

# Sears

# owners manual

## GAS-FIRED SECTION FURNACE

### MODEL NOS.

867.76391

867.76398

867.77387

867.77388

867.77389

867.763792

867.763822

867.763832

867.763842

867.763852

867.773860

### HOW TO ORDER REPAIR PARTS

**SEARS SERVICE  
IS AT YOUR SERVICE  
WHEREVER YOU LIVE  
OR MOVE IN  
THE U. S. A.**

The Model Number will be found on the Rating Plate located on the Front Division Panel. Always mention the Model Number when requesting service or repair parts for your Sears Furnace.

All parts listed herein may be ordered through SEARS, ROEBUCK AND CO. When ordering parts by mail, selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

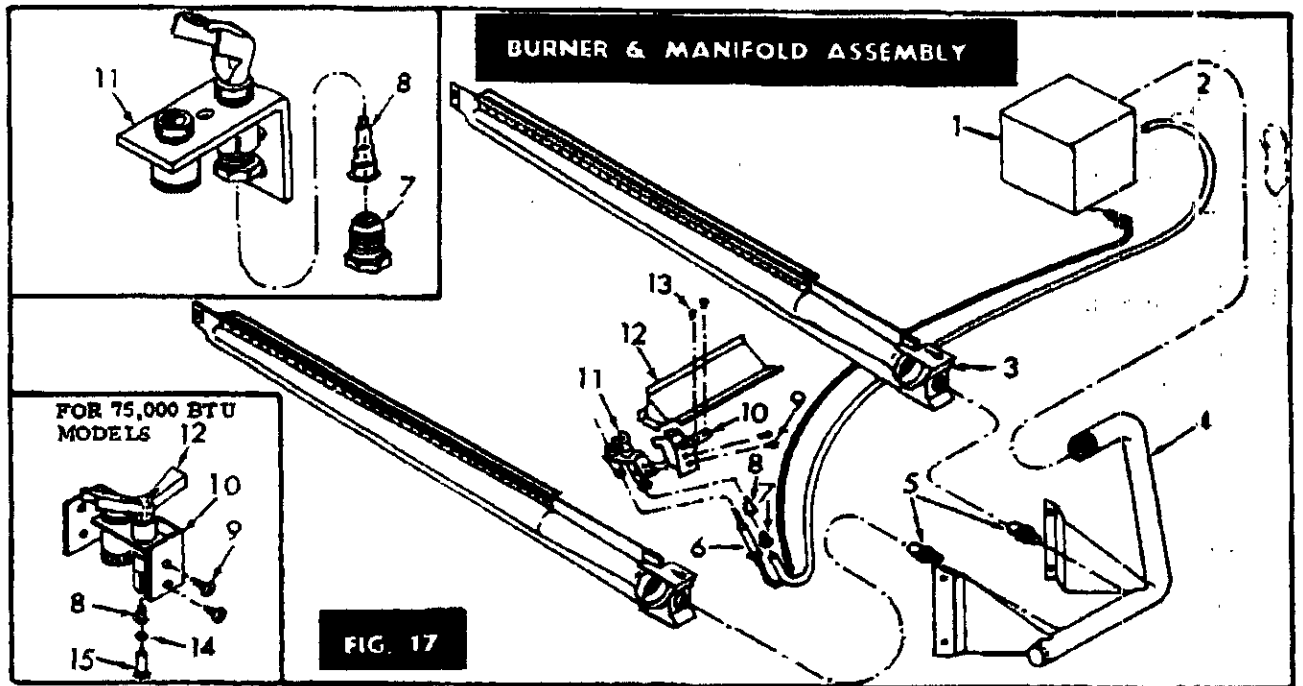
WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST.

1. The PART NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER
4. The NAME of ITEM - Gas Furnace

Your Sears merchandise takes on added value when you discover that Sears has over 2,000 Service Units throughout the country. Each has fully equipped trucks and is staffed by Sears-trained, professional technicians using Sears approved parts and methods.

SEARS ROEBUCK AND CO.

# SEARS GAS-FIRED SECTIONAL FURNACE



KEY NO.	PART NUMBERS FOR MODELS					DESCRIPTION
	867.763792 867.763822	867.763832	867.763842	867.763852	867.773860	
1	86858	86858	86858	86858	---	#Valve, Automatic (Nat. Gas) 224M Btu., 1/2 x 3/4., 24V.
1	---	---	---	---	93048	#Valve, Automatic (L.P. Gas) 224 Btu., 1/2 x 3/4., 24V.
2	69455	69455	69455	69455	69455	Tubing, Pilot
3	29592	---	---	---	---	Burner (3 Req.)
3	---	89592	---	---	---	Burner (4 Req.)
3	---	---	89592	89592	89592	Burner (5 Req.)
4	86806	86808	86810	86810	86810	Manifold
5	86870	---	---	---	---	#Spud, Burner Orifice (Brass, Nat. Gas) #34 Drill (3 Req.)
5	---	86871	---	---	---	#Spud, Burner Orifice (Brass, Nat Gas) #35 Drill (4 Req.)
5	---	---	86873	---	---	# Spud, Burner Orifice (Brass, Nat. Gas) #38 Drill (5 Req.)
5	---	---	---	86870	---	#Spud, Burner Orifice (Brass, Nat. Gas) #34 Drill (5 Req.)
5	---	---	---	---	86874	#Spud, Burner Orifice (Silver, Propane Gas) #50 Drill (5 Req.)
5	---	---	---	---	86875	#Spud, Burner Orifice (Black, Butane Gas) #51 Drill (5 Req.)
6	90779	90779	90779	90779	90779	Thermocouple
7	29441	29441	29441	29441	29441	Ferrule and Nut (2 Req.)
8	503211	503211	503211	503211	---	#Orifice, Pilot Burner (Brass, Nat. Gas)(BCR18)
8	---	---	---	---	503212	#Orifice, Pilot Burner (Black L.P. Gas)(BBR10)
9	132887	132887	132887	132887	132887	*Screw, #10-32 x 3/16" Rd. Hd. Machine (2 Req.)
10	84692	84692	84692	84692	96037	Bracket, Pilot
11	503209	503209	503209	503209	---	#Burner, Pilot (Nat. Gas)(Incl. #8)
11	---	---	---	---	503210	#Burner, Pilot (L.P. Gas)(Incl. #8)
12	81319	81320	81321	81321	81321	Crosslighter
13	457558	457558	457558	457558	457558	*Screw, #7 x 3/8" "B" Hex. Hd. (2 Req.)
1	64623	64623	64623	64623	64623	Rod, Pilot Lighter

\* Standard hardware items. Purchase locally.

# Be sure parts being ordered are for type of gas being used.

! Part not illustrated.

# repair parts

SEARS GAS-FIRED SECTIONAL FURNACE 867.76391, 867.76398,  
867.77387, 867.77388, 867.77389, 867.763832, 867.763842, 867.763852 AND 867.773860

## H-Q BLOWER ASSEMBLY

KEY NO.	PART NUMBERS FOR MODELS			DESCRIPTION
	867.77389 867.763832	867.763842	867.763852 867.773860	
1	68989	68989	68989	Screw, 1/4 x 1-3/4" Type "B" Hex. Hd. SMS (3 Req.)
2	446188	446188	446188	*Washer (3 Req.)
3	72409	72409	72409	Spacer
4	68986	68986	68986	Grommet, Center (3 Req.)
5	86022	86022	91584	Support, Motor
6	68987	68987	68987	Grommet, Ring (3 Req.)
7	84745	---	---	Motor, 1/4 HP 4-Speed PSC Direct Drive
7	---	84747	---	Motor, 1/3 HP 4-Speed PSC Direct Drive
7	---	---	92407	Motor, 1/2 HP 4-Speed PSC Direct Drive
8	120373	120373	120373	*Nut, 5/16-18 Square
9	103320	103320	103320	*Washer, 5/16" Lock
10	9415819	9415819	9415819	*Screw, 5/16-18 x 1-1/2" Hex. Hd. Machine
11	72299	72299	72299	Wire, Jumper
12	80779	80779	80779	Block, Terminal
13	21321	21321	21321	Nut, Wire
14	72412	72412	---	Capacitor, 370V., AC 4.0 Mfd.
14	---	---	87964	Capacitor, 340V., AC 15.0 Mfd.
15	88638	88638	88638	Wire, Blower
16	74465	74465	74465	Cover, Junction Box
17	81163	81163	87963	Box, Junction
18	72982	72982	87958	Housing, Blower
19	72400	72400	87966	Wheel, Blower
20	67584	67584	87960	Panel, Cut-Off
21	273556	273556	273556	*Screw, #10 x 5/8" SHWH Type "A" S.M.S. (2 Req.)

\* Standard hardware items. Procure locally. REFER TO PAGE 21 FOR PARTS ILLUSTRATION.

## SEARS GAS-FIRED SECTIONAL FURNACE

### BURNER & MANIFOLD ASSEMBLY

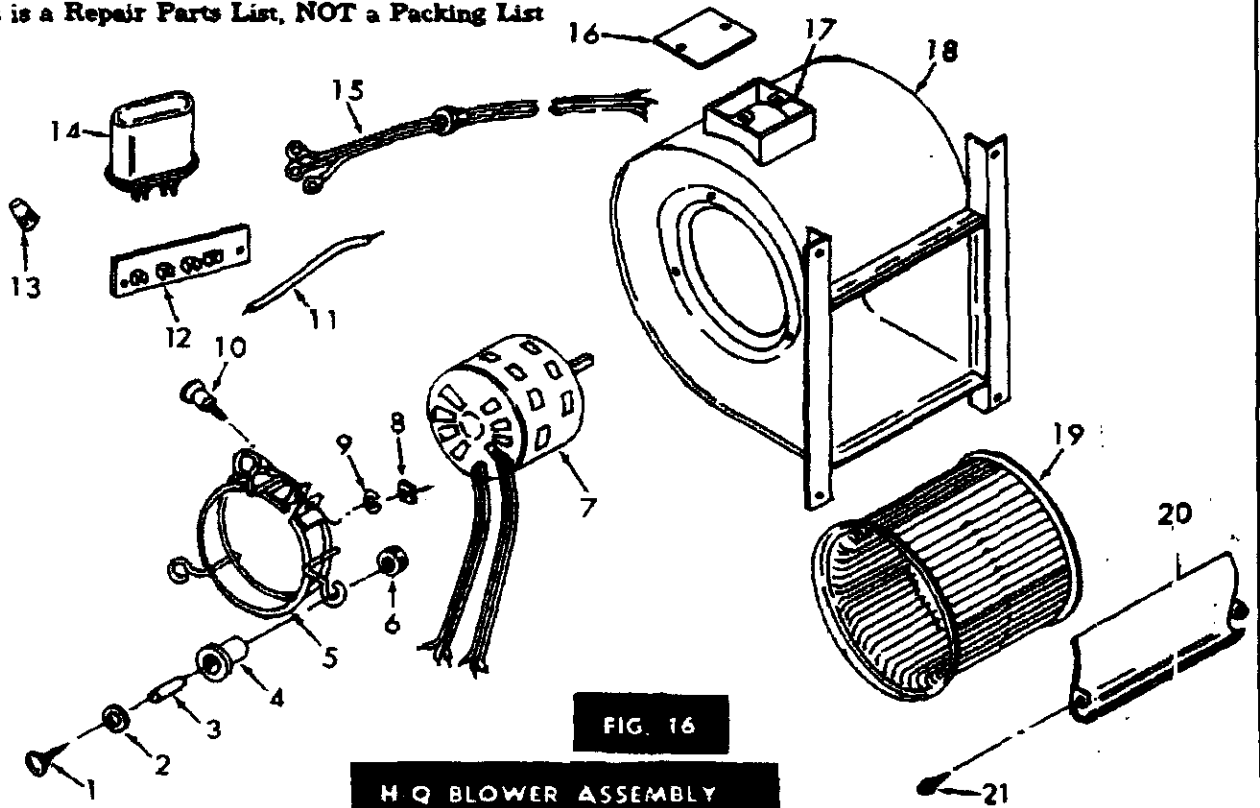
KEY NO.	PART NUMBERS FOR MODELS				DESCRIPTION
	867.76391 867.76398	867.77387	867.77388	867.77389	
1	91469	---	---	---	#Valve, Automatic (Nat. Gas) 240M Btu., 1/2 x 3/4., 24V
1	---	92548	---	---	#Valve, Automatic (L.P. Gas) 240M Btu., 1/2 x 3/4., 24V
1	---	---	93048	93048	#Valve, Automatic (L.P. Gas) 224M Btu., 1/2 x 3/4., 24V
2	91872	91872	69455	69455	Tubing, Pilot
3	89592	89592	---	---	Burner (2 Req.)
3	---	---	89592	---	Burner (3 Req.)
3	---	---	---	89592	Burner (4 Req.)
4	86804	86804	86806	86808	Manifold
5	86869	---	---	---	#Spud, Burner Orifice (Brass, Nat. Gas) #33 Drill (2 Req.)
5	---	86874	---	---	#Spud, Burner Orifice (Silver Propane Gas) #50 Drill (2 Req.)
5	---	---	86874	---	#Spud, Burner Orifice (Silver Propane Gas) #50 Drill (3 Req.)
5	---	---	---	86874	#Spud, Burner Orifice (Silver Propane Gas) #50 Drill (4 Req.)
5	---	86875	---	---	#Spud, Burner Orifice (Black, Butane Gas) #51 Drill (2 Req.)
5	---	---	86875	---	#Spud, Burner Orifice (Black, Butane Gas) #51 Drill (3 Req.)
5	---	---	---	86875	#Spud, Burner Orifice (Black, Butane Gas) #51 Drill (4 Req.)
6	504891	504891	90779	90779	Thermocouple
7	---	---	29441	29441	Ferrule and Nut (2 Req.)
8	92242	92243	---	---	#Orifice, Pilot Burner (Brass, Nat. Gas) (.026)
8	---	---	503212	503212	#Orifice, Pilot Burner (Black, L.P. Gas) (BBR10)
9	132887	132887	132887	132887	*Screw, #10-32 x 3/16" Rd. Hd. Machine (2 Req.)
10	80745	80745	84692	84692	Bracket, Pilot
11	91463	---	---	---	#Burner, Pilot (Nat. Gas) (Incl. Key #8)
11	---	92552	503210	503210	#Burner, Pilot (L.P. Gas) (Incl. Key #8)
12	---	---	81319	81320	Crosslighter
13	---	---	457558	457558	*Screw, #7 x 3/8" "B" Hex. Hd. (2 Req.)
14	22254	22254	---	---	Sleeve, Compression
15	505130	505130	---	---	Nut, Compression
1	64623	64623	64623	64623	Rod, Pilot Lighter

\* Standard hardware items. Purchase locally.  
# Be sure parts being ordered are for type of gas being used.

FOR PARTS ILLUSTRATION  
SEE PAGE 23

## SEARS GAS FIRED SECTIONAL FURNACE

This is a Repair Parts List, NOT a Packing List



**FIG. 16**

**H Q BLOWER ASSEMBLY**

KEY NO.	PART NUMBERS FOR MODELS			DESCRIPTION
	867.76391 567.77387	867.76398 867.77388 867.763822	867.763792	
1	68989	68989	58989	Screw, 1/4 x 1-3/4" Type "3" Hex. Hd. SMS (3 Req.)
2	446188	446188	446188	*Washer (3 Req.)
3	72409	72409	72409	Spacer
4	68986	68986	68986	Grommet, Center (3 Req.)
5	86022	86022	86022	Support. Motor
6	68987	68987	68987	Grommet, Ring (3 Req.)
7	---	84745	---	Motor, 1/4 HP 4-Speed PSC Direct Drive
7	---	---	84747	Motor, 1/3 HP 4-Speed PSC Direct Drive
7	84746	---	---	Motor, 1/4 HP 4-Speed PSC Direct Drive
8	120373	120373	120373	*Nut, 5/16-18 Square
9	103320	103320	103320	*Washer, 5/16" Lock
10	9415819	9415819	9415819	*Screw, 5/16-18 x 1-1/2" Hex. Hd. Machine
11	72299	72299	72299	Wire, Jumper
12	80779	80779	80779	Block, Terminal
13	21321	21321	21321	Nut, Wire
14	72412	72412	72412	Capacitor, 370V, AC 4.0 Mfd.
15	81260	81260	81260	Wire, Blower
16	74465	74465	74465	Cover, Junction Box
17	81163	81163	81163	Box, Junction
18	72980	72980	72980	Housing, Blower
19	72978	72978	72978	Wheel, Blower
20	67586	67586	67586	Panel, Cut-Off
21	273556	273556	273556	*Screw, #10 x 5/8" SHWH Type "A" S.H.S. (2 Req.)

\* Standard hardware items. Procure locally.

# repair parts

SEARS GAS-FIRED SECTIONAL FURNACE MODEL NOS. 867.76391, 867.76398, 867.77387, 867.77388, 867.77389, 867.763792, 867.763822, 867.763832, 867.763842, 867.763852 AND 867.773860

## FURNACE ASSEMBLY - ALL MODELS

This is a Repair Parts List, NOT a Packing List

KEY NO.	PART NUMBERS FOR MODELS			DESCRIPTION
	867.77389 867.763832	867.763842	867.763852 867.773860	
1	86574	86574	86575	Door, Blower
2	80937	80938	80938	Door, Front
3	80752	80752	80752	Nameplate, "SEARS"
4	80750	80750	80750	Medallion, "SEARS"
5	25609	25609	25609	*Nut, Speed (4 Req.)
6	271163	271163	271163	*Nut, 8-32 Hex. (4 Req.)
7	26870	26870	26870	Strike, Door (4 Req.)
8	26871	26871	26871	Catch, Door (4 Req.)
9	86946	86946	86951	Panel, Left Side
10	21321	21321	21321	Nut, Wire
11	81581	81581	---	Switch, Summer (6 Amp)
11	---	---	81582	Switch, Summer (15 Amp)
12	81167	81167	81167	Side, Plenum (2 Req.)
13	132768	132768	132768	*Screw, #8-32 x 3/4 Rd. Hld. Machine S.P.S. (2 Req.)
14	86852	86852	86852	Transformer,
15	86846	86846	86846	Support, Transformer
16	86850	86850	86850	Cover, Junction Box
17	145450	145450	145450	*Screw, #8 x 1/4" H.H. Type "B" S.M.S. (4 Req.)
18	85790	85790	85790	*Screw, #10 x 1/2" SHWH Type "AB" S.M.S. (44 Req.)
19	87509	87946	87946	Panel, Front Division
20	80672	88319	80674	Panel, Top
21	82439	87949	81888	Diverter
22	87056	87056	87056	Control, Fan and Limit
23	87003	87003	87003	Wire, Control (Black and Black)
24	87004	87004	87004	Wire, Control (Brown and Yellow)
25	80738	82450	82450	Scoop, Diverter
26	446817	446817	446817	*Screw, #4 x 3/16" Rd. Hld. Type "B" S.M.S. (4 Req.)
27	69334	69336	69336	Shield, Burner
28	See Burner and Manifold Parts List			Assembly, Burner and Manifold
29	84900	84900	84900	*Screw, #14 x 5/8" Type "AB" S.M.S. (16 Req.)
30	103319	103319	103319	*Washer, 1/4 Lock (4 Req.)
31	84846	84846	84846	Wire, Filter Lock (2 Req.)
32	69153	69153	69153	Base
33	64488	64488	64488	Filter, Air 16" x 25" x 1" (2 Req.)
34	See Blower Parts List			Assembly, Blower
35	81256	81256	81256	Deck, Blower
36	69298	---	---	Baffles, Flue (4 Req.)
36	---	69298	69298	Baffles, Flue (5 Req.)
37	---	69174	69174	Plate, Restrictor
38	69522	69522	69522	Liner, Left Side
39	75681	75681	75681	Bracket, Liner (4 Req.)
40	87870	87952	87952	Exchanger, Heat
41	86453	86453	81258	Panel, Rear
42	69520	69520	69520	Liner, Right Side
43	60563	60563	60563	Damper, Sound
44	60560	60560	60560	*Washer
45	81547	81547	81272	Panel, Right Side
	9235	9235	9235	Thermostat
	96300	96300	96300	Owners Manual (F642-14971)

\* Standard Hardware Items. Procure Locally.  
| Part Not Shown.

FOR PARTS ILLUSTRATION  
SEE PAGE 18

# SEARS GAS-FIRED SECTIONAL FURNACE

## FURNACE ASSEMBLY - ALL MODELS

This is a Repair Parts List, NOT a Packing List

KEY NO.	PART NUMBERS FOR MODELS				DESCRIPTION
	867.77387 867.76391	867.76398	867.763792	867.77388 867.763822	
1	86573	86573	86573	86573	Door, Blower
2	80936	80936	80936	80936	Door, Front
3	80752	80752	80752	80752	Nameplate, "SEARS"
4	80750	80750	80750	80750	Medallion, "SEARS"
5	25609	25609	25609	25609	*Nut, Speed (4 Req.)
6	271163	271163	271163	271163	*Nut, 8-32 Hex. (4 Req.)
7	26870	26870	26870	26870	Strike, Door (4 Req.)
8	26871	26871	26871	26871	Catch, Door (4 Req.)
9	86944	86944	86944	86944	Panel, Left Side
10	21321	21321	21321	21321	Nut, Wire
11	81581	81581	---	81581	Switch, Summer (6 Amp)
11	---	---	81582	---	Switch, Summer (15 Amp)
12	81167	81167	81167	81167	Side, Plenum (2 Req.)
13	132768	132768	132768	132768	*Screw, #8-32 x 3/4" Rd. Md. Machine (2 Req.)
14	86852	86852	86852	86852	Transformer
15	86846	86846	86846	86846	Support, Transformer
16	86850	86850	86850	86850	Cover, Junction Box
17	145450	145450	145450	145450	*Screw, #8 x 1/4" H. H. Type "B" S.M.S. (4 Req.)
18	85790	85790	85790	85790	*Screw, #10 x 1/2" SHWH "AB" S.M.S. (4 Req.)
19	87054	86938	86930	86934	Panel, Front Division
20	80668	80668	80670	80670	Panel, Top
21	80653	80653	82370	80655	Diverter
22	---	87055	---	---	Control, Fan and Limit
22	87056	---	87056	87056	Control, Fan and Limit
23	87003	87003	87001	87002	Wire, Control (Black and Black)
24	87004	87004	86999	87005	Wire, Control (Brown and Yellow)
25	80734	80734	80736	80736	Scoop, Diverter
26	446817	446817	446817	446817	*Screw, #4 x 3/16" Rd. Hd. "B" SMS (4 Req.)
27	69330	69330	69332	69332	Shield, Burner
28	See Burner and Manifold Parts List				Assembly, Burner and Manifold
29	84900	84900	84900	84900	*Screw, #14 x 5/8" "AB" S.M.S. (12 Req.)
30	103319	103319	103319	103319	*Washer, 1/4 Lock (4 Req.)
31	84846	84846	84846	84846	Wire, Filter Lock
32	69151	69151	69151	69151	Base
33	64438	74417	74417	64438	Filter, Air 16" x 25" x 1"
34	See Blower Parts List				Assembly, Blower
35	81011	81011	81011	81011	Deck, Blower
36	69298	69298	---	---	Baffles, Flue (2 Req.)
36	---	---	69298	69298	Baffles, Flue (3 Req.)
37	---	---	---	---	Plate, Restrictor
38	69135	74376	74376	69139	Liner, Left Side
39	75681	74408	74409	75681	Bracket, Liner (2 Req.)
40	76110	74396	74399	76112	Exchanger, Heat
41	81257	81257	81257	81257	Panel, Rear
42	69133	74376	74376	69137	Liner, Right Side
43	60563	60563	60563	60563	Damer, Sound
44	60560	60560	60560	60560	*Washer
45	81269	81269	81269	81269	Panel, Right Side
1	9235	9235	9235	9235	Thermostat
1	96300	96300	96300	96300	Manual, Owners (F642-14971)

\* Standard hardware items. Procure Locally.  
 † Part not shown.

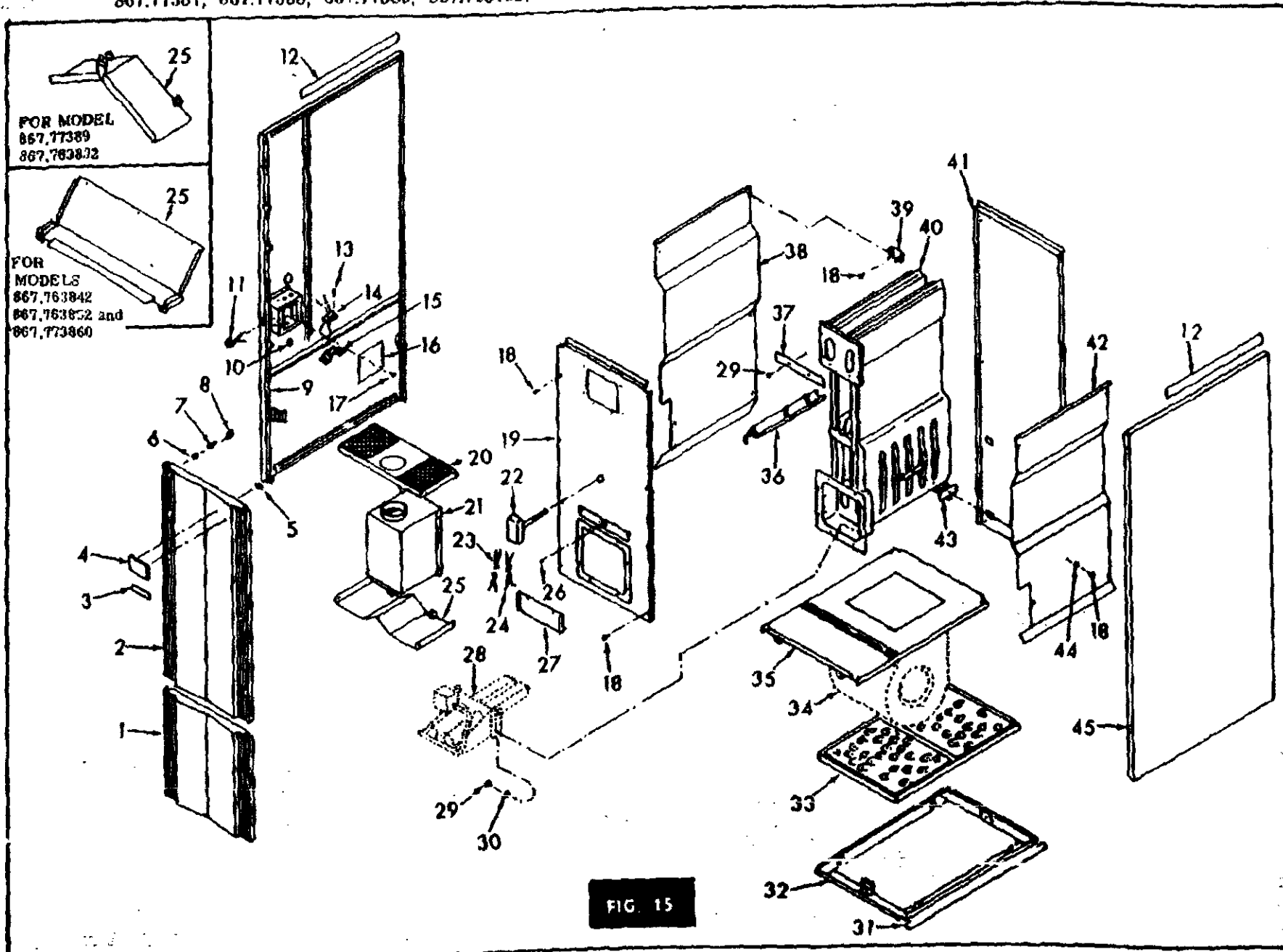
FOR PARTS ILLUSTRATION  
 SEE PAGE 18

SEARS GAS-FIRED SECTIONAL FURNACES MODEL NOS. 867.76391, 867.76398,  
867.77387, 867.77388, 867.77389, 867.763792, 867.763822, 867.763832, 867.763842, 867.763852 AND 867.773860

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FURNACE ASSEMBLIES, ALL MODELS

For Parts List  
Pages 19 and 20

low a setting as possible and still have it turn off when furnace is cool.

(2) Fuse Blown or Wire Broken. Correct the trouble.

(3) Blower motor needs attention of a service technician.

#### NOISY BLOWER

(1) Housing Rattles. Tighten screws.

(2) Needs Lubrication. Lubricate per instructions.

(3) Air Filters Dirty. Replace them.

#### NOISY FLAMES

(1) Excessive Gas Input. Probably due to too high a gas pressure. Adjust gas regulator.

(2) Damaged orifice (if it whistles). Replace with new one.

#### SOOT OR CARBON IN BURNER OR COMBUSTION CHAMBER — SWEATING OF WALLS OR WINDOWS

(1) Insufficient Ventilation. Provide permanent vent opening to outside.

(2) Smoke pipe or Flue Blocked or Improperly Installed. Check — and correct as required.

(3) Ventilating Fan Drawing Flue Gases Back Down Flue Pipe and Out of Diverter. Do not operate fan in vicinity of furnace. Provide permanent vent opening to outside.

#### DELAYED OR NOISY IGNITION

(1) Improper Burner Location. Check to see that burners are properly seated in the slots provided in the rear of the heat exchanger and crosslighter (Key No. 12, fig. 17) is engaged in each and every burner.

(2) Insufficient Pilot Flame. Pilot Flame should be visible and extend above crosslighter (or burners on 75,000 BTU Models)  $\frac{1}{4}$  inch to  $\frac{3}{8}$  inch.

#### BURNER FAILS TO RESPOND TO THERMOSTAT

(1) Gas Valve Safety Switch May Be Open. Shut down unit and repeat starting instructions (page 9). If burner fails to respond, pilot burner flame may be at fault. Check to see that pilot burner is ignited, is burning steadily, and properly heating the end of the thermocouple. Check pilot burner orifice (Key No. 8, fig. 17) for proper size and condition.

(2) Poor Electrical Connections. Check all control terminals and wire joints.

(3) Gas Valve Not Functioning.

(4) Thermostat Not Functioning.

#### NOTE

Call your Sears Service Technician for any of the above which you cannot correct.

**SHOP AT Sears . . . . AND Save**



## maintaining furnace (cont.)

be sure to replace with same type filter or one whose rating is at least 650 ft. min.

FILTER SIZES	*INPUT	NO. REQ.	SIZE OF FILTERS
Use	75,000	1	16"x25"x1"
Correct	105,000	1	16"x25"x1"
Size	135,000	2	16"x25"x1"
	150,000	2	16"x25"x1"
	175,000	2	20"x25"x1"

\* Refer to Table on Page 3 for Model Nos.

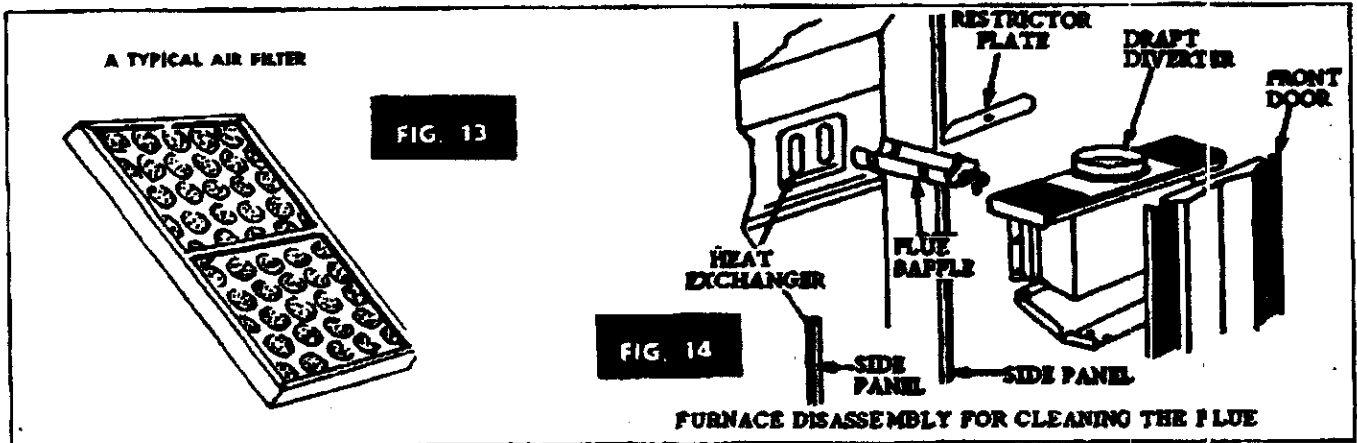
### CLEAN FLUE PASSAGE

Inspect at the beginning of each heating season. If the unit is dirty and requires cleaning, your Sears

Service Technician using specialized equipment, can do this best; but you can do a satisfactory job yourself with a home vacuum cleaner, if you are careful. Shut off electric power supply and close the pilot and shut-off (gas) valves. Remove Smoke Pipe and Draft Diverter. The Flue Baffles will now be exposed. Remove the Restrictor Plate if necessary, and slide out the Baffles. Remove the burners to prevent dirt from falling onto them. The heat exchanger sections can now be cleaned by using a long handled wire brush and vacuum cleaner.

When you have cleaned the passages thoroughly replace the parts in the reverse order in which they were removed. Before replacing the stack, inspect it carefully for rust or corrosion, and replace any sections that show signs of deterioration.

Check the burners for lint or dirt and clean if necessary. Replace burners in furnace.



## SERVICE HINTS — FOR BETTER PERFORMANCE

### INSUFFICIENT HEAT

- (1) Incorrect Gas Input.
  - a. Recheck gas input as described on pages 11 & 12 — and have Gas Company correct input, if necessary. If Gas Company advises, have your Sears Service Technician properly adjust pressure regulator.
  - (b) Recheck the orifice . . . to make certain it is the right size, and not clogged. If clogged, clean out the hole carefully (do not ream it out or in any way enlarge or distort it). Clean with smooth wood pick.
- (2) Furnace Overloaded. This can especially happen when a dwelling is enlarged (by adding on rooms or opening up previously unused attic space). Have a Sears Sales Engineer check the required heat "load" against the furnace capacity. He will make proper and economical recommendations for solving this problem.
- (3) Incorrect Gas Mixture or Flame.
  - (a) Flame should be soft blue, without orange tips.
  - (b) Check for dust or lint at air mixer openings and burner ports — clean, if necessary.

### ROOMS TOO HOT — OR SOME TOO COLD

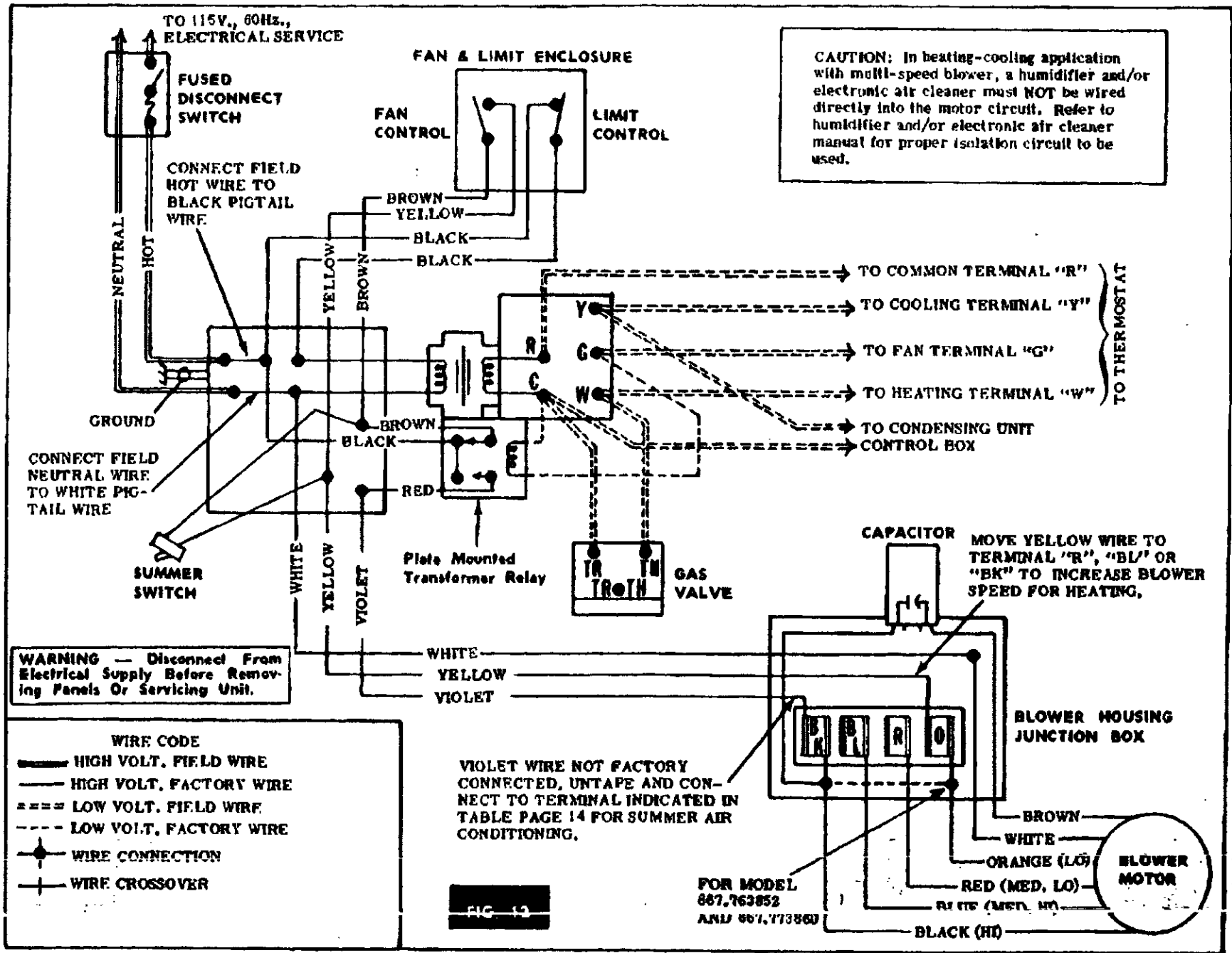
- (1) Thermostat Located Incorrectly. Read section in this manual on locating thermostat — and relocate it as necessary.
- (2) System Out of Balance. Readjust dampers as explained in this manual.
- (3) Check carefully to make sure that rugs or furniture are not covering or blocking discharge or return air register.
- (4) Check to see that return air passages are not blocked by fallen insulation or new construction.

### COLD FLOORS

- (1) System Out of Balance. Readjust dampers as explained in this manual.
- (2) Air Filters Dirty. Replace them.
- (3) Blower Not Operating Properly. Adjust for slower speed and continuous operation. Check lubrication of motor. Clean blower wheel.

### BLOWER FAILS TO TURN ON PROPERLY

- (1) Fan Control Adjusted too High. Adjust to as



FOR ALL MODELS CONNECTED TO A SINGLE THROW DOUBLE THROW FAN RELAY WHEN ADDING SUMMER AIR-CONDITIONING

## ADDING AIR CONDITIONING TO UNIT

The unit has been designed and equipped to supply sufficient air for most summer air conditioning applications. The multi-speed motor used on the furnace blower offers a convenient method of providing automatic change over between heating and cooling air deliveries. Any two speeds of the tapped motor can be connected to the terminals of a single pole double throw relay permitting automatic change of motor speeds between heating and cooling.

When adding air conditioning remove the cover from the junction box in the burner compartment. By removing two screws, the 12 V.A. transformer can be removed from inside the junction box. This transformer does not have capacity to handle the air conditioning load and must be disconnected and

discarded. Mount the combination plate mounted 40 V. A. transformer-relay furnished with the air conditioning unit on the junction box with the primary leads of the transformer and the relay leads connected as shown in Fig. 12 on Page 15.

The following chart shows the motor speed taps to use for normal installation conditions.

The violet wire is not factory connected in the blower junction box. Untape and connect to terminal indicated in table below when adding summer air-conditioning. The speeds in the table will be best for normal applications. But in areas of low humidity one speed faster may give better comfort conditions.

**SPEED TAPS FOR NORMAL APPLICATION**

MODELS	HEATING	COOLING BTU							
		24,000	27,000	30,000	33,000	37,000	40,000	45,000	60,000
867.76391	LO	MED LO	MED HI	HI	----	----	----	----	----
867.76398	LO	----	LO	MED LO	MED HI	MED HI	HI	----	----
867.77387	LO	MED LO	MED HI	HI	----	----	----	----	----
867.77388	MED LO	LO	MED LO	MED HI	MED HI	HI	----	----	----
867.77389	MED LO	----	MED LO	MED HI	MED HI	MED HI	HI	----	----
867.763792	MED LO	----	----	----	LO	MED LO	MED HI	HI	----
867.763822	LO	LO	MED LO	MED HI	MED HI	HI	----	----	----
867.763832	MED LO	----	MED LO	MED HI	MED HI	MED HI	HI	----	----
867.763842	MED LO	----	----	----	MED LO	MED HI	MED HI	HI	----
867.763852	LO	----	----	----	----	LO	MED LO	MED HI	HI
867.773860	LO	----	----	----	----	LO	MED LO	MED HI	HI

Speed Taps Indicated By "LO" "MED LO" "MED HI" And "HI"

### MAINTAINING FURNACE AT TOP EFFICIENCY

#### CAUTION: DISCONNECT ELECTRIC POWER BEFORE ANY DISASSEMBLY OR SERVICING

*A clean, properly maintained furnace will operate at top efficiency . . . and the little effort required for proper maintenance will pay big dividends in long-range service savings, lower operating costs, and greater comfort. Unless you are thoroughly familiar with the operating principles of the furnace and all its controls, you will profit by having an experienced Sears Service-Technician check and adjust the furnace once each year (preferably in the summer-time when Service-Technicians are readily available).*

Below are a few of the maintenance operations which must be done regularly — and which you may wish to do yourself.

#### OIL BLOWER MOTOR

At the start and twice a year oil the blower motor. Relubricate with a good grade of medium weight mineral oil such as automobile engine oil S. A. E. viscosity rating #20 non-detergent. Do not over oil.

#### CHECK AIR FILTER

Check Your Filter at Least Once a Month — and Change Filter when it is Dirty. Dirty filters greatly restrict the air flow, overload the blower motor, cause fuel wastage, and result in inefficient heating or cooling. Filters Must Be Replaced Under Average Conditions. At The Start And Middle Of Each Heating and Cooling Season. Filters may be obtained

from your nearest Sears Retail Store or Catalog Order Store.

#### TO CLEAN FILTERS

MODELS 867.76398 AND 867.763792

Remove Filter from Furnace. If metallic "permanent type" filter, remove excess dirt by rapping gently — Flush from dirty side with hot or soapy water — Rinse — Let Dry — To restore dust and odor removal properties, Recoat with RP Super Handi-Koter or equivalent.

This filter is especially designed for the higher air capacities of this unit. If replacement is necessary

Now set the thermostat for the desired minimum room temperature. If the thermostat is located where the air circulating in the room (and nothing else) affects it — and if the room in which it is located is "average" for the dwelling . . . then the temperature throughout the dwelling will stay constantly between this minimum setting and the few degrees higher for which you have adjusted your thermostat differential. If, however, a strong wind blows at one side of the dwelling (so that rooms on this side are abnormally colder), or if your thermostat is poorly located (so that its operation is governed by "local" conditions instead of the average dwelling temperature) . . . then you will have to alter the setting until you find one at which the average dwelling temperature is comfortable.

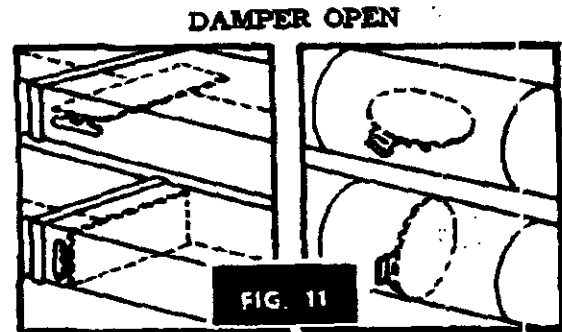
Some fuel can be saved by lowering the thermostat setting a few degrees at night. But do not set it more than 5° to 8° lower (depending upon the severity of the weather), or you will lose the economy by making your furnace run too long in the morning to reheat your dwelling to the desired day-time temperature.

#### BALANCE THE SYSTEM

Start with all dampers *wide open* (handles parallel to directions of runs). If experience, after several

days, proves one room to be warmer than average, close the damper in the run to this room a slight amount. Wait a few days — then close it a little more, if necessary . . . and so on. Never close a damper very much at one time. Also, never adjust the second damper until the first one is satisfactorily adjusted.

Do not continuously adjust dampers to try to compensate for changes in wind direction, or other temporary conditions. Get them properly adjusted for average conditions, then let them alone. Regulate your thermostat, instead.



# Sears

**EVERYTHING YOU NEED FOR COMFORTABLE LIVING**

## check-adjust (cont.)

### EXAMPLE

The "smallest" dial on the meter reads "TWO FEET" and it took 54 seconds for one revolution. In the "Input" column of the table opposite "54" in the "sec." column you find the figure "67". As yours is a TWO FEET dial, you multiply this figure by 2 — to arrive at "134." Your Gas Company has told you that the BTU rating of your gas is 1000. Multiplying 134 x 1,000 gives you 134,000 — the actual BTU/HR input to your heating unit. Your unit is rated for 135,000 BTU/HR input, and 134,000 is not more than 135,000 — so the "actual" input to your unit is within the required limits.

If the burner orifices furnished with your unit do not give the proper input, check with your local Gas Company for the proper orifice size.

### PRIMARY AIR ADJUSTMENT

Air shutters are not normally supplied as the burners are designed to inspirate correct amount of primary air on either natural or LP gas.

### CONTROLS

Limit controls are preset at factory and should not be adjusted.

### ADJUST AIR FLOW

The furnace is equipped with a direct-drive blower with multi-speed motor. If air flow adjustment is necessary, it is accomplished by changing motor speed. The unit is factory wired to give lowest blower speed on the heating cycle and it will not often be necessary to change this heating speed. If, however, it is desired to decrease the outlet air temperature from the furnace, (increase blower speed) it is accomplished in the following manner:

1. Shut off power to unit.
2. Remove cover from junction box on blower housing.
3. Remove yellow wire (lead from heating cycle fan control) from Lo-Speed terminal and push onto desired higher speed terminal.

**NOTE:** The white wire is the common lead and is not to be moved when changing blower speed.

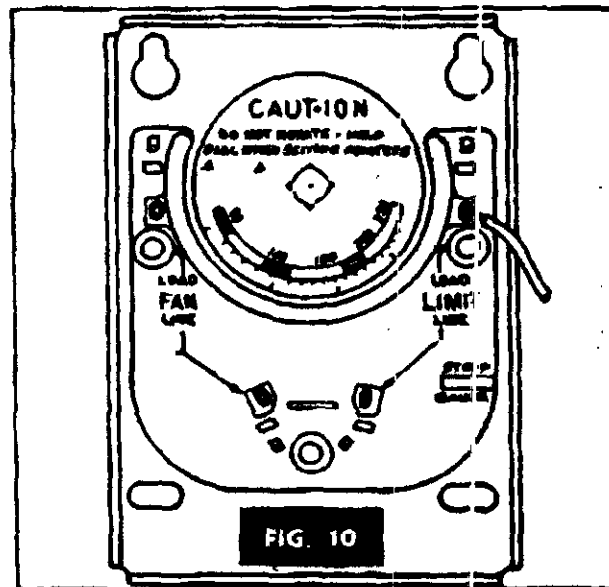
The violet wire is not factory connected but is taped off in the blower junction box. Untape and connect to terminal indicated in table on page 14 when adding summer air-conditioning.

4. Reverse steps 1 and 2 above.

Adjustment should be made to run the blower to deliver the lowest practicable air flow. This is desirable because, first, it means less current consumption, and second, less noticeable draft at the warm air outlets. The blower should deliver the amount of air which will produce a temperature rise through the unit of between 45° to 75° for Models 867.76398 and 867.763792 and between 70° and 100° for Models 867.76391, 867.77387, 867.77388, 867.77389, 867.763822, 867.763832, 867.763842, 867.773852 and 867.773860.

### SET BLOWER CONTROL

The combination Fan-Limit control is on the Division Panel below the draft diverter scoop on the furnace.



Set the "Fan Off" setting on the fan control to stop the blower motor at as low a temperature setting as practicable. "Practicableness" is determined by the type and locations of the warm-air outlets (and how warm the air must be for these outlets to circulate it comfortably through the rooms). Usually, a "Fan Off" setting of 80° to 100° is best for high wall or perimeter diffusing type outlets. The blower should shut off just before a cooling draft is felt anywhere in the room.

After setting the "Fan Off" set the "Fan On" at approximately 20° above the "Fan Off". The lowest practicable "Fan Off" setting combined with the slowest practicable blower speed, will result in a "gentle" practically unnoticeable air circulation that will prevent stratification of room air (warm air near ceiling and colder air below it). As long as the blower runs it will keep taking cool air off the floor and mixing it with the warmer air near the ceiling — so that a uniform temperature will be maintained.

### ADJUST THERMOSTAT

This is the final adjustment. Adjustment instructions are packaged with the Thermostat. Check it by setting it to turn the furnace on at several different temperature settings (in turn) — and make certain that it closes properly when the temperature (in the room) drops to the setting, then later opens properly when the room temperature rises a degrees.

Next adjust the thermostat heat anticipator. The heat anticipator is in effect a variable resistor that can be adjusted to either shorten or lengthen burner "ON" cycle. For normal operation set pointer at 20 on the graduated scale. Setting pointer slightly higher than 20 will result in longer burner "ON" cycles while setting the pointer below 20 will result in shorter burner "ON" cycles.

## CHECKING AND ADJUSTING UNIT

Unless the gas input to the burner is within the required limits, the unit cannot produce the heat intended. The input to the unit shall not exceed its rated INPUT BTU/HR (table page 3). If it is not correct, the pressure regulator will have to be adjusted and/or the orifices may have to be changed.

A tapped opening is provided in the Gas Valve to facilitate measuring the manifold gas pressure. A U-tube manometer having a scale range from 0 to 12 inches of water should be used for this measurement. The manifold pressure must be measured with the burners and pilot operating.

The manifold pressure is set in accordance with the following list for various types of gases.

TYPE OF GAS	MANIFOLD PRESSURE INCHES OF WATER
Natural	3 1/2
Liquefied Petroleum	11

Only small variations in gas flow should be made by means of the gas pressure regulator adjustment.

In no case should the final manifold pressure vary more than plus or minus 0.3 inches water column from the above specified pressures.

Any major changes in the flow must be made by changing the size of the burner orifices. The burner orifices furnished with the unit are listed in the following table for the various gases.

### BURNER ORIFICE SPUDS FURNISHED

FURNACE INPUT* BTU/HR.	NO. OF ORIFICES	BURNER ORIFICE DRILL SIZE D.M.S. (Diameter)		
		900-1050 BTU 0.65-0.69 SP GR. NATURAL	2500 BTU PROPANE	3200 BTU BUTANE
75,000	2	33 (.113)	50 (.070)	51 (.067)
105,000	3	34 (.1110)	50 (.070)	51 (.067)
135,000	4	35 (.1100)	50 (.070)	51 (.067)
150,000	5	38 (.1015)	- - - -	- - - -
175,000	5	34 (.1110)	50 (.070)	51 (.067)

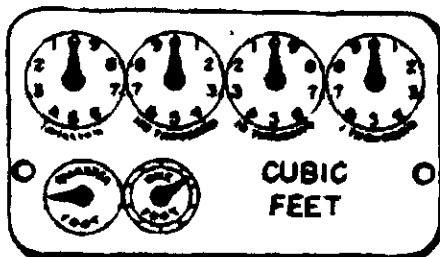
\* For Model Nos. of Units as listed above refer to Table, page 3.

### CHECK GAS INPUT (CITY GASES ONLY)

The input to the unit, may be checked by using the gas meter as follows:

- Turn off all other gas appliances connected to the meter.
- Start the heating unit — and set the thermostat so that the main burner is on.
- Watch the "smallest" dial on the gas meter (the one whose hand is revolving fastest). Count (with the second hand of a watch or clock) the exact number of seconds it takes for the hand of this dial to make one full revolution.
- Now look to see what one revolution of this hand indicates, as marked on the dial. On some meters the "smallest" dial will read "ONE FOOT," or it might read "QUARTER FOOT," or "5 FEET." A typical meter is illustrated here.

A  
TYPICAL  
CITY  
GAS  
METER

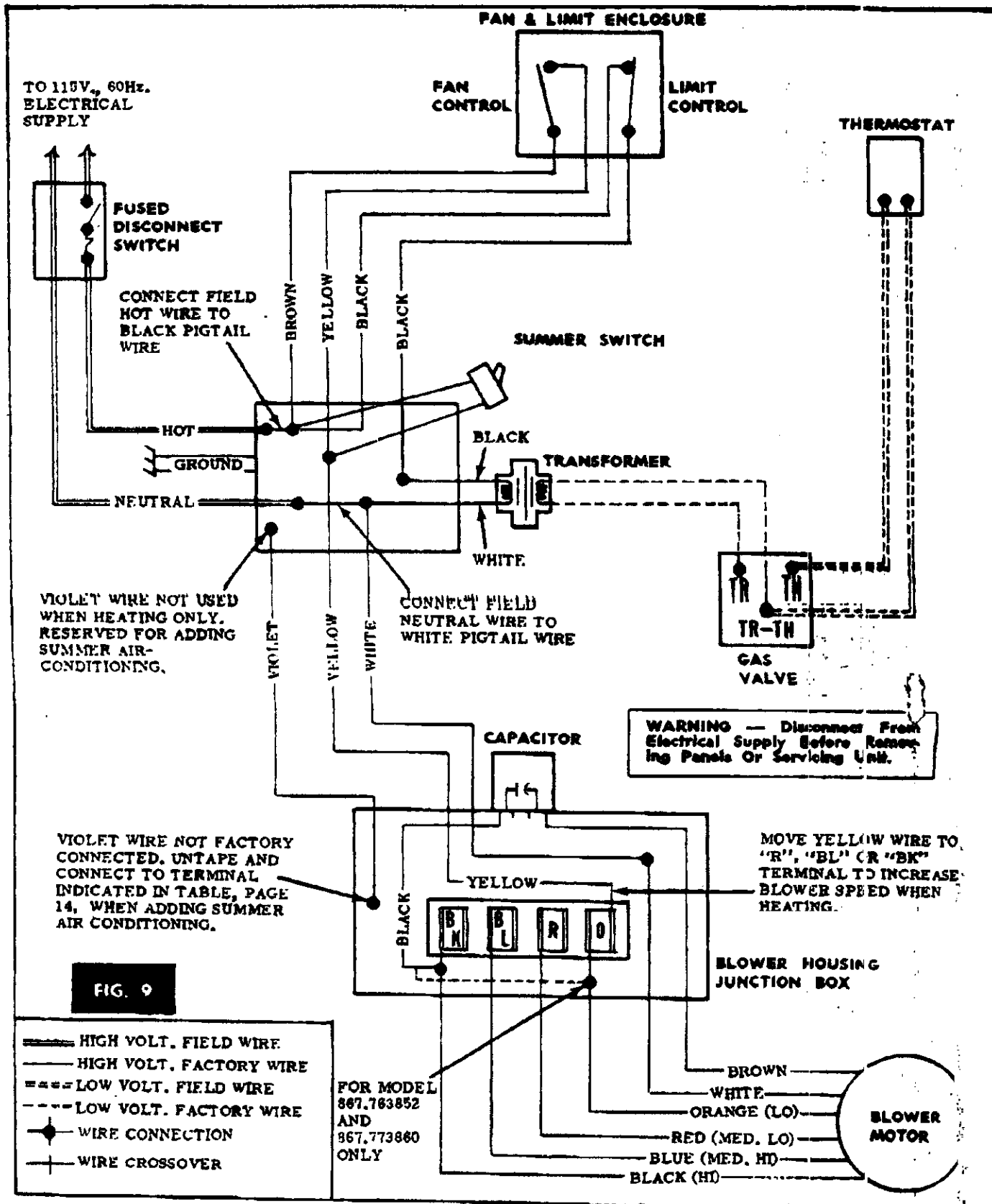


- Use the table below to determine your gas input. If yours is a ONE FOOT dial, simply read the ACTUAL GAS INPUT — IN CU. FT. PER HR. FOR ONE REVOLUTION OF A ONE FOOT DIAL

SEC.	INPUT	SEC.	INPUT	SEC.	INPUT
10	350	27	133	44	82
11	327	28	129	45	80
12	300	29	124	46	78
13	277	30	120	47	76
14	257	31	116	48	75
15	240	32	113	49	73 5
16	225	33	109	50	72
17	212	34	106	51	70 5
18	200	35	103	52	69
19	189	36	100	53	68
20	180	37	97	54	67
21	171	38	95	55	65 5
22	164	39	92	56	64
23	157	40	90	57	63
24	150	41	88	58	62
25	144	42	86	59	61
26	138	43	83 5	60	60

"Input" figure that corresponds to the "Sec." (seconds) that you have counted. If yours is a TWO FEET dial, multiply this figure by 2; if it's a FIVE FEET dial, multiply by 5. If it's a HALF FOOT dial, divide by 2; and if it's a QUARTER FOOT dial, divide by 4. The figure you arrive at when you've done this correctly will be your actual gas input in cu. ft. per hr.

- Take the figure arrived at above and multiply it by the BTU rating of your gas (as told to you by your Gas Company). This result will be the actual BTU/HR input of your heating unit — and, as stated above, it should be within 5% of the rated A. G. A. Input of the unit.



HEATING WIRING DIAGRAM FOR ALL MODELS

## CONNECTING THE WIRING

The Schematic Diagram Fig. 9, shows you how to make all necessary electrical connections. Complete your electrical work accordingly. Remember, however, all electrical work must conform with the requirements of your local ordinances and the National Electrical Code. If you are not familiar with the proper wiring methods, we suggest that you purchase our booklet "Electrical Wiring for Home and Farm", Form No. F5428, for sale at nominal cost in Sears Retail and Catalog Order Stores.

Note particularly that wiring for the heating unit should originate at the Entrance Switch, and be a separate fused circuit out of this switch (rather than be a branch line from some existing circuit). In order to properly fuse this circuit and to simultaneously provide a master switch for the whole heating system, we recommend that the hot (black) wire pass through a Fused Disconnect Switch.

Use No. 14 or larger size wire throughout, except where the illustration indicates that bell wire (low voltage line) is sufficient. Fuse the circuit at the (fused disconnect switch) with a Timed-Lag fuse of not over 15 amps. size.

## ELECTRIC GROUNDING

Electric ground is required on this appliance.

## A) RECOMMENDED GROUNDING METHOD

Permanently ground this appliance in accordance with the National Electrical Code and local codes and ordinances. Use a conductor of the appropriate size (#14 AWG Copper) from the appliance to a grounded connection in the service panel or a properly driven and electrically grounded ground rod.

## B) ALTERNATE GROUNDED METHOD

If the recommended grounding method is impossible, permanently ground the appliance from the ground connector to a grounded cold water pipe\* using a separate, green colored, insulated conductor of appropriate size. **THIS HOWEVER, IS NOT RECOMMENDED.**

\*Cold water pipe must have metal continuity to electrical ground and not be interrupted by plastic, rubber or other electrically insulating connectors (including water meter or pump) without adding a jumper wire at these connections.

NOTE: Do not ground to a gas supply pipe. Do not connect to electric power supply until appliance is permanently grounded.

If you have done the installation yourself we recommend that you now call upon the nearest Sears Service-Technician—or the Gas Company—to make the following checks and adjustments. He will have the proper instruments.

## OPERATING THE FURNACE

The automatic gas valve on the furnace is designed for two stage ignition. When the thermostat calls for heat, the valve partially opens to allow just enough gas to flow to the burners for quiet

ignition. After a short delay, the gas flow increases to full input. The above sequences results in quiet ignition of the burners.

## STARTING THE UNIT

Before starting unit, be sure and check unit and Figure 8 to identify valve type and location. To start the unit under normal conditions, proceed as follows:

### TO LIGHT THIS APPLIANCE:

**CAUTION:** Before lighting or relighting make sure that valve knob has been in "off" position for at least 5 minutes and that room thermostat is set at lowest setting.

1. With valve knob in "Off" position, depress knob — hold it depressed — and turn valve knob to pilot position, light pilot and continue to hold valve knob depressed for 60 seconds, then release it.

Note: If pilot flame goes out, repeat steps above.

2. Turn valve knob to "On" position.

3. Set room thermostat to desired setting.

### TO TURN THIS APPLIANCE OFF

1. Depress Valve knob and turn to "Off" position.
2. Turn the fused switch off.

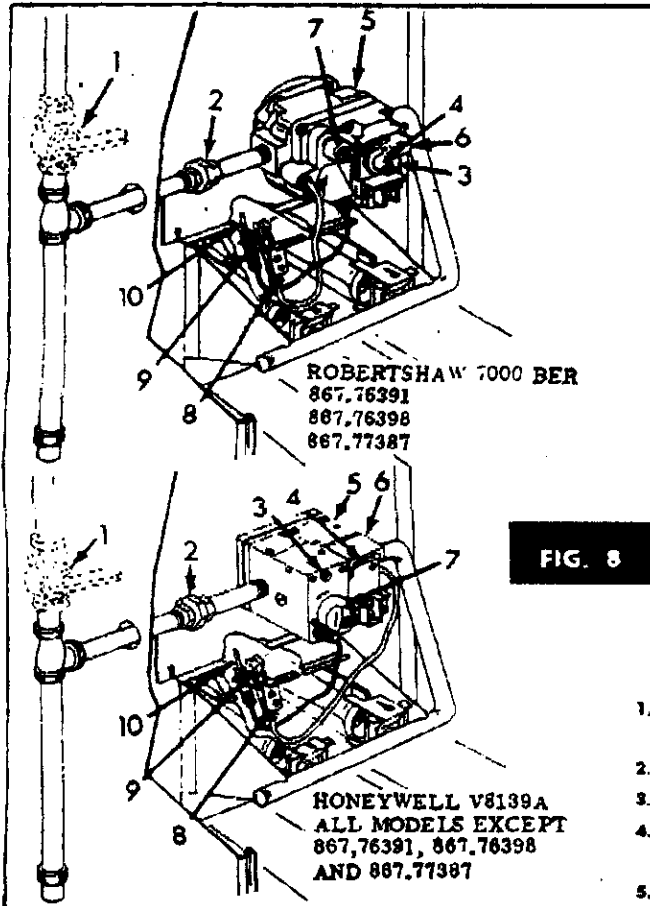


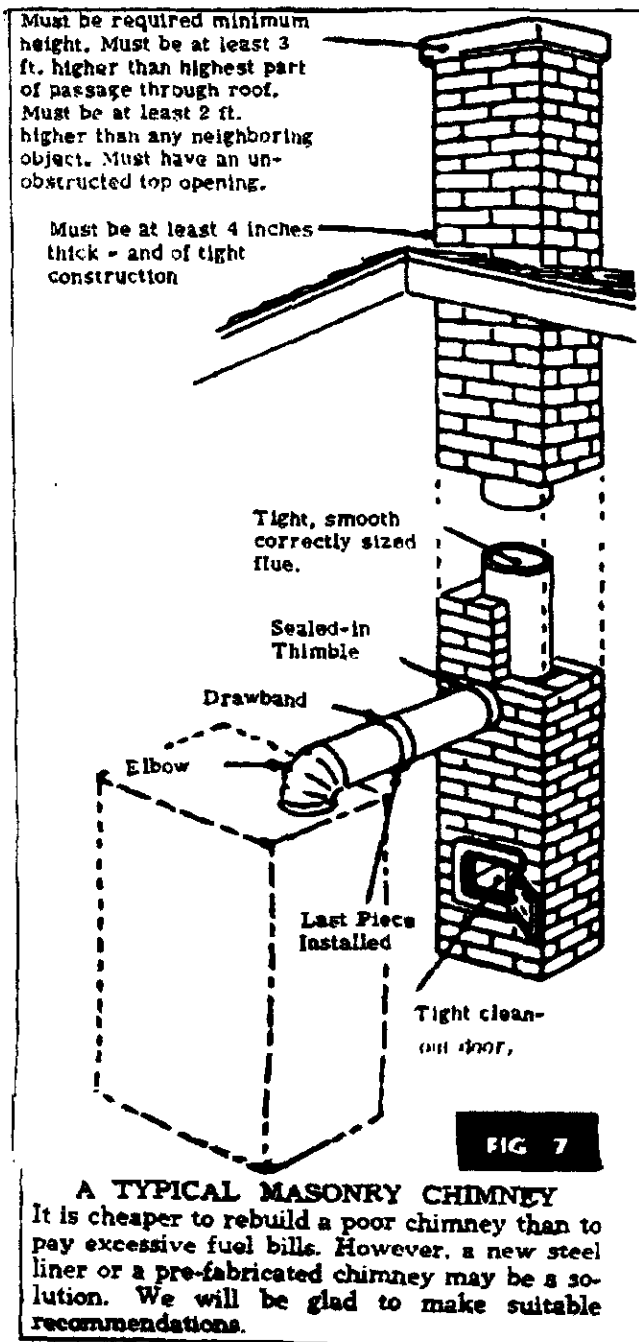
FIG. 8

- |  |                       |
|--|-----------------------|
| 1. MANUAL GAS VALVE (WHEN USED, NOT FURNISHED WITH FURNACE). | 6. PRESSURE REGULATOR |
| 2. GROUND JOINT UNION  | 7. GAS COCK           |
| 3. PILOT ADJUSTMENT SCREW COVER                              | 8. PILOT ORIFICE      |
| 4. PRESSURE REGULATOR ADJUSTMENT SCREW                       | 9. PILOT BURNER       |
| 5. GAS VALVE   | 10. THERMOCOUPLE      |



area of the largest vent connector plus 50 percent of the cross sectional areas of the additional vent connectors.

Make certain that the end of the smoke pipe does not project into the chimney any further than the inner surface of the chimney — and preferably use a sealed-in thimble to connect the pipe with the chimney. Also, make certain that any horizontal portion of the pipe slopes up at least  $\frac{1}{4}$  inch per foot, from the draft diverter to the chimney. Keep this section of pipe as short as possible. Seal the thimble (or pipe end) in the chimney with cement. Use plenty of sheetmetal screws in the assembly so that the pipe will be sufficiently rigid. If necessary for rigidity, support the pipe with stovepipe wires fastened above. If the furnace or smoke pipe is in relatively cool or cold surroundings, or if the smoke pipe is more than 15 feet long, it may be desirable to insulate the smoke pipe to prevent condensation in the smoke pipe due to low flue gas temperature.



No damper should ever be installed in the smoke pipe of any gas appliance.

## DUCTWORK

All ductwork is to be installed in accordance with a heating system plan which will provide the correct size ducts (or pipes), correct size and number of warm-air outlets and cold-air returns, and proper distribution throughout the dwelling. If the furnace is part of a complete Sears Heating System, we will have provided you with such a plan. Otherwise, consult us before installing new ductwork. Provisions have been made for introducing the return air at the bottom or either side of the unit. Knockouts are provided, on either side of the unit, and the base has a rectangular opening for the return air ducts or plenums. Install the filter inside the unit using the clips or tabs provided for locating the filter, and the wire to hold it in place.

Where there is no complete return duct system, the return connection should be run full size to a location outside the utility room. The return air grilles and the warm air registers should be located so they will not be obstructed at anytime.

### NOTE

Model Nos. 867.77389, 867.763832, 867.763842, 867.763582 and 867.773860 are designed for, and must be installed with the two filters furnished with the unit using both sides or one side and the base of the furnace.

These furnaces, when used in connection with cooling units, shall be installed in parallel with or on the upstream side of the cooling units, to avoid condensation in the heating element. With a parallel flow arrangement the dampers or other means used to control flow of air shall be adequate to prevent chilled air from entering the furnace and if manually operated must be equipped with means to prevent operation of either unit unless the damper is in the full heat or cool position.

### CONTROLS NOT ON THE HEATING UNIT

In addition to those controls which are mounted on (and a part of) the heating unit, you should have a fused disconnect switch and a thermostat which are illustrated in the Schematic Diagram, Fig. 9. All controls should have mounting and adjusting instructions packaged with them (will have if obtained from Sears) Mount each in accordance with its instruction before making any electrical connections.

### GIVE SPECIAL ATTENTION TO THE LOCATION OF THE THERMOSTAT

Read instructions packed with thermostat before making installation. The thermostat will call for heat, or shut off the heating unit, in accordance with the temperature of the air which circulates around it... and it is also affected by the convected heat from such nearby appliances as a lamp, television or radio set, etc. Direct sunlight, or a cold or hot draft will also affect it. And it will not respond correctly if it is in a "dead air" area, as under a stairwell.

It is therefore very important that the thermostat be located in a place where only the air which circulates freely throughout the dwelling will it — so that it will respond correctly to average room temperature. Choose a location on an inside wall, preferably about 4 1/2 feet above the floor.

The vapor pressure in a bulk L.P. tank can vary from as high as 225 p.s.i.g. to as low as 10 p.s.i.g.—depending upon weather variations and the tank size — so that it is impossible to expect a one-stage (low pressure) regulator to deliver anything like a constant gas pressure to the heating unit burner. Moreover, the low pressure comes at the coldest time — just when you most need a constant higher pressure to keep the heating unit producing its full BTU HR output!

Service-wise, the two-stage regulation is also superior. By expanding the gas at two points instead of just one, the amount of refrigeration produced is greatly reduced. This reduces the tendency to "freeze-ups" resulting from frozen moisture in the regulator — and thus reduces service calls. Then, too, the tank can be located far from the dwelling, on an alley etc., where refilling is convenient; and the gas lines can be smaller (and less costly).

PIPE OR TUBING SIZES FOR VARIOUS DISTANCES IN FEET BETWEEN 1ST-STAGE REGULATOR AND SECOND STAGE REGULATOR IN A 2-STAGE REGULATION SYSTEM

HEATING UNIT BTU/HR. RATING	1/4 IN. O. D.	3/8 IN. O. D.	1/2 IN. O. D.
75,000	300		
100,000	175		
125,000	100		
150,000	80		
175,000	60	300	
200,000	40	200	
250,000	27	150	
300,000	18	100	300

PIPE OR TUBING SIZES FOR VARIOUS DISTANCES IN FEET FOR 1-STAGE REGULATION SYSTEM OR AFTER THE 2ND-STAGE REGULATOR IN A 2-STAGE REGULATION SYSTEM

HEATING UNIT BTU/HR. RATE	1/4 IN. O. D.	3/8 IN. O. D.	1/2 IN. O. D.	3/4 IN. STD.	1 IN. STD.
75,000	15	35	110	250	1200
100,000	—	25	80	200	800
125,000	—	25	55	125	400
150,000	—	17	35	120	370
175,000	—	13	30	90	270
200,000	—	10	24	65	200
250,000	—	—	15	45	130
300,000	—	—	10	35	90

Use black iron or steel pipe and fittings, or an approved type of copper tubing (consult local regulations). Do not use an ordinary thread compound (LP Gas will dissolve it) . . . instead, use a special LP (Shellac base) compound. Check carefully for leaks (refer to preceding page).

Two methods of installation are shown in figs. 5 and 6). Both call for two-stage regulation employing a first-stage regulator and a standard-type second-stage regulator.

### THE CHIMNEY (See Fig. 7)

The chimney is a very important part of the heating system. No furnace, however efficient its design, can perform satisfactorily if the chimney that serves it is inadequate. Check the chimney to make certain that it is the right size, properly constructed, and in sound condition.

MINIMUM CHIMNEY SIZE

FURNACE INPUT BTU/HR.	FIVE DIMENSIONS IN INS.		
	HT. 18-19 FT.	HT. 16-20 FT.	HT. 20 FT. UP
Up to 100,000	6 x 6	6 x 5	5 x 5
100 to 200,000	7 x 8	7 x 7	6 x 7

Refer to table, page 3 for input of your unit.

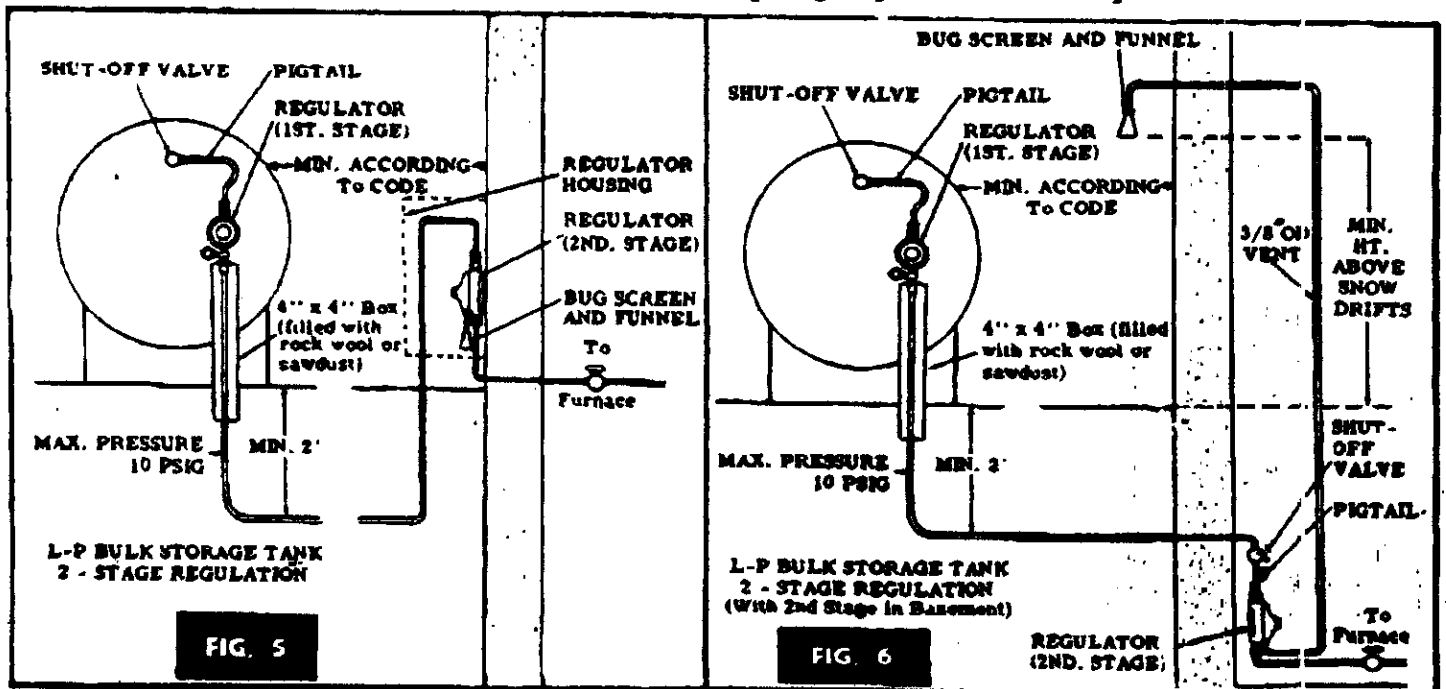
### NOTE

For detailed information regarding chimneys, smoke pipe and ductwork obtain our free booklet—refer to *Other Sears Booklets*, page 6.

### SMOKE PIPE (See Fig. 7)

Connect the draft diverter to the chimney using a galvanized elbow and galvanized smoke pipe of the same diameter at the outlet of the draft diverter. See Dimensions "D" Fig. 1 for location and size of draft diverter outlet.

Where two or more appliances are connected to a gas vent or chimney, the cross sectional area of the passageway shall be at least equal the cross sectional



It is very important, too that you continue to maintain your heating plant — after it is in operation — by regularly performing the minimum maintenance (pages 14 and 17) which we have listed.

**OTHER SEARS BOOKLETS TO HELP YOU**

- \*Form No. F11768 — How to Install Plumbing.
- \*Form No. F12967 — How to Install Forced Air Heating and Cooling Systems.

†Form No. F5428 — Electrical Wiring for Home and Farm.

\*Free Obtain from Plumbing Dep't. in Retail Store or write to Dep't. 243 at Catalog Order Store.

†Normal Cost: Obtain from Electrical Dep't. in Retail Store or write to Dep't. 243 at Catalog Order Store.

**INSTALLING UNIT**

**CONNECTING A NATURAL GAS UNIT TO THE GAS COMPANY METER**

*Piping Requirements*

The gas piping to the heating unit should be an independent line direct from the gas meter to the unit—to insure an unrestricted gas flow and proper burner operation. In addition, the pipe for this line must be of ample size. Its size will depend upon the length of the line (from meter to unit), the number of fittings required (elbows, couplings, etc), the required maximum BTU/HR. input of the unit, and the specific gravity of the gas used.

If you will require more than 60 feet of piping and/or more than 6 fittings between your meter and the "T" (See Fig. 4, Connecting the Gas Piping", consult your Gas Company about pipe size. Otherwise use the table, "Pipe Sizes—Most Applications". Be certain, too, to refer to any local regulations regarding gas line installation—and comply with these.

**— GAS PIPE SIZES — MOST APPLICATIONS —**

Length of Pipe	NATURAL GAS			
	Pipe Capacity in BTU/HR. Inputs			
Pipe Size, In.	1-2	3-4	1	1-1.4
15 ft.	73,000	163,000	330,000	720,000
30 ft.	50,000	115,000	230,000	515,000
45 ft.	41,000	95,000	190,000	415,000
60 ft.	36,500	82,500	166,000	365,000

*Connecting the Piping*

Use black iron or steel pipe and fittings. Do not use an ordinary thread compound (L-P gas will dissolve it) — instead use a special L-P (Shellac base) compound. Apply the compound to all joints — but apply it to the male threads only, and use it sparingly so that none will get inside the line. Tighten all joints securely.

For information regarding methods of pipe fitting, obtain our free booklet: "How to Install Plumbing." Form No. F11768 (refer to preceding page).

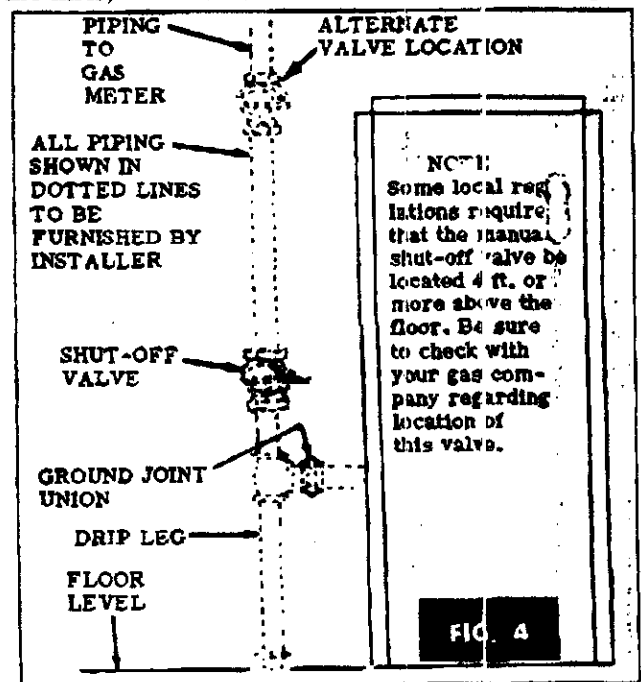
In Fig. 4, parts not furnished with your heating unit are drawn in dotted lines and you will have to obtain them separately (from any Sears Store).

Note in particular, that the supply line must drop down vertically to the shut-off valve (located outside of the heating unit, preferably as close as possible to where the line goes through to the inside of the unit). Also, note that a drip leg is to be provided — by installing a tee, nipple and pipe cap as shown. The vertical nipple should be 12 in.

or more long. The drip leg is needed to trap any dirt or moisture in the line, before it reaches the burner.

*Test for Gas Leaks*

When the piping is finished, open the valve at the meter, the shut-off valve, (to allow gas to fill all the lines) — then test for leaks. Never use a light-



**CONNECTING THE GAS PIPING**

ed match or other open flame. Use a creamy solution of soap suds applied to each joint, in turn, if there is a leak, bubbles will form and burst. Correct even the most minute leak immediately.

**INSTALLING AN L-P (LIQUEFIED PETROLEUM GAS) BULK STORAGE TANK**

**IMPORTANT:**

**THE CONNECTIONS FROM THE BULK STORAGE TANK TO THE FURNACE CAN ONLY BE MADE BY A LICENSED LP DEALER.**

For economical, trouble-free operation of Liquefied Petroleum Gas (Butane or Propane) it is essential that the bulk storage tank be properly installed and connected — through two stage regulation — to the heating unit. The tank is to be furnished and installed by your L-P dealer, and we recommend — for your own future satisfaction — that you discuss this with him and request two-stage (instead of the more commonly used one-stage) regulation.

## WHEN SHIPMENT ARRIVES

### INTRODUCTION

We suggest you take a few minutes to read the instructions contained in this booklet before installing and using your furnace. This will help you obtain the full benefits of the quality and convenience built into this equipment. It will also help you avoid any needless service expense resulting from causes beyond our control which naturally cannot be covered in our guarantee.

### YOUR GUARANTEE

Your SEARS GUARANTEE is your positive assurance that this merchandise is exactly as represented, in materials and workmanship . . . that it will serve you well. To keep this guarantee fully operative it is only necessary that the equipment be installed properly, and be maintained in accordance with the instructions printed in this book.

**NOTE:** Your guarantee does not cover damage caused by improper installation or adjustment, or by willful neglect of specified operation and maintenance procedures.

Your SEARS GUARANTEE is backed by the greatest service organization in the world . . . by an organization with a long established reputation for fair dealing and prompt attention to the smallest details. Only SEARS can give you such a guarantee.

## GUARANTEE

When your furnace is installed, adjusted and maintained in accordance with our instructions:

For the first year, we will repair the furnace, free of charge, if defective.

During the next fourteen (14) years replace the heat exchanger, if defective, charging 1/15 of the price of the heat exchanger for each full year the furnace has been in service; plus installation charges; if installation is desired.

This guarantee service is available by simply contacting your nearest Sears store or service center throughout the United States.

### YOUR HEATING UNIT

This is Your new SEARS Heating Unit. It combines the very latest engineering advances with modern production techniques to give you carefree, ideal heating and top economy — automatically. Carefully constructed of the finest materials, it is a quiet, smooth-running unit that will deliver all the heat your fuel can develop. When properly installed, it will give you years of trouble-free heating satisfaction, dependable service, and economical, safe operation.

If you want your furnace professionally installed contact your Sears Salesman. He will arrange for prompt, quality installation by Sears Authorized Installers.

#### SEARS INSTALLATION POLICY

All installation labor provided through Sears shall be performed in a neat, workmanlike manner in accordance with generally accepted trade practices. Further, all installations shall adhere to all local laws, codes, regulations and ordinances. Customer shall also be protected by insurance at the time of installation relating to Property Damage, Workman's Compensation and Public Liability.

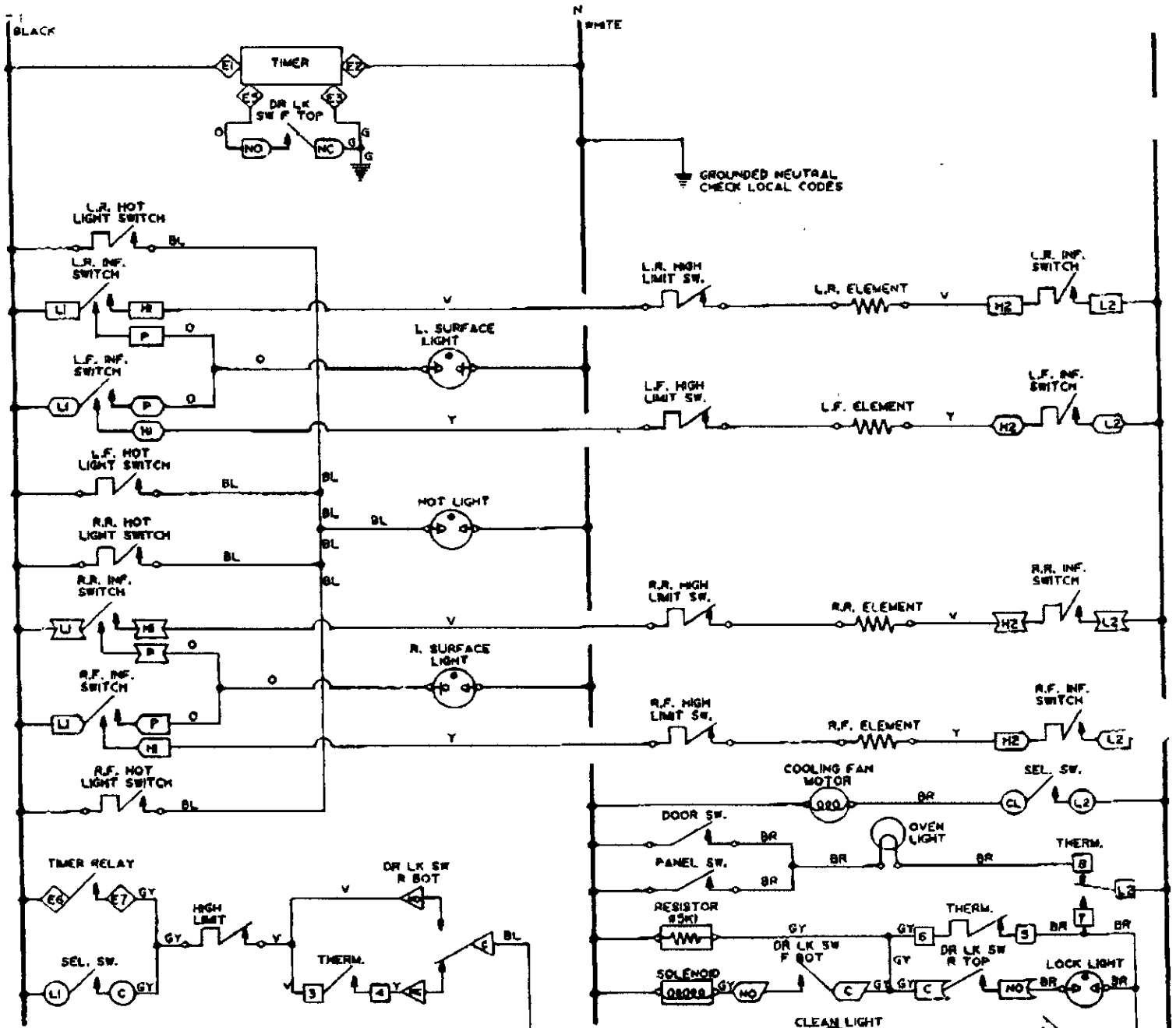
#### SEARS INSTALLATION GUARANTEE

If defects should appear in installation workmanship within one (1) year of installation, Sears will, upon notice from you, cause such defects to be corrected at no additional cost.

### IMPORTANT

**SAVE THIS BOOK:** This book is valuable. In addition to telling you how to install, adjust, and maintain your heating unit, it also contains the information that will enable you to obtain repair parts when needed. Keep it with your other important papers.

**PROTECT YOUR INVESTMENT.** Have your heating unit checked at least once a year by a Sears Service technician.



THERMOSTAT CONTACT MADE AT OVEN TEMP. °F.

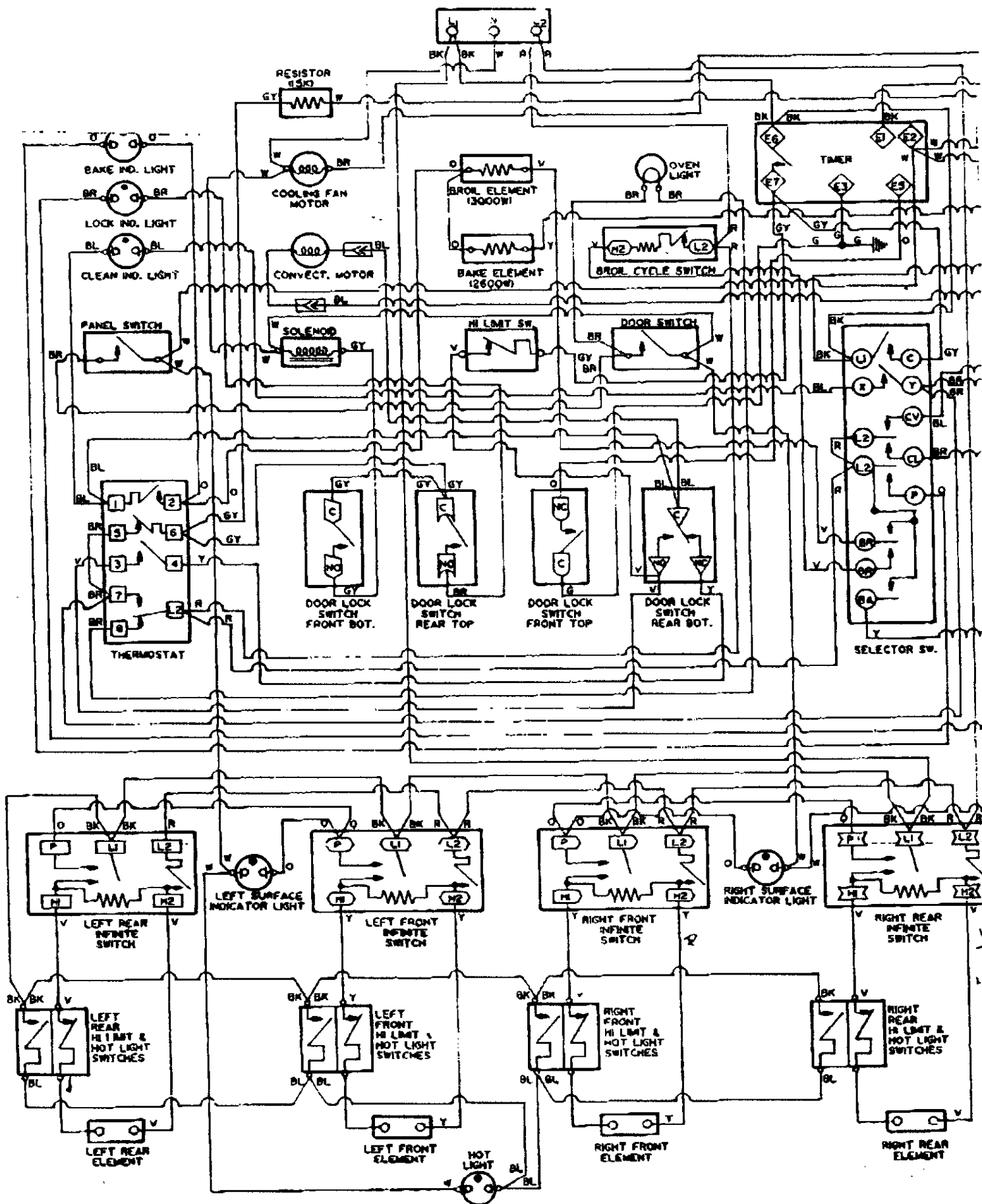
DIAL SETTING	1	5
OFF	2	6
BAKE TEMP. OR BROIL	OPEN	OPEN
CLEAN	MADE BELOW 225° F	MADE BELOW 315° F

\* NEED IS TO BE TURNED FROM "OFF" TO "SELECTED TEMPERATURE" FOR CHECKING THIS TEMPERATURE.

COMPONENT SYMBOLS DO NOT REFLECT TRUE CONFIGURATION. ALL FEED LINE COLORS ARE NOTED (BLACK, WHITE & RED). ALL COMPONENTS SHOWN IN "OFF" OR RELATED POSITION.

MODE OF OPERATION	SELECTOR SWITCH								THERMOSTAT				DR LK SW R BOT	DR LK SW R TOP	DR LK SW F TOP	BROIL SP. CYCLE AT JOG			
	L1	K	L2	Z	2L	2R	M	L2	1	3	5	2					4	6	C
OFF																			
BAKE	X	X						X	X	X	X	X	X	X	X	X	X	X	X
TIMED BAKE	X	X						X	X	X	X	X	X	X	X	X	X	X	X
CLEAN	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TIMED CONVECT	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
BROIL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTES:  
1. THERE IS A RESISTANCE HEATER IN ALL INFINITE CONTROLS IN SERIES WITH M1 & M2. SEE OTHER SIDE FOR DETAILS.



**JENN-AIR**  
**WIRING DIAGRAM 207260**

TO: PDQ APPLIANCE REPAIR

37 46 FAX: (970) 563-4452

PHONE: (970) 563-4452 1/11/99 3:01:58 PM



Authorized Servicer Administration

P.O. Box 6029 Round Rock, TX 78683

Phone: 1-800-755-1276

**Service Request Information:**

Service Order: 97172434

Coverage: IW MA  
 Service: 04/01/1999  
 Parts: 04/01/1999  
 Exp Parts:  
 Location:

Date Taken: 01/11/1999

Customer:

EULA ROOMAN

Phone Number: (970) 884-4725

Alt. Phone: (303) 000-0000

Repair Location:

246 HUNIMROSE LN NONE

BAYFIELD, CO 81122

Phone:

Service Requested:

MA CHECK

Permanent Instructions:

CTC146LALA NO ALT#

MA Certificate Number Expir. Date

Product:

Division: 0026

Merchandise: DRYER - ELECTRIC LTD-ED

Purchase Date: 08/01/1993

Brand: SEARS

Model# 11886371500

Serial# M32911379

Special Instructions:

"PLS CC WITH ET/THINK"

Repair Instructions:

**Service Completion Information:**

Job Code: \_\_\_\_\_ Call Code: \_\_\_\_\_

Service Type:

\_\_\_ Basic \_\_\_ PM Check \_\_\_ Mult PM \_\_\_ 2nd Product  
 \_\_\_ Short Block \_\_\_ Sealed System \_\_\_ Inshop \_\_\_ Major  
 \_\_\_ Recall \_\_\_ Cancelled Other: \_\_\_\_\_

Major Rate/Over Limit Approval Confirmation No.: \_\_\_\_\_

Completion Date: \_\_\_\_\_ Miles Driven: \_\_\_\_\_

Arrival Time: \_\_\_\_\_ (24:00) Departure Time: \_\_\_\_\_ (24:00)

Tech Comments: \_\_\_\_\_

Please return this form with Invoice Claim Form for payment.

**Parts Used:**

Qty	PLS	Part Number	Part Description	Qty	Price Each	Total	Coverage

<b>Charges:</b>
Total Parts: _____
Total Labor: _____
Discount _____
Coupons: ( _____ )
Sales Tax: _____
Grand Total: _____

**Credit Agreement:**  
 I acknowledge receipt of merchandise and/or services in the total amount shown hereon agree that the credit purchase is subject to my Agreement with the credit card issuer identified hereon. If this is a credit purchase under my SearsCharge Agreement, then I grant Sears a security interest in the merchandise described hereon, unless prohibited by law, until paid in full.

Purchased By \_\_\_\_\_

If the sale is on Easy Payment Modernizing Credit Plan (EPMCP) use applicable contract

**Payment Information:**

Credit Card: \_\_\_\_\_  
 Card Number: \_\_\_\_\_  
 Expiration Date: \_\_\_\_ / \_\_\_\_  
 Check Number: \_\_\_\_\_ Check Amount: \_\_\_\_\_  
 Store Number: \_\_\_\_\_ Charge Code: \_\_\_\_\_

Customer Signature: \_\_\_\_\_

Sears Home Services 1/11/1999 14:59 PAGE 31P/1 RIGHTFAX

TO: PDQ APPLIANCE REPAIR  
Authorized Service Administration

37 46 FAX: (970) 563-4452  
P.O. Box 6625 Round Rock, TX 78683

PHONE: (970) 563-4452 1/11/99 3:02:06 PM  
Phone: 1-800-755-1276



Service Request Information:  
Service Order: 87172439

Coverage: IW MA  
Service: 04/01/1999  
Parts: 04/01/1999  
Excp Parts:  
Location:

Service Completion Information:

Job Code: \_\_\_\_\_ Call Code: \_\_\_\_\_

Service Type:  
\_\_\_ Basic \_\_\_ PM Check \_\_\_ Multi PM \_\_\_ 2nd Product  
\_\_\_ Short Block \_\_\_ Sealed System \_\_\_ Inshop \_\_\_ Major  
\_\_\_ Recall \_\_\_ Cancelled Other: \_\_\_\_\_

Date Taken: 01/11/1999  
Customer:  
EULA RODMAN  
Phone Number: (970) 884-4225  
Alt. Phone: (303) 000-0000  
Repair Location:  
246 PRIMROSE LN NONE  
BAYFIELD, CO 81122  
Phone:  
Service Requested:  
MA CHECK & NOISEY

MA Certificate Number \_\_\_\_\_ Expir. Date \_\_\_\_\_

Product:  
Division: 0026  
Merchandise: WASHER  
Purchase Date: 08/01/1983  
Brand: KENMORE  
Model# 11087360810  
Serial# C32905339

Major Rate/Over Limit Approval Confirmation No.: \_\_\_\_\_

Completion Date: \_\_\_\_\_ Miles Driven: \_\_\_\_\_

Arrival Time: \_\_\_\_\_ (24:00) Departure Time: \_\_\_\_\_ (24:00)

Tech Comments: \_\_\_\_\_

Permanent Instructions:  
CTC146LLA NO ALT#

Special Instructions:  
\*\*PLS CC WITH ET/THX\*\*CUST PREFERS

Repair Instructions:

Please return this form with Invoice Claim Form for payment.

Parts Used:

Div	PLS	Part Number	Part Description	Qty	Price Each	Total	Coverage

Charges:	
Total Parts:	_____
Total Labor:	_____
Discount Coupon:	( _____ )
Sales Tax:	_____
Grand Total:	_____

**Credit Agreement:**  
I acknowledge receipt of merchandise and/or services in the total amount shown hereon agree that the credit purchase is subject to my Agreement with the credit card issuer identified hereon. If this is a credit purchase under my SearsCharge Agreement, then I grant Sears a security interest in the merchandise described hereon, unless prohibited by law, until paid in full.

Purchased By \_\_\_\_\_

If the sale is an Easy Payment Modernizing Credit Plan (EPMCP) use applicable contract

Payment Information:

Credit Card: \_\_\_\_\_  
Card Number: \_\_\_\_\_  
Expiration Date: \_\_\_\_ / \_\_\_\_  
Check Number: \_\_\_\_\_ Check Amount: \_\_\_\_\_  
Store Number: \_\_\_\_\_ Charge Code: \_\_\_\_\_

Customer Signature: \_\_\_\_\_



**To: PDQ APPLIANCE REPAIR    From: Sears Product Services**  
**P.O. Box 6029**  
**Fax: (970) 563-4452                      Round Rock, TX 78683-6029**  
**Voice: (800) 755-1276**  
**Service Recap    1/11/99 6:14:47 PM    Fax: (512) 248-7927**

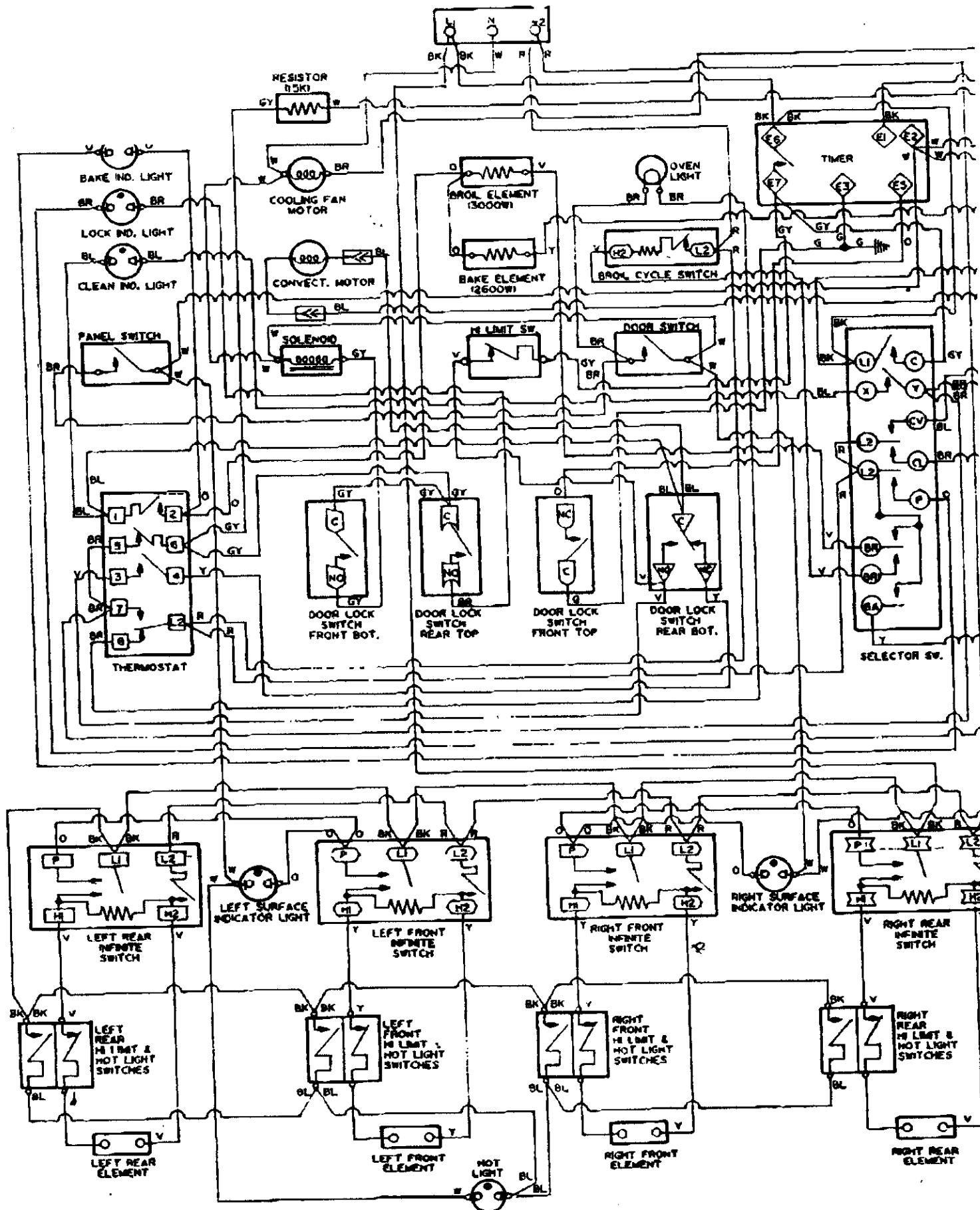


<u>Type</u>	<u>Service Order</u>	<u>Dispatched</u>	<u>Customer</u>	<u>Emergency</u>	<u>Merchandise</u>
Service Message	97168072	10:43	MARTHA EVERROAD	N	WATER HEATER
Service Order	97172434	14:52	EULA RODMAN	N	DRYER ELECTRIC
Service Order	97172439	14:53	EULA RODMAN	N	WASHER, AUTOMATIC
Service Order	97172445	14:55	GREG MOSELEY	N	WASHER, AUTOMATIC
Service Order	97172531	15:09	JANICE ZWART	N	RANGE-ELECTRIC
Service Order	97172629	16:10	JANICE ZWART	N	DISHWASHER, BUILT-IN
Service Order	97172630	16:10	JANICE ZWART	N	OTR/BUILT-IN MICROWAVE
Service Order	97172776	16:00	DONALD NATION	N	WASHER- DIRECT DRIVE

Dispatches for this unit: 8  
Number of pages: 1

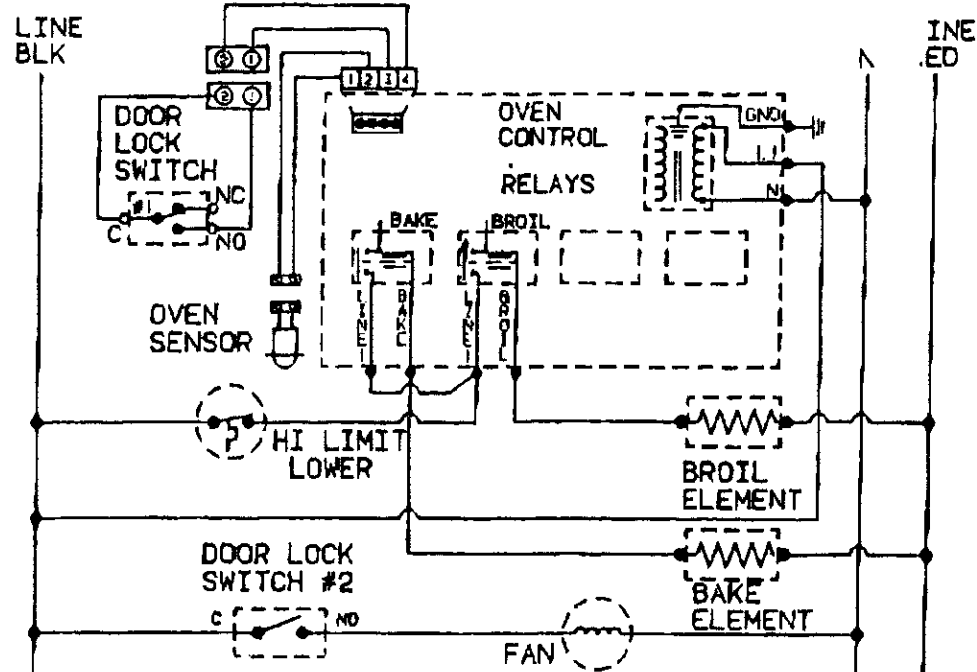
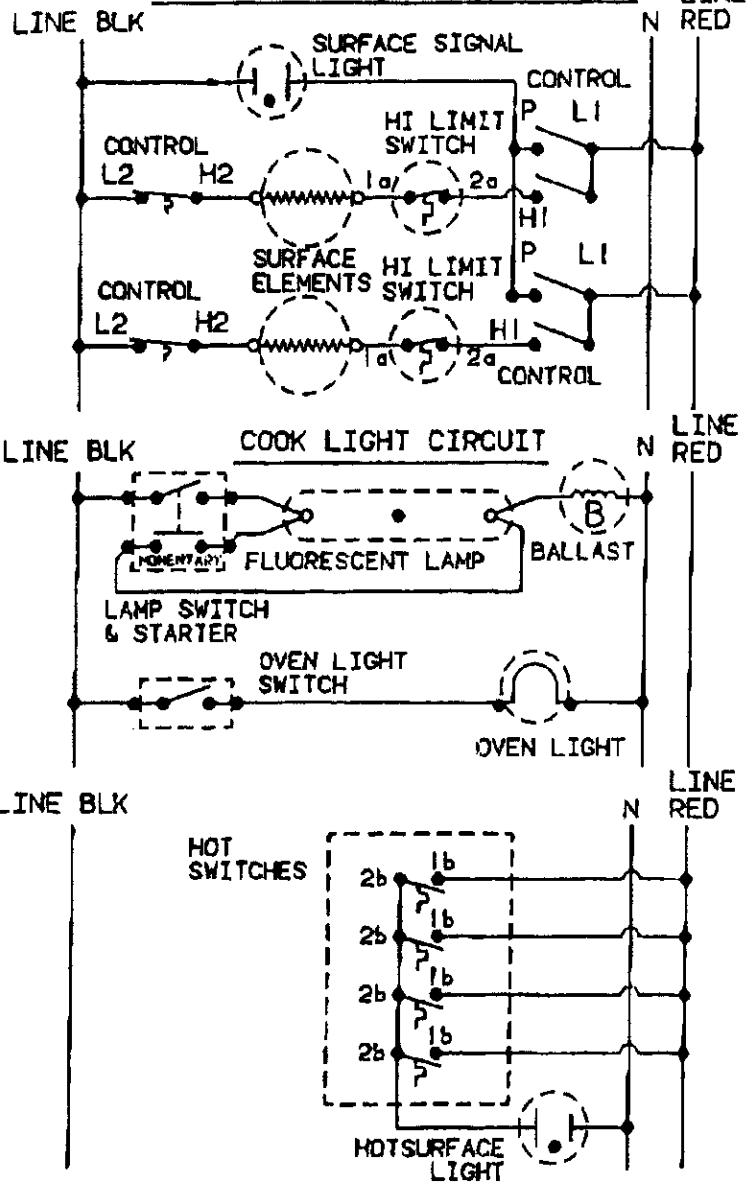
SEARS Home Services    1/11/1999 16:19    PAGE 1 P/1    RIGH FAX





**JENN-AIR**  
WIRING DIAGRAM 207269

TYPICAL SURFACE UNIT  
CIRCUIT WITH INFINITE SWITCHES



	DOOR LOCK SWITCHES				RELAY CONTACTS	
	#1	#2	#1	#2	LINE 1 / BROIL	LINE 1 / BAKE
OFF	OPEN	CLOSED	OPEN	CLOSED	OPEN	OPEN
BAKE	OPEN	CLOSED	OPEN	CLOSED	SEE NOTE 1	CYCLES
BROIL	OPEN	CLOSED	OPEN	CLOSED	SEE NOTE 2	OPEN
TIME BAKE	OPEN	CLOSED	OPEN	CLOSED	SEE NOTE 1	CYCLES
CLEAN	CLOSED	OPEN	CLOSED	OPEN	SEE NOTE 3	SEE NOTE 3

NOTES:  
 1-CYCLES AT 25% RATE.  
 2-HI BROIL-FULL RATE. LO BROIL-CYCLES AT 80% RATE.  
 3-FIRST 40 MIN. LINE 1/BROIL OPERATING ONLY CYCLING AT 80% RATE. AFTER 40 MIN. LINE 1/BAKE CYCLING ONLY AT FULL RATE.

NOTICE:  
 1. DISCONNECT RANGE FROM POWER BEFORE REMOVING WIRE COVER.  
 2. REFER ONLY TO FEATURES EQUIPPED.

DIAGRAM NO. 8105P556-60

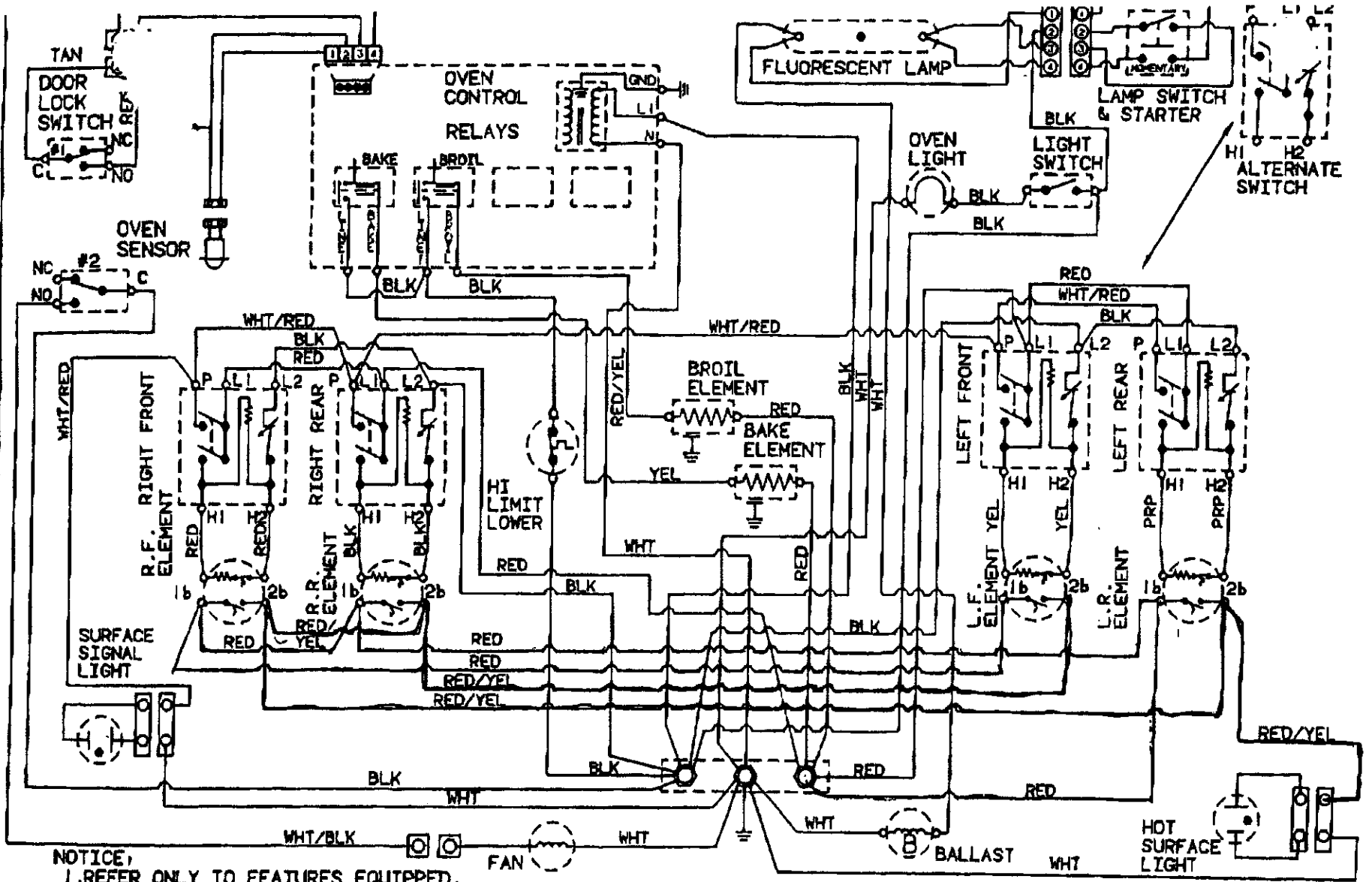
2 PER (8 X 5)

REVISED	DATE	BY	APPROVED	ISSUE NO.	DATE	BY	APPROVED	ISSUE NO.	DATE	BY	APPROVED	ISSUE NO.	DATE	BY	APPROVED	ISSUE NO.	DATE	BY	APPROVED	ISSUE NO.	DATE	BY	APPROVED

3M-43  
 12/17/70  
 12/22/70  
 RELEASED FOR TOOLING  
 8105P556-60

99-955656-60

JAN-14-99 THU 12:07 PM MCS-TECHNICAL ASSISTANCE FAX NO. 423 559 3605



NOTICE:  
 1. REFER ONLY TO FEATURES EQUIPPED.  
 2. DISCONNECT RANGE FROM POWER BEFORE REMOVING WIRE COVER.

DIAGRAM NO. 8105P557-60

2 PER (8 X 5)

MAGNUS		MAGNUS		MAGNUS		MAGNUS		MAGNUS		MAGNUS		MAGNUS		MAGNUS	
DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY
12/17/98	T.A.	1-2-99		1-5-99											
RELEASED FOR TOOLING															

