spring action of the fan control bracket allow the fan control to contact the heat exchanger tube.

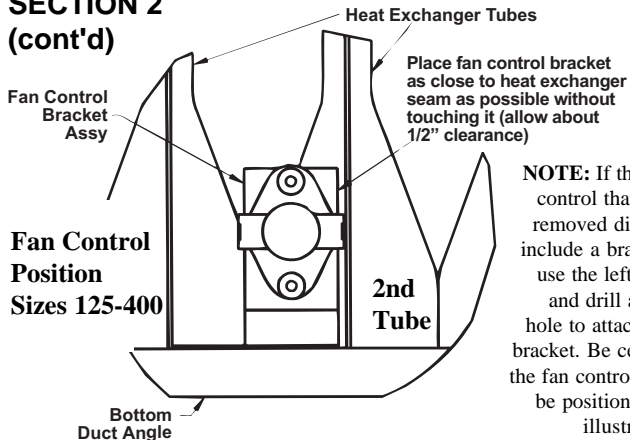
### Illustration Showing Location of Original Equipment Fan Control - Sizes 125-400



Fan Control Limit Control

(continued on page 4)

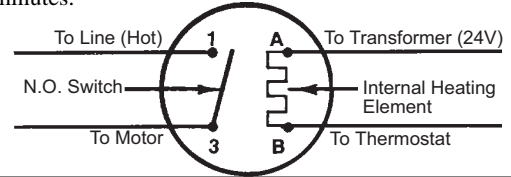
## SECTION 2 (cont'd)



**NOTE:** If the fan control that was removed did not include a bracket; use the left hole and drill a #20 hole to attach the bracket. Be certain the fan control will be positioned as illustrated.

## SECTION 3 - Wiring for Fan Control P/N 10357

When the thermostat calls for heat, the valve and the internal heating element in the fan control are energized simultaneously. The main burner ignites and the heat buildup in the switch commences. The radiant heat from the outside tube wall combined with the heat produced by the internal heater accelerates the snap on time to approximately one minute. When the thermostat is satisfied, the current to the main valve and to the internal heater is broken, and a cool down of the bimetal disc occurs, which shuts off the fan in approximately two minutes.



## SECTION 4 - Functional Replacement for Discontinued Fan Control, Relay Kit P/N 63254

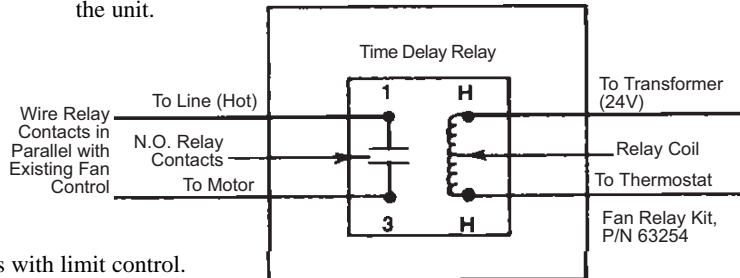
A fan relay kit (P/N 63254) may be used to replace the discontinued fan control on Models LUS/F, FM and AFA units equipped with 24 volt controls. This fan relay kit may also be used, if desired, on Models XA, XB, XL, XLB.

### Components:

Qty	P/N	Description
2	42924	Red Wire Assembly, 18 ga x 6" with terminal
1	40750	Black Wire Assembly, 18 ga x 15" with terminal
1	40749	White Wire Assembly, 18 ga x 15" with terminal
1	52887	Time Delay Fan Relay, Thermdisc 12522
1	10159	Outlet Box 4"x4" x 2-1/8" DP
1	16221	Conduit Nipple, Kinray 2639
2	16222	1/2" Lockout T&B #141
1	3397	Rubber Grommet
1	1849	"U" Nut, Tinnerman #C7392-10Z
1	11813	#10x1/2" long Sheetmetal Screws
1	17320	4" x 4" Cover
2	16354	Wire Nut

### Instructions for Installing Time Delay Fan Relay

- 1) Turn off gas supply and electric.
- 2) Use the conduit nipple and locknut to attach the pre-wired 4x4
- 3) Wire as illustrated below.
- 4) Turn on the electric and gas supply.
- 5) Refer to Operating Sequence and box to the electrical outlet box on verify proper operation.



### NOTES:

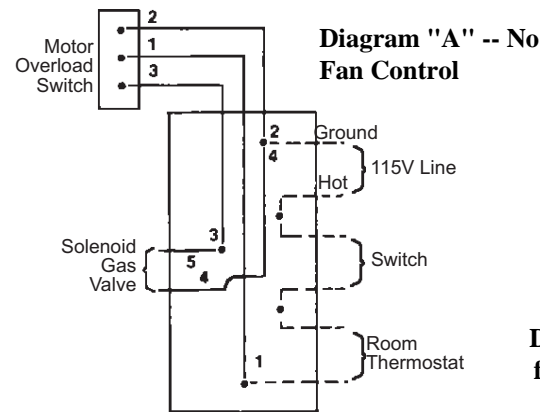
- Use type TEW-105°C or equivalent for replacement wiring on the unit.
- Use #18 gauge wire for control wiring on the unit.
- Use #14 gauge wire for line and motor wiring on the unit.

### Operating Sequence

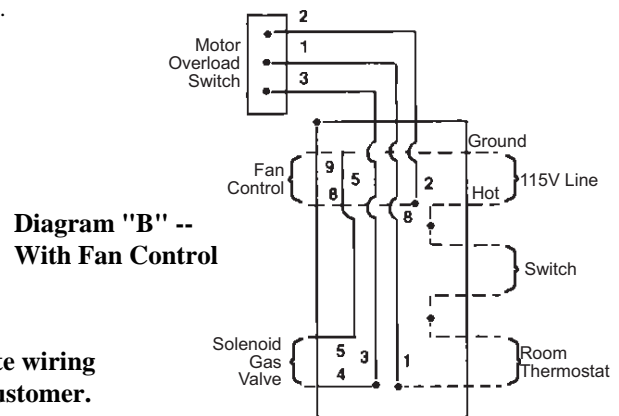
- 1) Follow lighting instructions and establish pilot.
- 2) Turn on power energizing control transformer in series with limit control.
- 3) Thermostat calls for heat, energizing the gas valve and time delay fan relay.
- 4) Fan control senses heat exchanger temperature, energizing the fan motor.
- 5) When the thermostat is satisfied, the gas valve is de-energized, shutting off the gas supply to the main burner.
- 6) When the unit has cooled, the fan control opens, shutting off the fan motor.

## SECTION 5 - US Models with 115 Volt Controls

Applies to US Models which may or may not have been equipped with a fan control. Since the fan control is no longer available, the fan control can be bypassed and the unit wired to the 115 volt thermostat, as shown in wiring diagrams A and B below. This means that when the thermostat calls of heat, the burners and fan motor come on at the same time.



**Diagram "A"** - Wiring in old style US Series heater with serial numbers having prefix "D" without a fan control. It is important that the hot and ground wire be connected into the terminal box as shown.



**Dotted lines indicate wiring furnished by the customer.**

**Diagram "B"** - Fan control wiring in old style US Series heaters with serial numbers having prefix "D". Motor overload switch takes place of limit control by breaking circuit to solenoid gas valve. Since replacement fan control is not available, wire unit as shown in Diagram "A".