

Service Instructions

Models listed
on pages 4-6

**80% GDT, GMP, GMPE, GMPH,
GMPV, GMT, GMTH, GPD**

**90% GMNT, GMNTE, GMNV, GMPN, GSM,
GSMS, GSU**



This Forced Air Central Unit Design Complies With
Requirements Embodied in The American National
Standard / National Standard of Canada Shown Below.
ANSI Z21.47•CSA-2.3 Central Furnaces



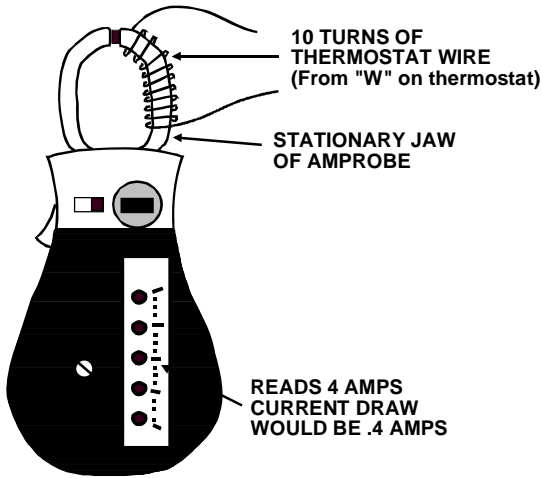
This manual is to be used by qualified, professionally trained HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures or services performed by an unqualified person.

RS6610003
January 2007

SERVICING

The heating anticipator setting for furnaces covered in this manual is **0.70 Amps**.

If the anticipator current draw is unknown, then an amp draw should be taken to determine the anticipator setting. Use an amprobe as shown in the following drawing.



Checking Heating Anticipator Current (Amp) Draw

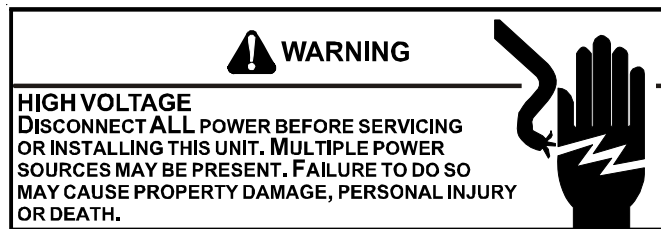
S-3C Cooling Anticipator

The cooling anticipator is a small heater (resistor) in the thermostat. During the "OFF" cycle it heats the bimetal element helping the thermostat call for the next cooling cycle. This prevents the room temperature from rising too high before the system is restarted. A properly sized anticipator should maintain room temperature within 1 1/2 to 2 degrees range.

The anticipator is fixed in the subbase and is not to be replaced. If the anticipator should fail for any reason, the subbase must be changed.

S-4 CHECKING TRANSFORMER AND CONTROL CIRCUIT

A step-down transformer 120 volt primary to 24 volt secondary, 40 VA (Heating and Cooling Models) supplies ample capacity of power for either operation.



1. Remove blower compartment door to gain access to the thermostat low voltage wires located at the furnace integrated control module.
2. Remove the thermostat low voltage wires at the furnace integrated control module terminals.

With Power On (and Door Interlock Switch closed):

5. Check transformer primary voltage at incoming line voltage connections, fuse, splices, and blower door interlock switch.
6. If line voltage is available to the primary side of transformer and not at secondary side, the transformer is inoperative. Replace.
7. After completing check and/or replacement of transformer and check and/or repair of control circuit, reinstall blower compartment door.
8. Turn on electrical power and verify proper unit operation.

S-5 CHECKING PRIMARY LIMIT CONTROL

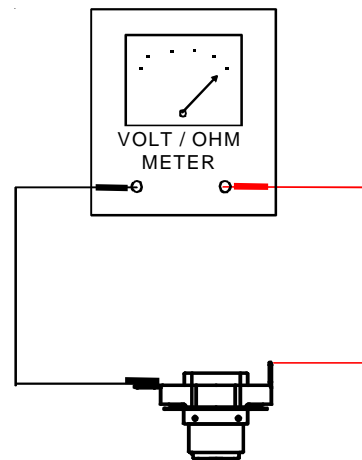
The 80% furnaces use nonadjustable, automatic reset, primary limits part # B13701(87-99) and B13709*. The illustration below shows how to test limit controls. See the following note BEFORE replacing the limit control.

NOTE: The following service problems could cause the primary limit to open up and should be checked first:

1. **Low air flow.** Check for dirty evaporator coil, dirty blower wheel, blower motor not running or turning too slow, high duct static pressure (duct system undersized), high static air filters, return air duct or return grilles undersized.



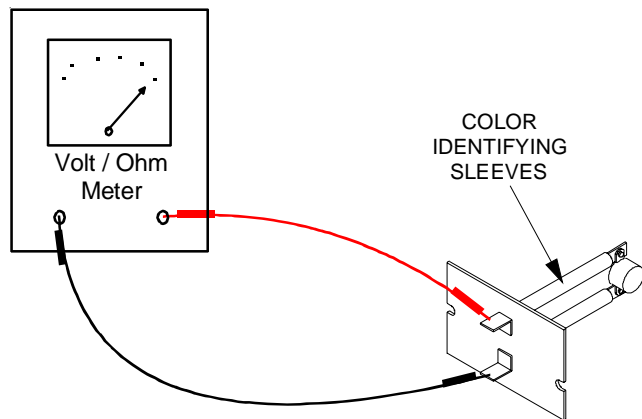
1. Remove burner compartment door to gain access to the primary limit.
2. Remove low voltage wires at limit control terminals.
3. With an ohmmeter, test between these two terminals as shown in the following drawing. Should read continuous unless heat exchanger temperature is above limit control setting. If not as above, replace the control.



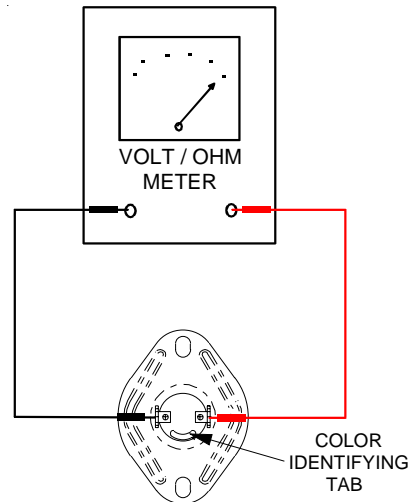
SERVICING

4. After completing check and/or replacement of primary limit control, reinstall burner compartment door.
5. Turn on electrical power and verify proper unit operation.

As shown in the following drawing, limit control should read continuous unless the heat exchanger temperature is above limit control setting. If not as above, replace the control



**Testing Primary Limit Control
(GMP, GMPN Furnaces)**



**Testing Primary Limit Control
(GMNT, GMT Furnaces)**

6. After completing check and/or replacement of primary limit control, reinstall burner compartment door.
7. Turn on electrical power and verify proper unit operation.

To aid in identifying these controls, refer to the following *Primary Limit Charts* for temperature setting and length specifications.

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80% Primary Limit (GDT - GMT - GMTH)											
Part Number	B1370187	B1370190	B1370191	B1370192	B1370193	B1370194	B1370195	B1370196	B1370919	B1370920	B1370921
Open Setting °F	160	210	220	230	240	250	300	320	170 F	180 F	240 F
Length (Inches)	3"	3"	3"	3"	3"	3"	3"	3"	7"	7"	7"
GDT 045-3*	---	---	---	---	---	---	1	---	---	---	---
GDT 070-3*	---	---	---	---	1	---	---	---	---	---	---
GDT 090-4*	---	---	---	---	---	1	---	---	---	---	---
GDT 115-5*	---	---	1	---	---	---	---	---	---	---	---
GMT 045-3*	---	---	---	---	---	---	1	---	---	---	---
GMT 070-3*	---	---	---	---	---	---	---	---	1	---	---
GMT 070-4*	---	---	---	---	---	---	---	---	1	---	---
GMT 090-3*	---	1	---	---	---	---	---	---	---	---	---
GMT 090-4*	---	1	---	---	---	---	---	---	---	---	---
GMT 090-5*	---	---	---	---	---	---	---	1	---	---	---
GMT 115-5*	---	---	1	---	---	---	---	---	---	---	---
GMT 135-5*	1	---	---	---	---	---	---	---	---	---	---
GMT 140-5*	1	---	---	---	---	---	---	---	---	---	---
GMTH 045-3*	---	---	---	1	---	---	---	---	---	---	---
GMTH 070-4*	---	---	---	---	---	---	---	---	---	---	1
GMTH 090-5*	---	---	---	---	1	---	---	---	---	---	---
GMTH 115-5*	---	---	---	---	---	---	1	---	---	---	---

80% Primary Limit (GMP - GMPE - GMPH - GPD)									
Part Number	B1370902	B1370903	B1370905	B1370908	B1370910	B1370911	B1370912	B1370914	B1370915
Open Setting °F	210	240	290	160	170	220	240	220	230
Length (Inches)	3"	3"	3"	7"	7"	3"	7"	7"	3"
GMP 050-3*	---	---	---	---	---	---	1	---	---
GMP 075-3*	---	---	---	1	---	---	---	---	---
GMP 075-4*	---	---	---	---	---	1	---	---	---
GMP 100-3*	---	---	1	---	---	---	---	---	---
GMP 100-4*	---	---	1	---	---	---	---	---	---
GMP 100-5*	---	1	---	---	---	---	---	---	---
GMP 125-4*	1	---	---	---	---	---	---	---	---
GMP 125-5*	---	---	---	---	---	---	1	---	---
GMP 150-5*	---	---	---	---	---	---	---	1	---
GMPE 075-3*	---	---	---	---	1	---	---	---	---
GMPE 100-4*	---	---	---	---	---	---	1	---	---
GMPE 125-5	---	---	---	1	---	---	---	---	---
GMPH 050-3*	---	1	---	---	---	---	---	---	---
GMPH 075-3*	---	1	---	---	---	---	---	---	---
GMPH 080-5*	---	---	---	---	1	---	---	---	---
GMPH 120-5*	---	---	---	---	---	---	---	1	---
GPD 050-3*	---	---	---	---	---	---	1	---	---
GPD 075-3*	1	---	---	---	---	---	---	---	---
GPD 100-4*	---	---	---	---	---	---	---	---	1
GPD 125-4*	---	---	---	---	---	1	---	---	---