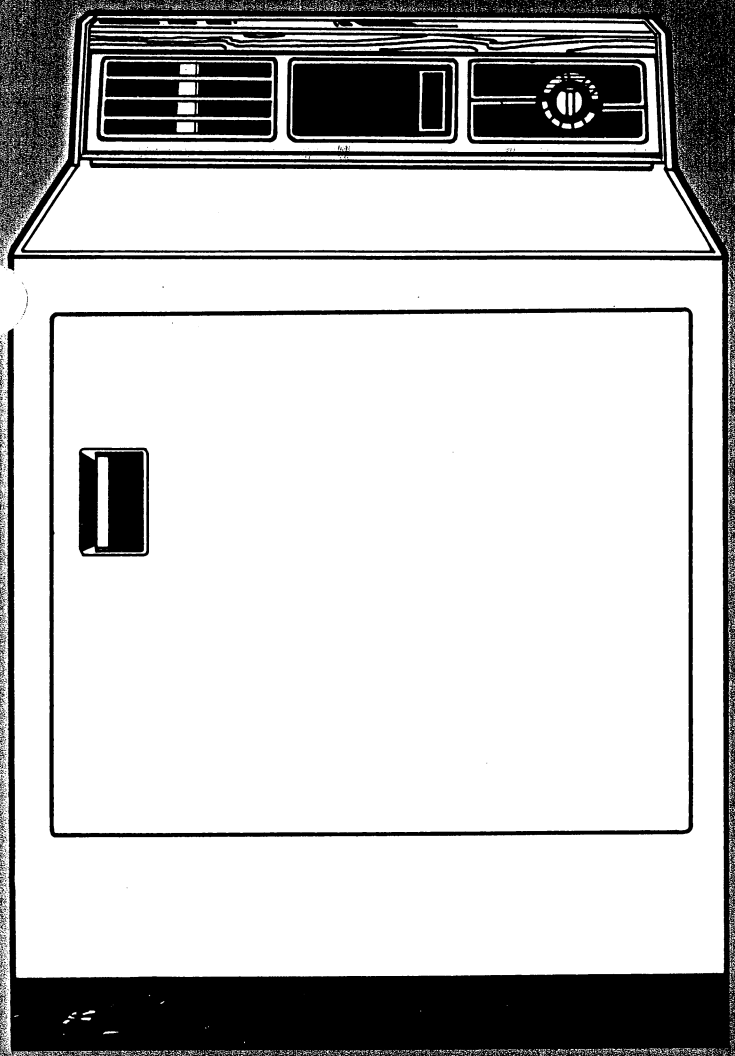
Step-By-Step Repair Manual

SUGGESTED RETAIL PRICE $6.95

For General Electric/Hotpoint DRYERS



Prepared for you by General Electric

Covers nearly all repairs

Charts to help you find your problem quickly

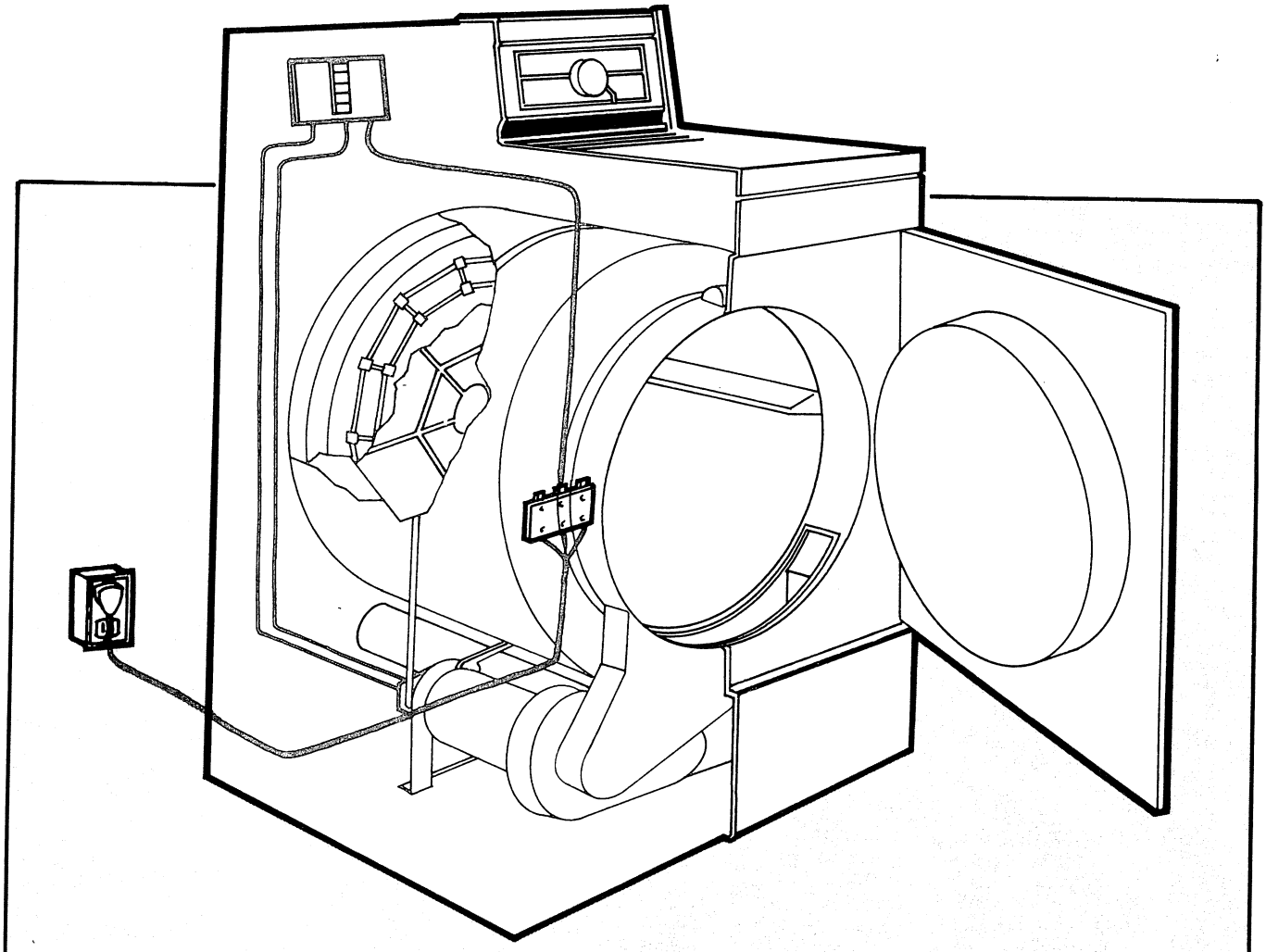
Easy to follow instructions

Pictures to show you how

GENERAL ELECTRIC

Do it yourself!

It doesn't necessarily take a highly trained service technician to make most repairs on an appliance. This book shows you just how easy it can be to repair your own dryer. Whether you're an avid do-it-yourselfer or just a beginner, the step-by-step photo instructions and detailed explanations will help you to perform the majority of dryer repairs you're likely to encounter.



By learning to do as many of your own repairs as possible, you save time and money.

Safety information: Gas and electric dryers are complex electro-mechanical appliances. Any attempt to repair your dryer may, if improperly performed, result in personal injury and property damage. General Electric Company cannot be responsible for the interpretation of this manual, nor can it assume any liability in connection with its use. For more detailed safety information, see page 5 of this manual.

Step-By-Step Repair Manual For General Electric/Hotpoint Dryers
General Electric Company

Contents

Note: Pages 2 through 8 contain important information. Be sure to carefully read these pages before you begin any repair procedures.

Introduction

General Electric Company has recognized the growing need for the homeowner to perform as many of the service operations as possible around the house. Consequently, we have prepared this manual to provide the typical homeowner with the information necessary to perform the majority of dryer repairs. This manual is written in an easy to follow, step-by-step, photo guide format to instruct you in how to do your own repairs.

A large number of service calls performed by technicians each year are for routine jobs—repairs that homeowners could do themselves. The General Electric/Hotpoint service technician is a professional, equipped and trained to handle complex dryer problems. Significant expense is involved in getting the service technician to your door for any repair job. By learning to do routine repairs yourself you will be able to eliminate many service calls and save money.

Consumer research has told us that most people are capable of doing more repairs than they realize. Obviously, the beginner needs detailed instructions, while the experienced handyman needs only assistance from time to time in making repairs. This manual has been designed for both types of do-it-yourselfers.

To diagnose your problem, this manual includes Problem Diagnostic Charts which describe typical dryer problems and list the probable causes—from the most likely cause to the least common causes. The charts will refer you to the repair procedures that use photography and illustrations to show you step-by-step how to make the repair. Once the procedures are properly understood, there is nothing mysterious about repairing a dryer. Like any other job, it is just a combination of the right information and the right tools.

In addition to saving time and money, you will accomplish something with your hands for which you will see tangible results. And you can be proud of your self-sufficiency in handling what once was considered a highly technical job.

At General Electric/Hotpoint, we are dedicated to making your life easier. That dedication means more than just producing the world's finest appliances. This manual is a direct response to your current consumer needs. Helping you save time and money on appliance repairs is just another one of our commitments to making your life easier.

How to use this manual

This manual is intended to be used when dryer troubles arise. Therefore, to be better prepared to cope with repair problems, take the time to read the general information presented on pages 2 through 8. By acquiring basic understanding of dryer repair, you'll be a step ahead on identifying and solving the problem.

When a problem does occur, refer to the Problem Diagnostic Chart section of the manual (pages 7-12). These charts will help you pinpoint the location of your dryer problem by listing possible causes for the symptoms that you are experiencing. The charts will also refer you to repair procedures (pages 13-86) that will explain how to remedy the problem. Be sure to read the entire repair procedure carefully before attempting any work.

If you find a term that you don't understand, you may find it in the Glossary of Terms, listed at the end of this manual (page 95). Also, don't forget to use the Index as a reference for locating various information.

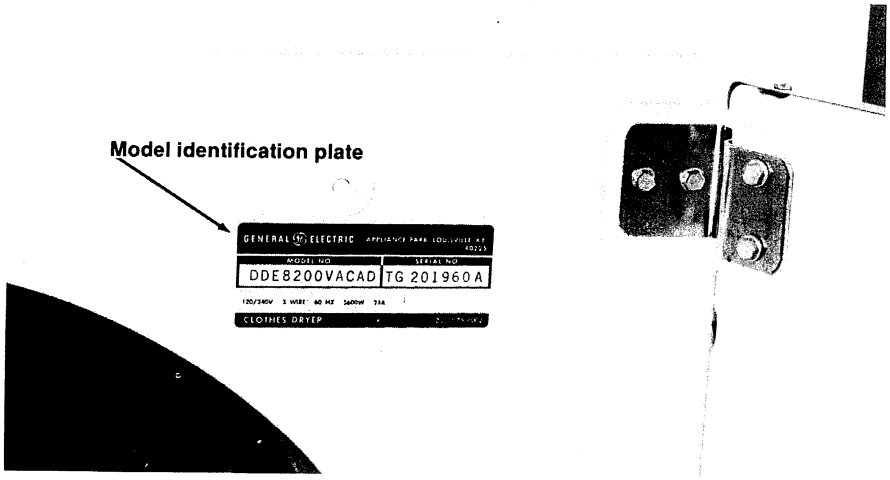
After you have read the introductory sections in this manual, you may want to read the *Use and Care Book* that accompanied your dryer. The *Use and Care Book* can tell you how to remedy many problems that are not due to equipment faults. For further information on how you can improve the performance of your dryer, see page 87 of this manual.

Although General Electric/ Hotpoint has introduced hundreds of dryer models over the years, similarities in basic components allow this manual to cover the most common repairs. Some procedures may not apply to your dryer; for instance, your dryer doesn't have both electric and gas heating, but it will have one of the two.

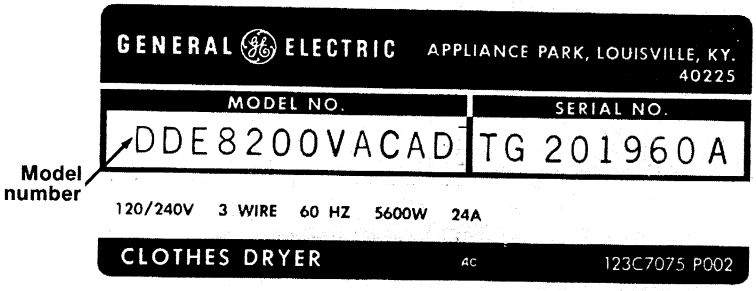
Model identification plate

The model identification plate contains important information. The plate indicates the Model Number of your dryer. The 12-digit Model Number must be used when ordering exact replacement parts. Be sure to copy this number correctly for future reference.

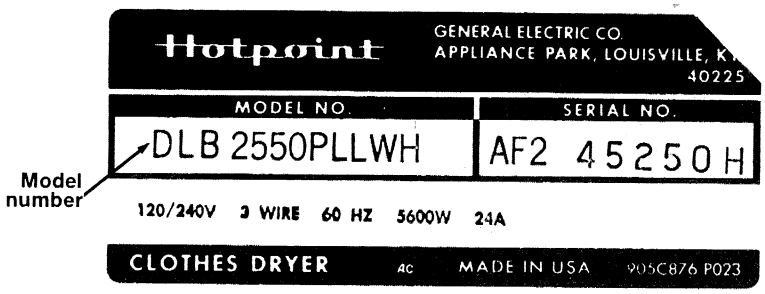
The model identification plate is located on the upper front side of the dryer behind the door.



The following photos show sample model identification plates. The model number represents coded manufacturing and engineering information that is important when ordering parts for your dryer.



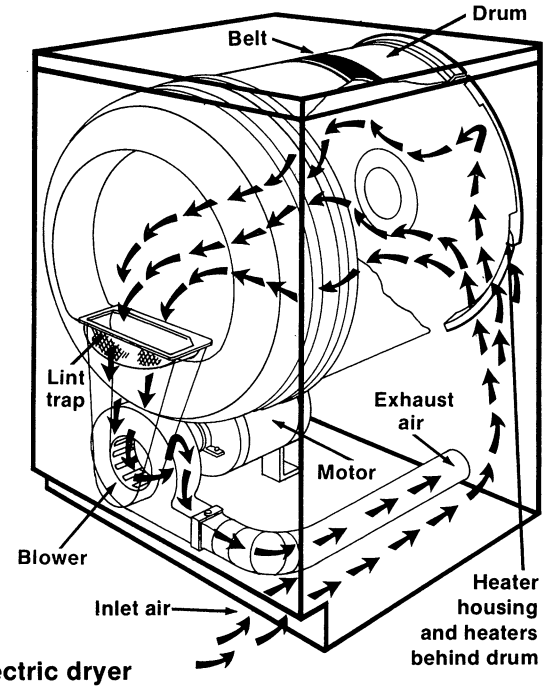
General Electric dryer identification plate



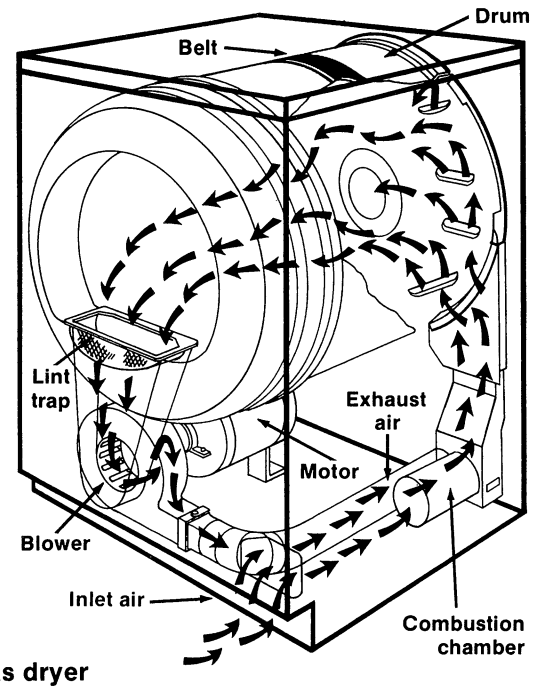
Hotpoint dryer identification plate

How your dryer operates

The more you know about the mechanical and electrical operation of your dryer, the easier it will be to understand the causes and solution to a problem. For example, when you use your dryer, you load it with clothes, set a timer or automatic control, and activate the start button. But what causes the clothes to tumble, and how does the heated air flow to the clothes? Answers to these questions could make it easier for you to repair your dryer. So let's take a closer look at how your dryer operates.



Electric dryer



Gas dryer

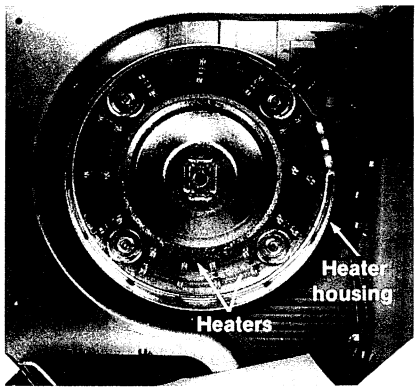
It all starts at the power supply cord that connects your dryer to the electrical outlet (receptacle). Large, flexible wires within the cord carry the power to a terminal block. From the terminal block, power is distributed through a network of internal wiring to various parts of the control system. The control system consists of a series of switches and thermostats, which turn the heating source and motor on and off.

All dryers, whether gas or electric, operate according to the same principle—they remove moisture from damp clothes by bringing the clothes in contact with a flow of heated air. Mechanically, the clothes must tumble to expose all of their surfaces to heat, and the heated air must be circulated within the dryer and vented. Switches, timers, and thermostats regulate the air temperature and duration of the drying cycle.

When the start button is activated with the dryer door closed, electrical power is sent to start a motor. The motor is connected to the drum by a drive belt. The drive belt rotates the drum through a pulley system attached to the motor shaft. The drum itself is supported by a bearing at the rear and Teflon® slides at the front.

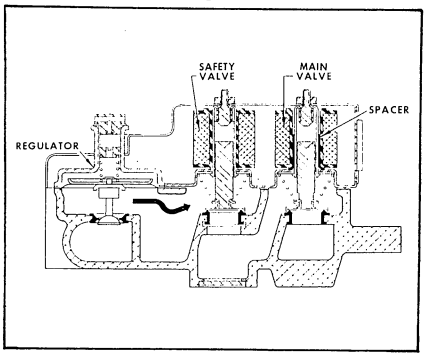
The blower pulls incoming air through the heat source into the drum and pushes moist air from the dryer through the ductwork to the outside vent. Air circulation is extremely important for the dryer to maintain the proper air temperature.

Electric heating system



In electric dryers, the heat source is not energized until the drive motor starts turning. Both the timer and thermostats energize coiled resistance heaters. The temperature selector switches control the number of heaters energized.

Gas heating system

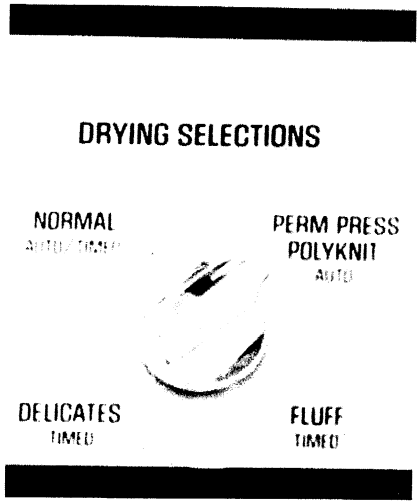


Arrangement within a gas burner

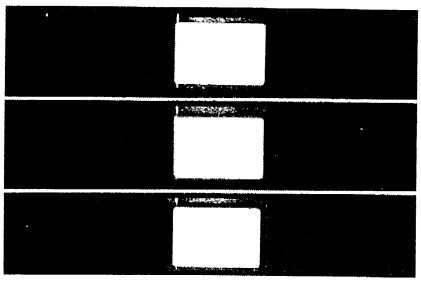
In gas dryers, the heat source is from a gas burner. For safety reasons, the gas must pass through two valves before reaching the opening where it will be ignited by an electric coil. The flow of gas is controlled by a pressure regulator. The safety valve is held open through an electrical circuit. If the voltage should be cut off as it would if the dryer door were opened, the gas flow would be turned off automatically.

Types of control switches

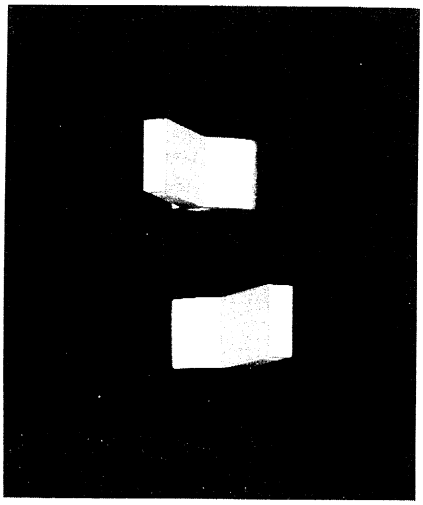
The following photographs illustrate the various types of selector switches that are used to designate the desired control settings. Dryer models may differ in the number of heat selections offered for specific fabric types.



Rotary switch



Pushbutton switch

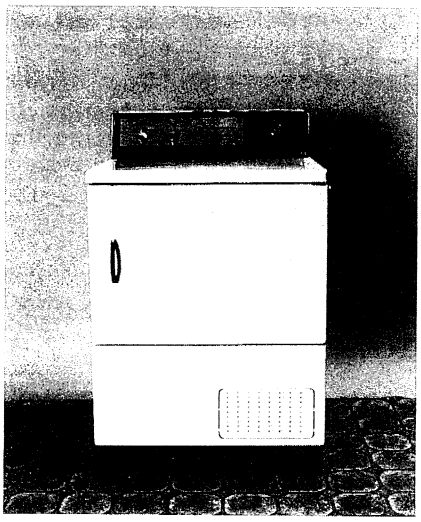


Toggle switch

Various dryer models

Standard capacity electric dryer

Large capacity electric dryer



Standard capacity gas dryer

Safety information

Dryers are complex electromechanical appliances. Any attempt to repair your dryer may, if improperly performed, result in personal injury and property damage. General Electric Company cannot be responsible for the interpretation of this manual, nor can it assume any liability in connection with its use.

Safety precautions

To minimize the risk of personal injury and property damage, it is important that the following safe servicing practices be observed.

1. Be sure that you are operating your dryer properly. Read carefully the *Use and Care Book* that comes with your dryer.

2. Know the location of your dryer's circuit breakers or fuses. Clearly mark all switches and fuses for quick reference. If you are unfamiliar with circuit breakers and fuses, please refer to Procedure #1: Power Supply, Circuit Breakers and Fuses.

3. Before servicing your dryer turn off controls. Disconnect the power supply at the distribution panel by removing the fuse or switching off the circuit breaker. UNPLUG the power cord before performing any repairs or removing any access panel. Note: Except for Procedure #16: Inspecting and Replacing Gas Assembly, none of the repairs in this manual require voltage to be applied to the dryer during the repair procedure.

4. Be careful when handling access panels, dryer parts, or any components that may have sharp edges. Avoid placing your hand into any areas of the dryer that you cannot first visually inspect for sharp edges.

5. Do not light a match around the gas burner. If you smell gas, open windows, extinguish any open flames, don't touch electrical switches, and call your gas supplier.

6. Never interfere with or bypass the operation of any switch, component, or feature of the dryer.

7. Use only replacement parts of the same size and capacity as the original part. If you have any question contact your authorized local appliance parts dealer.

8. Before reconnecting the power supply, make sure that no uninsulated wires or terminals are touching the cabinet. Electrical wiring and grounds must be correctly reconnected and secured away from sharp edges, high temperature components, and moving parts. All panels and covers should be reinstalled before the dryer is plugged in.

9. The internal wiring of dryers is made with special heat-resistant insulation. Therefore, ordinary wire must never be substituted. Since the wire carries heavy currents and is subjected to heat, it is especially important that all connections are tight and secure.

10. Exhaust ductwork should be the specified size and material suited for dryers. The ductwork must be placed in position to vent air to the outside before operating your dryer. The total length and number of turns should be kept to a minimum. Refer to installation instructions that come with your dryer.

11. If moved out from the wall, the dryer should be checked when pushed back into position to insure that it is level and that ductwork is in place and not kinked. The legs should be securely locked into position.

12. Carefully read through the entire repair procedure for a specific repair before attempting the job. If you don't fully understand the repair procedure or doubt your ability to complete it, call a qualified service technician.

13. Throughout this manual additional safety precautions dealing with specific repair procedures will be presented. This information should be read carefully.

Notes

Problem diagnostic charts

How to use the problem diagnostic charts

The problem diagnostic charts help you with one of the most difficult tasks in do-it-yourself repairs. . .locating the possible causes and solutions to your problem. Before using the charts, make note of the problem you are experiencing with your dryer. Keen observation can often lead you to the area where the problem lies. Watch for anything that deviates from normal operation. Note everything that is or is not working. Listen carefully for any unusual sounds. Once you have identified a problem, then you can begin to solve it by referring to the problem diagnostic charts.

The problem diagnostic charts are divided into four columns of information: (1) Problem; (2) Possible Cause; (3) Repair Procedure and (4) Skill Level. The first column, PROBLEM, lists examples of problems you may encounter with your dryer. In the second column, there is a list of POSSIBLE CAUSES that may be the reason for the problem. The possible causes for each problem are listed in the order in which they might be expected to occur, from most likely to least likely. A REPAIR PROCEDURE for each possible cause is listed in column three. Repair procedure information refers you to a course of action to remedy the possible cause of your dryer problem.

The final column, SKILL LEVEL, indicates a skill level rating for each repair task. This rating will help you decide which repairs you feel confident of completing.

●	Easy	No previous experience necessary
● ●	Average	Involves removing service panels
● ● ●	Difficult	Requires the use of an ohmmeter
● ● ● ●	Very difficult	Requires ohmmeter and ability to read a circuit diagram
● ● ● ● ●	Requires Service Technician	Complex; requires special tools and skills

Each task you complete will serve as a building block that increases your experience and confidence, allowing you to progress to more complex levels. No matter what skill level assigned to a task, study the repair procedure and safety instructions carefully before proceeding.

You may be able to solve some problems without need for repairs or parts replacement. Basic precautions and maintenance routines can often prevent or correct minor dryer performance problems. Read the Preventive Maintenance section on page 87 in this manual and follow the advice given to keep your dryer functioning properly. Additional details on dryer maintenance can be found in your *Use and Care Book.*

Dryer problems

The problems listed are numbered exactly as they appear in the PROBLEM column of the Problem Diagnostic Charts. Use this list to find your Problem and then refer to the charts.

1. Dryer will not run

2. Motor runs, but dryer does not heat

3. Dryer will not turn off

4. Dryer stops during cycle

5. Clothes overheat

6. Clothes do not dry, or drying time is too long

7. Dryer is noisy

8. Dryer runs with door open

9. Dryer drum does not rotate, but motor runs

10. Damaged dryer body

Problem diagnostic charts

Problem	Possible Cause	Repair Procedure	Skill Level
1. Dryer will not run	No power to dryer (blown fuse or tripped breaker)	Check Power Supply (See p. 15 & Procedure #1)	•
	Terminal block inoperative	Check Terminal Block (See p. 27 & Procedure #5)	••
	Centrifugal switch inoperative	Check Centrifugal Switch (See p. 69 & Procedure #19)	•••
	Motor winding burned out	Check Motor (See p. 71 & Procedure #20)	••••
	Open contact in timer	Check Timer (See p. 35 & Procedure #9)	••••
	Open contact in door switch	Check Door Switch (See p. 79 & Procedure #23)	•••
	Power cord defective	Check Power Cord (See p. 19 & Procedure #3)	•••
	Start switch inoperative	Check Start Switch (See p. 33 & Procedure #8)	••••
	Door is open	Check Door Alignment (See p. 81 & Procedure #24) Check Door Latch (See p. 77 & Procedure #22)	••
2. Motor runs, but dryer does not heat	Blown fuse or tripped breaker in 1 side of power line to dryer	Check Power Supply (See p. 15 & Procedure #1)	•
	Open electric heating element (electric dryers only)	Check Electric Heater Coils (See p. 55 & Procedure #15)	•••
	Centrifugal switch inoperative	Check Centrifugal Switch (See p. 69 & Procedure #19)	•••
	Open contact in timer	Check Timer (See p. 35 & Procedure #9)	••••
	Thermostat(s) inoperative	Check Thermostats—Electric Dryers (See p. 43 & Procedure #12) Check Thermostats—Gas Dryers (See p. 47 & Procedure #13)	•••
	Gas burner inoperative (gas dryers only)	Check Gas Assembly (See p. 59 & Procedure #16)	••••
	Corroded terminal at heating element (electric dryers only)	Check Electric Heater Coils (See p. 55 & Procedure #15)	•••
	Incorrect voltage at terminal block	CALL SERVICE TECHNICIAN	•••••
	Open contact in selector switch	Check Selector Switches (See p. 31 & Procedure #7)	••••

Skill Level Index: •Easy ••Average •••Difficult ••••Very Difficult •••••Requires Service Technician

Problem	Possible Cause	Repair Procedure	Skill Level
3. Dryer will not turn off	Thermostat(s) inoperative	Check Thermostats—Electric Dryers (See p. 43 & Procedure #12) Check Thermostats—Gas Dryers (See p. 47 & Procedure #13)	•••
	Timer inoperative	Check Timer (See p. 35 & Procedure #9)	••••
	Resistor inoperative (electric dryers only)	Check Resistor (See p. 37 & Procedure #10)	•••
	Cold room	Room temperature must be 50°F or more	
	Moisture sensor inoperative (large capacity dryers only)	Check Moisture Sensor (See p. 51 & Procedure #14)	•••
4. Dryer stops during cycle	Interruption of power supply	Check Power Supply (See p. 15 & Procedure #1)	•
	Motor overheating	Check Motor (See p. 71 & Procedure #20)	••••
	Timer inoperative	Check Timer (See p. 35 & Procedure #9)	••••
5. Clothes overheat	Improper vent installation	Check Dryer Vent (See p. 17 & Procedure #2)	•
	Grounded heating element (electric dryers only)	Check Electric Heater Coils (See p. 55 & Procedure #15)	•••
	Thermostat(s) inoperative	Check Thermostats—Electric Dryers (See p. 43 & Procedure #12) Check Thermostats—Gas Dryers (See p. 47 & Procedure #13)	•••

Problem diagnostic charts (cont.)

Problem	Possible Cause	Repair Procedure	Skill Level
6. Clothes do not dry or drying time is too long	Improper vent installation	Check Dryer Vent (See p. 17 & Procedure #2)	•
	Heating system inoperative	Check Heater Coils—Electric Dryers (See p. 55 & Procedure #15) Check Gas Assembly—Gas Dryers (See p. 59 & Procedure #16)	••••
	Timer improperly set	See *Use and Care Book*	
	Dryer overloaded	See *Use and Care Book*	
	Clothes too damp when put into dryer	See *Use and Care Book*	
	Link blockage	Check Dryer Vent (See p. 17 & Procedure #2) See *Use and Care Book*	•
	Dryer loaded with a mixture of fabrics	See *Use and Care Book*	
	Too small a load	See *Use and Care Book*	
	Low voltage at terminal block	CALL SERVICE TECHNICIAN	•••••
	Thermostat(s) inoperative	Check Thermostats—Electric Dryers (See p. 43 & Procedure #12) Check Thermostats—Gas Dryers (See p. 47 & Procedure #13)	•••
7. Dryer is noisy	Foreign object in drum front seal	Check Drum (See p. 39 & Procedure #11)	••
	Worn drum bearing	Check Drum Bearing (See p. 75 & Procedure #21)	••
	Dryer not level	Check Leveling (See p. 83 & Procedure #25)	•
	Loose panel or component	Check Access & Control Panels (See p. 23 & Procedure #4) Check Wiring and Connections (See p. 29 & Procedure #6)	••
	Foreign object in drum	Check Drum (See p. 39 & Procedure #11)	•
	Worn idler pulley bearing	Check Idler (See p. 65 & Procedure #18)	••
	Worn belt	Check Belt (See p. 65 & Procedure #18)	••
	Damaged or loose blower wheel	Check Blower Wheel (See p. 63 & Procedure #17)	••

Skill Level Index: •Easy ••Average •••Difficult ••••Very Difficult •••••Requires Service Technician

Problem	Possible Cause	Repair Procedure	Skill Level
8. Dryer runs with door open	Door switch inoperative	Check Door Switch (See p. 79 & Procedure #23)	•••
9. Dryer drum does not rotate, but motor runs	Belt off idler pulley	Check Belt (See p. 65 & Procedure #18)	••
	Broken drive belt	Check Belt (See p. 65 & Procedure #18)	••
	Defective idler pulley	Check Idler (See p. 65 & Procedure #18)	••
	Broken idler tension spring	Check Idler (See p. 65 & Procedure #18)	••
	Drum binds	Check Drum Bearing (See p. 75 & Procedure #21)	••
10. Damaged dryer body	Scratches and dents	Check Cosmetic Repairs (See p. 85 & Procedure #26)	•

Repair procedures

How to use the repair procedures

The following dryer repair procedures take you step-by-step through repairs for most of the dryer problems you are likely to encounter. Checking the problem diagnostic charts will help you to pinpoint the likely causes of your problem. Beginning with the most likely cause, you can then refer to the appropriate repair procedure section.

Each repair procedure is a complete inspection and repair process for a single dryer component, containing the information you need to test a component that may be faulty and to replace it if necessary. This format breaks down even some of the most complex repair problems into separate, easy-to-handle units. Following the instructions given, you can test each component separately, isolating the cause of the problem and replacing any faulty parts. If one procedure fails to locate the failed component, you simply refer back to the diagnostic charts for the next most likely cause of the problem. The repair procedure for this cause may be more difficult, but the skills and confidence you gain from making simpler tests and repairs will allow you to gradually tackle the more demanding tasks.

The introduction to each repair procedure features a close-up photograph of the component you will be dealing with, and gives a brief description of what the component does and how it works. In the case of a component which varies with different dryer models, you will be shown how to determine which type is found on your dryer. More than just a step-by-step repair guide, each introduction and repair procedure section is designed to increase your knowledge and understanding of the functions of your General Electric/Hotpoint dryer, and to help you build valuable repair skills.

Each procedure begins with basic steps that must be followed to assure your safety. Other initial steps indicate the skills and equipment that will be needed for the task. If you are uncertain about a process that will be used, such as reading a circuit diagram, using an ohmmeter, or removing service panels, you are referred to the pages in this manual where that process is discussed in detail. No matter what your skill level, careful attention must be paid to these instructions and safety precautions before you begin any procedure.

Clear photographs of typical dryer models illustrate each step of every repair procedure, proceeding from visual inspection and testing to replacement of the component. Because of the diversity of dryer models available, your dryer may differ somewhat from the illustrated model. However, each procedure has been carefully designed to be representative of the entire General Electric/Hotpoint line, and as much information as possible has been included to help you make repairs on most General Electric/Hotpoint dryers.

Dryer repair procedures

The repair procedures are listed below in the order in which they appear in this section. Refer to the Problem Diagnostic Charts for the procedure most likely to remedy your dryer problem, then use this list to locate the desired procedure.

1. Inspecting Circuit Breakers and Fuses

2. Inspecting and Replacing Exhaust Vent

3. Inspecting and Replacing Electric Dryer Power Cord

4. Removing Access and Control Panels

5. Inspecting and Replacing Terminal Block

6. Repairing Wiring and Connections

7. Inspecting and Replacing Selector Switches

8. Inspecting and Replacing Start Switch

9. Inspecting and Replacing Timer

10. Inspecting and Replacing Resistor

11. Removing Drum

12. Inspecting and Replacing Electric Dryer Thermostats

13. Inspecting and Replacing Gas Dryer Thermostats

14. Inspecting and Replacing Moisture Sensor

15. Inspecting and Replacing Electric Heater Coils

16. Inspecting and Replacing Gas Assembly

17. Inspecting and Replacing Blower Wheel

18. Inspecting and Replacing Belt and Idler

19. Inspecting and Replacing Centrifugal Switch

20. Inspecting and Replacing Motor

21. Inspecting and Replacing Drum Bearing

22. Inspecting and Replacing Door Latch Assembly

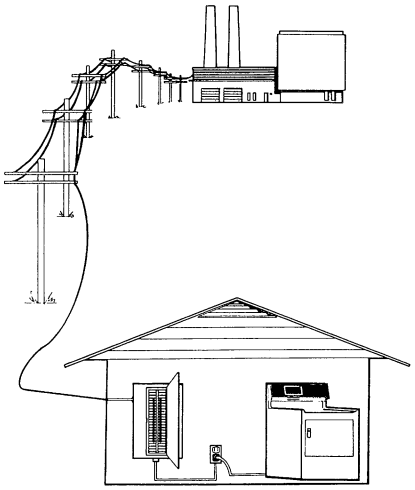
23. Inspecting and Replacing Door Switch

24. Adjusting Dryer Door

25. Leveling Dryer

26. Cosmetic Repairs

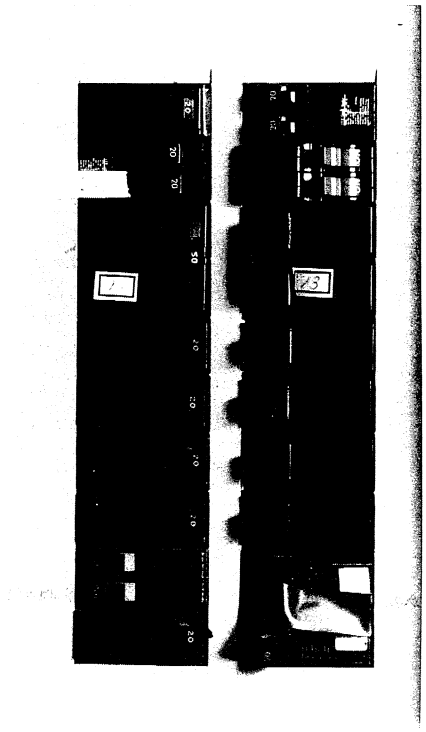
Power supply, circuit breakers & fuses



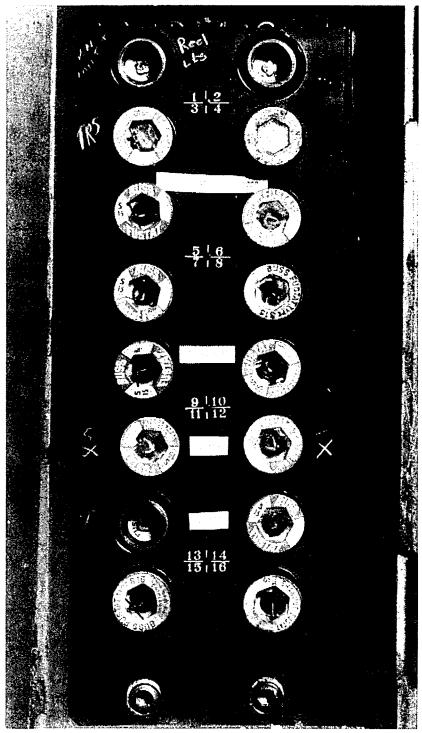
Electricity produced by the power company is delivered to your house through a series of connecting power lines. A power distribution panel is located at the point where the main line from the power company enters your home. One of two types of distribution panels services your household—a circuit breaker or a fuse panel. From the distribution panel, the power line is divided into a number of smaller circuits that are distributed to various household appliances, receptacles, and lights. Each of these circuits is protected from becoming overloaded by either a circuit breaker or fuse. It's important to know which breakers or fuses protect each circuit in your home. It's also wise to label them when everything is operating correctly, so that you'll know which breaker or fuse to look for in time of trouble.

The distribution panel is the place to turn off all power on the dryer circuit before unplugging and servicing it. And it's the first place to look when problems occur. A tripped circuit breaker or blown fuse is a minor problem, but it can stop the entire dryer from working.

Note: There are two 30-amp circuit breakers or fuses controlling the power to your electric dryer; the gas dryer will have only one 15 or 20-amp breaker or fuse. If you are unable to identify the location of the circuit breakers or fuses for your dryer or suspect your dryer is not receiving the correct voltage, contact a qualified electrician.



Circuit breaker type panel

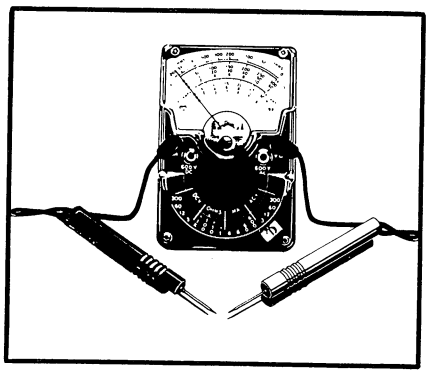


Fuse type panel

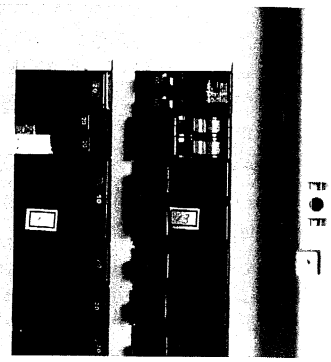
PROCEDURE

1 Inspecting circuit breakers and fuses

Step 1: Be sure all dryer controls are turned **OFF**. Avoid touching any grounded objects such as water pipes when working around power supply. Stand on a dry insulated surface. Other than opening door to distribution panel, never remove any cover or expose any electrical terminals.

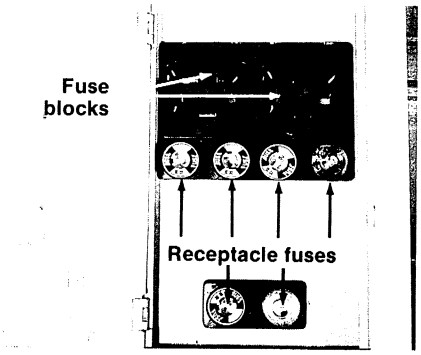


Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.

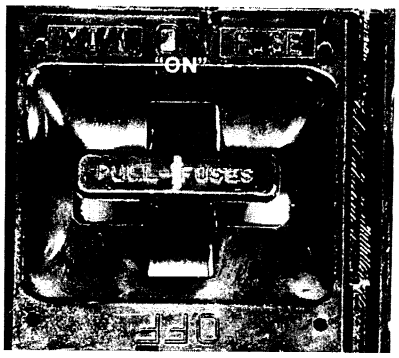


Step 3: Circuit breakers. Circuit breaker distribution panels contain rows of switches. When a breaker "trips", power is shut off, and the breaker switch moves to an intermediate position between the "ON" and "OFF" points.

Step 4: To restore power, turn breaker switch to "OFF" position, then back to "ON". If the breaker trips again, the circuit is still overloaded or shorted. Further exploration of the problem is necessary.

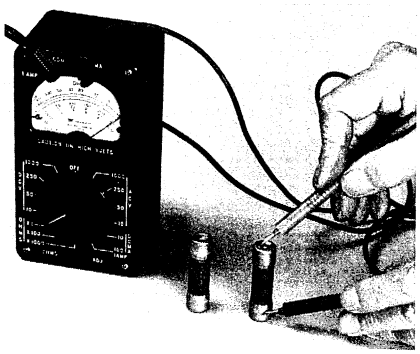


Step 5: Fuses. A second type of distribution panel is protected by fuses. Depending on the age of your home, the fuses controlling your dryer may be small glass-front fuses or cartridge fuses contained in fuse block.

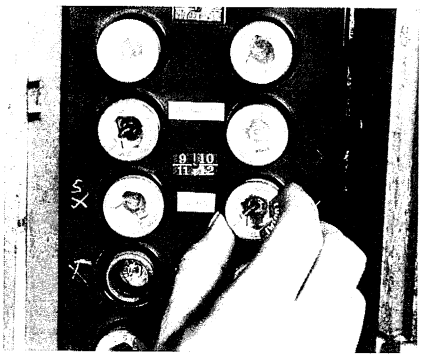


Step 6: Fuse blocks have a separate circuit to which nothing else is attached. A double-pole fuse block (two cartridges joined together at the handle) protect this circuit.

Step 7: Dryer fuses are accessible by pulling block out of panel, which also disconnects dryer. A sharp forward tug releases block.



Step 8: Check cartridge fuses with ohmmeter. Touch probes to brass caps on either end of fuse with meter on R x 1 scale. If no continuity, replace fuse.



Step 10: Glassfront fuses unscrew from panel and can sometimes be checked visually for internal breakage. Replace fuse with a known good fuse or check with ohmmeter.

Exhaust vent

Proper venting is essential for the dryer to maintain an unrestricted air flow and the correct air temperature. Exhaust duct installations having either excessive total length or too many turns will reduce air flow and cause problems such as wrinkling of your garments.

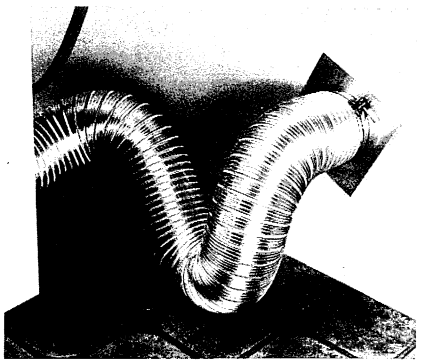
If you are having wrinkling problems with your dryer, look at the way the exhaust duct has been installed. Use the charts on this page to give you an idea of what the maximum length for the number of turns and type of hood should be. There are a few high air flow dryers made by GE and Hotpoint that can extend the maximum allowable length. Check the installation instructions that accompany your dryer for further details. Except for these high air flow models, no more than two 90° turns are acceptable. Be sure to count the turn as the ductwork comes out of the dryer and the turn to attach it to the hood.

Four-inch diameter metallic ductwork is recommended. Hoods with both a 4-inch and 2½-inch opening are used, but the 4-inch opening is preferred. The wall cap should be installed with the opening pointed down and spaced at least 12 inches above ground level or any obstruction. The ductwork should be installed so as to prevent back drafts from the outside.

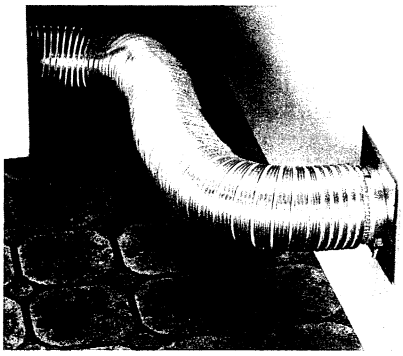
Ductwork that runs through an unheated area or an area adjacent to an air conditioning duct should be insulated to reduce condensation and lint accumulation. Always vent to the outside. Do not vent to a crawl space or other restricted area.

To avoid lint accumulation, do not use screws that extend into the duct to connect the ductwork. Frequently check the bottom of the exhaust vent at the base of the dryer for lint clogging and clean, if necessary.

CAUTION: Do not use nonmetallic flexible ductwork as it can crimp, accumulate lint, and catch on fire.

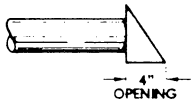
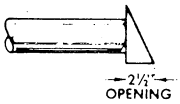


Unacceptable exhaust vent installation



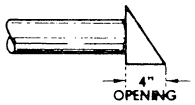
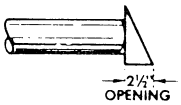
Properly installed exhaust vent

Metallic flexible ductwork specifications

Number of 90° turns separated by at least 4 ft. of straight run	Preferred 	
0	30 feet	15 feet
1	25 feet (electric) 20 feet (gas)	10 feet
2	10 feet	—

Maximum allowable length of 4" diameter metallic flexible duct.

Rigid ductwork specifications

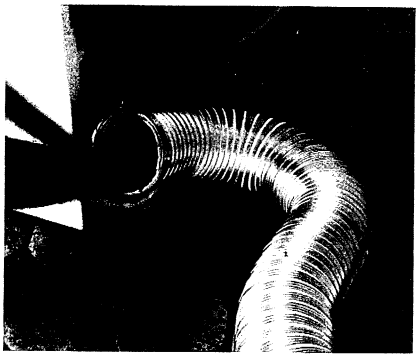
Number of 90° turns separated by at least 4 ft. of straight run	Preferred 	
0	45 feet (electric) 35 feet (gas)	30 feet
1	35 feet (electric) 25 feet (gas)	20 feet
2	25 feet (electric) 15 feet (gas)	10 feet

Maximum allowable length of 4" diameter rigid duct.

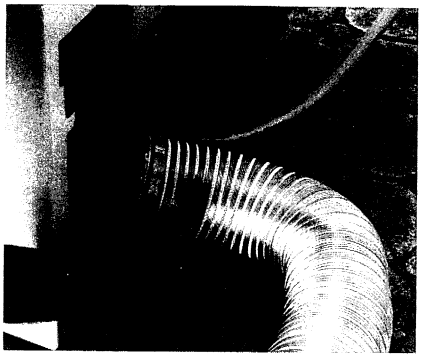
PROCEDURE

2 Inspecting and replacing exhaust vent

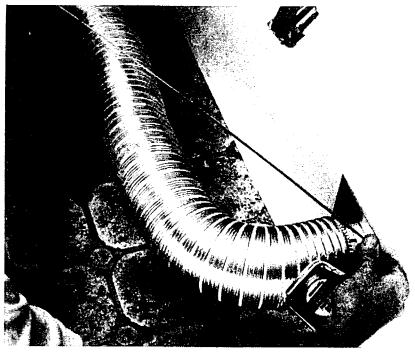
Step 1: For your personal safety, exercise caution when working with any electrical appliance. Watch for sharp edges on vent.



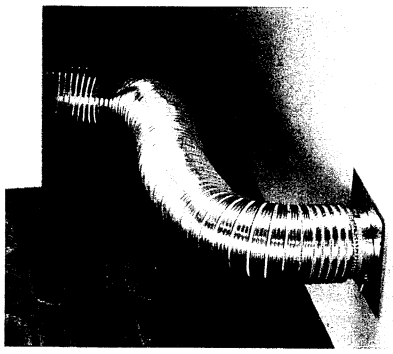
Step 2: Inspection. Periodically, check bottom of ductwork at dryer base for lint accumulation. Remove any lint. Reconnect ductwork.



Step 3: If your ductwork appears broken or worn, replace it with metallic 4-inch diameter ductwork.

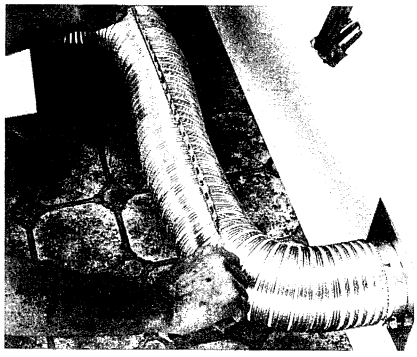


Step 4: Replacement or rearrangement. Measure total length of exhaust vent from dryer base to wall cap.

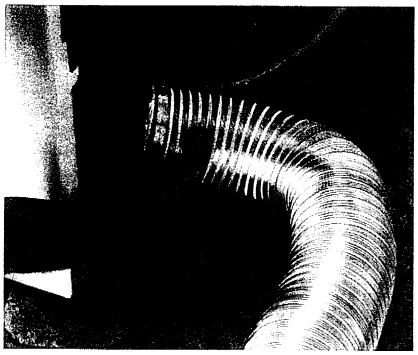


Step 5: Count number of turns in of exhaust ductwork from dryer base to wall cap.

Step 6: Measure opening of hood on wall cap. With measurements from Steps 2-4, compare total length of your ductwork with recommended length found in tables shown in the introduction section of this procedure.



Step 7: There should be a minimum of 4 feet between turns. Except for certain high air flow dryers, there should be no more than two 90° turns.

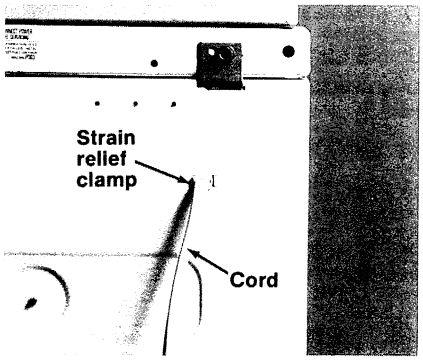


Step 8: If configuration of your exhaust vent does not match recommended measurements, rearrange position of ductwork.

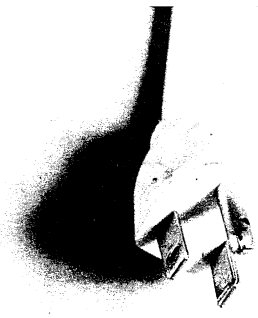
Power cord

If the dryer fails to operate properly, the power cord may be preventing power from reaching your dryer. Most problems of the power cord are caused by damaged and loose connections and will likely be visible.

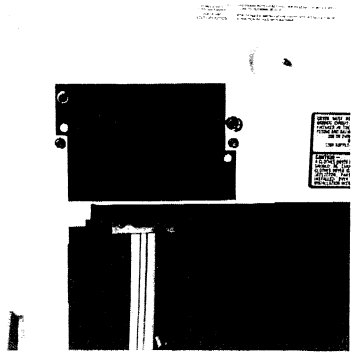
The pictures illustrate differences in the cord plug and attachment that exist between gas and electric dryers. Since the gas dryer power cord is wired directly into the internal wiring with no disconnect access, it can only be inspected visually from the plug to the dryer attachment. Because the gas dryer cord carries less current than the electric dryer cord, few problems are encountered with the gas dryer cord. Therefore, Procedure #3 refers only to electric dryer power cords.



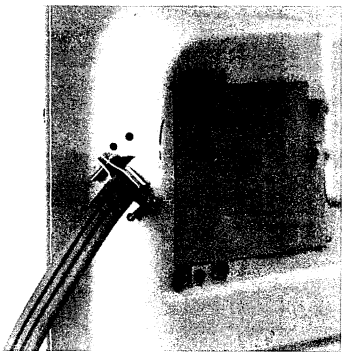
Gas dryer attachment point



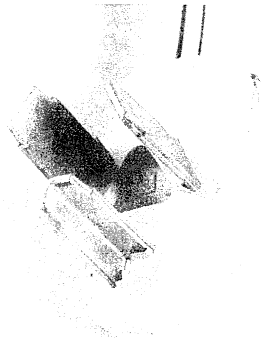
Gas dryer plug



Standard capacity electric dryer attachment point



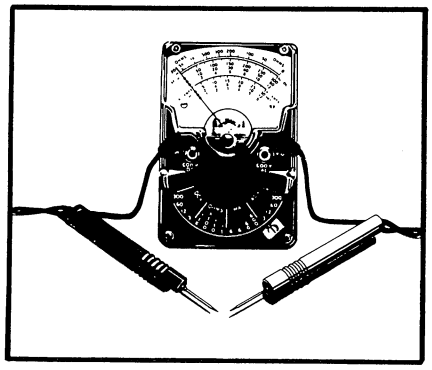
Large capacity electric dryer attachment point



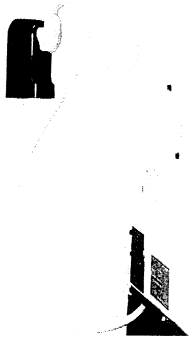
Electric dryer plug

3 Inspecting and replacing electric dryer power cord

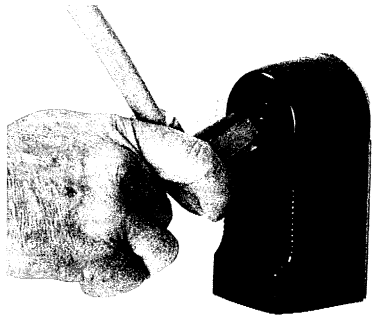
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel. Watch for sharp edges on access panels.



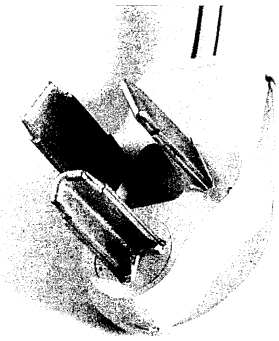
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



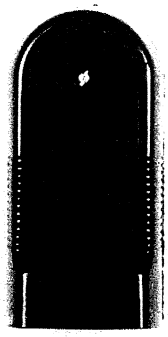
Step 3: After protecting floor cover, pull dryer away from wall. Power cord should be visible between dryer and receptacle. Improper connections could be sole cause of trouble.



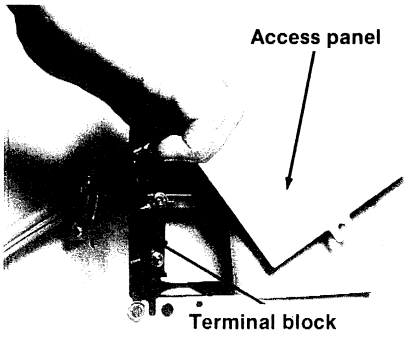
Step 4: Pull plug from receptacle with a firm, quick tug. Always grasp by plug and never by cord. Be careful not to contact terminal blades of plug.



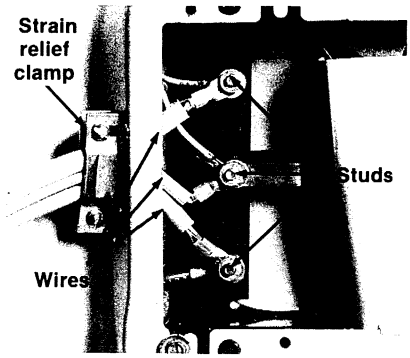
Step 5: Inspect plug carefully for damaged, corroded, or burned terminals. Look carefully around molded portion for signs of overheating. If plug is damaged, replace cord.



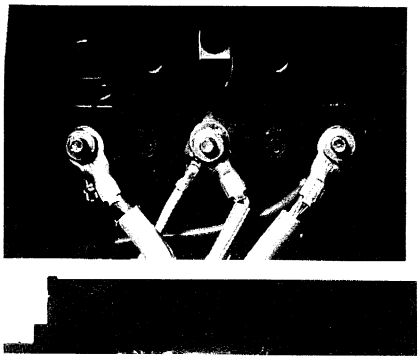
Step 6: A damaged plug may also result from poor connections inside receptacle. Have receptacle checked by qualified electrician.



Step 7: To inspect power cord at terminal block, remove terminal block access panel by removing mounting screws. On standard capacity dryers, terminal block access is above exhaust vent; large capacity dryer terminal block access is higher up on left upper rear.



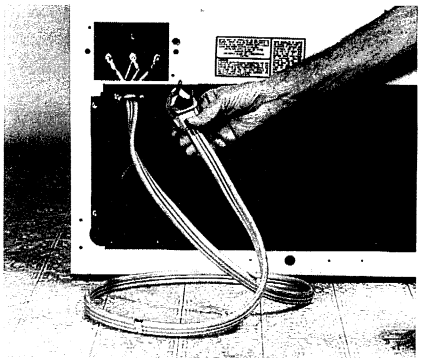
Step 8: Visually inspect power cord connections at terminal block. Inspect wires, studs, and strain relief clamp. If any of these parts are damaged, replace defective parts.



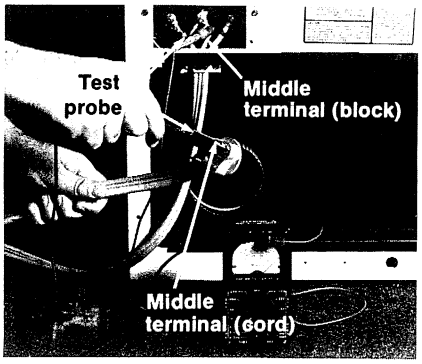
Step 9: On standard capacity dryers, the terminal block is horizontal rather than vertical as in large capacity dryers. Use the same process to replace the power cord for either type dryer.

continued...

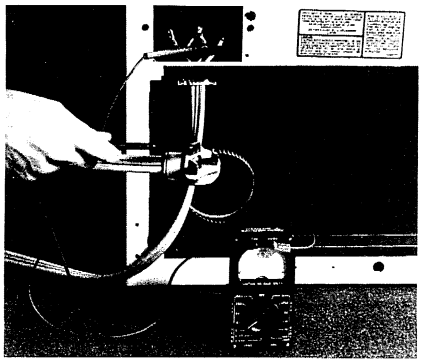
3 continued



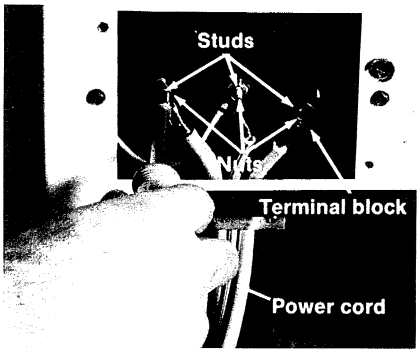
Step 10: If no visible damage to power cord is detected, an ohmmeter must be used to check for defective wires inside the power cord.



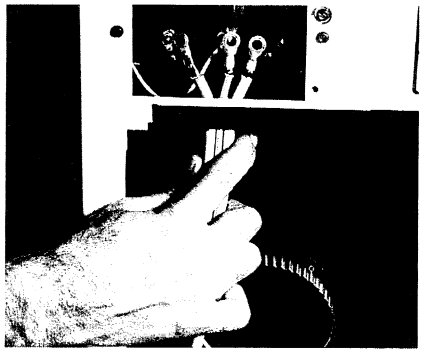
Step 11: To test cord, set ohmmeter on R x 1 scale. Clamp one test probe to terminal block. Middle terminal on block should always indicate continuity to middle terminal on plug.



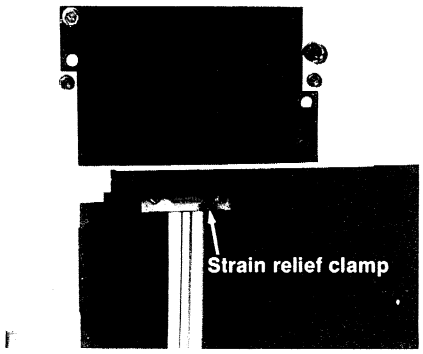
Step 12: Outer terminals on block should indicate continuity to one, but not both, of the outer terminals on plug. With meter probes in place, twist cord to be sure no internal break occurs. Replace cord if needle drops.



Step 13: To remove power cord, remove 3/8" nuts with nut-driver, holding three eyelets to three studs on terminal block. Remove cord strain relief clamp and pull cord out of dryer.



Step 14: Before installing new power cord, brass nuts under terminals must be tight. Assemble cord terminals onto terminal block studs and tighten brass nuts on top of them.



Step 15: The strain relief clamp must be reinstalled. Be sure to replace access cover. Reconnect power supply.

Notes

Access and control panels

For reasons of safety and appearance, all electrical, gas, and mechanical components of a dryer are enclosed. Many repairs require the removal of access panels to reach affected parts.

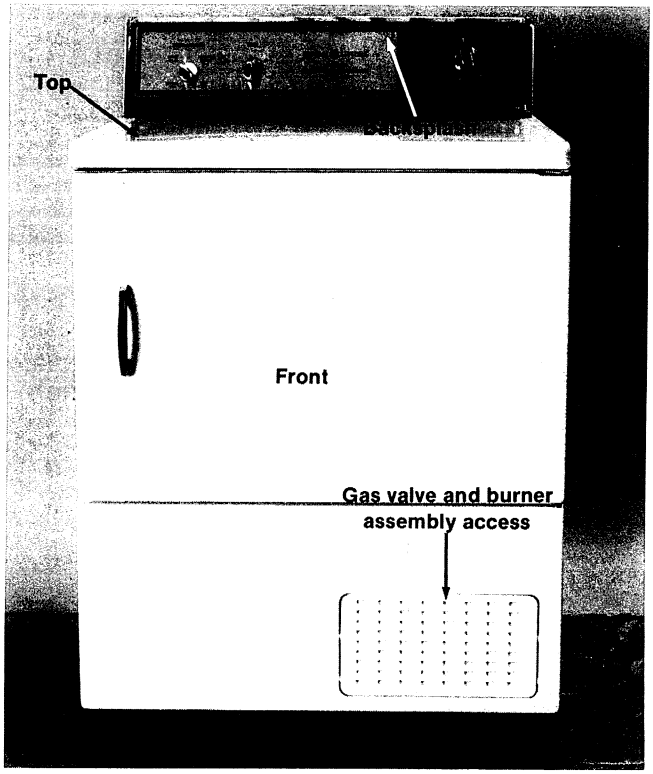
The electrical connections are accessed through three main panels—the backsplash control panel, dryer top, and terminal block access. The backsplash control panel houses the controls. The raised top exposes the high-limit thermostat, electric heater terminals, and door switch on electric dryers, and the door switch and terminal board on gas dryers. The terminal block access covers the terminal block and power cord connection in electric dryers.

The small access panel centered in the back of the dryer allows the drum to be disengaged from the bearing support. The large, lower access panel in the rear exposes the drive system for inspection. The access panel in the lower right front section on gas dryers permits access to some thermostats and the gas valve and burner assembly.

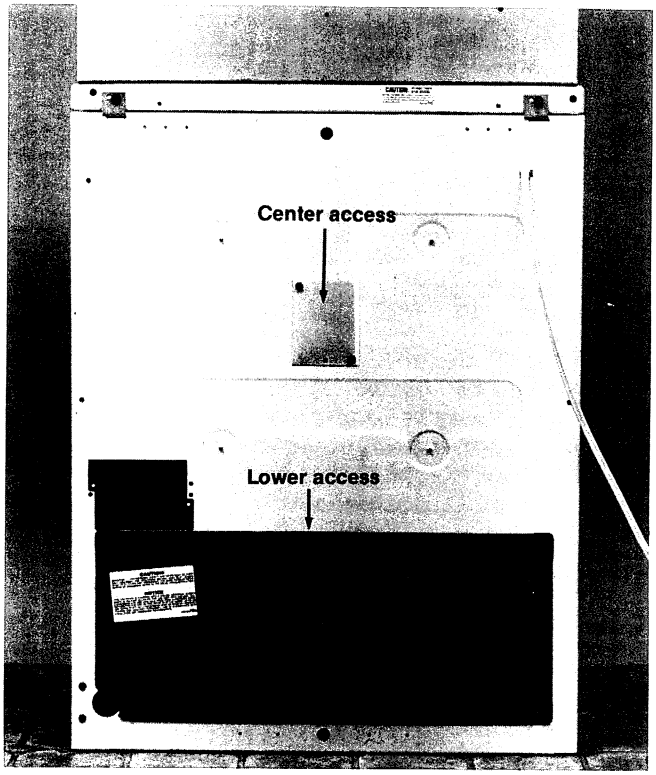
Most dryer panels are easily removed by taking out the mounting screws securing the panel to the dryer cabinet. However, removal of the dryer backsplash, top, and front panels is more complicated and varies between models. For that reason this procedure refers only to removing the backsplash, top, and front dryer panels. The removal of other panels is described in the procedures requiring their removal.

Front panels on electric dryer

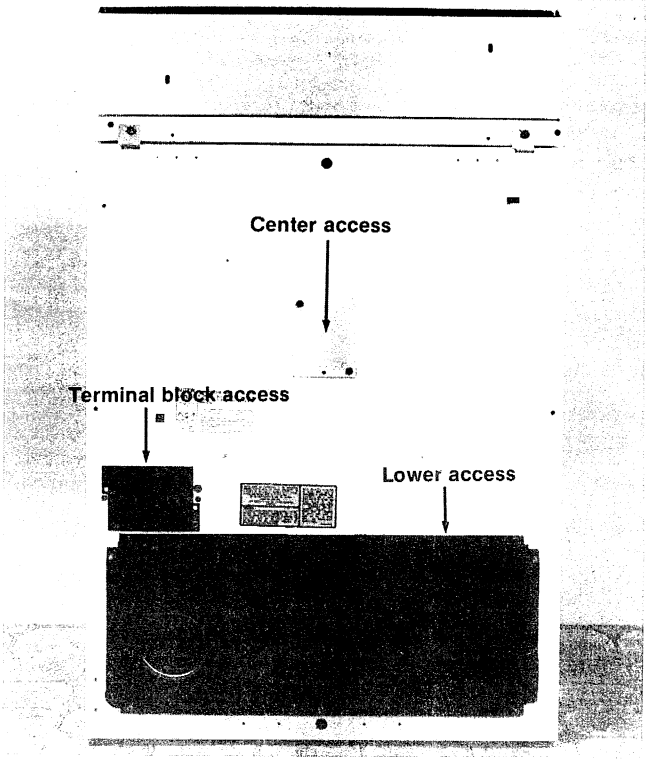
4 Removing access and control panels



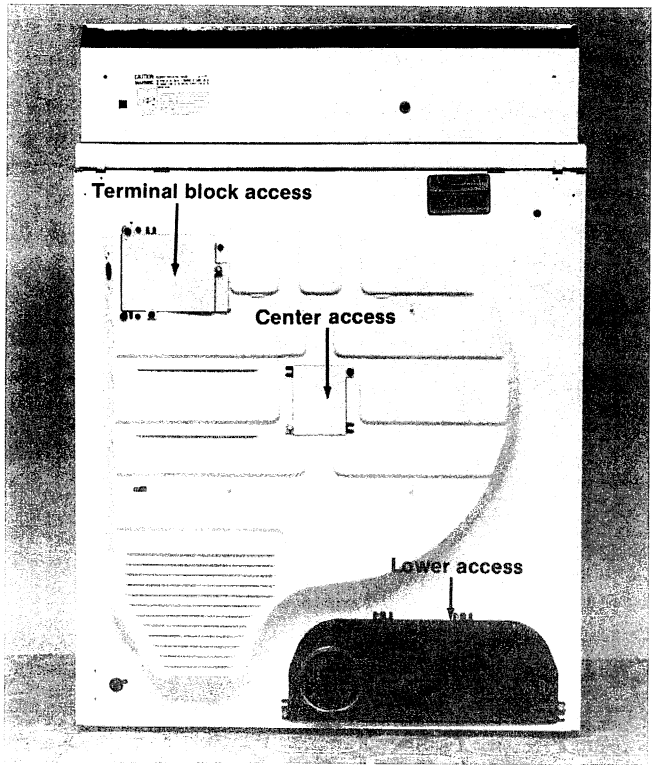
Front panels on gas dryer



Back panels on gas dryer



Back panels on standard capacity electric dryer



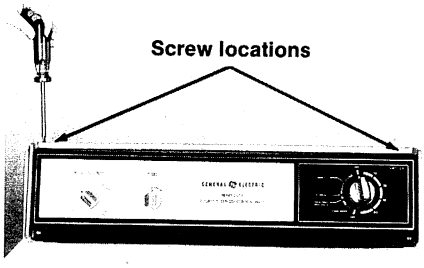
Back panels on large capacity electric dryer

continued...

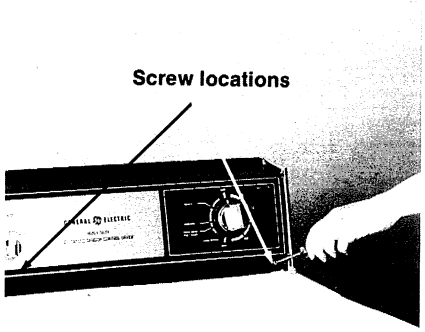
PROCEDURE

4 Removing access and control panels

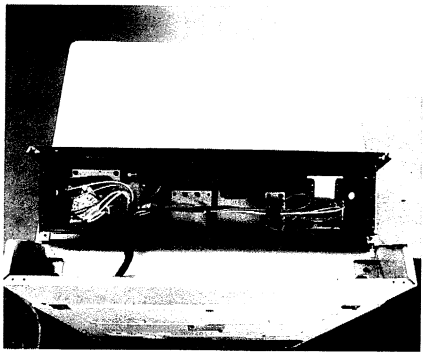
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels.



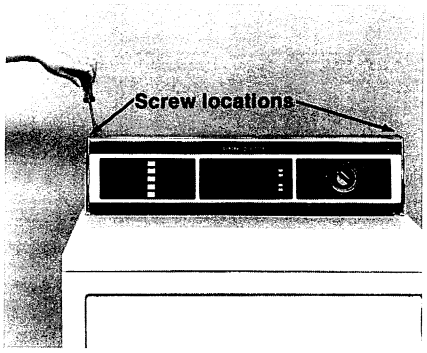
Step 2: The six-inch backsplash. Using a Phillips screwdriver, remove two screws, one at each end of top trim.



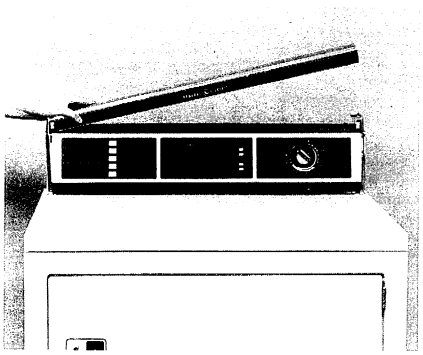
Step 3: Remove two bottom front screws with a Phillips screwdriver.



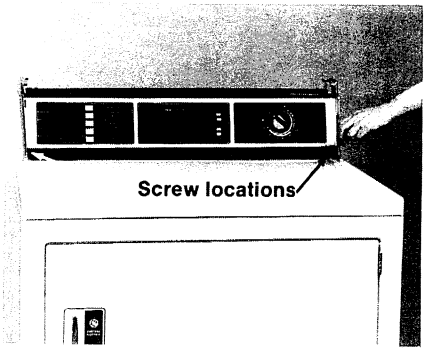
Step 4: Tilt control panel forward, pulling up gently on wires for full extension. Wires for backsplash controls are now exposed.



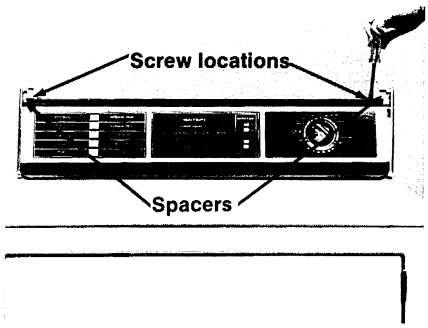
Step 5: The seven-inch backsplash. Using a Phillips screwdriver, remove two top screws on the trim.



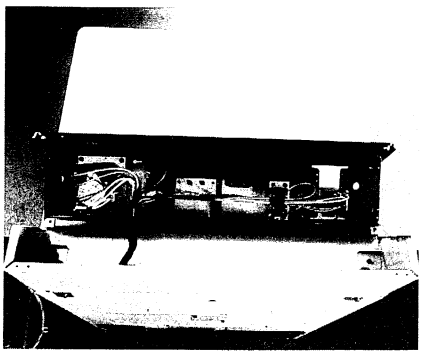
Step 6: Lift off top trim and set aside.



Step 7: Remove two Phillips screws from bottom front.

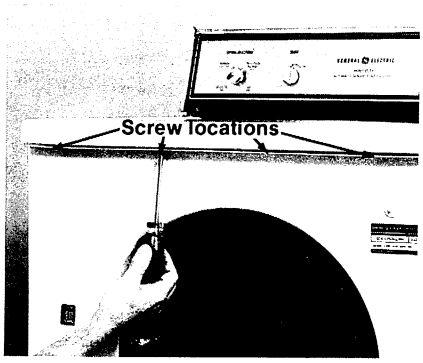


Step 8: Using a nutdriver, remove two hex head screws and spacers from exposed top.

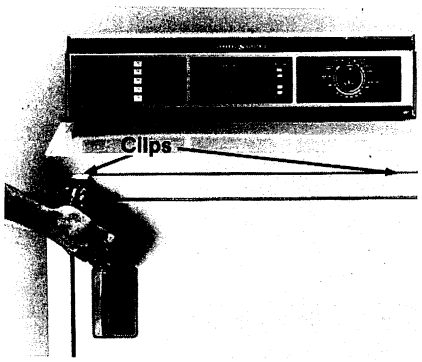


Step 9: Tilt control panel forward, pulling up gently on wires for full extension. Wires for backsplash controls are now exposed.

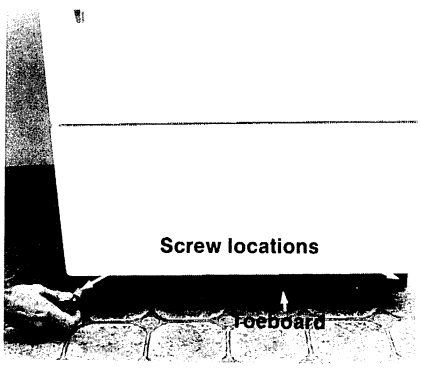
4 continued



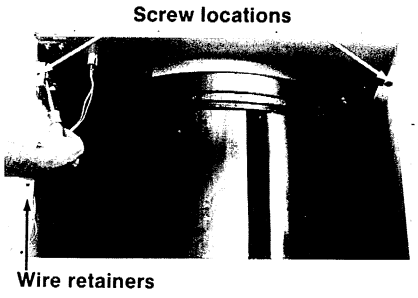
Step 10: Standard capacity dryers. The cabinet top is raised by removing 4 Phillips head screws from upper cabinet front inside door opening. Secure backsplash before tilting back. Note: Rest top firmly against support.



Step 11: Large capacity dryers. Clips securing cabinet top are located where top joins dryer front. To open top, press against clips with a putty knife that has been wrapped with masking tape. Top should pop up. Note: Rest top firmly against support.



Step 12: To remove cabinet front on any dryer, loosen, but do not remove, 2 screws on either side of toeboard with a nutdriver.

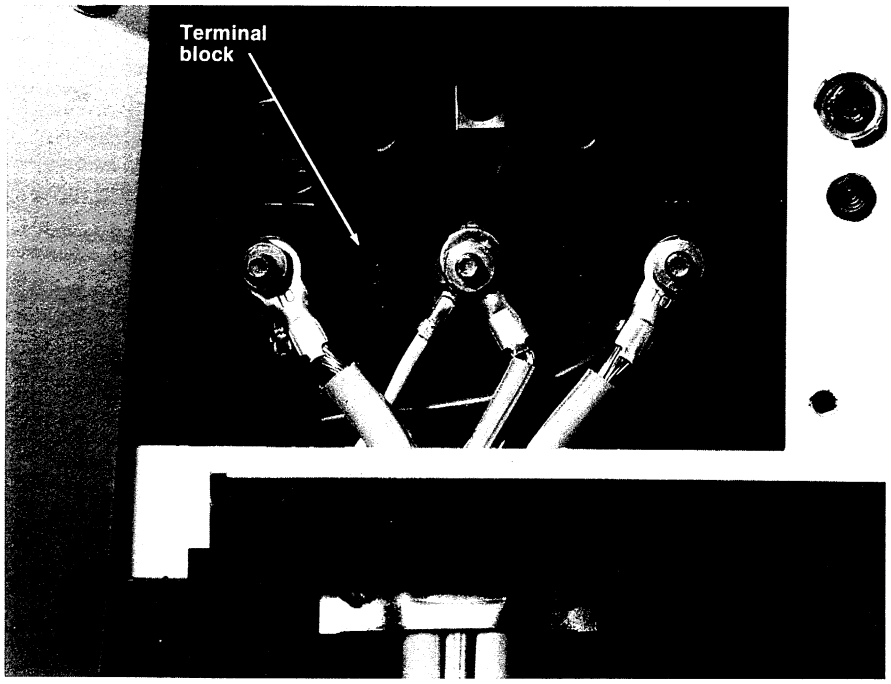


Step 13: Remove 2 screws on the right and left inside cabinet front with a nutdriver. Remove wire retainers. Lift front up and set to the side. When finished with dryer inspection and repair, reassemble dryer and reconnect power supply.

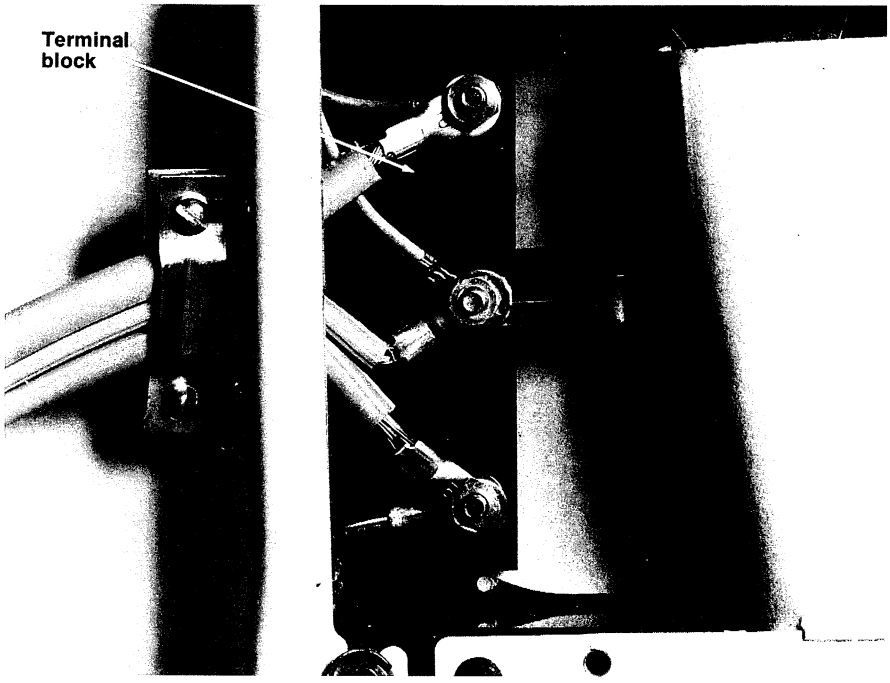
Terminal block (electric dryers)

In electric dryers, the power cord is connected to the dryer at the power supply terminal block. From the terminal block, internal wiring carries the power to various circuits of the dryer. Gas dryers do not have a terminal block. The power cord is connected directly to the internal wiring.

Most problems at the terminal block are caused by loose connections and are visible in the form of either burned and oxidized terminals or damaged insulating material.



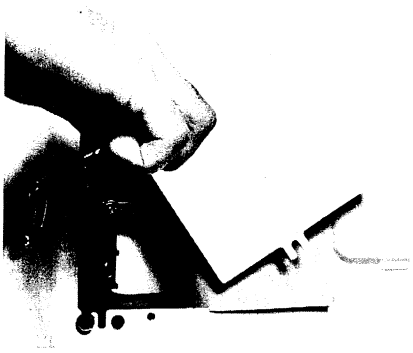
Terminal block on standard capacity electric dryer



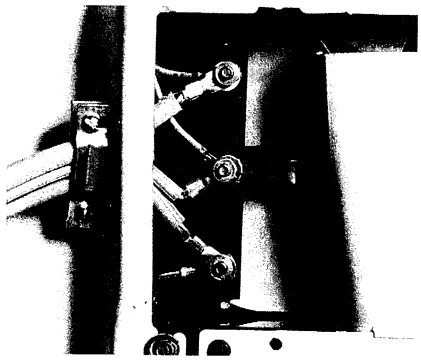
Terminal block on large capacity electric dryer

5 Inspecting and replacing terminal block

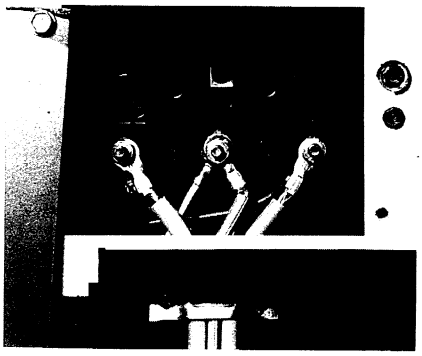
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and around terminal block.



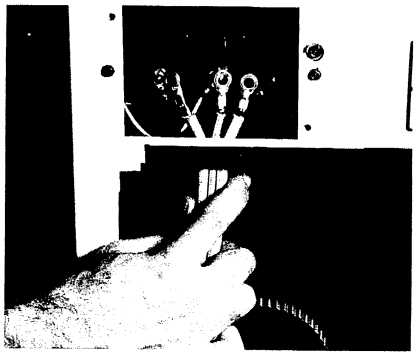
Step 2: Remove terminal block access panel by unscrewing mounting screws with nutdriver. On standard capacity dryers, access is above exhaust vent; on large capacity dryers (shown here) access is on upper left rear.



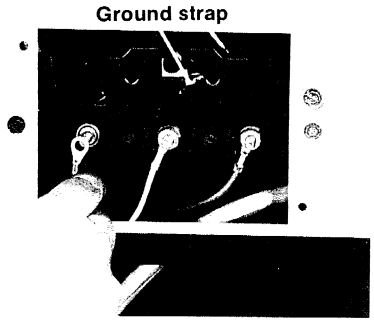
Step 3: Visually inspect terminal block for burnt terminal connections. If damaged, replace with new terminal block.



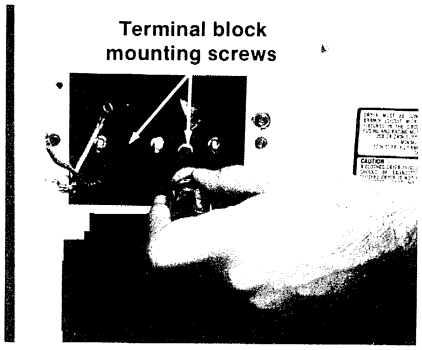
Step 4: On standard capacity dryers, terminal block is horizontal rather than vertical. Use same steps to replace terminal block for either type dryer.



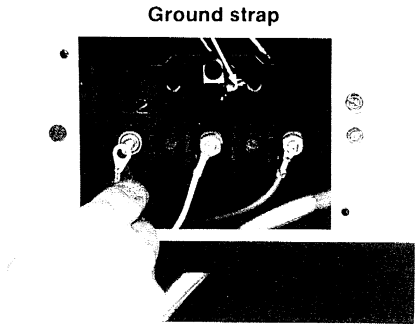
Step 5: To replace terminal block, first remove power cord. Cord is removed by unscrewing three 3/8" nuts that retain eyelets on terminal block.



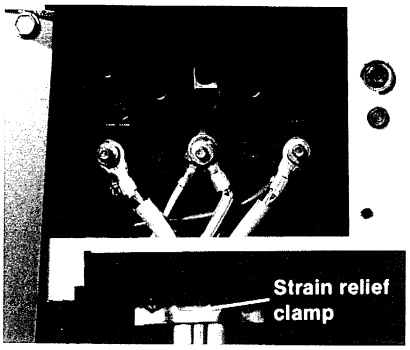
Step 6: Remove 3 inner nuts and remove internal wiring from terminals. When middle wire is removed, ground strap is also released. Move it up and out of your way.



Step 7: Using nutdriver, remove two recessed mounting screws on terminal block. Terminal block can now be lifted out of cabinet.



Step 8: Remount new terminal in cabinet. To middle terminal of block, connect white wire of internal wiring and ground strap. Attach other wires individually to left and right terminals.



Step 9: Reattach power cord leads to terminal block, making sure that the strain relief clamp is in place and that all wires and nuts are secure. Reassemble dryer and reconnect power supply.

Wiring and connections

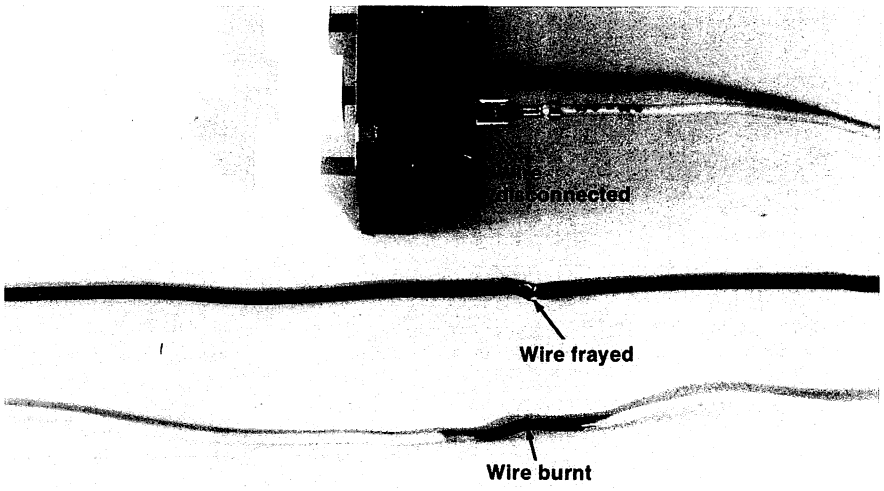
Power is carried to the components of the dryer by specially insulated heat resistant wire. These wires are connected to various switches and heating systems by push-on terminals, studs, nuts, or connector blocks.

Wires connected to terminals are very susceptible to damage because of arcing and heat build-up. If terminals are dull and oxidized from excessive heat, they should be replaced. Any mating terminal, such as one located on a switch or disconnect terminal, should be polished until bright and shiny before a new wire is attached to insure a good connection.

When checking electrical connections, be sure to follow the circuit diagram for your dryer carefully. The diagram is glued on the back of the dryer or inside an envelope in the backsplash control panel.

Note: If replacement wire is required, use only appliance wire having the same temperature and gauge rating as the wire you are replacing.

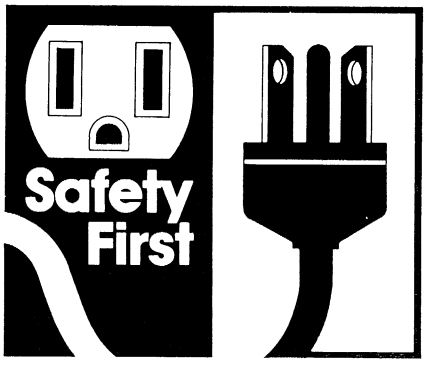
Note: For installation reference make note of how wires are connected. Use masking tape to mark wires or draw a diagram of wiring connections on paper.



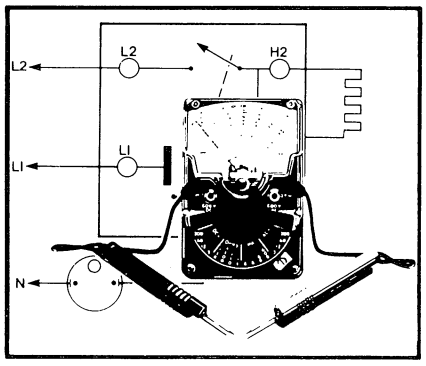
Typical wiring problems encountered

PROCEDURE

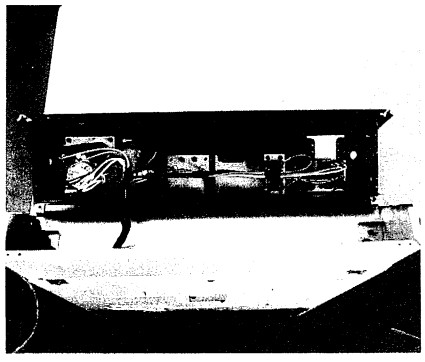
6 Repairing wiring and connections



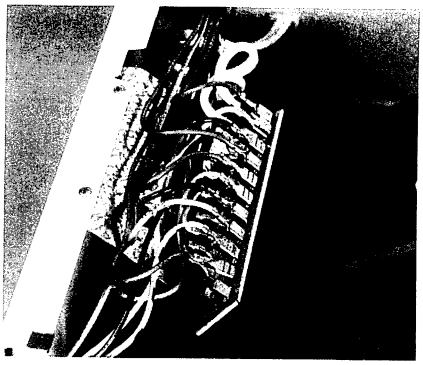
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



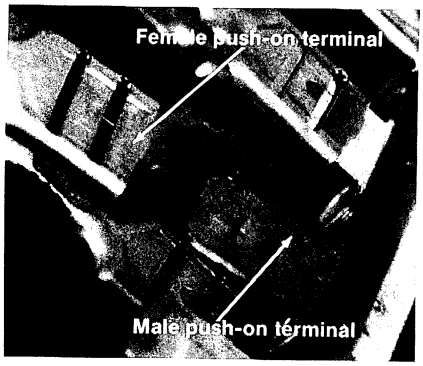
Step 2: This procedure requires use of an ohmmeter and ability to read a circuit diagram. For instructions, please refer to Tools and Testing Equipment, pages 89-94.



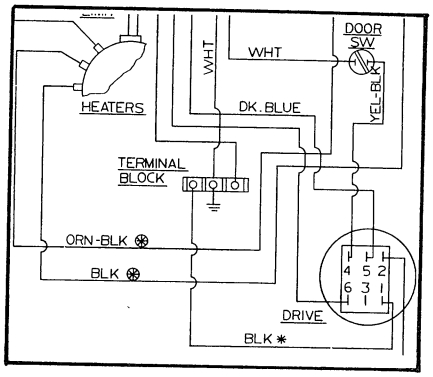
Step 3: Most dryer electrical connections are accessed by removing backsplash and raising top. If you are unfamiliar with these processes, please refer to Procedure #4: Removing Access and Control Panels.



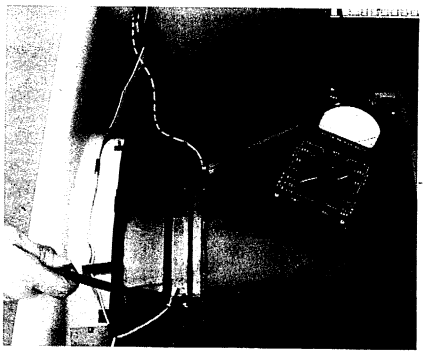
Step 4: Some gas dryers have a terminal board located at top left side of dryer. This could be a possible point of wiring and connection problems. To access terminal board, raise dryer top as described to Procedure #4.



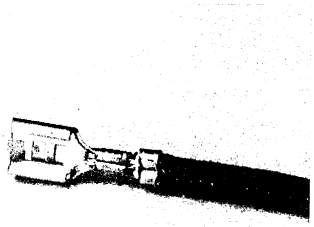
Step 5: Either terminal or wire may need repair. Shown above are "push-on" terminals used in dryers. Check wires and terminals visually for signs of damage.



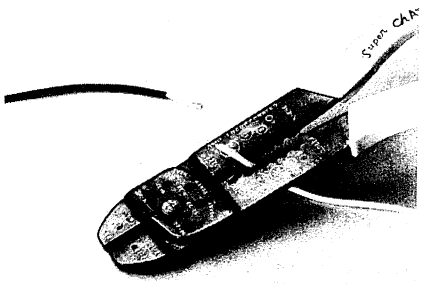
Step 6: Wires are color coded or numbered. Follow wire on your circuit diagram to find where it is connected.



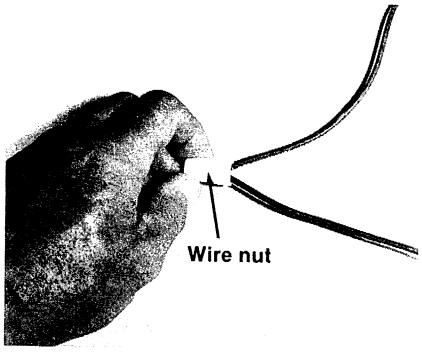
Step 7: To test a particular wire, disconnect one end from male terminal connection and place ohmmeter probes across both ends of wire. You should observe continuity on R x 1 scale.



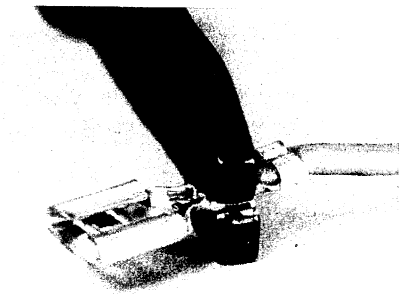
Step 8: If no continuity, check area where wire is attached to female terminal. Wires should make contact against terminal. If attachment looks okay, replace wire.



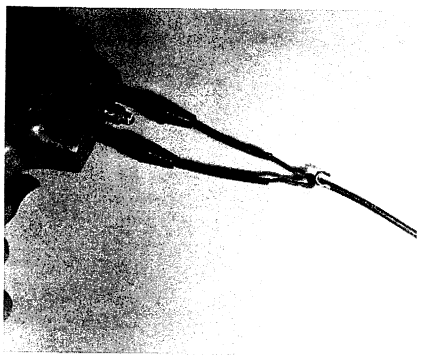
Step 9: To remove insulation from the wire use wire strippers rather than knife to avoid cutting too deep. Remove only enough insulation to make connection or splice.



Step 10: To splice dryer wiring use only high temperature wire nut. Strip the insulation back to bright and shiny wire. Twist strands together and secure with wire nut.



Step 11: Should terminal need replacing, cut old terminal loose from wire. Strip wire end and twist strands together. Slip new terminal over twisted wire strands and crimp terminal down over them securely with a terminal crimping tool.

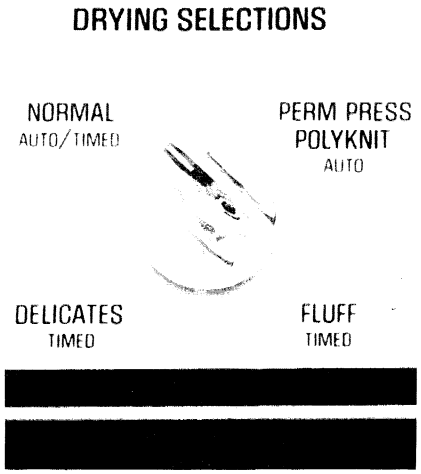


Step 12: If you do not have a crimping tool, you will have to solder terminals on. Twist wire strands together. Place terminal over them and solder. Reassemble dryer and reconnect power supply when finished.

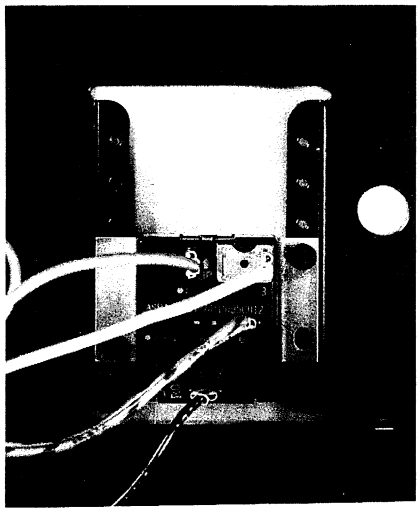
Selector switches

Selector switches, located on the backsplash control panel, allow you to select the correct drying cycle for the type of clothes you are drying. Typical selections include NORMAL, FLUFF, DELICATES, PERMANENT PRESS, and COTTONS. Once selected, the switch then activates the heating control system to supply NORMAL HEAT, LOW HEAT, or NO HEAT to dry your clothes. There are three types of selector switches used—toggle, rotary, and pushbutton. These switch types are pictured on page 4.

If the dryer does not heat, or the air temperature is wrong for a particular cycle, there could be a malfunction in the selector switches. If the dryer won't start, there may be a problem in the start switch located on or near the selector switch panel. See Procedure #8: Inspecting and Replacing Start Switch.



Rotary selector switch

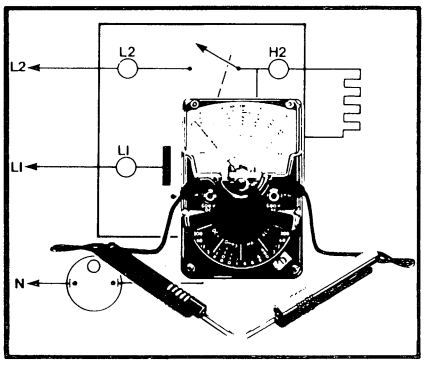


Internal wiring

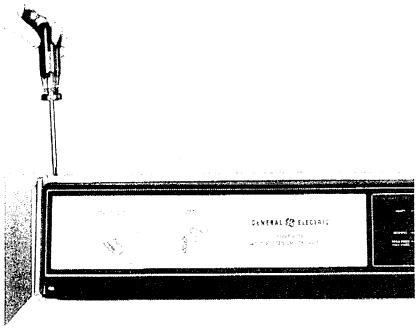
PROCEDURE

7 Inspecting and replacing selector switches

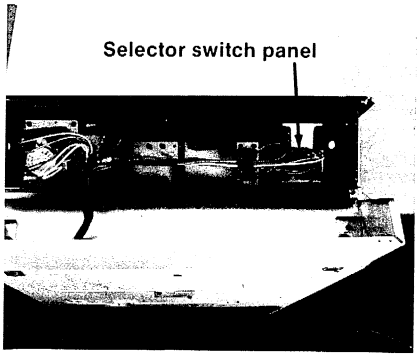
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on and inside backsplash.



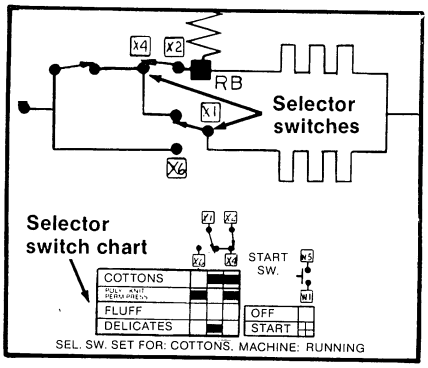
Step 2: This procedure requires use of an ohmmeter and ability to read a circuit diagram. For instructions, please refer to Tools and Testing Equipment, pages 89-94.



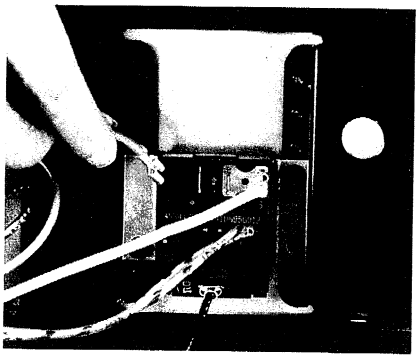
Step 3: Remove backsplash control panel. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



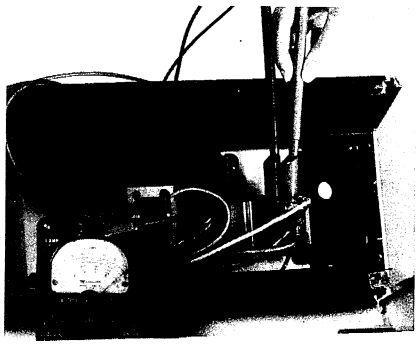
Step 4: Wiring to selector switch panel is located directly behind controls on inside of backsplash.



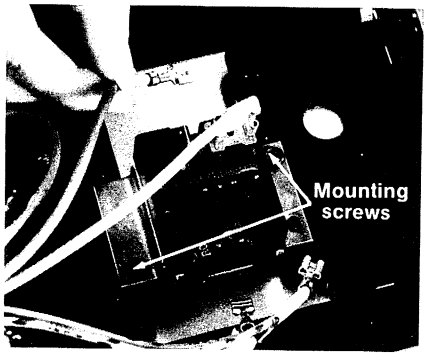
Step 5: Look carefully at your circuit diagram located inside backsplash or on back of your dryer. Find numbers for selector switch terminals (X) used in affected drying cycle from the selector switch chart.



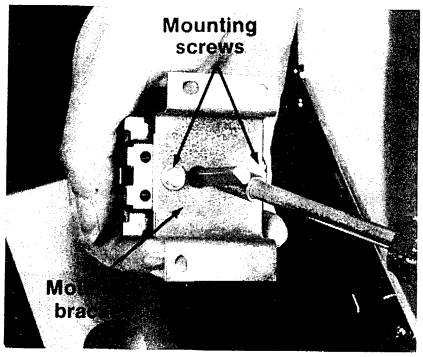
Step 6: When you have located the terminals for the switch contacts controlling the affected cycle, remove the wire leads from these terminals.



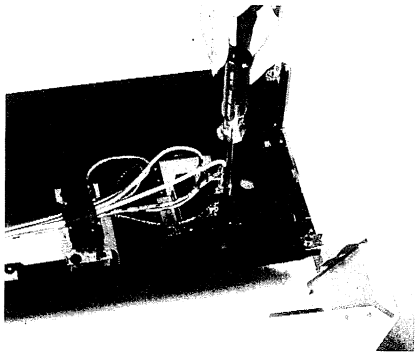
Step 7: Turn selector switch to affected cycle. Place ohmmeter probes across two switch terminals. If no continuity on R x 1 scale, replace switch.



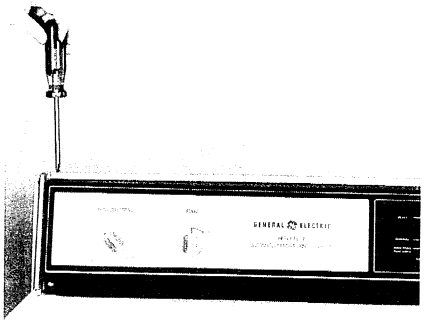
Step 8: Remove other wire leads to switch panel. For installation reference, make note of how wires are connected. Remove selector switch panel from its support by removing 2 mounting screws with nutdriver.



Step 9: Rotary switch knobs may have to be pulled off shaft from front of backsplash for switch removal. Some switches are also attached to a mounting bracket which is removed by removing 2 mounting screws with nutdriver.



Step 10: Install new selector switch, making sure all connections are secure and in right location.

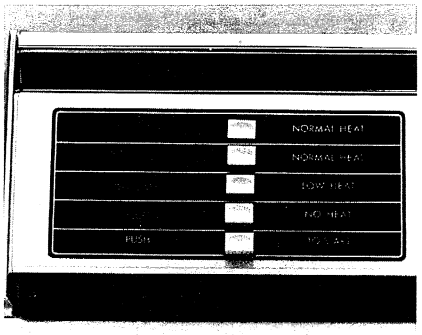


Step 11: Reassemble dryer and reconnect power supply.

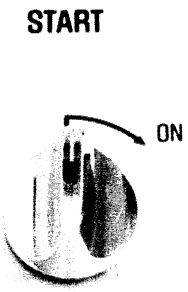
Start switch

The start switch on the backsplash activates the drive motor through a set of contacts on the centrifugal switch. On pushbutton control dryers, the start switch is at the bottom of the selector switch panel; rotary start switches are to the right of the selector switch.

If the contacts in the start switch are defective, the dryer will not run. The start switch is primarily a safety feature. It prevents the dryer from running when the door is open and must be reactivated each time the drying cycle is stopped by opening the door.



Pushbutton start switch

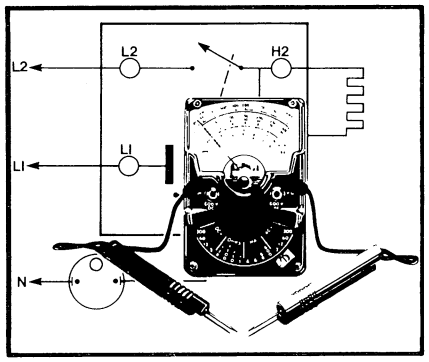


Rotary start switch

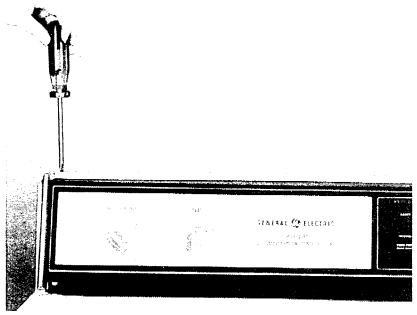
PROCEDURE

8 Inspecting and replacing start switch

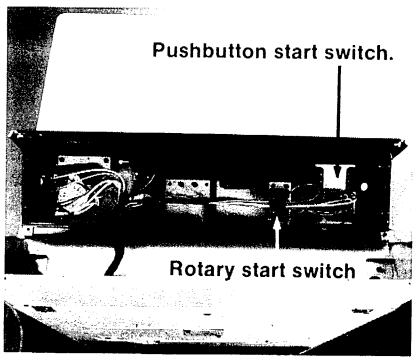
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on and inside backsplash.



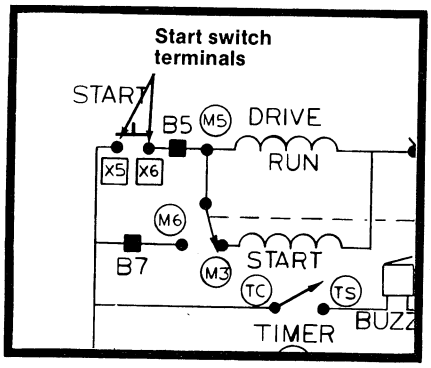
Step 2: This procedure requires use of an ohmmeter and ability to read a circuit diagram. For instructions, please refer to Tools and Testing Equipment, pages 89-94.



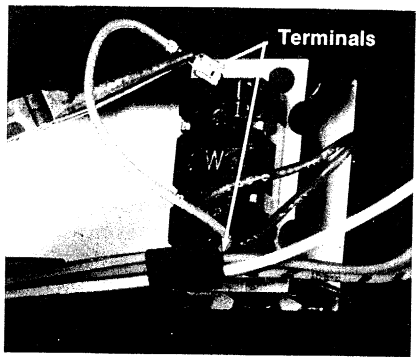
Step 3: Remove backsplash control panel. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



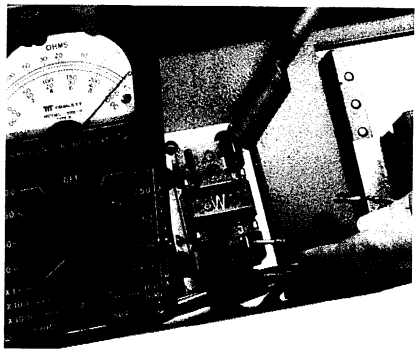
Step 4: Wiring to start switch is located directly behind controls on inside of backsplash.



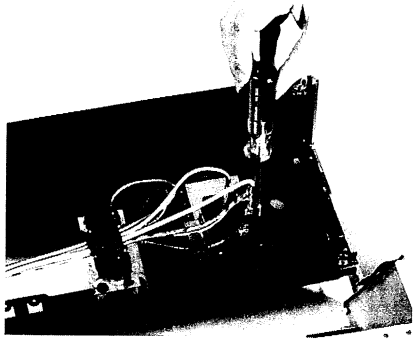
Step 5: Look carefully at your circuit diagram, located inside backsplash or on back of your dryer. Find letter and numbers used for start switch terminals for your dryer.



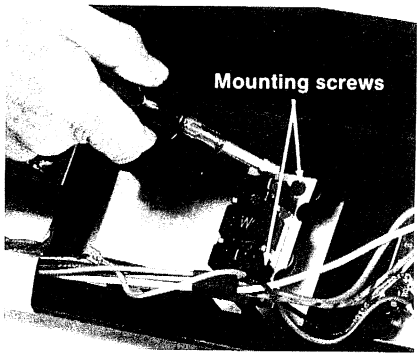
Step 6: When you have located contact terminals for start switch, remove wire leads from switch terminals. Shown above is rotary switch.



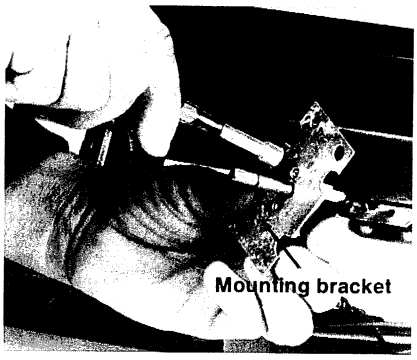
Step 7: Place ohmmeter probes across two switch terminals. Depress or turn switch to "ON". If no continuity on R x 1 scale, replace switch.



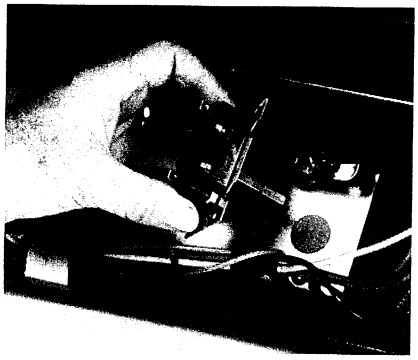
Step 8: If start switch is on selector switch panel, remove and replace as described in Procedure #7: Inspecting and Replacing Selector Switches, Steps 8-10.



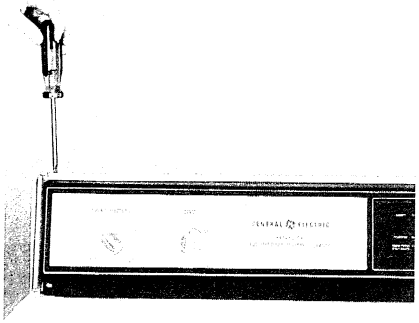
Step 9: To remove rotary start switch, remove two mounting screws with nutdriver. Remove other wire leads to switch. Pull knob off its shaft from front of backsplash.



Step 10: The rotary switch is attached to a mounting bracket which is removed by removing two mounting screws underneath switch with nutdriver.



Step 11: Install new start switch, making sure all wire connections are secure. Attach switch to mounting bracket and secure switch on backsplash support. Attach knob to shaft.



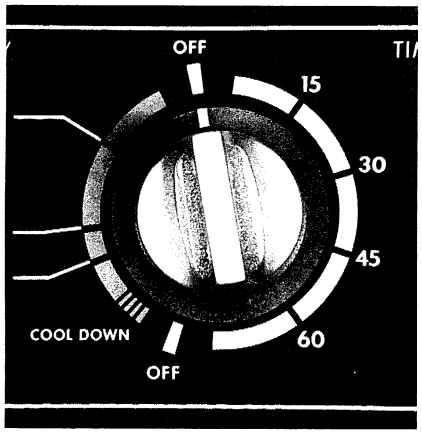
Step 12: Reassemble dryer and reconnect power supply.

Timer

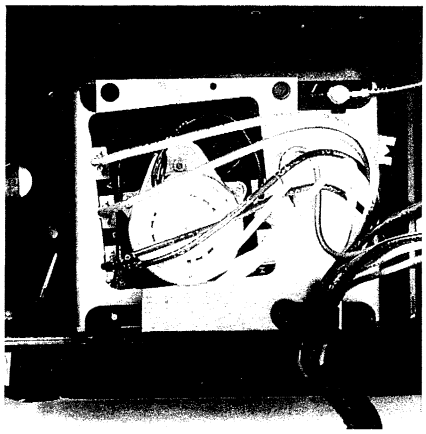
The timer is located inside the backsplash control panel directly behind the cycle control knob. The motor within the timer advances the timer in the drying cycle selected. After a specified period of time, the timer switches open to turn off the heat and stop the drum from turning.

For different cycles, the timer functions differently. In the timed cycle the timer runs continuously for the amount of time set on the dial. In the automatic cycle the timer advances when the thermostats turn the heat off and will continue to advance until the heat comes back on. The total cycle time depends on the type of fabrics, size load, moisture content, and timer setting. On electronic moisture sensing models, the timer advances when the clothes reach the specified level of dryness.

Many dryer problems can result from bad electrical connections within the timer. The dryer may not run, heat, or complete its cycle. Should the timer knob advance in the timed cycle but not during the automatic cycle, check the resistor as outlined in Procedure #10: Inspecting and Replacing Resistor, or the moisture sensor as described in Procedure #14: Inspecting and Replacing Moisture Sensor.



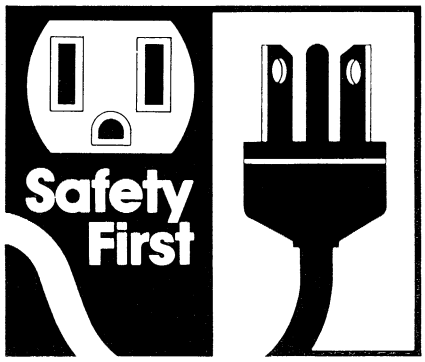
Timer control knob



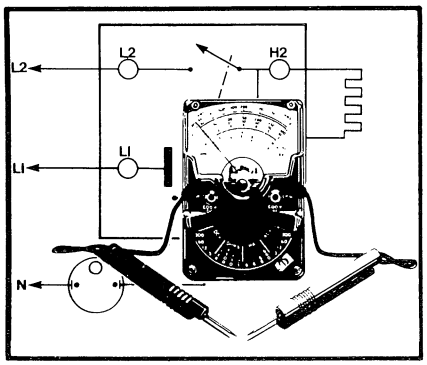
Timer motor and wiring

PROCEDURE

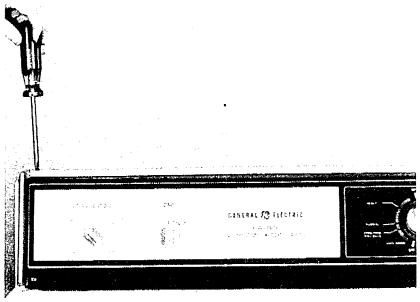
9 Inspecting and replacing timer



Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges inside backsplash.

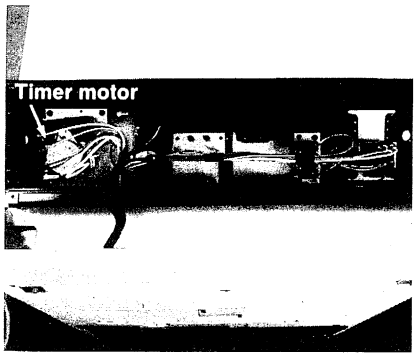


Step 2: This procedure requires use of an ohmmeter and ability to read a circuit diagram. For instructions, please refer to Tools and Testing Equipment, pages 89-94.

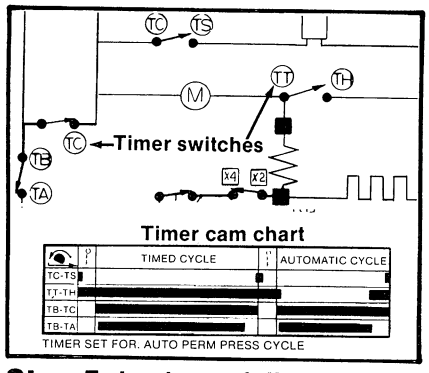


Step 3: Remove backsplash control panel. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.

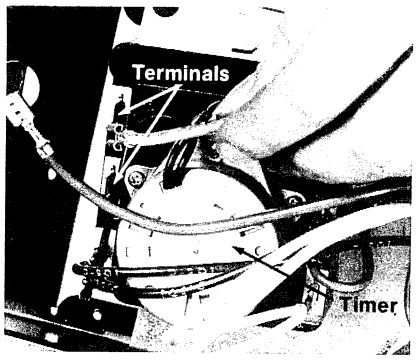
9 continued



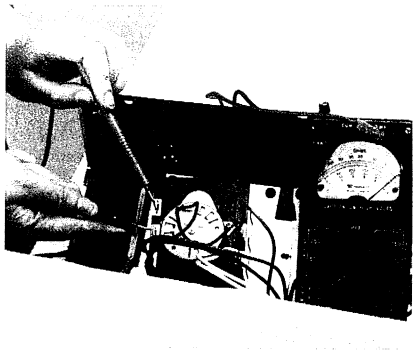
Step 4: Wiring to timer is located directly behind cycle control knob on inside of backsplash.



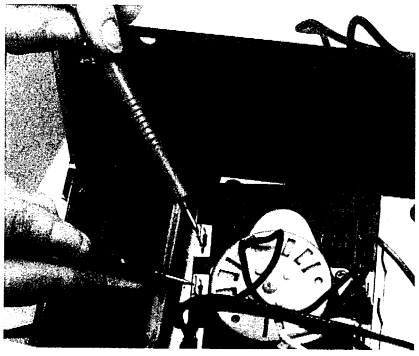
Step 5: Look carefully at your circuit diagram, located inside backsplash or on back of your dryer. Find letters used for timer switch terminals (T) that control dryer circuit of concern. Timer cam chart shows which switches are open and closed for each cycle.



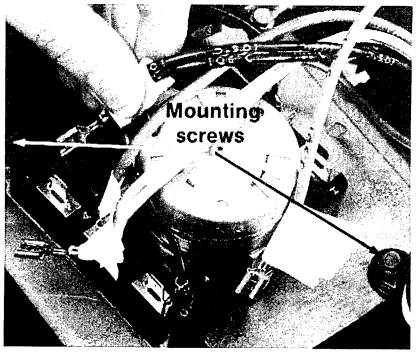
Step 6: When you have located terminals for switch controlling affected cycle, remove wire leads from these terminals. For installation reference make note of how wires are connected.



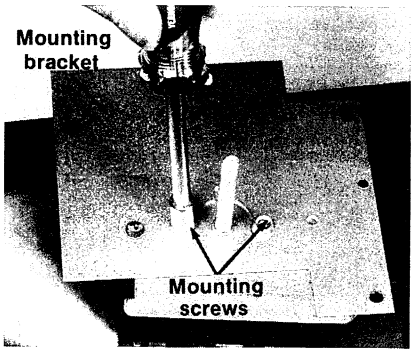
Step 7: Turn timer control knob to cycle where those timer contacts should be closed. Place ohmmeter probes across the 2 switch terminals. If no continuity with ohmmeter set on R x 1 scale, replace timer.



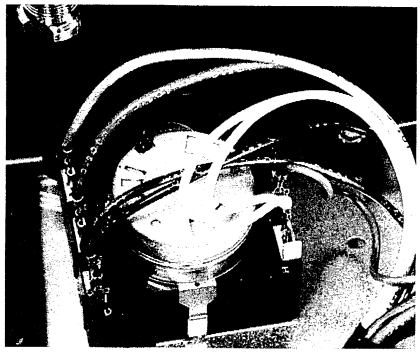
Step 8: To check timer motor winding, find terminals on either side of motor from circuit diagram. With ohmmeter set on R x 1 scale, place probes across these terminals with wire leads removed. If no continuity, replace timer.



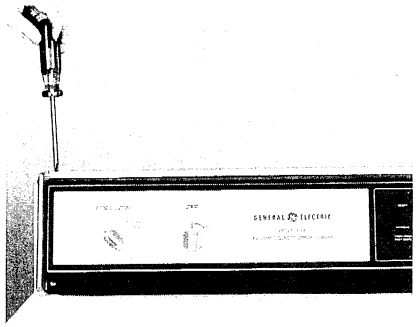
Step 9: Remove timer from its support by removing two mounting screws with nutdriver. Remove wire leads to timer. For installation reference make note of how wires are connected.



Step 10: Pull off the timer rotary knob on backsplash to remove timer. Timer is attached to a mounting bracket which is removed by removing 2 mounting screws with nutdriver.



Step 11: Install new timer, reattaching wires as stated in instructions that come with timer. Make sure all connections are properly placed and secure.

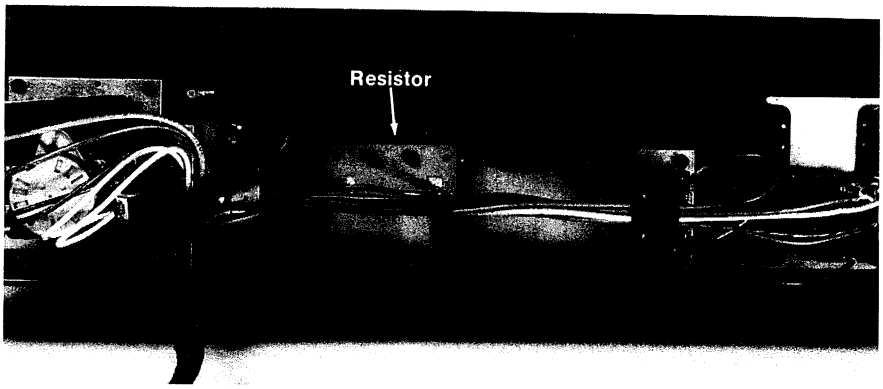


Step 12: Reassemble dryer and reconnect power supply.

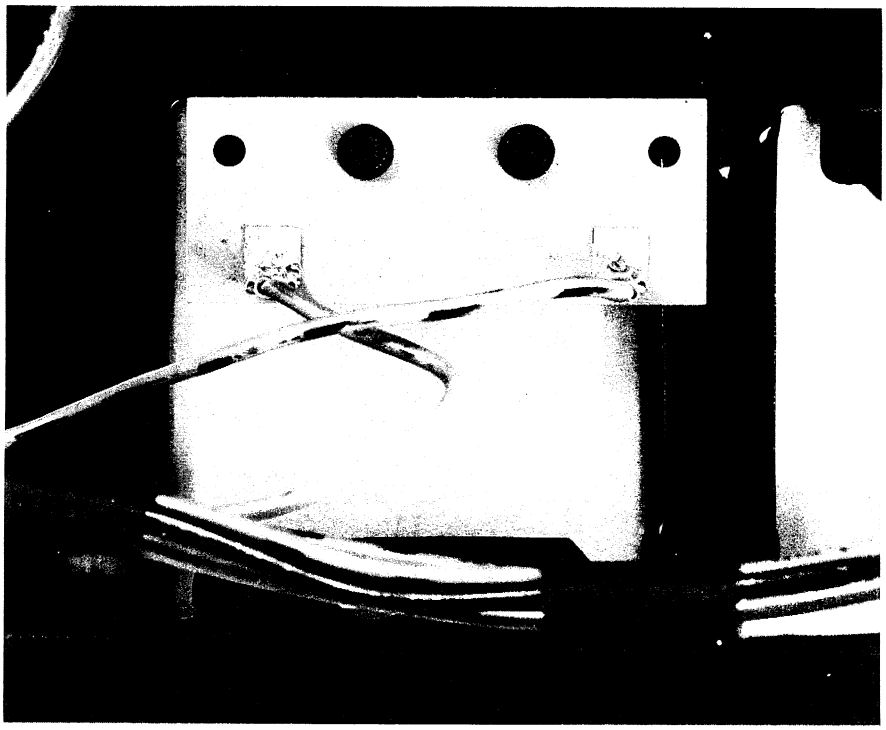
Resistor (electric dryers)

The resistor is only used in electric dryers having an automatic cycle. It is located between the selector switches and timer on the inside of the backsplash. During the automatic cycle, the timer is not energized until the heaters are turned off. Because the timer runs on 120 volts and not the 240 volts that pass through the heaters, the resistor divides the heater voltage in half to provide the correct voltage to the timer.

Should the resistor malfunction, the timer won't advance in the automatic cycle. If the timer is good, it should advance in the timed cycle. If the timer does not advance in either cycle, check the timer as described in Procedure #8: Inspecting and Replacing Timer.



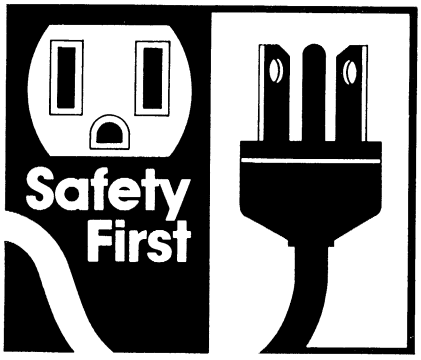
Resistor location



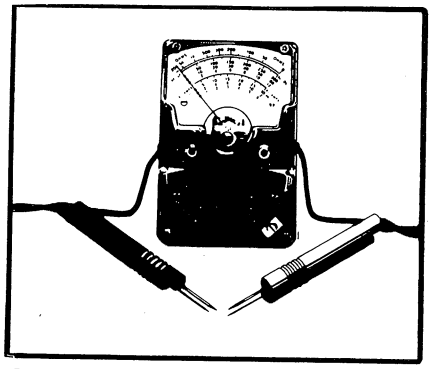
Close-up of resistor terminal board

PROCEDURE

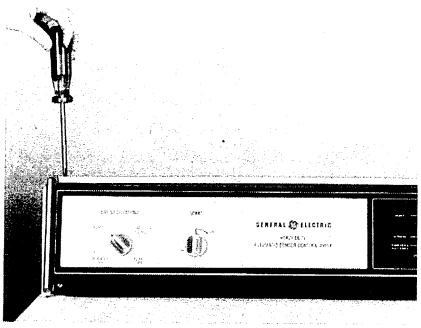
10 Inspecting and replacing resistor



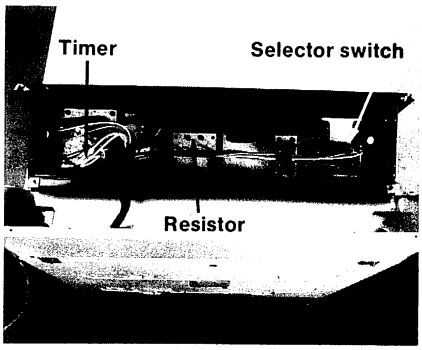
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels.



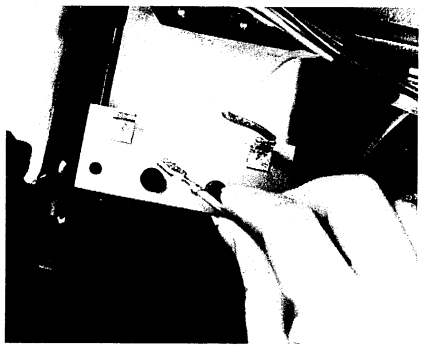
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



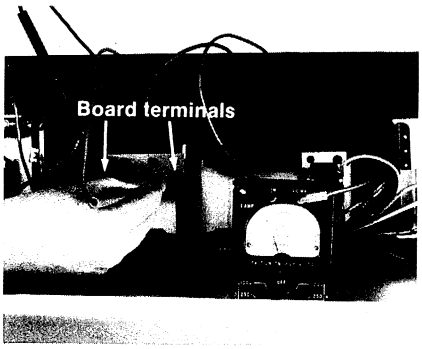
Step 3: Remove backsplash control panel. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



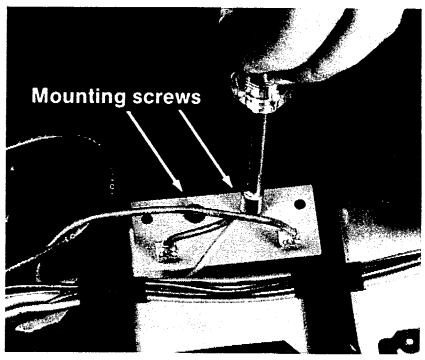
Step 4: The resistor is located between selector switch and timer inside backsplash. It is rectangular in shape.



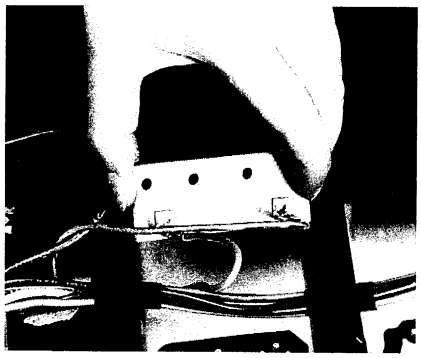
Step 5: Remove one wire lead from resistor terminal board.



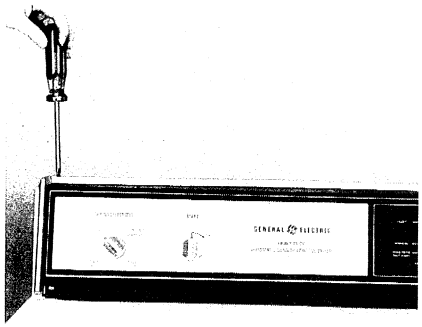
Step 6: Attach ohmmeter probes to two board terminals. Set on R x 100 scale, ohmmeter should read about 38 Ω . If not, replace resistor.



Step 7: Remove resistor terminal board from mounting bracket by removing mounting screws with nutdriver.



Step 8: Be sure you are replacing with a resistor of the correct resistance and wattage. Replace wire leads and make sure all connections are tight.



Step 9: Reassemble dryer and reconnect power supply.

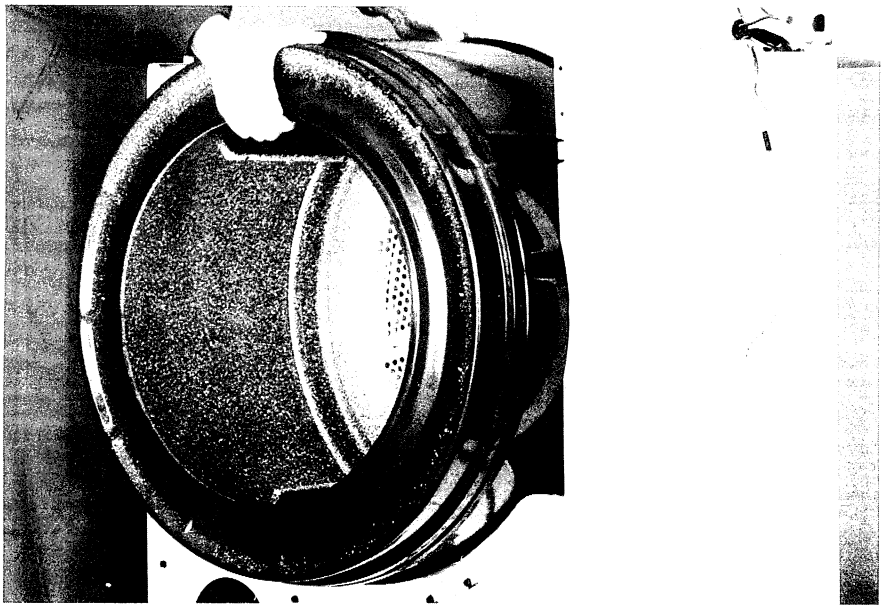
Drum

The drum is by far the largest dryer component and takes up the majority of space inside the dryer. To access some dryer components, the drum must be removed.

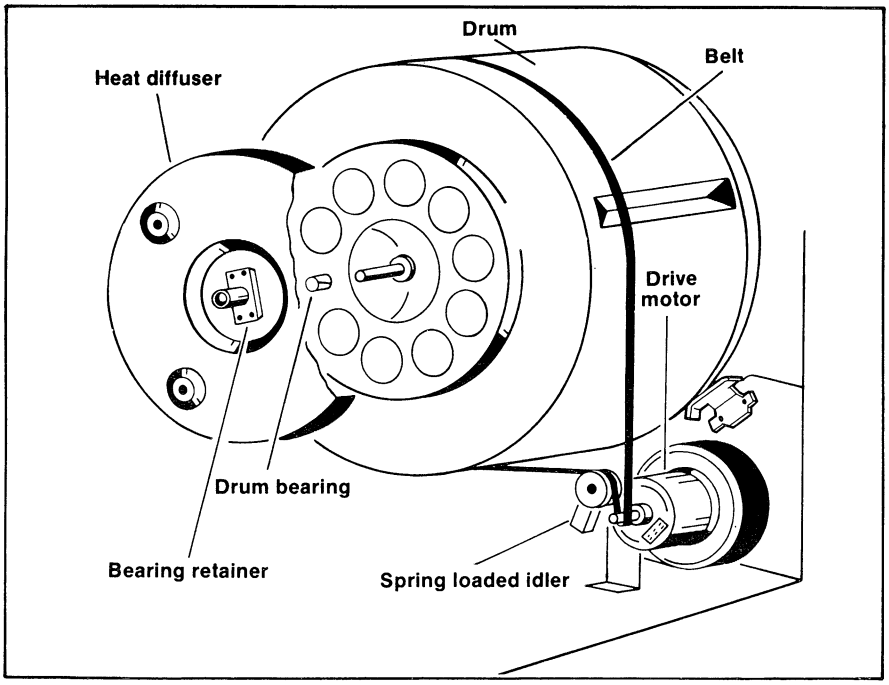
The drum is connected to the motor shaft by a belt that is held taut over a spring loaded idler pulley system. The drum is also connected to the rear of the dryer cabinet by a drum shaft and a retaining ring.

Dryer noise may result from foreign objects (pocket contents, usually) in the drum or drum seal. Steps 2-4 of this procedure pertain to drum noise.

CAUTION: The belt is under high tension on the spring loaded idler. Be careful when you swing back the idler arm to release the belt that it does not snap back and pin your hand.



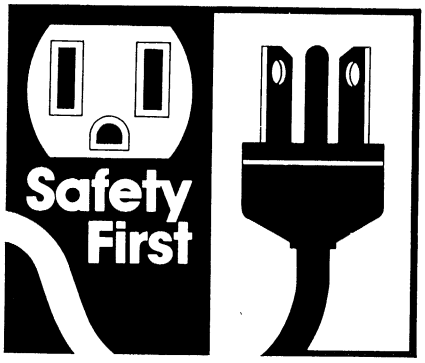
Drum removal (front view)



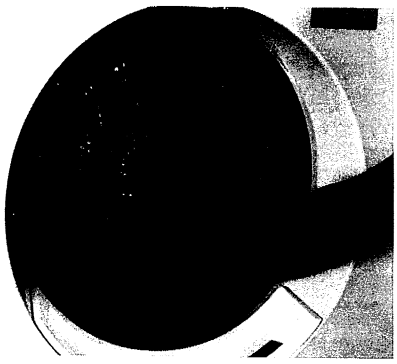
Dryer drive system (rear view)

PROCEDURE

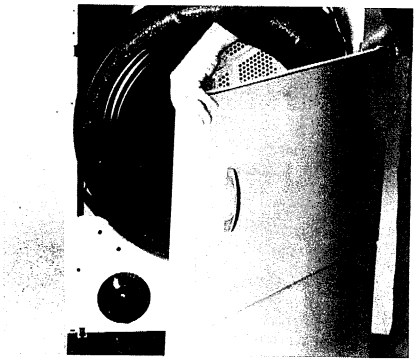
11 Removing drum



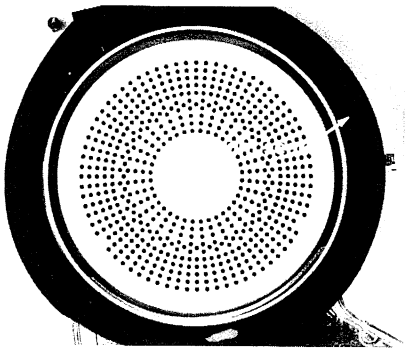
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



Step 2: Drum noise. Should dryer make excessive noise, revolve inside of drum to check for foreign objects such as hair pins or contents from clothes pockets.

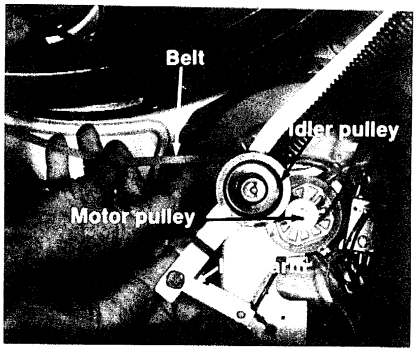


Step 3: If you hear noise when revolving drum, but nothing is in drum, look for foreign object in front drum seal. To access seal, remove dryer front. If you are unfamiliar with this process, refer to Procedure #4: Removing Access and Control Panels.

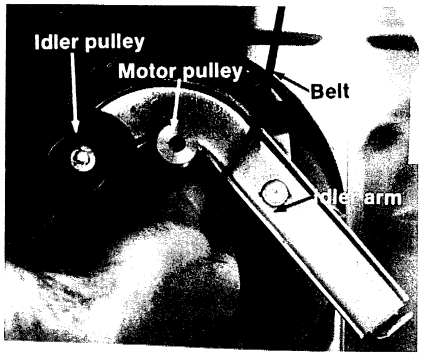


Step 4: Turn front panel of dryer around to inspect felt front seal. Visually inspect felt for sharp or pointed objects before moving your hands around it. Remove any foreign objects.

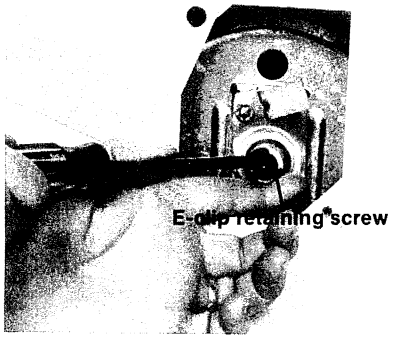
Step 5: Drum removal. Remove large, lower rear access panel by unscrewing all 5/16" mounting screws around cabinet with nutdriver. Detach belt from idler pulley as described in Procedure #18.



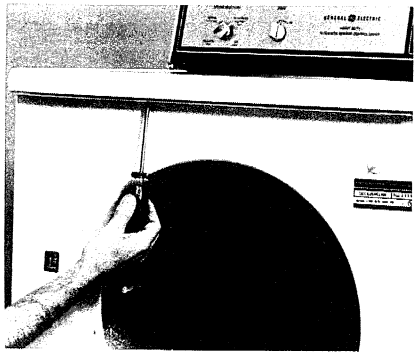
Step 6: On standard capacity dryers swing idler arm away from pulleys as shown, and belt should pop off easily.



Step 7: Large capacity dryer idler assembly differs from standard capacity dryers. Pull back idler arm away from pulleys, and belt should pop off.



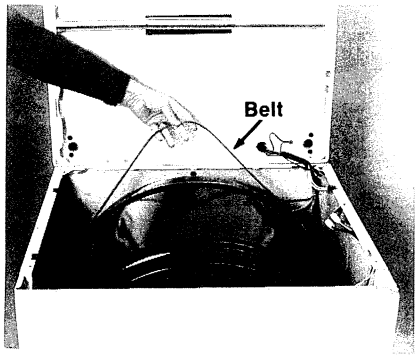
Step 8: To release drum, first remove center rear access panel by removing 5/16" mounting screws from around cabinet with nutdriver. Then use small screwdriver to pry retaining ring loose.



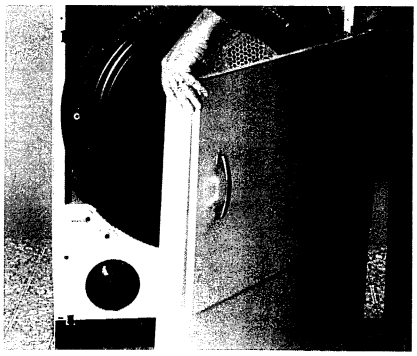
Step 9: Raise and support dryer top. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.

continued. . .

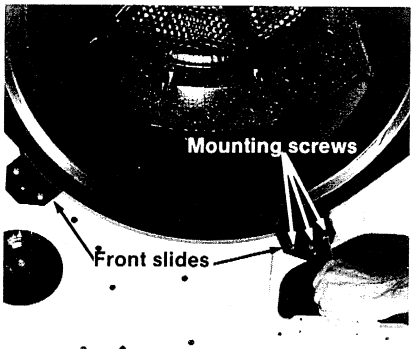
11 continued



Step 10: When you have raised top, move loose belt back to rest on the rear housing.

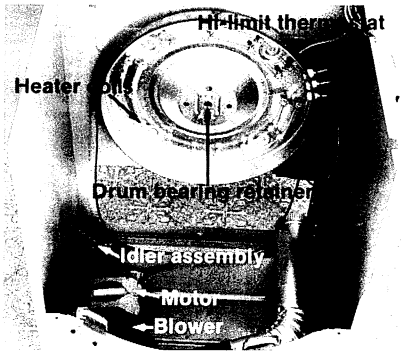


Step 11: Remove dryer front. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.

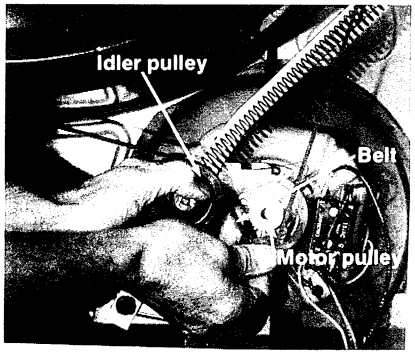


Step 12: Before you can lift out drum on large capacity dryers, you must remove two front slides. Loosen three mounting screws on each of 2 slides with a nutdriver.

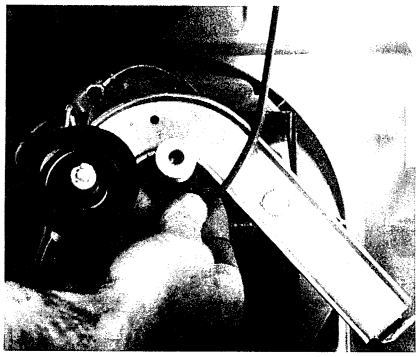
Step 13: Carefully lift drum out through dryer front. Avoid hitting the sides of dryer with drum.



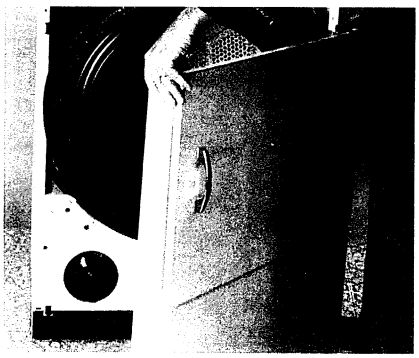
Step 14: With drum removed, you can access the drum bearing, heater coils, motor, idler, blower, and some thermostats.



Step 15: When reassembling dryer, position belt around drum and rethread belt over top of idler pulley and underneath motor pulley with idler arm pulled away from pulleys. Picture illustrates process for standard capacity dryers.



Step 16: On large capacity dryers, rethread belt over top of idler pulley and underneath motor pulley with idler arm pulled away from pulleys, as shown. Check belt alignment by turning drum in both directions.



Step 17: Complete dryer reassembly and reconnect power supply.

Notes

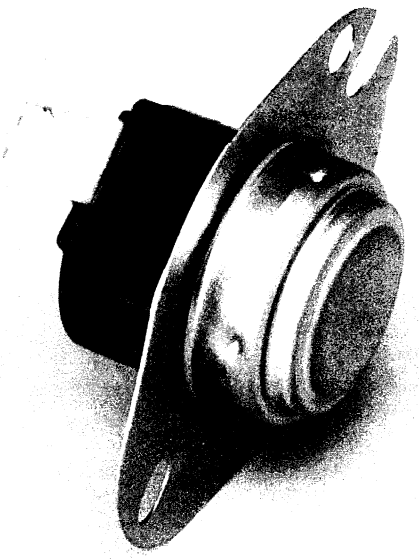
Electric dryer thermostats

Thermostats cycle the electric heaters on and off, based on their sensing of the air temperature. Electric dryers generally have two or more thermostats—the drum outlet thermostat(s) and the hi-limit thermostat. The drum outlet thermostat(s) senses the temperature of the air flowing out of the drum and turns off the heaters at the correct air temperature. The hi-limit thermostat acts as a safety if the drum outlet thermostat malfunctions or the air flow becomes restricted. It is always located on the top right side of the heater housing.

In standard capacity dryers, the drum outlet thermostat is located inside the lint trap. Some models have two drum outlet thermostats, one for the normal drying cycle, and another for the delicate cycle. On large capacity dryers the drum outlet thermostat will be located either to the left of the lint trap or on the internal exhaust duct.

To locate the thermostats on your electric dryer, check your dryer's circuit diagram. Circuit diagrams are located in an envelope inside the backsplash or are taped on the back of your dryer. If you are unfamiliar with how to open the backsplash control panel, please refer to Procedure #4: Removing Access and Control Panels. On some earlier models, thermostat locations are not shown on the circuit diagram; use the illustrations on the next page to help you locate the thermostat locations for your dryer.

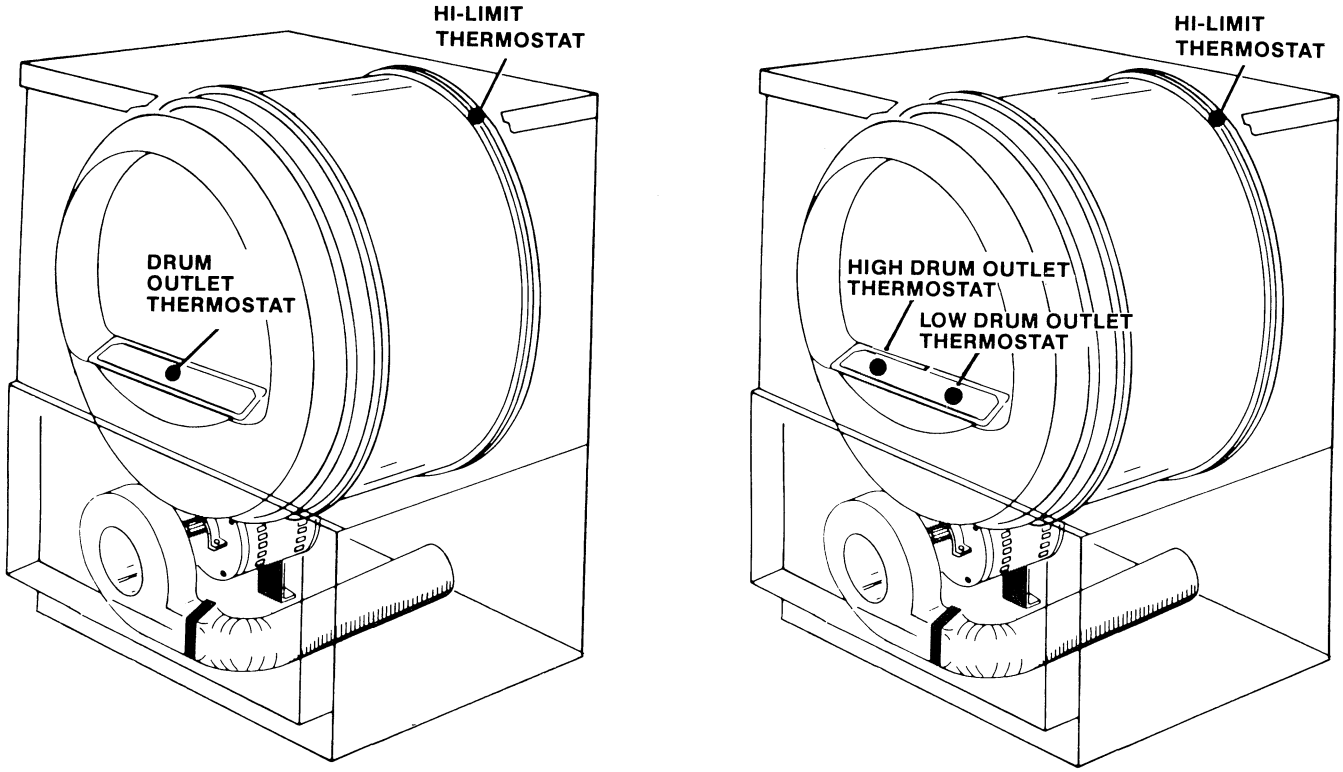
Note: The test described in the following procedure shows only whether the thermostat is open or closed. The test can only verify a switch malfunction, the most common problem with thermostats. It cannot, however, determine if the thermostat is cycling at the proper temperature. Temperature calibration can only be checked by a qualified service technician. If the test in this procedure shows no defect in the thermostat switch, check dryer venting and door alignment for air leaks before calling for service.



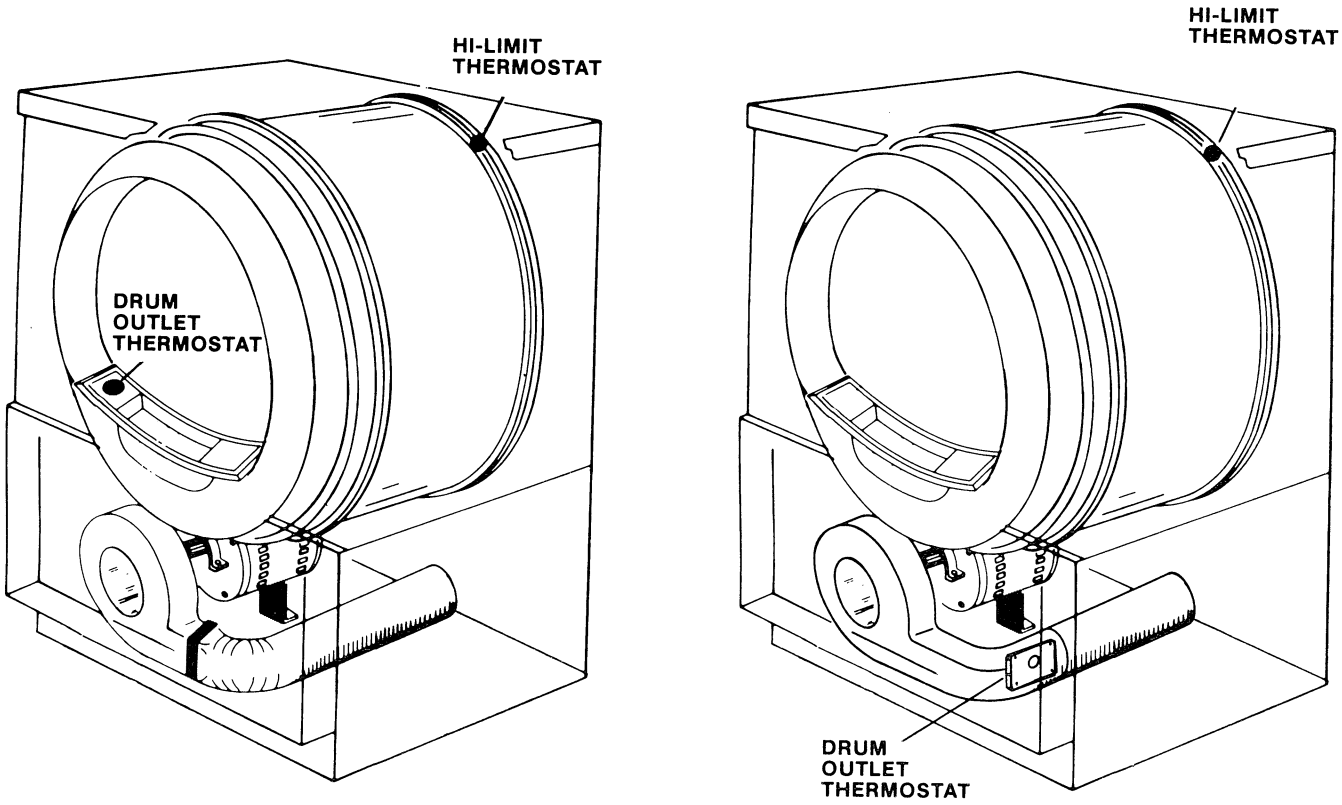
Dryer thermostat

PROCEDURE

12 Inspecting and replacing electric dryer thermostats



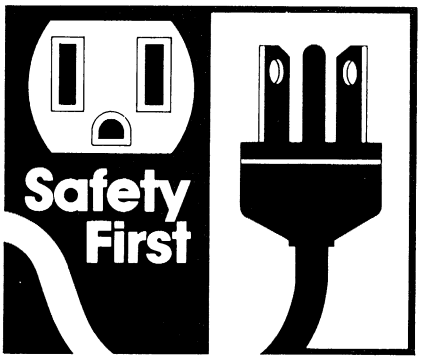
Thermostat locations for standard capacity electric dryers



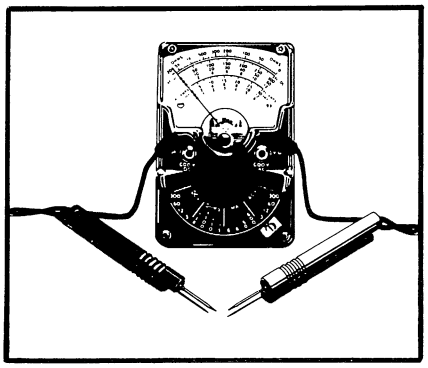
Thermostat locations for large capacity electric dryers

continued. . .

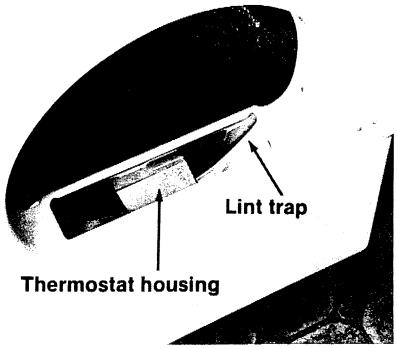
12 Inspecting and replacing electric dryer thermostats



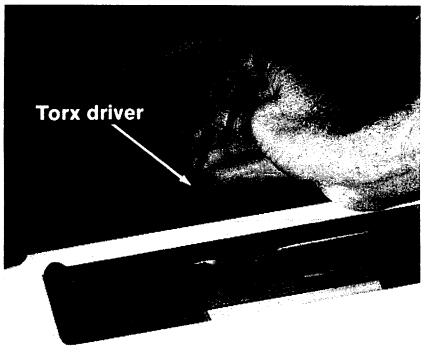
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from the receptacle. Watch for sharp edges on access panels and parts.



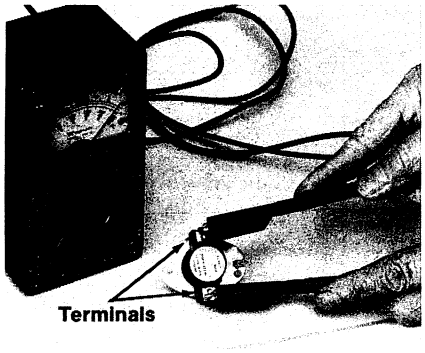
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



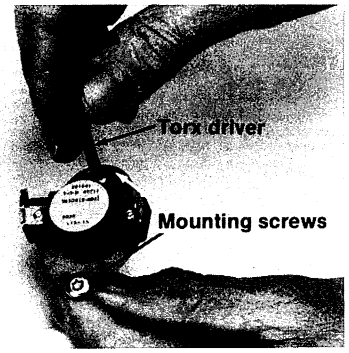
Step 3: Standard capacity electric dryers. Open dryer door and remove lint trap. Underneath lint trap there is a metal housing that protects thermostat(s) from lint.



Step 4: Remove the two screws on the back side of the thermostat housing. On some models the housing is mounted with Torx® screws. Lift out housing.

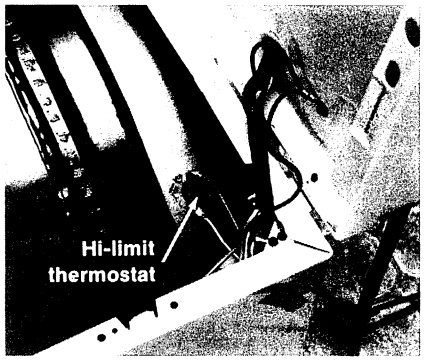


Step 5: Remove one wire leading to thermostat and place ohmmeter probes across thermostat terminals. With ohmmeter set on R x 1 scale, test for continuity. If no continuity, replace thermostat.

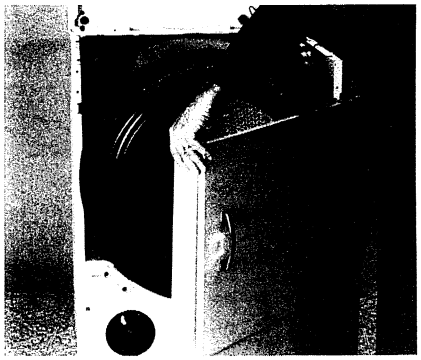


Step 6: To replace, remove thermostat by removing mounting screws or nuts with a nutdriver or Torx driver. Install new thermostat.

Step 7: Standard and large capacity electric dryers. To access hi-limit thermostat, raise dryer top. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.

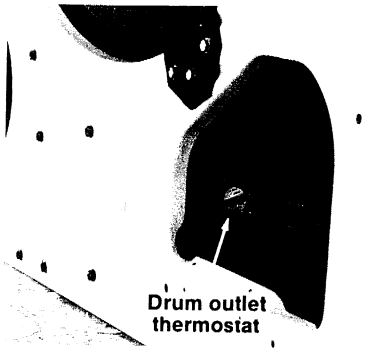


Step 8: The hi-limit thermostat is located on top right side of heater housing. This thermostat is tested and replaced as described in Steps 5 and 6.

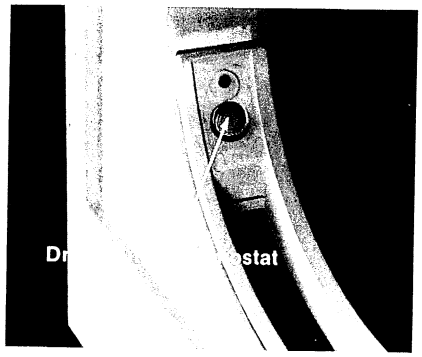


Step 9: Large capacity electric dryers. To access the drum outlet thermostat on some large capacity dryers, remove dryer front. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.

12 continued



Step 10: When the front is removed, you can easily access the drum outlet thermostat on the internal exhaust duct. It can be tested and replaced as described in Steps 5 and 6.



Step 11: On other large capacity electric dryers, drum outlet thermostat is located to left of lint trap. It can be tested and replaced as described in Steps 5 and 6.

Step 12: When you have finished testing and replacing thermostats, reassemble dryer and reconnect power supply.

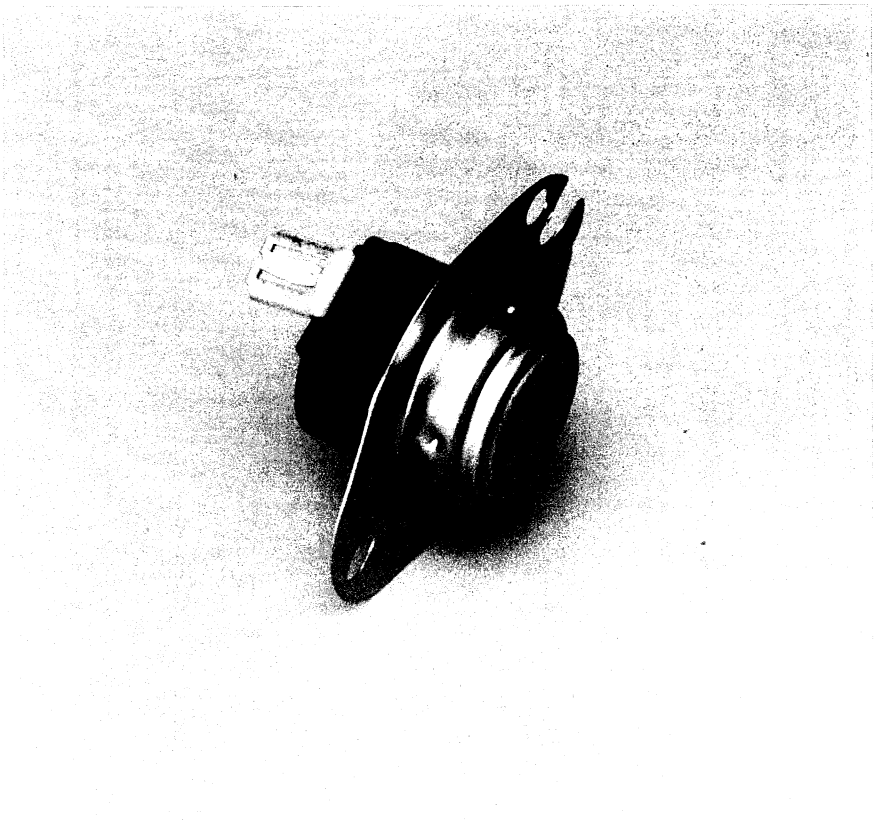
Gas dryer thermostats

Thermostats cycle the gas burner on and off based on their sensing of the air temperature. Standard capacity gas dryers have three thermostats, and large capacity dryers have four. All gas dryers have a drum outlet thermostat for normal on-off cycling of the gas valve control, and an inlet hi-limit thermostat that turns off the gas valve should the dryer overheat or the air flow become restricted. Some gas dryers use a drum inlet thermostat in combination with a drum outlet thermostat to regulate low heat; others have a delicate thermostat for low heat control. Large capacity dryers may also have a blower housing thermostat as an additional safety.

Over the years in dryer design, there have been two arrangements of thermostat locations used for standard capacity gas dryers and two arrangements of thermostat locations used for large capacity gas dryers. Your dryer will have one of the arrangements illustrated on the next page. For later dryer models, thermostat locations are pictured on your dryer's circuit diagram.

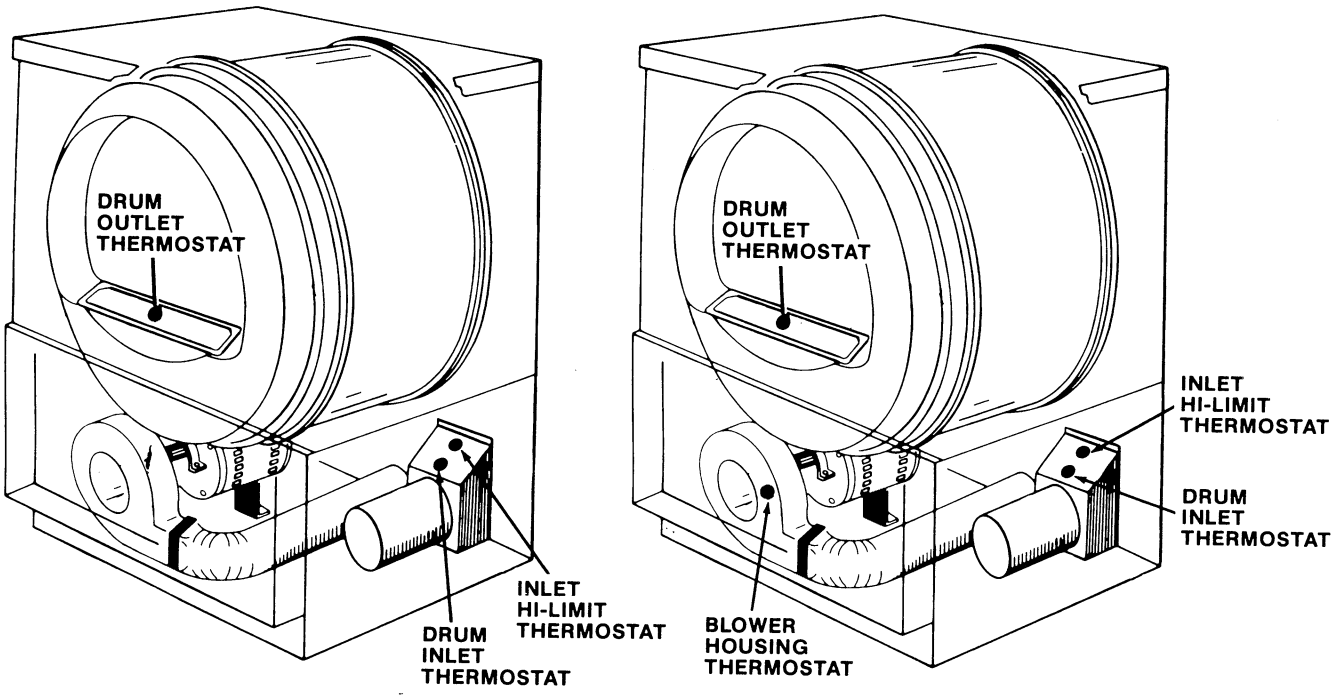
Note: The test described in the following procedure show only whether the thermostat is open or closed. The test can only verify a switch malfunction, which is the most common problem with thermostat. It cannot, however, determine if the thermostat is cycling at the proper temperature. Temperature calibration can only by checked by a qualified service technician. If the test in this procedure shows no defect in the thermostat switch, check dryer venting and door alignment for air leaks before calling for service.

CAUTION: Do not use open flame around gas assembly.

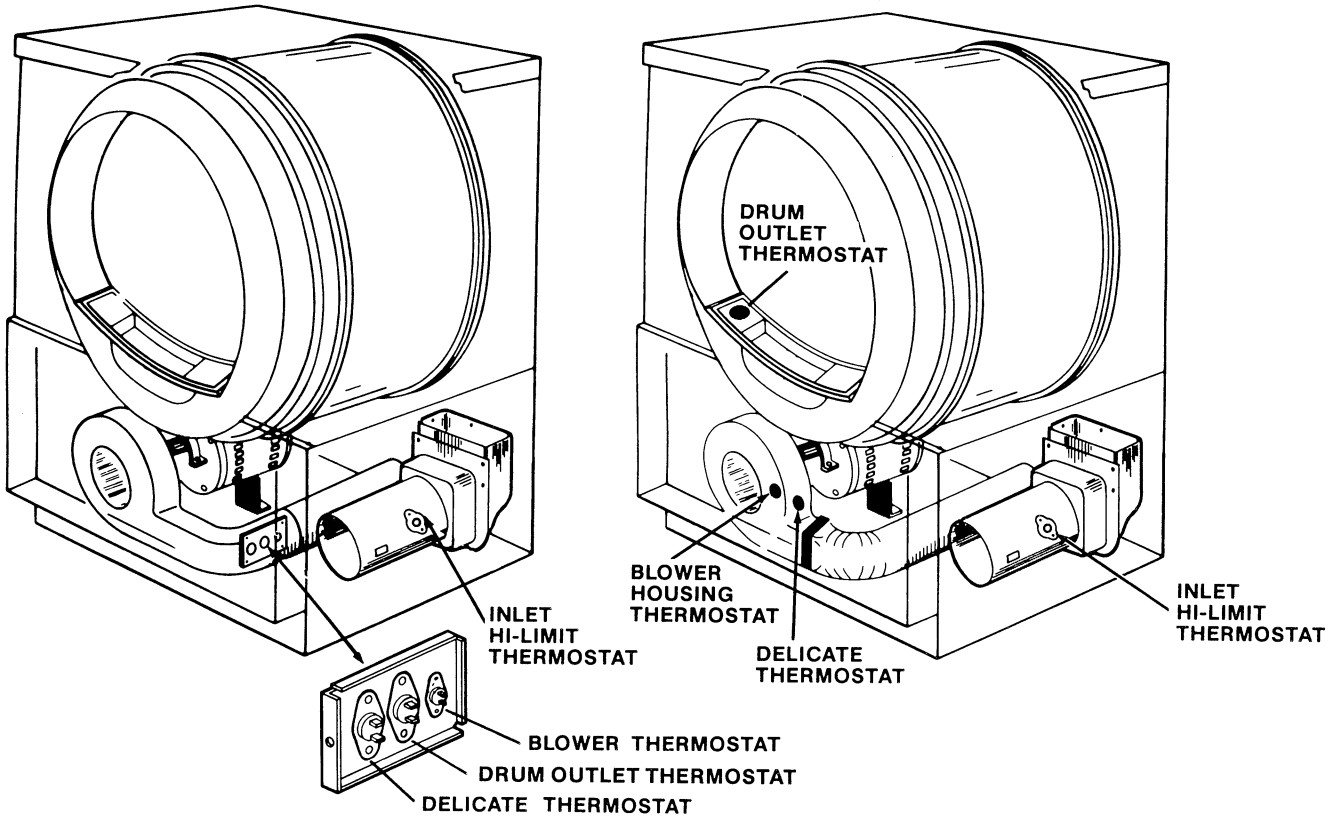


Dryer thermostat

13 Inspecting and replacing gas dryer thermostats



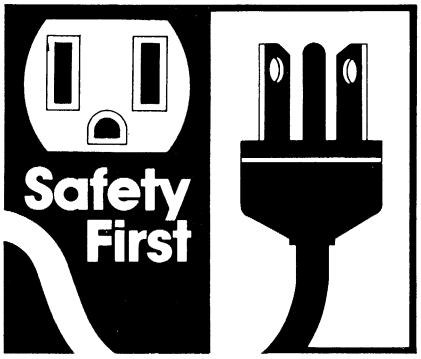
Thermostat locations (standard capacity gas dryers)



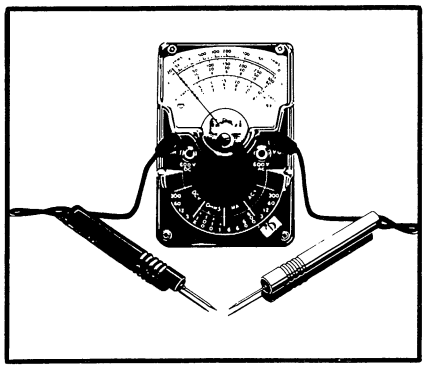
Thermostat locations (large capacity gas dryers)

continued. . .

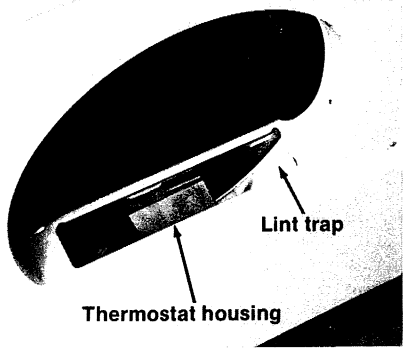
13 Inspecting and replacing gas dryer thermostats



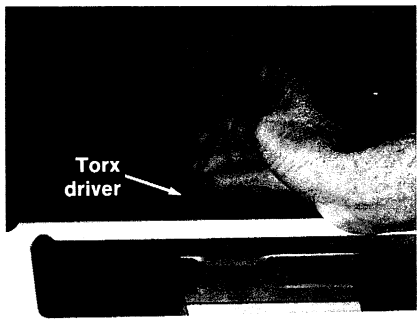
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts. Do not use open flame around gas assembly.



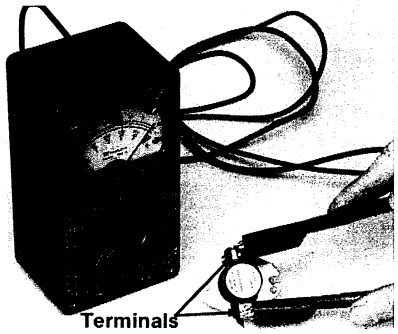
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



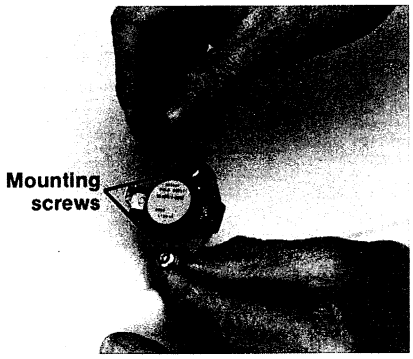
Step 3: Standard capacity gas dryers. To access thermostat, open dryer door and remove lint trap. Underneath lint trap there is a metal housing that protects thermostat from lint.



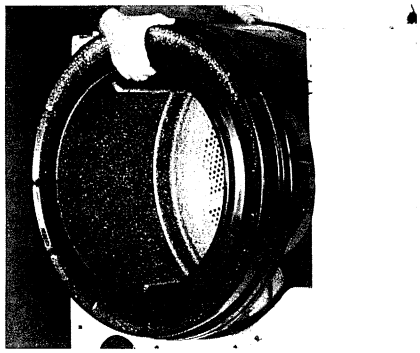
Step 4: Remove two screws on back side of housing. On some models housing is mounted with Torx® screws. Lift out housing.



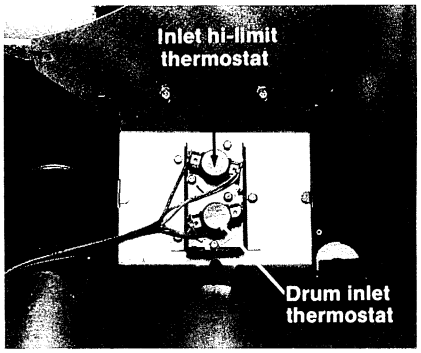
Step 5: Remove one wire on thermostat and place ohmmeter probes across thermostat terminals. With ohmmeter set on R x 1 scale, observe for continuity. If no continuity, replace thermostat.



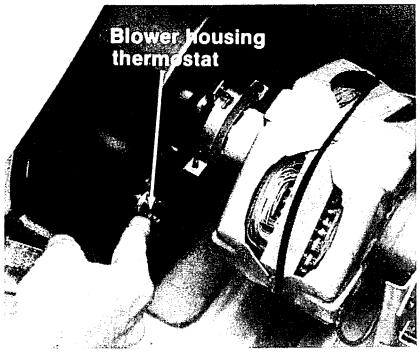
Step 6: To replace, remove thermostat by removing mounting screws or nuts with a nutdriver or Torx driver. Install new thermostat.



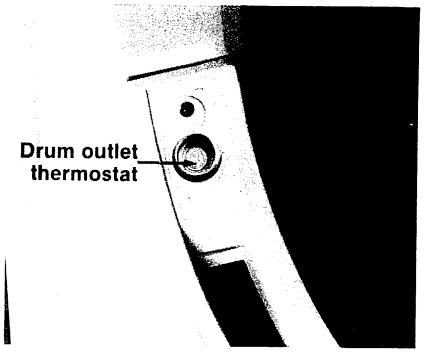
Step 7: To access other thermostats, remove drum from dryer. If you are unfamiliar with this process, please refer to Procedure #11: Removing Drum.



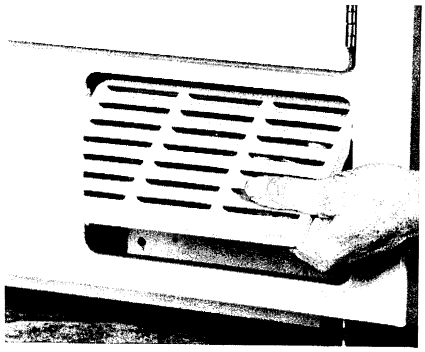
Step 8: With drum removed, you can easily access rear duct thermostats. These thermostats are tested and replaced as described in Step 5 and 6.



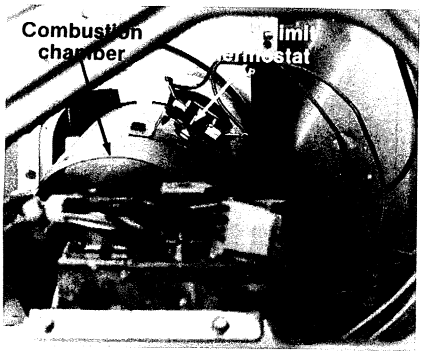
Step 9: With drum removed, you can also access thermostat on back side of blower housing. This thermostat is also tested and replaced as described in Steps 5 and 6.



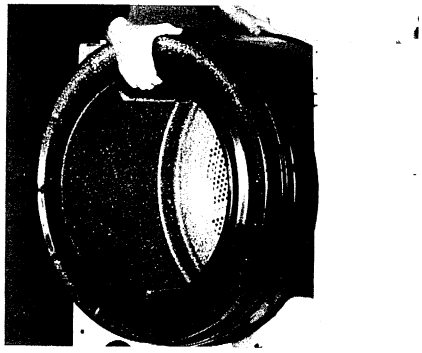
Step 10: Large capacity gas dryers. On some large capacity gas dryers, drum outlet thermostat is located to left of lint trap. This thermostat is tested and replaced as described in Steps 5 and 6.



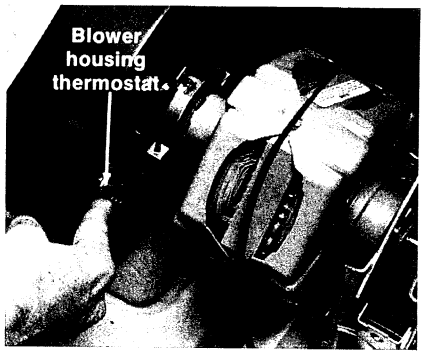
Step 11: Open gas assembly access at bottom right side of dryer front. Place your hand underneath bottom of dryer and push panel outward. Watch for sharp edges on dryer body.



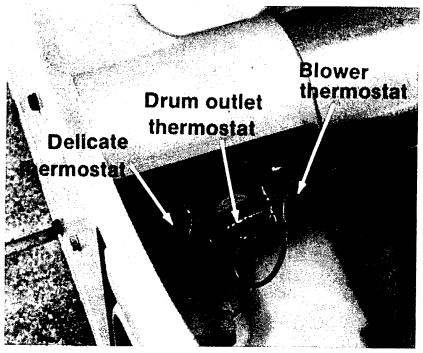
Step 12: The combustion chamber is located just beyond gas valve assembly. The thermostat mounted on top right side is tested and replaced as described in Steps 5 and 6.



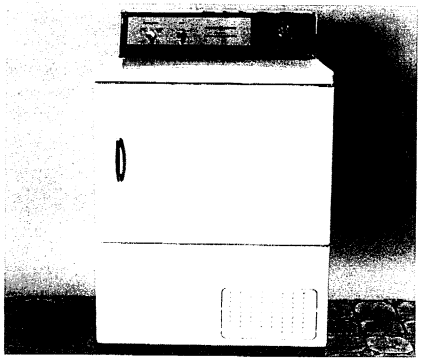
Step 13: To access other thermostats, remove drum. If you are unfamiliar with this process, please refer to Procedure #11: Removing Drum.



Step 14: With drum removed, you can access thermostat on back side of blower housing. This thermostat is tested and replaced as described in Steps 5 and 6.



Step 15: With drum removed, you can access drum outlet, delicate, and blower thermostats on internal exhaust duct. These thermostats are tested and replaced as described in Steps 5 and 6.



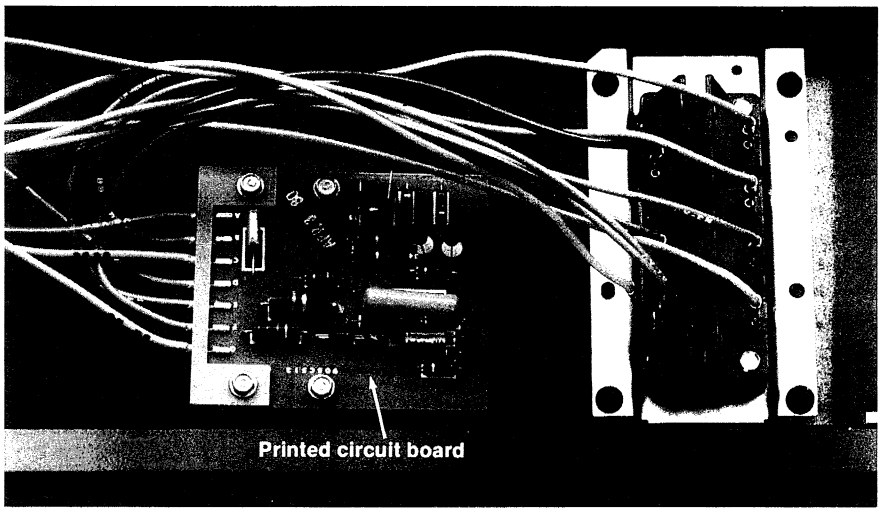
Step 16: Reassemble dryer and reconnect power supply.

Moisture sensor (large capacity dryers)

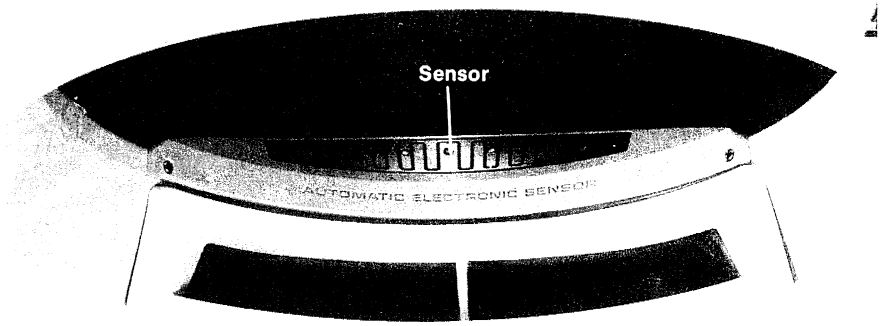
The moisture sensor is only used in certain large capacity dryers having an automatic cycle. The sensor is a copper-plated grid located inside the dryer door behind the lint trap. Moisture coming in contact with the sensor completes an electrical circuit to a printed circuit board in the backsplash. When this circuit is completed in the printed circuit board, the timer will not advance. When the clothes reach a predetermined dryness, the circuit from the sensor opens, and the timer motor is energized.

Should the sensor malfunction, one of two consequences could occur. If the sensor is shorted, the timer will not advance, and the dryer will not turn off automatically. If the sensor is open, the timer will advance too soon, and the dryer will turn off with wet clothes.

Note: If the dryer does not advance in the automatic cycle, check to see if it will advance in the timed cycle. If the timer advances in the timed cycle, check the moisture sensor. If the timer does not advance in either cycle, check the timer as described in Procedure #9: Inspecting and Replacing Timer.

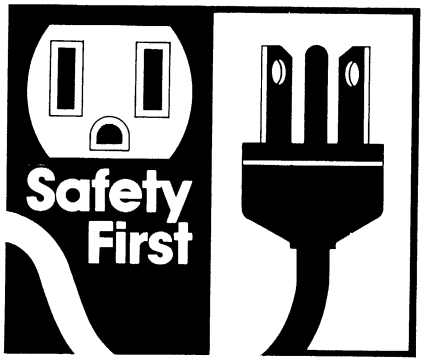


Printed circuit board

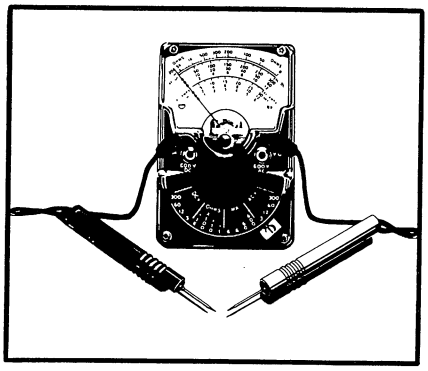


Sensor location

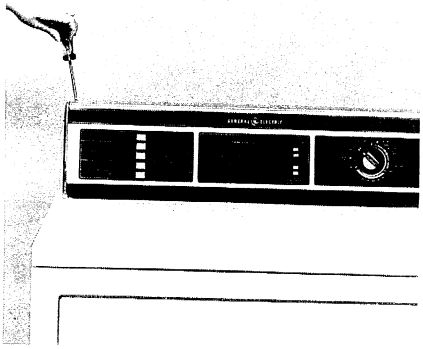
14 Inspecting and replacing moisture sensor



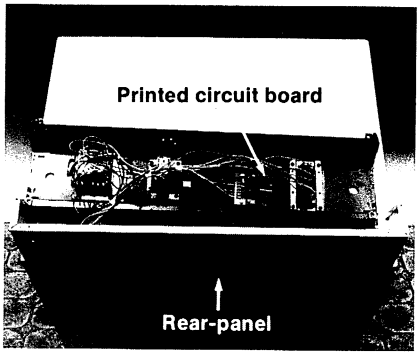
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges inside dryer door and backsplash.



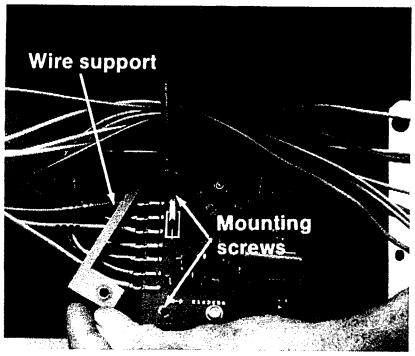
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



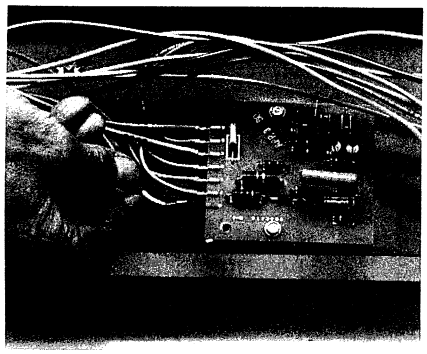
Step 3: Remove backsplash control panel. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



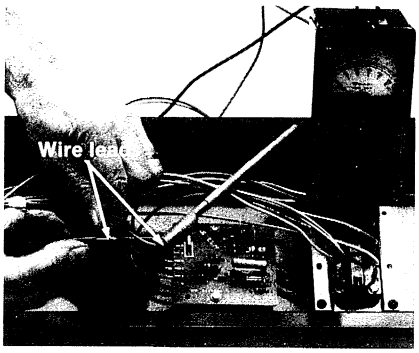
Step 4: The printed circuit board for moisture sensor is located between selector switch panel and timer inside the backsplash.



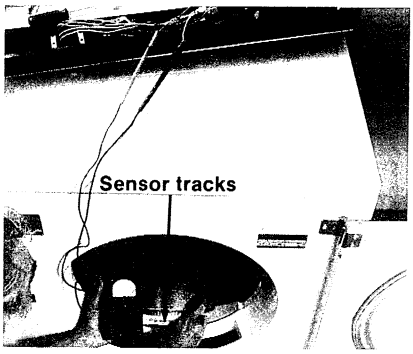
Step 5: Some printed circuit boards have a wire support to secure wire leads. Remove wire support by removing 2 mounting screws with a nutdriver.



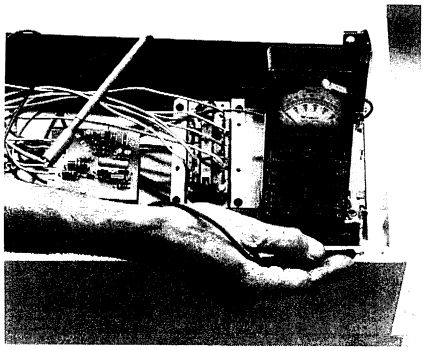
Step 6: To test wire leads C and G, remove leads from terminals marked C and G on circuit board.



Step 7: Attach ohmmeter probes to wire leads from C and G terminals. Set ohmmeter on highest scale. If the needle moves partially upscale go to Step 9. If not, go to Step 8.



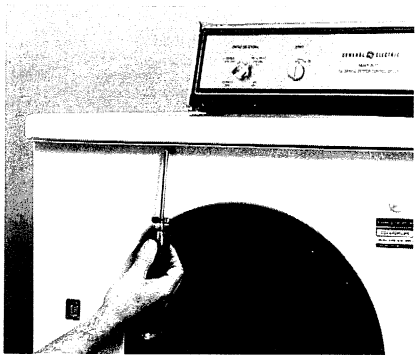
Step 8: With ohmmeter still connected to wire leads from C and G terminals, set ohmmeter on R x 100 scale. Place a screwdriver across indentations along sensor grid. If no continuity, replace moisture sensor (See Step 12).



Step 9: Place ohmmeter probes consecutively across C and G wire lead and dryer cabinet. Set ohmmeter on highest scale. If needle moves partially upscale, go to Step 10. If not, see Step 12 to replace sensor.

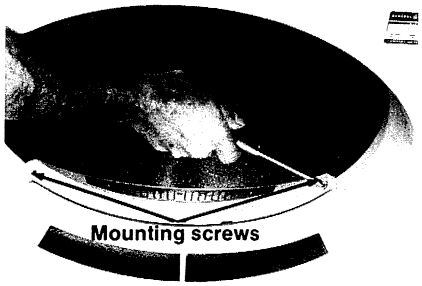
continued...

14 continued

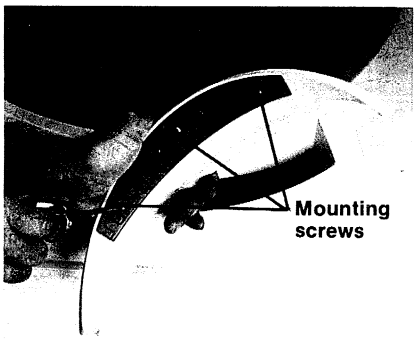


Step 10: To see if wires need straightening or replacing, raise dryer top. It may also help to remove dryer front. If you are unfamiliar with these processes, refer to Procedure #4: Removing Access and Control Panels.

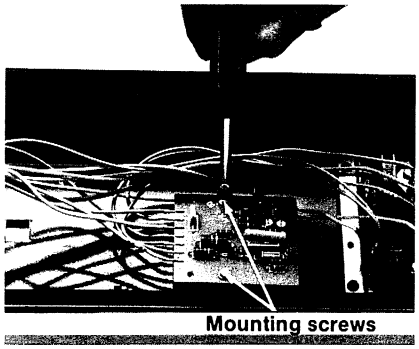
Step 11: Find wires leading to sensor and test as described in Procedure #6: Repairing Wiring and Connections. Cut and splice to repair wire or replace wire with same type as removed.



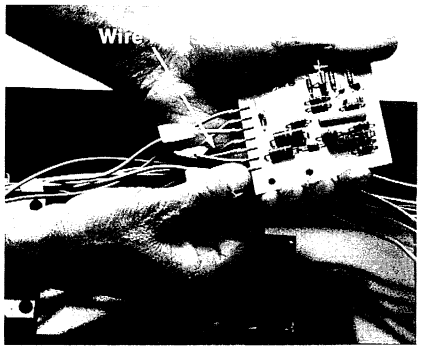
Step 12: To remove sensor, remove two Phillips head mounting screws connecting sensor housing to dryer cabinet. Sensor housing can then be pulled forward through dryer door for easy access.



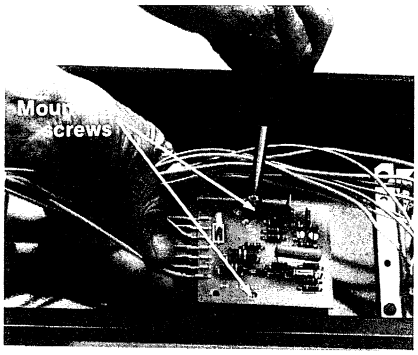
Step 13: By removing three sensor mounting screws with a Phillips screwdriver, remove sensor from housing to inspect wire leads or to replace.



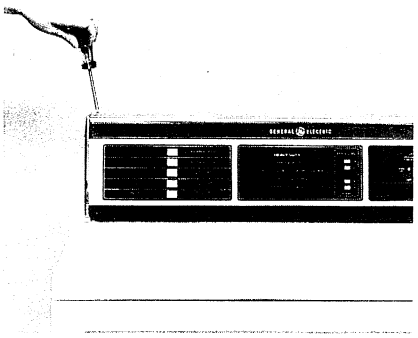
Step 14: If moisture sensor checks out good, and timer advances in the timed but not automatic cycle, replace circuit board by removing two mounting screws with nutdriver.



Step 15: Remove wire leads from printed circuit board. For installation reference, make note of how wires are connected. Labeling wires is recommended.



Step 16: To install new circuit board, attach wire leads to their correct location and mount board with two screws. Be sure to reattach wire support. Make sure all connections are secure.



Step 17: Reassemble dryer and reconnect power supply.

Notes

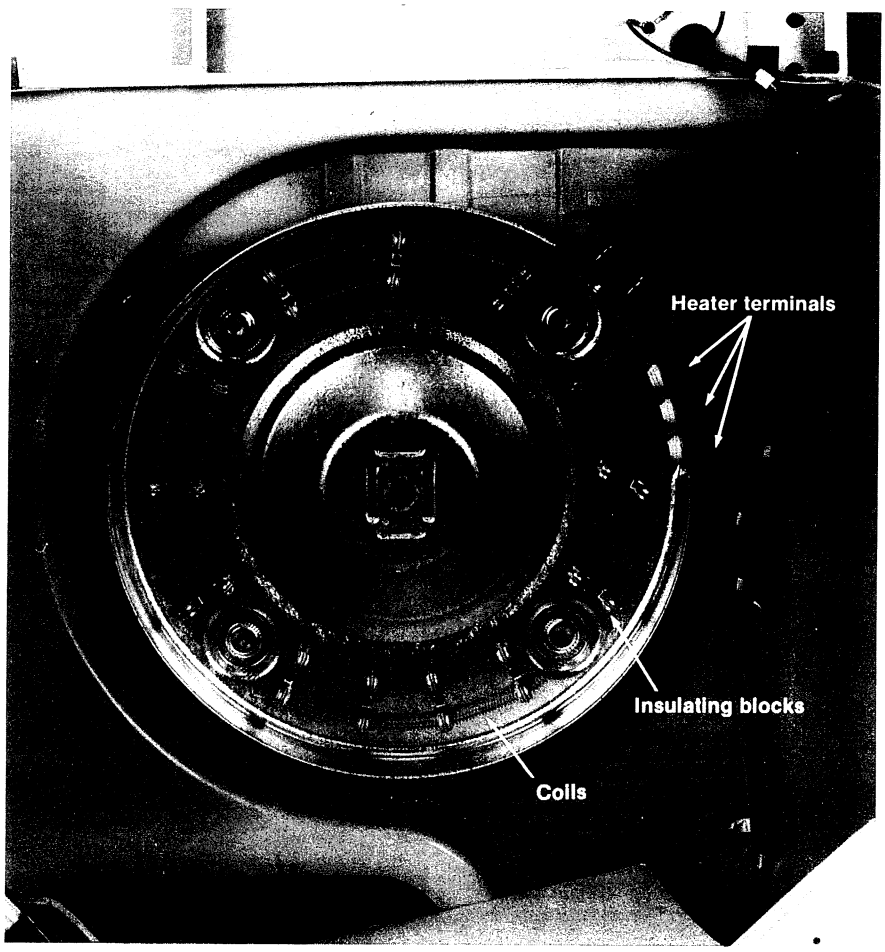
Electric heater coils

Heat is supplied in electric dryers by two identical resistance coils. The coils are mounted in parallel inside the heater housing and receive power from two legs of a 240-volt line. The heaters are controlled in some models by one or more selector switches, offering the option of high heat (both heaters on), low heat (one heater on), or fluff (both heaters off). Thermostats cycle the heaters on and off. Air is pulled across the heaters before entering the drum. An unrestricted air flow is crucial to optimum heater performance.

When evaluating a dryer heating problem, first determine whether or not the dryer is getting any heat. If you are getting low heat, but not high heat, one coil may be defective, or there may be a problem in one of the selector switch contacts. By determining that your dryer is getting some heat, you have eliminated problems in the timer, thermostats, motor centrifugal switch, and power supply.

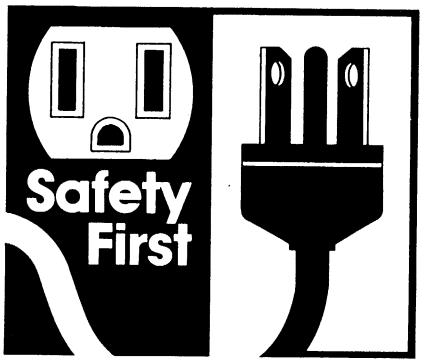
If the dryer runs but there is no heat, first check the circuit breakers or fuses. One breaker or fuse may be tripped. Using your circuit diagram and an ohmmeter, you can then check the heaters, selector switches, thermostats, timer, and motor centrifugal switch. Refer to the respective individual procedures as listed in the Problem Diagnostic Charts on pages 7-12.

If one heater is defective, it is wise to replace both heaters at the same time. Also, look for signs of overheating from restricted air flow. Check the lint filter and dryer vent for clogging and improper installation.

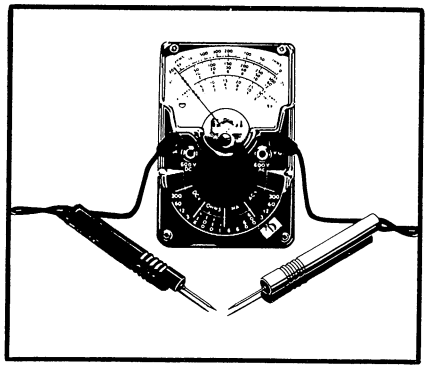


Electric dryer heating system (front view with drum removed)

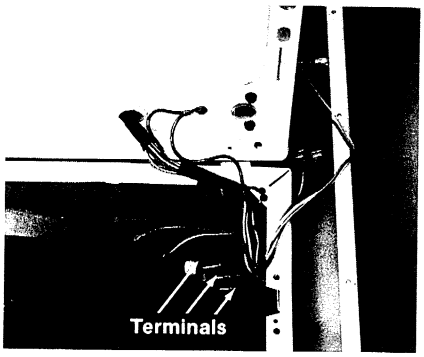
15 Inspecting and replacing electric heater coils



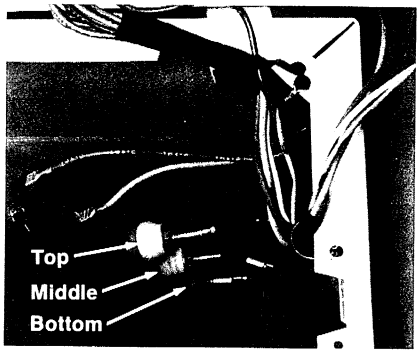
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



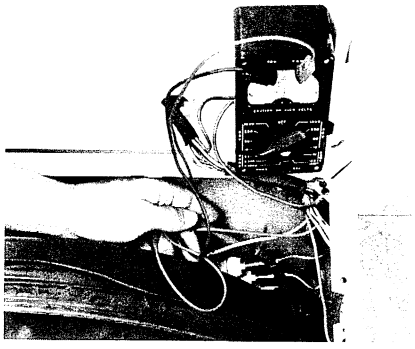
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



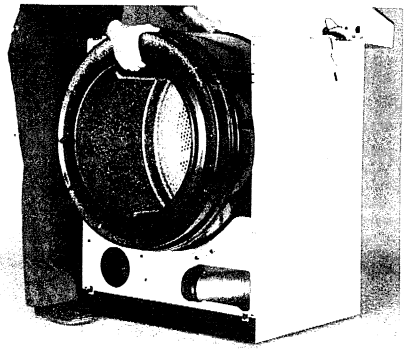
Step 3: To access heater coil terminals for testing, raise dryer top. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



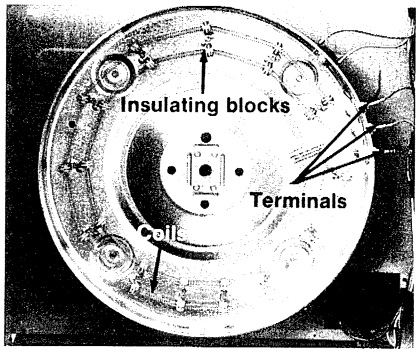
Step 4: To test terminals, remove wire leads from top terminal and one of the other terminals. Middle terminal is connected to inner coil. Bottom terminal is connected to outer coil.



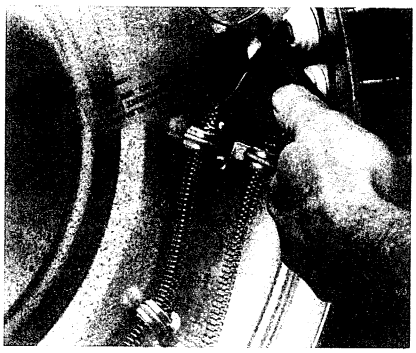
Step 5: Place ohmmeter probes across top terminal and one other terminal. If no upscale movement on R x 1 scale, replace coil. Keeping probe on top terminal, repeat test for other terminal.



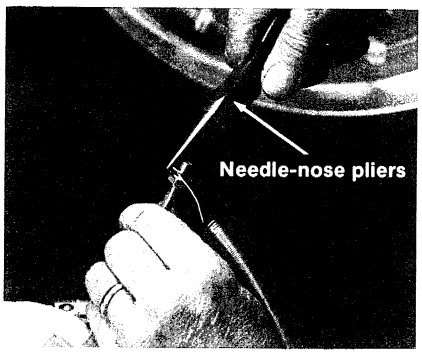
Step 6: If either heater is defective, remove drum. If you are unfamiliar with this process, please refer to Procedure #11: Removing Drum.



Step 7: When the drum is removed, you can visually check heater coils for breaks.

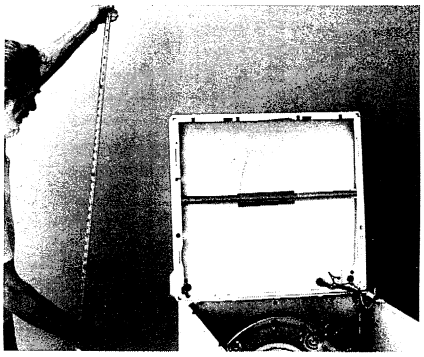


Step 8: To replace defective coil, cut both ends of coil at the terminals. Remove the two terminals by unscrewing nuts on either side of the housing.

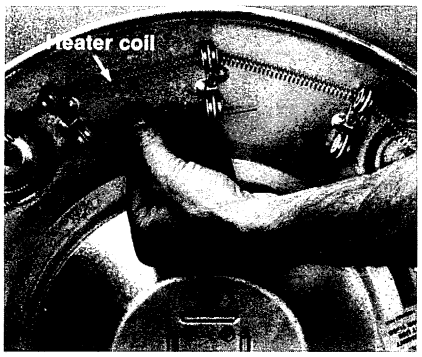


Step 9: Wrap one end of a new coil around top of a new terminal between two washers tightened on each side by a nut.

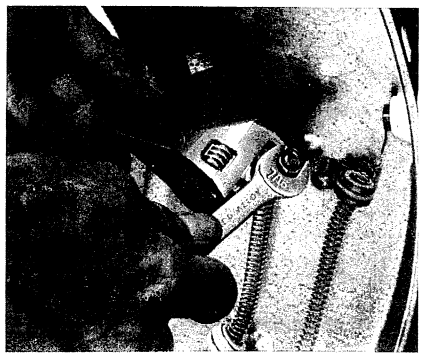
continued...



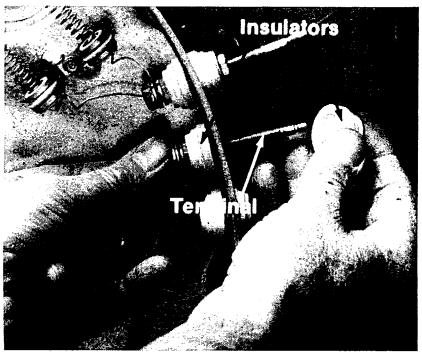
Step 10: Stretch replacement coil to the proper length—49½" for outer coil and 42½" for inner coil. The coil must be stretched evenly and hold the recommended length when relaxed.



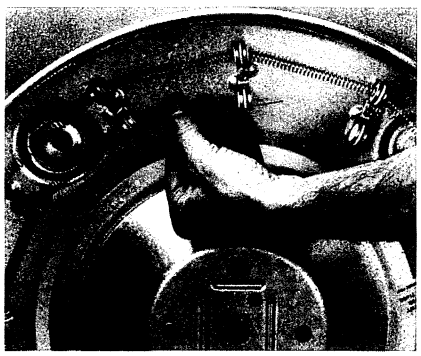
Step 11: Remove defective heater coil(s) from heater assembly and thread replacement coil through the insulators. Be sure coils are evenly spaced.



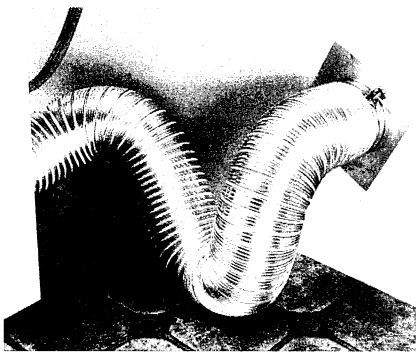
Step 12: Wrap other end of coil around top of the second terminal between two washers tightened on each side by a nut.



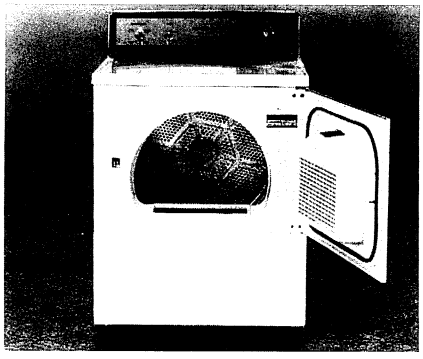
Step 13: Insert terminals through one insulator, then through the correct hole in the heater housing, then through another insulator. Secure on the outside of housing with a nut.



Step 14: When replacing both coils, two identical replacement kits are needed. Repeat Steps 8-13 to replace second coil. It is recommended when replacing one coil to replace the other at the same time.



Step 15: After installing new heater(s), look for signs of restricted air flow that could have caused coils to overheat and burn out. Check lint filter and dryer vent as described in Procedure #2: Inspecting and Replacing Exhaust Vent.



Step 16: Reassemble dryer and reconnect power supply.

Notes

Gas assembly

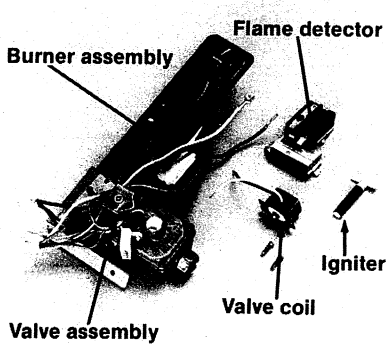
The gas burner assembly regulates and ignites the gas that will heat the dryer air. The gas must pass through two valves that are opened electromagnetically by the solenoid valve coils. The gas then passes over an electric igniter "glow bar" that ignites it. When the flame detector senses a flame, it turns the igniter off. Dryer thermostats cycle the flame on and off according to air temperature.

Three components of the gas assembly can be checked—the valve coils, the igniter, and the flame detector. The valve coils are located on the front top left side of the valve assembly. On most models, the igniter is located underneath the burner assembly at the rear; the flame detector is mounted on the combustion chamber.

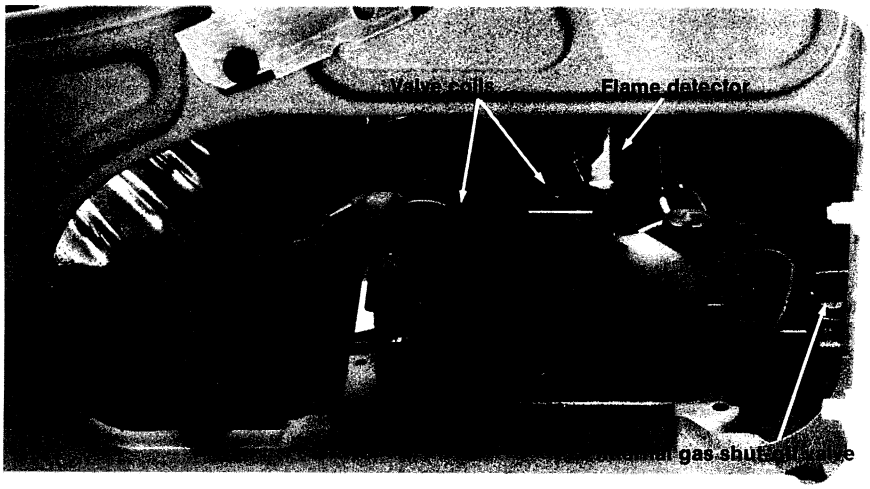
Note: If the dryer runs but does not heat, there could be problems with thermostats, centrifugal switch, timer switches, or selector switches, as well as with the gas assembly. See the Problem Diagnostic Charts on pages 9-12.

CAUTION: This procedure should only be attempted by an experienced do-it-yourselfer. If after making the checks suggested in this procedure, your gas assembly still does not work, call a qualified service technician for service.

CAUTION: Be sure the gas to the dryer is turned OFF before disassembling the gas assembly. Use a flashlight to illuminate work area. Never smoke or use an open flame or match around gas assembly. See Step 23 for testing gas leaks.



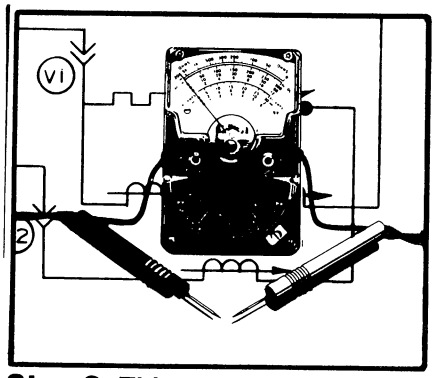
Gas assembly components



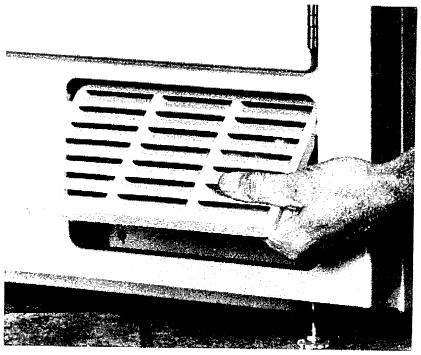
Gas assembly location (front panel removed)

16 Inspecting and replacing gas assembly

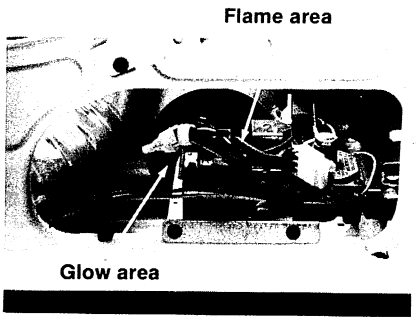
Step 1: Never smoke or use an open flame or match when working around gas assembly. When examining gas assembly in Step 4, keep hands outside of dryer.



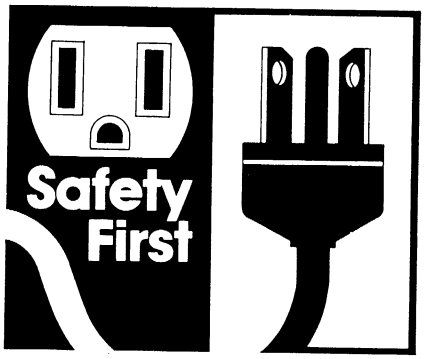
Step 2: This procedure requires use of an ohmmeter and ability to read a circuit diagram. For instructions, please refer to Tools and Testing Equipment, pages 89-94.



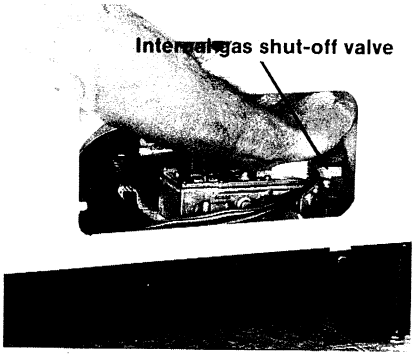
Step 3: Open gas assembly access panel at bottom right side of dryer front. Place your hand underneath bottom of dryer and push panel outward. Watch for sharp edges on access panel.



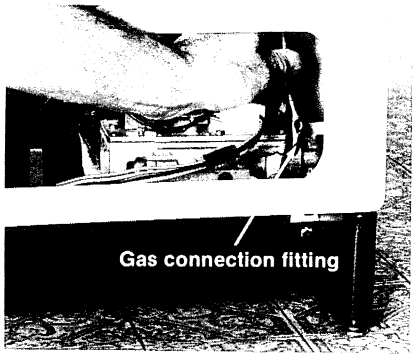
Step 4: With dryer on and drum turning, look for a glow and a flame from inside gas assembly. If you see a glow and flame for 30 seconds or longer, all components of gas assembly are functioning normally. Check no further.



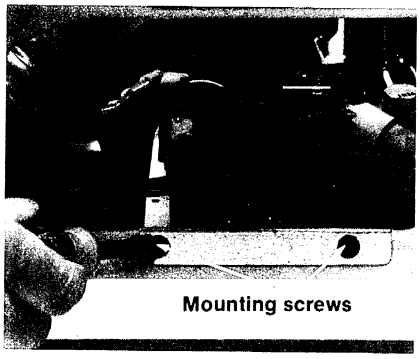
Step 5: To examine a defective gas assembly, turn shut-off valve in your household gas supply line **OFF**. Turn all dryer controls **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on parts.



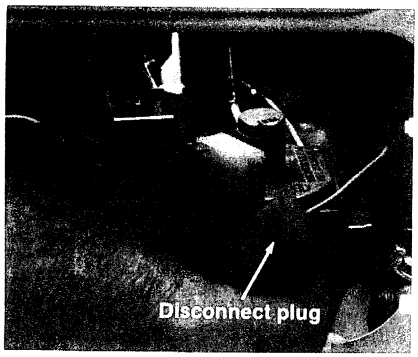
Step 6: Turn internal gas shut-off valve to "OFF" position by turning handle counter-clockwise.



Step 7: To remove valve and burner assembly for inspection, loosen gas connection fitting with an adjustable wrench. Lay connection pipe to side.



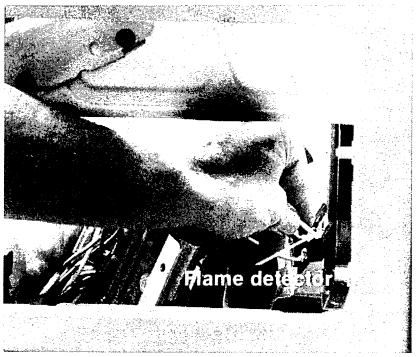
Step 8: Using a 5/16" nutdriver remove two mounting screws connecting valve assembly to cabinet front.



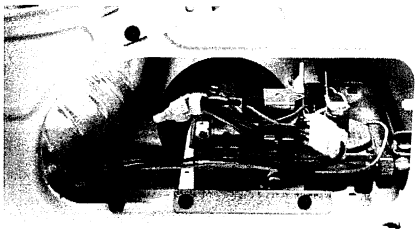
Step 9: Pull out disconnect plug from front of valve assembly to disconnect wiring.

continued...

16 continued

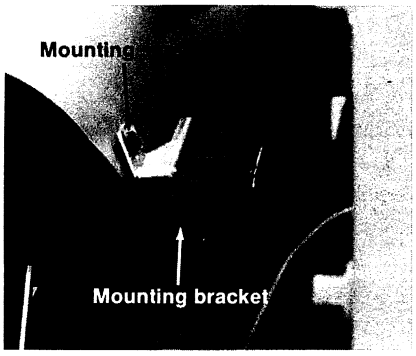


Step 10: If flame detector of your gas assembly is located on combustion chamber, remove wire leads to free valve and burner assembly. If flame detector is not on combustion chamber, it is attached to side of burner assembly. Pull valve and burner assembly outside dryer for inspection.

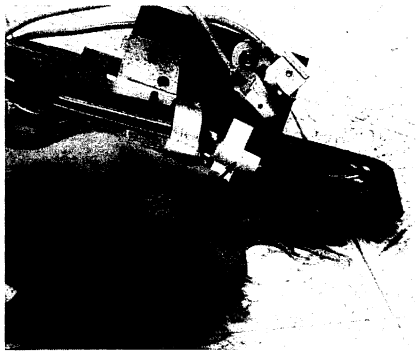


Step 11: If in Step 4 there was no glow, igniter or flame detector is defective; proceed to Steps 12-15. If there was glow but no flame, valve coils are defective; proceed to Step 16. If a flame came on but immediately went out, check flame detector (Steps 12-13) and valve coils (Steps 16-20).

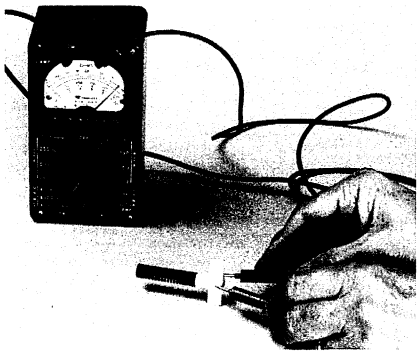
Step 12: Flame detector. With wire leads removed from flame detector, place ohmmeter probes across exposed terminals. If meter shows no continuity on R x 1 scale, replace flame detector.



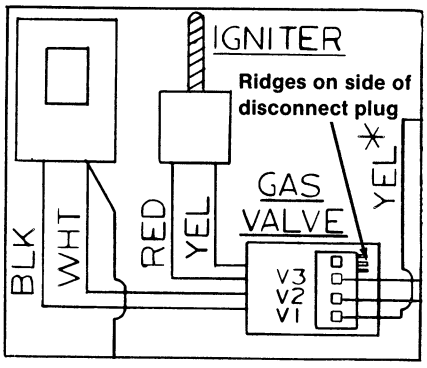
Step 13: To remove flame detector, remove one screw from front side with nutdriver and lift detector up and out. Mounting bracket comes with detector.



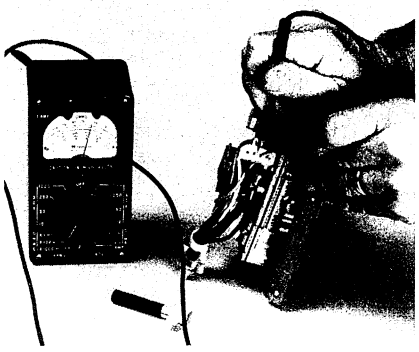
Step 14: Igniter. Detach igniter from a spring-loaded clip underneath burner assembly. Igniter is very brittle and fragile; use extreme care when handling igniter.



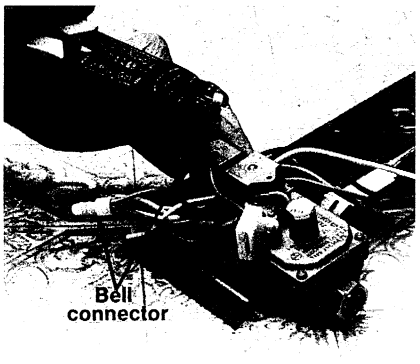
Step 15: With ohmmeter on R x 100 scale, place probes across sides at silver-coated end of igniter. Needle should swing partially upscale. If not, replace igniter.



Step 16: Valve coils. Using circuit diagram that comes with your dryer, locate V1, V2, and V3 on the disconnect plug on front of valve assembly.

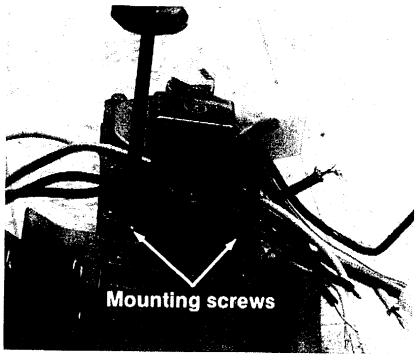


Step 17: Place ohmmeter probes across V3 and V2 on disconnect plug. With ohmmeter set on R x 100, needle should sweep partially upscale. If not, replace valve coil. Repeat test with terminals V1 and V3.

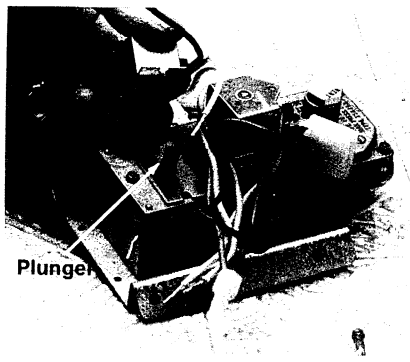


Step 18: Remove mounting screw holding wire strain relief clip. For installation reference make note of how wires are connected to valve coil. Remove wire leads attached to bell connector or disconnect plug from valve coil.

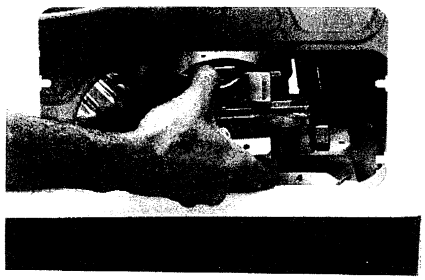
16 continued



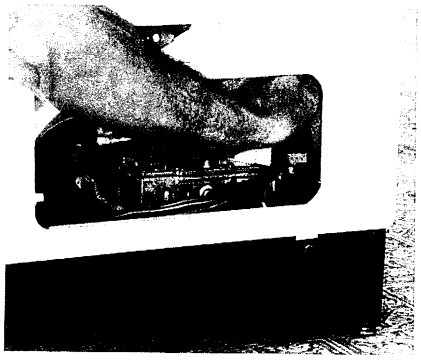
Step 19: The valve coil replacement kit will have two new coils. It is recommended that you replace both coils even if only one is defective. To remove valve coil, remove two mounting screws on valve coil bracket with screwdriver or nutdriver.



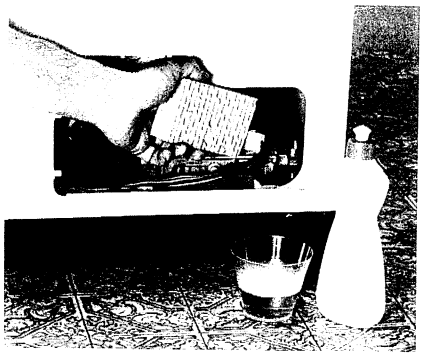
Step 20: To install new valve coil, place over plunger, secure mounting screws, and reattach wire leads. You will need a new bell connector for any you removed.



Step 21: Reinsert valve assembly into access. Place wire leads onto flame detector, reattach disconnect plug, and screw mounting screws back into cabinet. Reattach gas connection fitting.



Step 22: Open internal gas shut-off valve by turning handle clockwise. Turn on gas in household supply line.

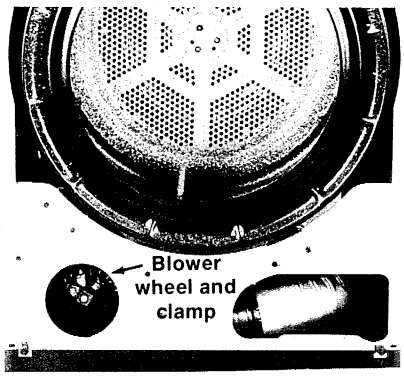


Step 23: Check for gas leaks by applying a 50:50 mixture of water and dishwashing liquid to pipe fitting joints. If bubbles form, retighten connection. Do not operate dryer or leave gas supply turned on until leak is corrected. Close access panel and reconnect power supply.

Blower wheel and clamp

The blower is an exhaust fan that circulates air through the dryer. It pulls moist air out of the drum and directs it out through the exhaust duct-work. The suction the blower creates pulls incoming air across the heating source before the air can enter the drum. Proper air flow is important for the dryer to maintain the right temperature for the drying cycle.

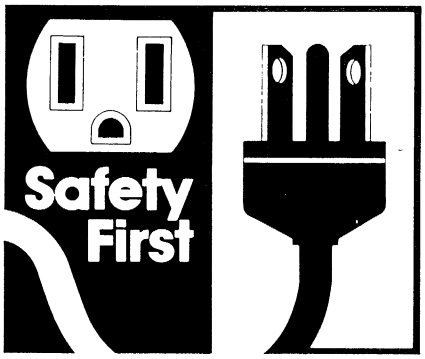
The blower wheel, located inside the bottom left front of the dryer cabinet, is clamped onto the motor shaft. Should the clamp loosen or the wheel blades wear or break, the wheel could be off-balance, and the dryer will make noise. If the blower wheel cannot turn freely, the clothes will take a long time to dry. The blower wheel is also susceptible to lint accumulation.



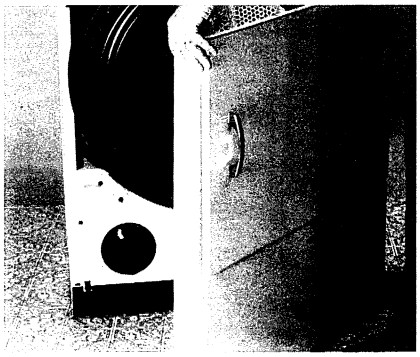
Blower location

PROCEDURE

17 Inspecting and replacing blower wheel

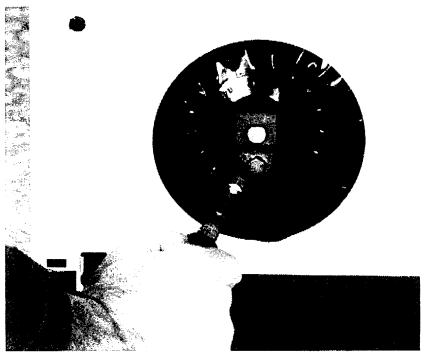


Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.

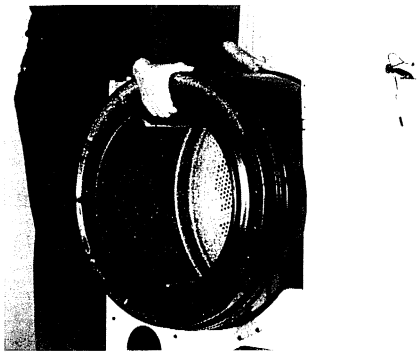


Step 2: To inspect blower wheel, remove dryer front. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.

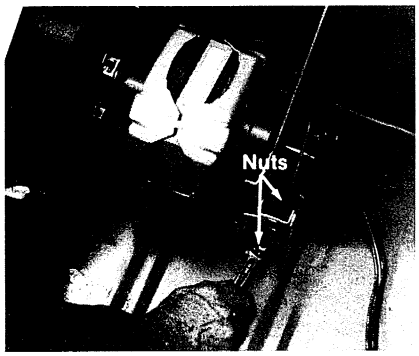
Step 3: Check blower wheel through cabinet opening. Look for broken blades and see if blower wheel turns freely; it should not rub blower housing in any way. Remove blockages or lint.



Step 4: If blower is rubbing on housing, loosen clamp screw with nutdriver and reposition wheel on shaft where it does not rub. Retighten screw on clamp.

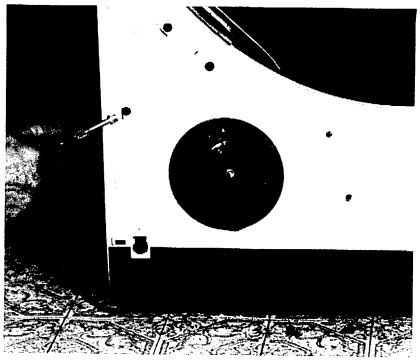


Step 5: To replace blower wheel, remove drum. If you are unfamiliar with this process, please refer to Procedure #11: Removing Drum.

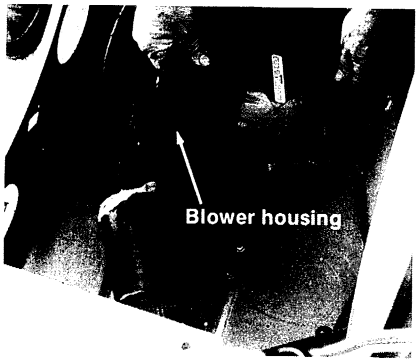


Step 6: To access blower wheel, motor assembly must be moved toward rear of dryer base. Remove two nuts on base of rear motor support with adjustable wrench.

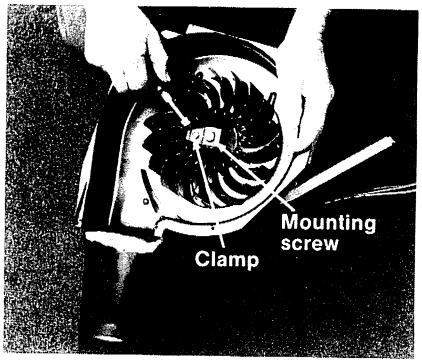
17 continued



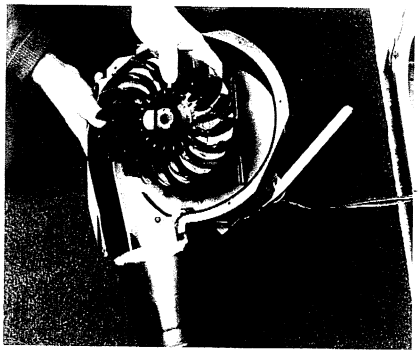
Step 7: Remove 6 mounting screws from front cabinet around blower housing using nutdriver.



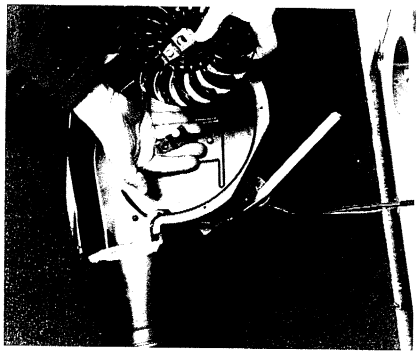
Step 8: Once blower housing is removed from front of cabinet and unscrewed from internal ductwork, blower, motor, and idler can be lifted and moved for easier access.



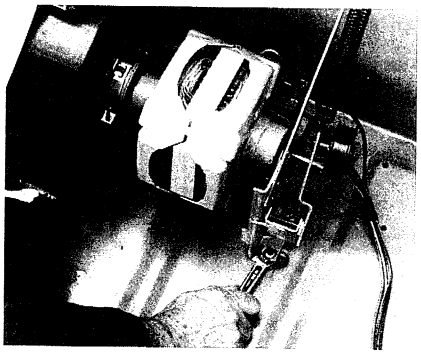
Step 9: The blower wheel is removed by unscrewing mounting screw on clamp with nutdriver. The clamp has two pieces that go in front and in back of blower wheel.



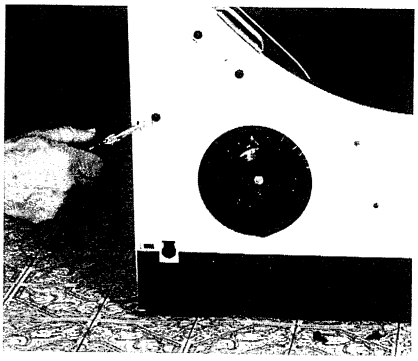
Step 10: Remove front green piece of clamp and lift blower wheel off shaft. Save the clamp.



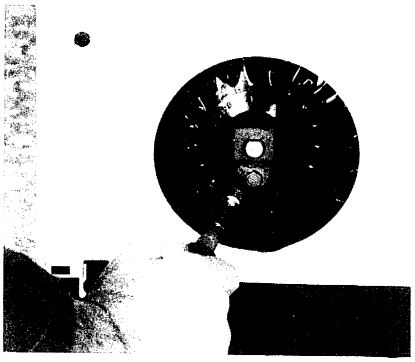
Step 11: Place back side of clamp (black) on shaft. Position front side of clamp (green) on top of new blower and place on shaft so that back side of clamp is threaded through blower. Reattach screw to clamp, but do not tighten firmly.



Step 12: Carefully align blower, motor, and idler assembly into its original position. Attach rear motor support back to dryer base.



Step 13: Replace cabinet screws around blower housing.



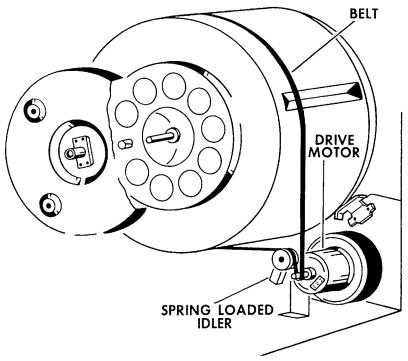
Step 14: After making certain through cabinet opening that blower is aligned properly and wheel turns freely, tighten clamp screw down. Reassemble dryer and reconnect power supply.

Belt and idler

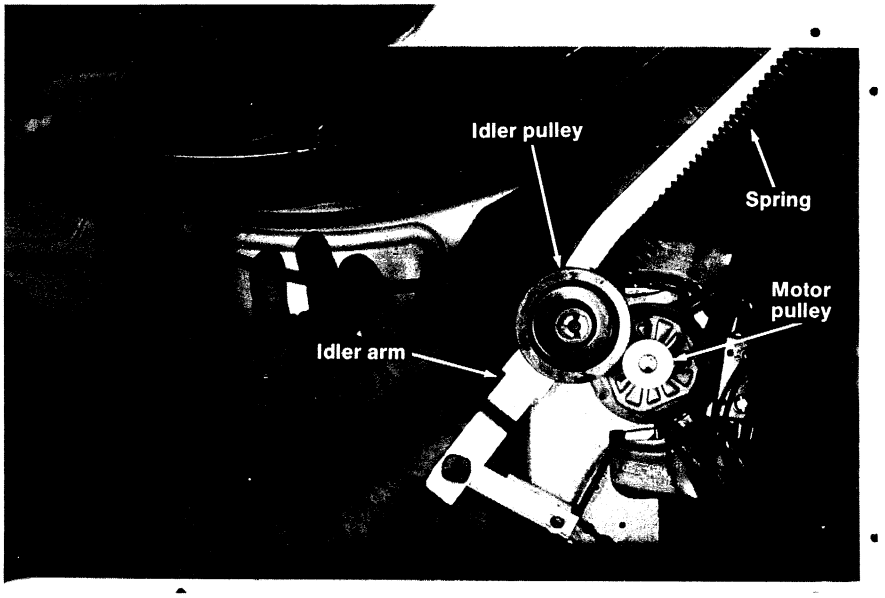
The belt drives the drum through a pulley attached to the motor shaft. Belt tension is controlled by a spring-loaded idler pulley system. The idler assembly is attached to the rear motor support at the bottom left rear of the dryer. The idler assembly in large capacity dryers differs from those in standard capacity dryers in configuration and structure of parts.

Note: The only times you need to check the belt and idler is if the motor runs but the drum does not rotate, or if the dryer is noisy and the noise has been traced to the idler. Causes for the drum not to rotate include broken belt, belt off the idler, loose motor pulley, or broken idler spring. Noise can be caused by the belt off of the idler, a broken belt, or worn idler bearings.

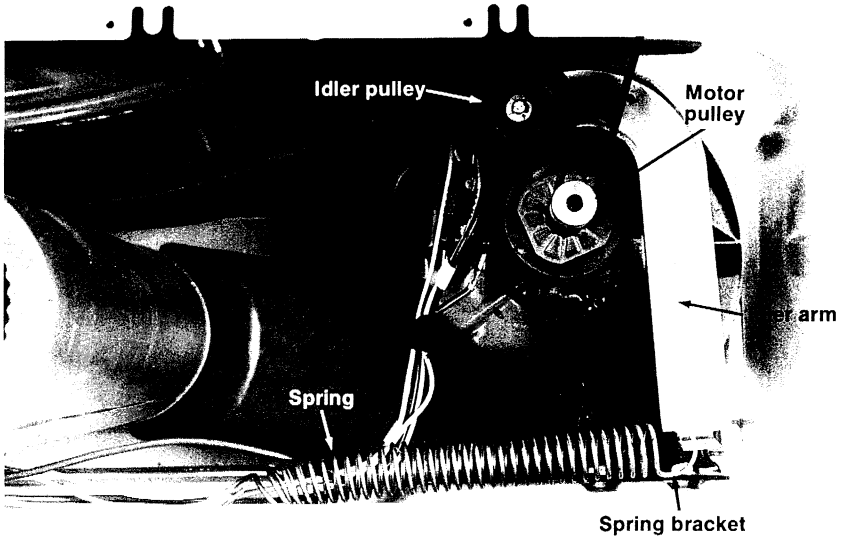
CAUTION: Be careful when bending back idler arm; arm is under high tension and could snap back on your hand.



Dryer drive system

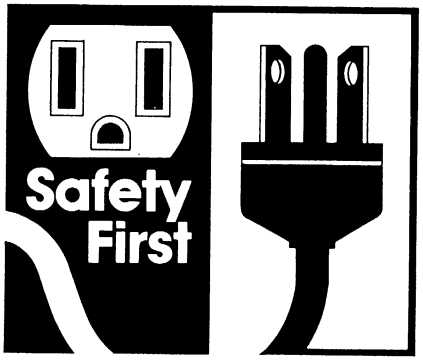


Standard capacity idler assembly

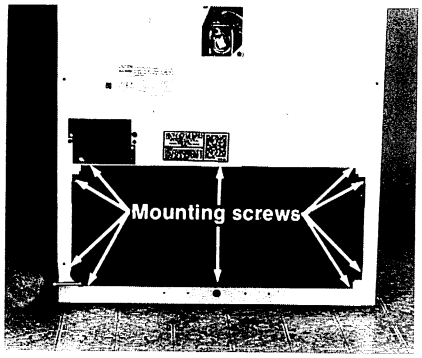


Large capacity idler assembly

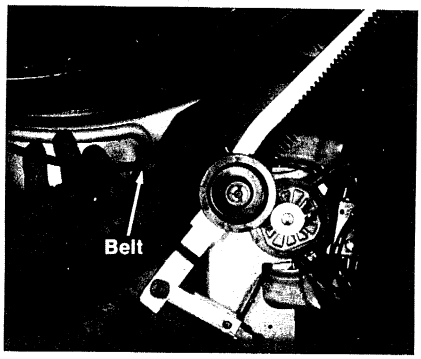
18 Inspecting and replacing belt and idler



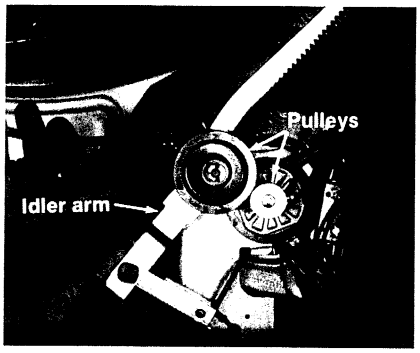
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



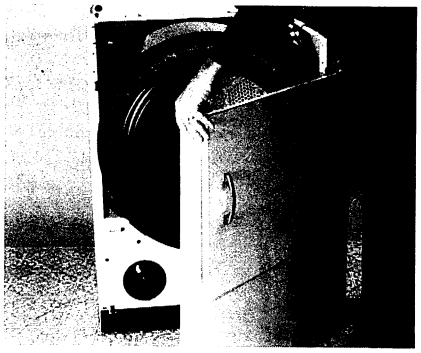
Step 2: Remove large lower rear access panel by unscrewing 5/16" mounting screws around cabinet with nutdriver.



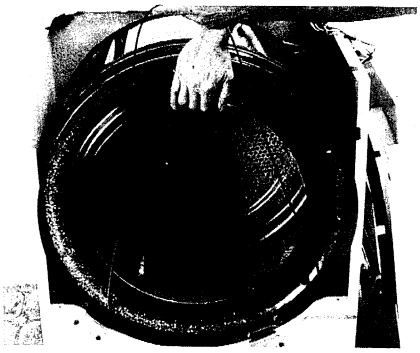
Step 3: Examine belt to see if it is worn, broken, or off of idler. If the belt is worn or broken, replace belt.



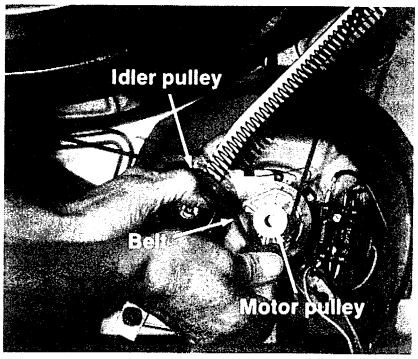
Step 4: Release belt from idler. Swing idler arm away from pulleys and belt should pop off. Be careful that arm does not snap back on your hand.



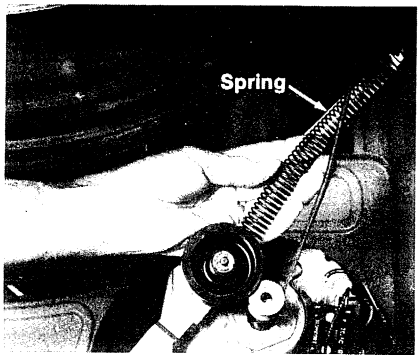
Step 5: To replace belt, dryer top must be raised and dryer front removed. If you are unfamiliar with these processes, please refer to Procedure #4: Removing Access and Control Panels.



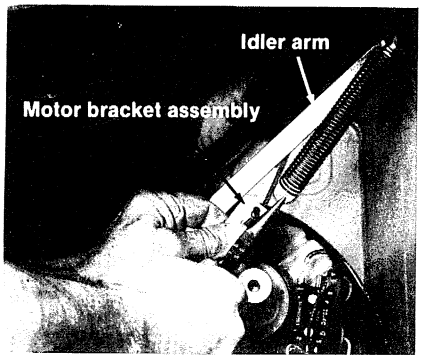
Step 6: Slide loose belt to front of dryer and off drum by tilting drum upward. Slip on new belt the same way and postion it over marks on drum left by old belt.



Step 7: Pull idler arm away from pulleys. Rethread new belt over top of idler pulley and underneath motor pulley. Release idler arm slowly. Check alignment on idler pulley by turning drum in both directions.

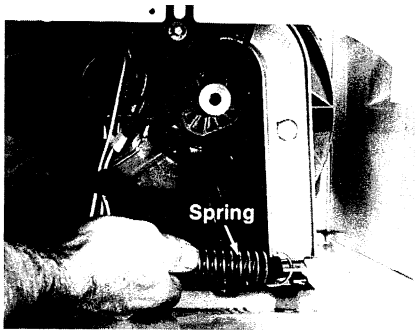


Step 8: If you found on inspection of idler assembly that belt was off idler pulley, check spring for any breaks. If spring is not broken, proceed to Step 11.

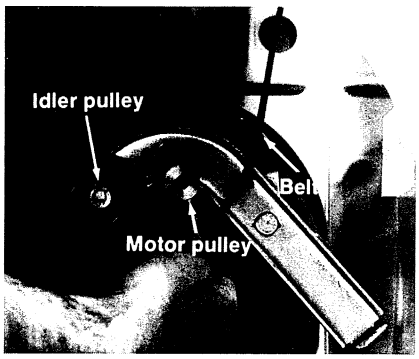


Step 9: Before replacing spring, be sure belt is off idler pulley. To replace spring, hook one end onto idler arm and other end into hole on arm of motor bracket assembly.

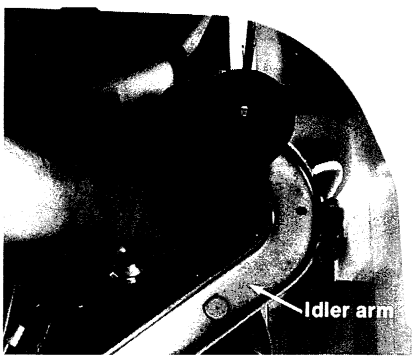
continued...



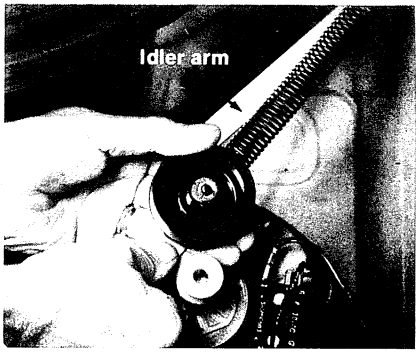
Step 10: On large capacity dryers, remove spring from the tab on base of dryer and bottom of idler arm. Replace spring by hooking it back into tab and idler arm. Make sure belt is off idler pulley.



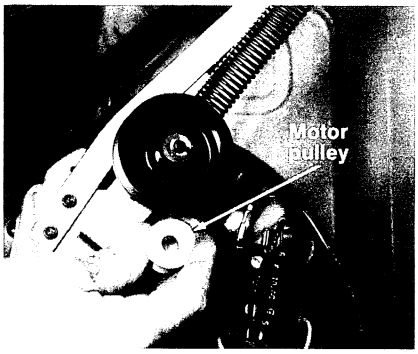
Step 11: Rethread belt over idler pulley and underneath motor pulley. Release idler arm slowly. Check alignment on idler pulley by turning drum in both directions.



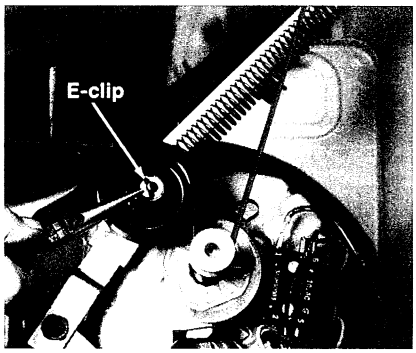
Step 12: If belt is positioned near front or rear edge of idler pulley, bend idler arm to center belt on idler pulley.



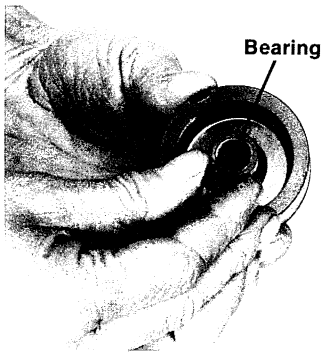
Step 13: On standard capacity dryers, bend idler arm, as shown above, to center belt on idler pulley.



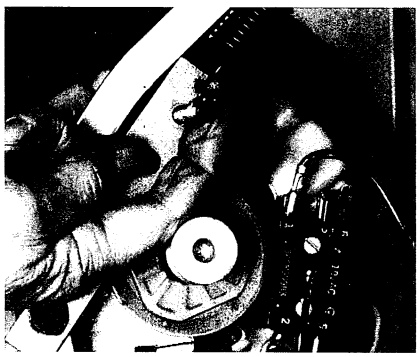
Step 14: If belt is securely in place and drum does not rotate, check to see if pulley on motor shaft will turn freely. If the motor shaft does not turn, check both motor and blower as described in Procedures #20 and #17.



Step 15: If idler assembly is noisy, remove idler pulley from shaft by removing the E-clip retaining ring. Replace idler bearings.



Step 16: There are two bearings inside pulley, one on either side. These bearings have a key that aligns with a slot inside pulley. To remove or replace bearings, rotate bearing until it goes into or out of position.



Step 17: Lubricate pulley shaft lightly with automotive type grease before reattaching idler pulley. Slide pulley back on shaft and reattach washers and retaining ring.

Step 18: If the pulley itself is cracked or broken, replace both pulley and bearing. Once pulley is reattached to shaft, rethread and align belt as described in Steps 11-13. Reassemble dryer and reconnect power supply.

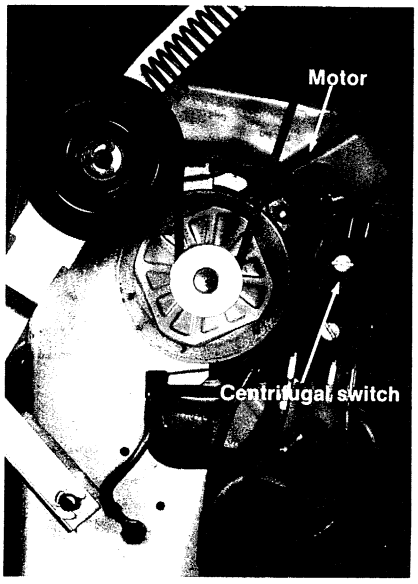
Notes

Centrifugal switch

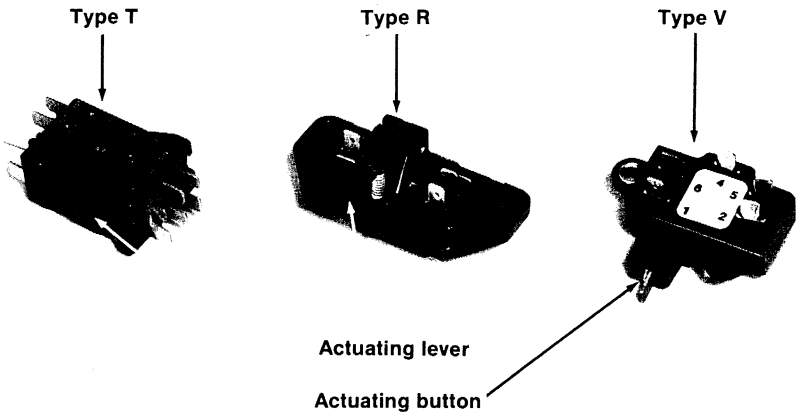
The centrifugal switch is located on the rear of the motor. It closes the circuit to the start winding when the dryer is first started to give the motor starting power. At the same time, the centrifugal switch prevents electricity from reaching the heaters until the drum is turning and the blower is circulating air. Once the motor reaches top speed, certain contacts inside the centrifugal switch open to remove the start winding from the circuit, while other contacts close to energize the heating system.

A defective centrifugal switch can cause many dryer problems. The motor may simply not start, or it may hum if the start winding is not engaged. If the centrifugal switch contacts leading to the heating system are defective, the dryer will not heat.

There are three types of centrifugal switches—one associated with each type of motor that has been used (T, V, or R). Should you need to replace the motor, a new centrifugal switch will come attached. If only the switch is bad, you can replace it individually. Take the old switch to your authorized local appliance parts dealer when ordering a new switch.

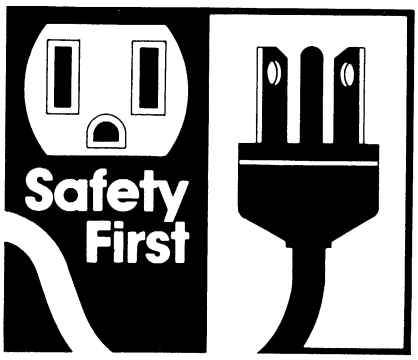


Centrifugal switch location

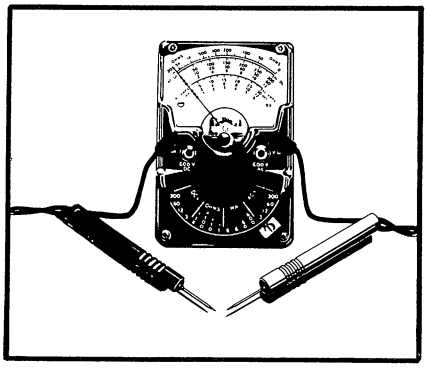


Centrifugal switch (different motor types)

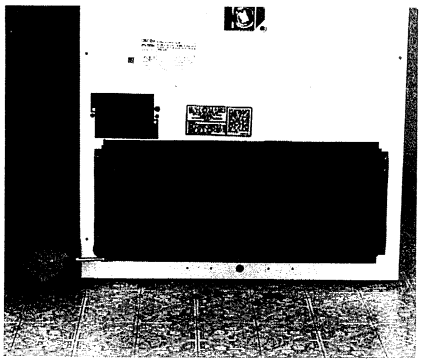
19 Inspecting and replacing centrifugal switch



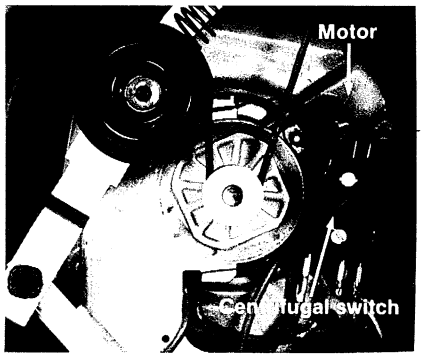
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel, and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



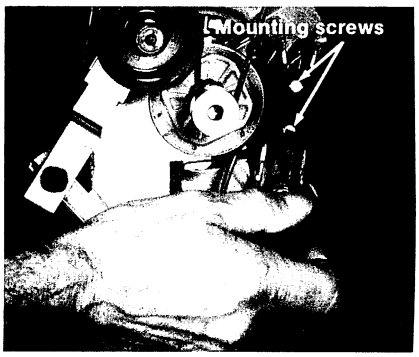
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



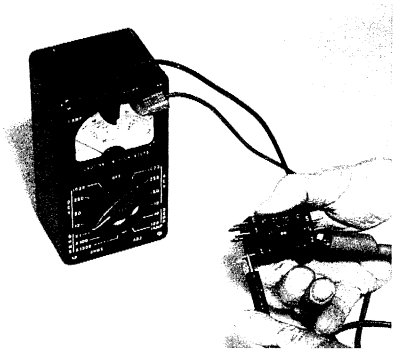
Step 3: Remove large, lower rear access panel by unscrewing mounting screws around cabinet.



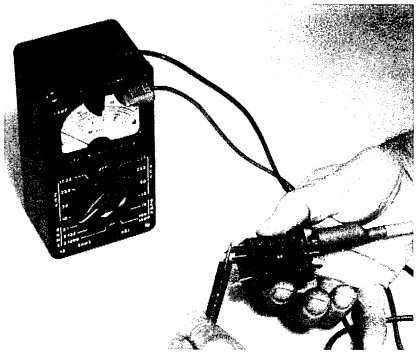
Step 4: The centrifugal switch is located on end of motor near its rear support.



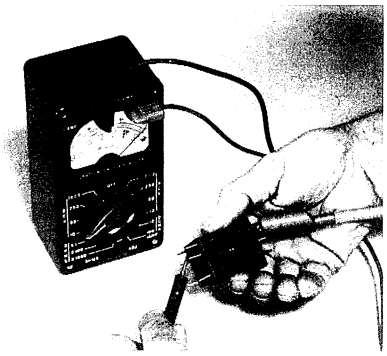
Step 5: Remove 2 mounting screws holding centrifugal switch to motor so that switch can be tested freely. For installation reference, make note of how all wires are connected as you remove them.



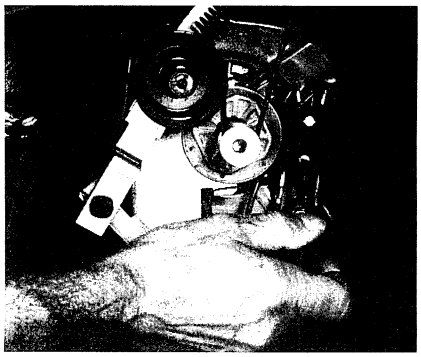
Step 6: Place ohmmeter probes across M1-M2. Meter should show continuity at R x 1 setting. Depress actuating button or lever, and needle should fall downscale and show no continuity.



Step 7: Place ohmmeter probes across M5-M6. Meter should show continuity at R x 1 setting. Depress actuating button or lever, and needle should fall downscale and show no continuity.



Step 8: Place ohmmeter probes across M5-M3. Meter should show no continuity at R x 1 setting. Depress actuating button or lever, and needle should sweep upscale to denote continuity.



Step 9: Replace switch if it fails any of above tests. Connect all wire leads to new centrifugal switch and attach switch onto motor. Reassemble dryer and reconnect power supply.

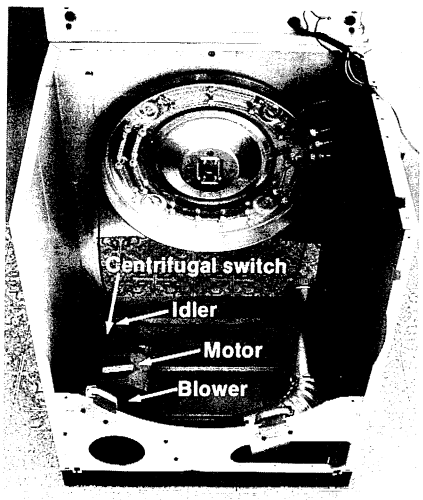
Motor

The front motor shaft drives the blower, and the rear motor shaft drives the drum via a belt connected to a pulley system. The motor is located in the bottom of the dryer on the left side. For the motor to run, the door switch, timer, and start switch must be closed, and the centrifugal switch operational.

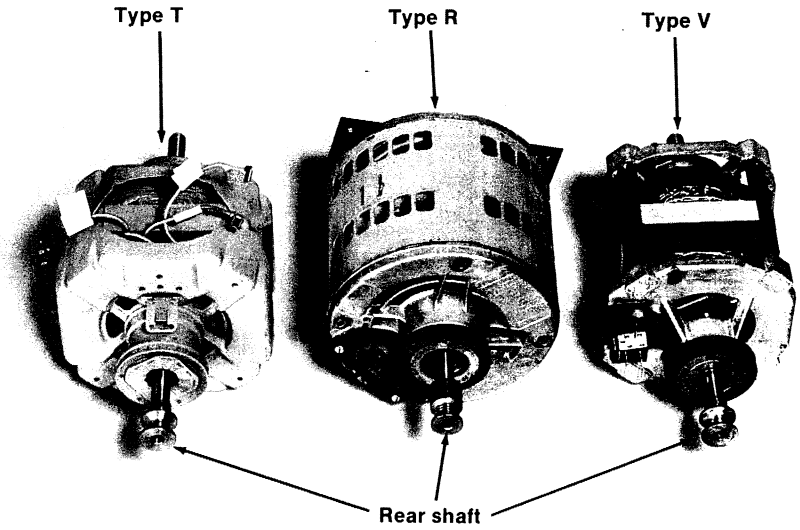
Several problems can occur with the motor. The start or run winding may open. If either winding is open, the motor will hum. The bearings may also wear out, which will bind the motor shaft. If any of these problems affect your motor, it must be replaced.

There are three types of motors used in dryers—types T, V, and R. They are all interchangeable and come with their own centrifugal switch.

Note: If dryer stops during cycle, wait ten minutes and start dryer again. If dryer starts, motor was overheating. Check for lint blockage around motor and for possible overloading. If dryer repeatedly stops during cycle, especially in the second of consecutive loads, replace motor.

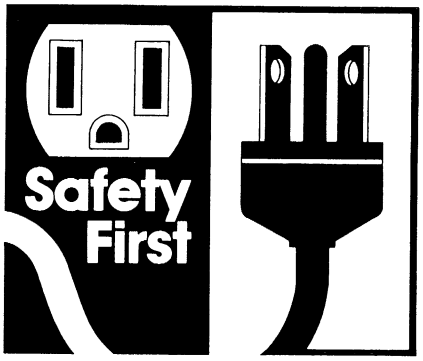


Motor location (drum removed)

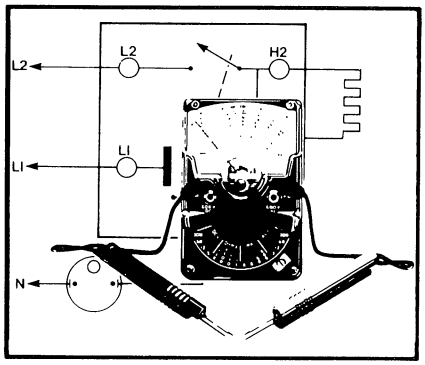


Various dryer motors

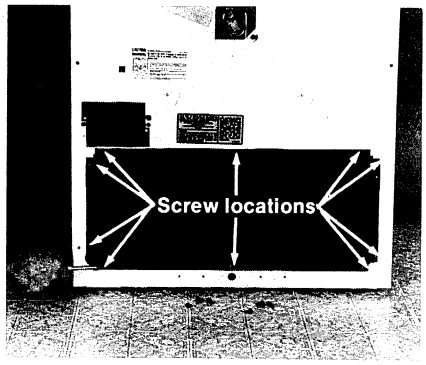
20 Inspecting and replacing motor



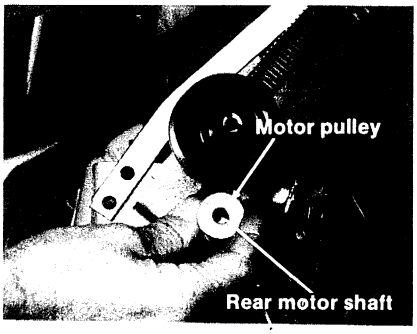
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



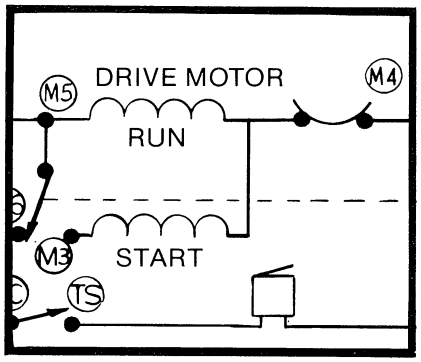
Step 2: This procedure requires use of an ohmmeter and ability to read a circuit diagram. For instructions, please refer to Tools and Testing Equipment, pages 89-94.



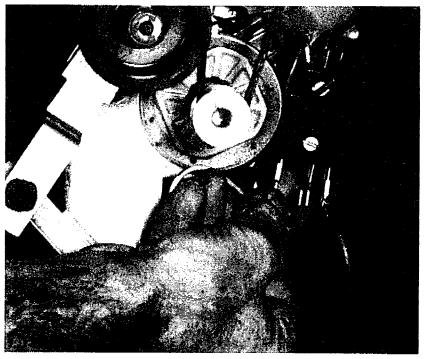
Step 3: Remove large, lower rear access panel by unscrewing 5/16" mounting screws around cabinet with nutdriver. Vacuum out any lint accumulation around motor.



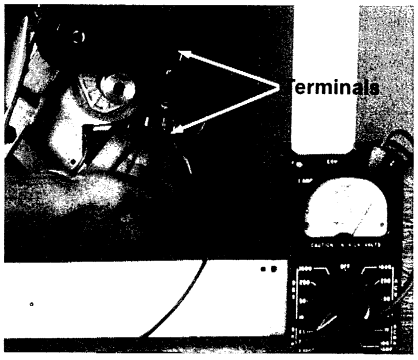
Step 4: Check rear motor shaft to see if it turns freely. If shaft does not turn, check blower wheel as described in Procedure #17: Inspecting and Replacing Blower Wheel. If blower is free from obstruction, but shaft will still not turn, replace motor.



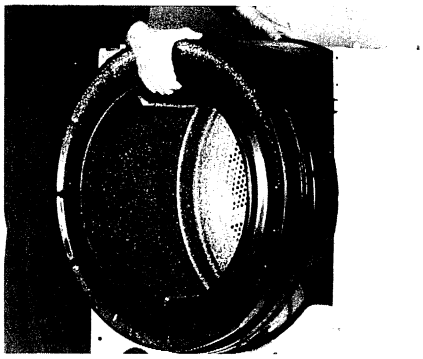
Step 5: Locate motor contacts on your circuit diagram. On most dryers, M4-M5 energizes run winding, and M4-M3 energizes start winding.



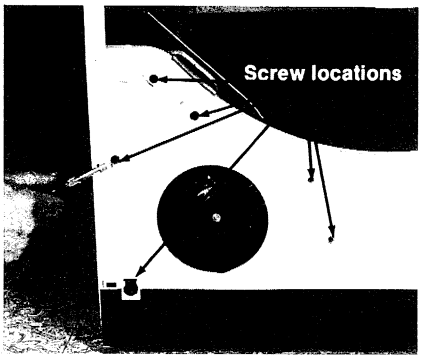
Step 6: Locate terminals corresponding to motor contacts that energize start winding on centrifugal switch. Remove one of wire leads.



Step 7: Place ohmmeter probes across terminals. Set on R x 1 scale, meter should move partially upscale. Repeat Steps 7 and 8 for terminals energizing run winding.

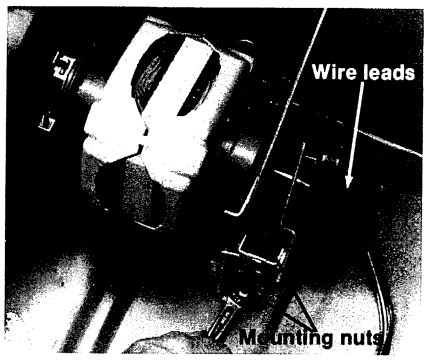


Step 8: If ohmmeter shows no upscale reading at either test, replace motor. To replace motor, remove drum. If you are unfamiliar with this process, please refer to Procedure #11: Removing Drum.

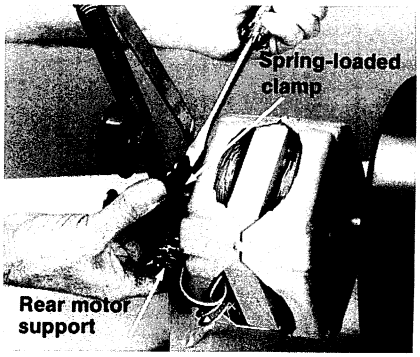


Step 9: To easily access motor, remove blower housing, motor, and idler from dryer base. First, remove 5/16" mounting screws attaching blower housing to cabinet front with nutdriver. Remove mounting screw to disconnect blower housing from ductwork.

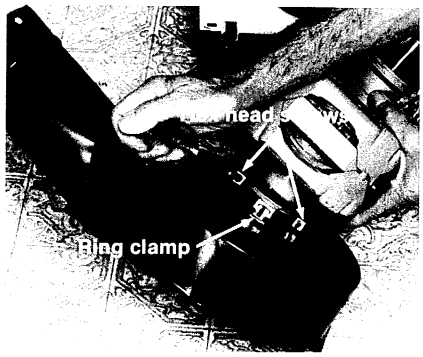
continued...



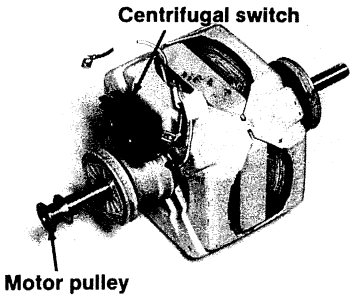
Step 10: Use wrench to remove two mounting nuts on rear motor support. For installation reference make note of how wires are connected to centrifugal switch. Remove wire leads and move blower-motor-idler assembly outside of dryer for easy access.



Step 11: To release motor from rear motor support, pry open spring-loaded clamp with screwdriver. CAUTION: Be careful not to place your finger where clamp can pinch. Remove ground strap from motor.

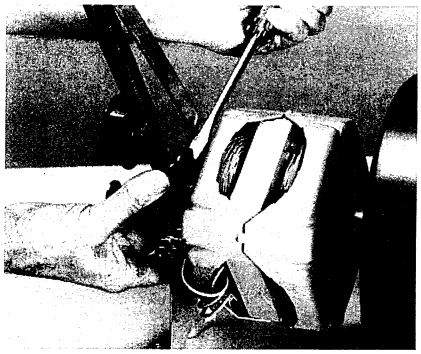


Step 12: To release front motor shaft from blower, loosen blower wheel clamp screw as shown in Step 9 of Procedure #17: Inspecting and Replacing Blower Wheel. Remove two screws holding ring clamp at front motor support with nutdriver.

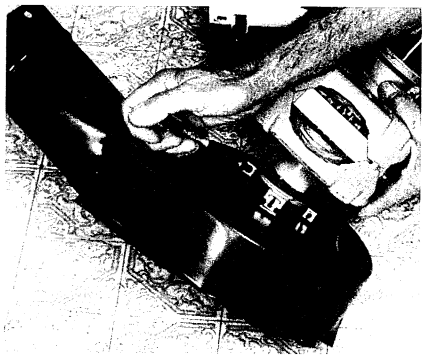


Step 13: New motor will have centrifugal switch attached, but will require attachment of motor pulley to rear shaft. Motor pulley from old motor may be used if there's a set screw to remove it from shaft.

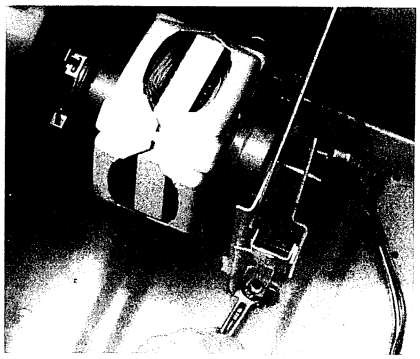
Step 14: If motor pulley cannot be removed from shaft, purchase a new motor pulley with your motor. To attach motor pulley to shaft of new motor, align set screw over hole and tighten with Allen wrench.



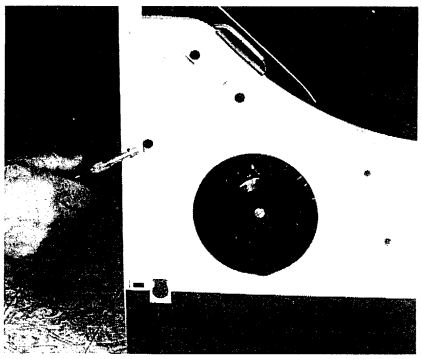
Step 15: Attach new motor to rear motor support using spring-loaded clamp removed in Step 11.



Step 16: Fit front motor mount through ring clamp at blower rear and tighten two screws. Reattach blower wheel clamp to front motor shaft but do not tighten.



Step 17: Reattach motor to base of dryer, making sure that blower-motor-idler assembly is properly aligned. Reconnect wires to centrifugal switch.



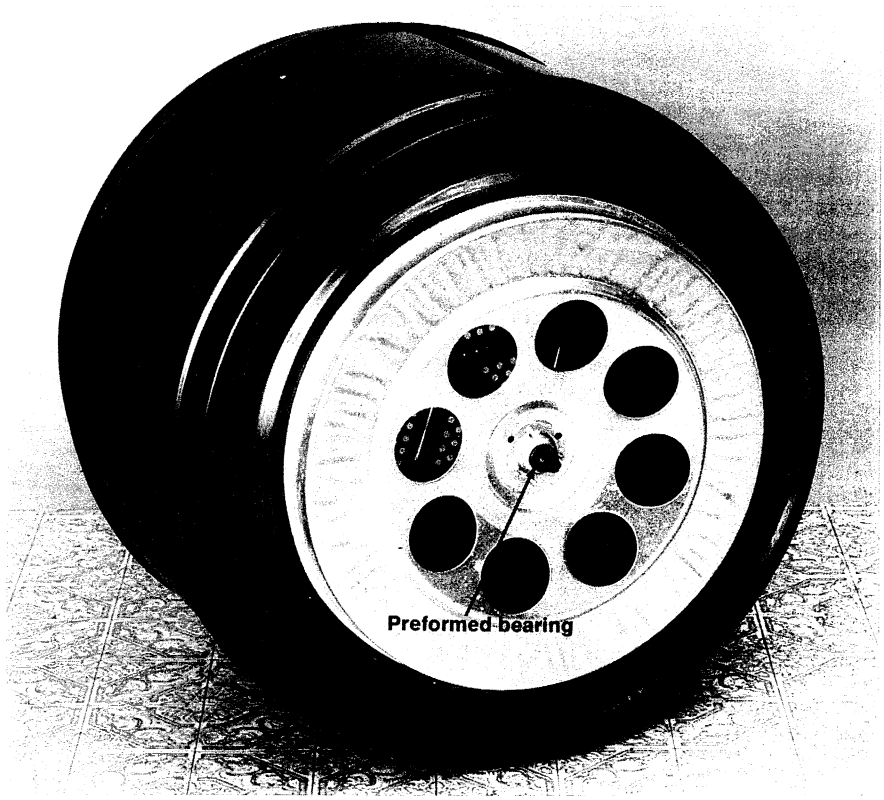
Step 18: Reattach screws to blower housing. Once you have made sure that blower wheel turns freely, tighten blower wheel clamp. Reassemble dryer and reconnect power supply.

Notes

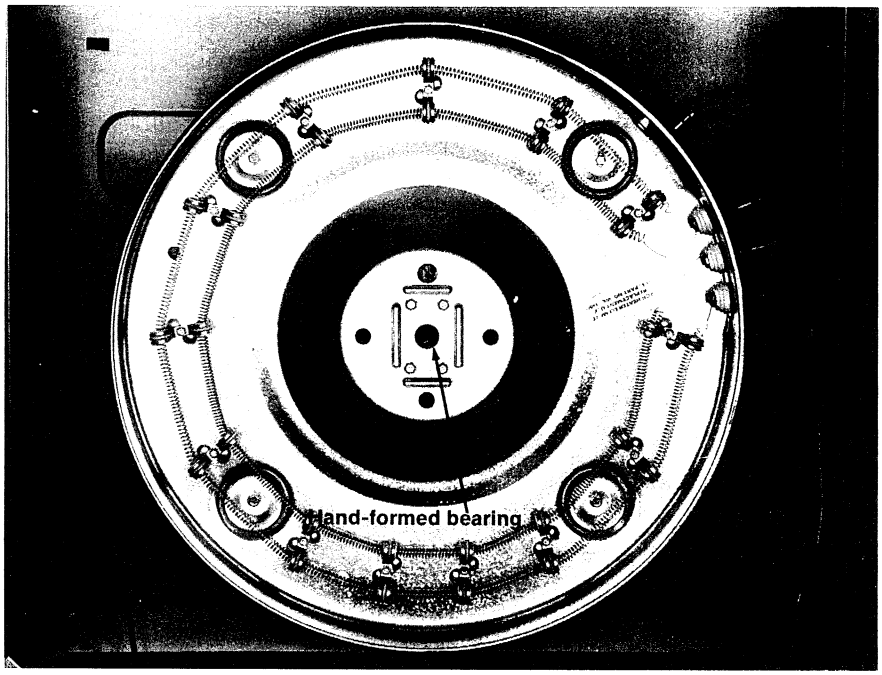
Drum bearing assembly

The drum bearing supports the drum shaft and allows the drum to revolve smoothly. If the bearing should break or wear out, the drum would move about too freely and would make excessive noise.

There are two types of pliable drum bearings in use—a preformed bearing that fits over the rear drum shaft, and a straight piece that must be formed to fit in the hole in the rear cabinet.



Drum bearing located on rear drum shaft

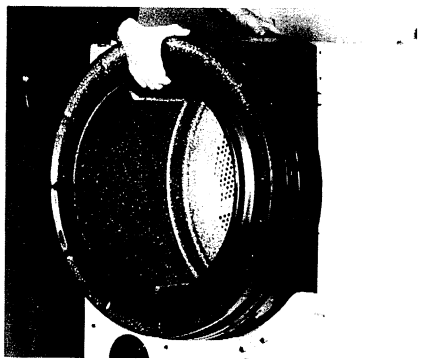


Drum bearing located in bearing retainer

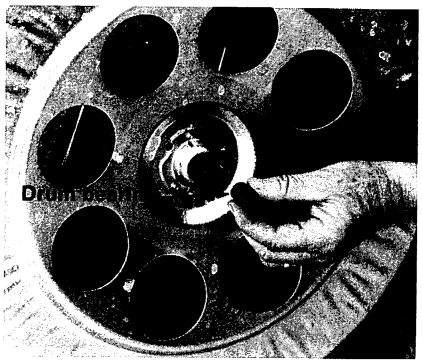
PROCEDURE

21 Inspecting and replacing drum bearing

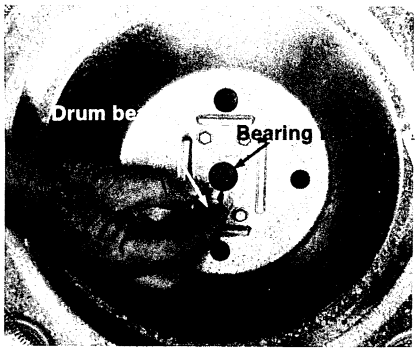
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels and parts.



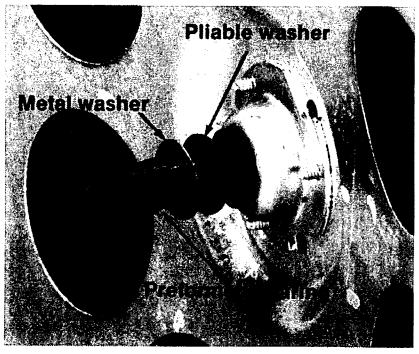
Step 2: To access drum bearing assembly, remove drum. If you are unfamiliar with this process, please refer to Procedure #11: Removing Drum.



Step 3: After you have removed the drum, check bearing on rear shaft. If it is worn or broken, slip a new preformed bearing onto the rear shaft.

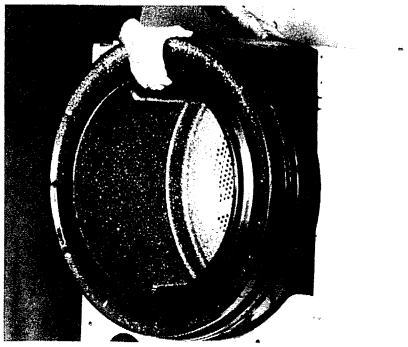


Step 4: If the drum bearing was not on rear shaft of drum, check bearing retainer in rear housing, where hand-formed bearings usually remain. Examine bearing for wear or breakage.

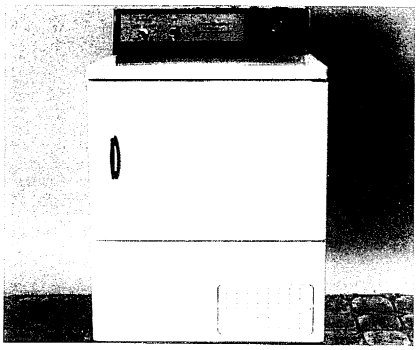


Step 5: Look for two washers on drum shaft. These washers may have fallen off when drum was removed. Check to see that the pliable washer is on shaft first, followed by metal washer.

Step 6: If your new bearing is flat, form it into a ring that will fit inside bearing retainer. Once formed, insert bearing into bearing retainer.



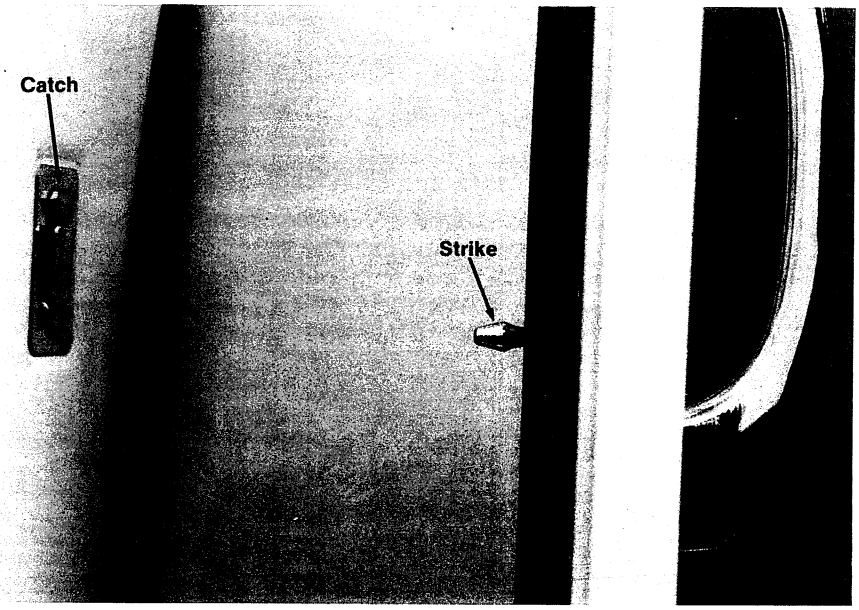
Step 7: Be sure when you reinsert the drum into dryer that bearing and washers do not fall off rear shaft. Also be sure that rear shaft does not push bearing out back of bearing retainer.



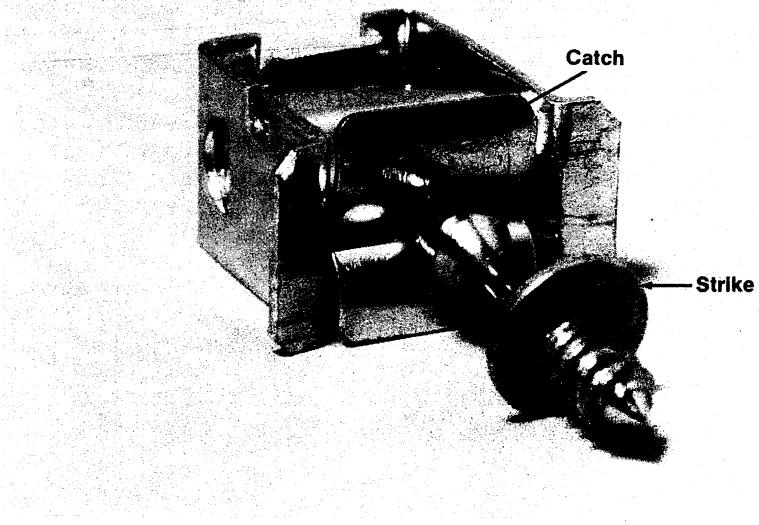
Step 8: Reassemble dryer and reconnect power supply.

Door latch assembly

The door latch assembly has two parts. The "strike" is a prong-like object extending from the dryer door liner. When the door closes, the strike engages the "catch", mounted in the front of the dryer. If the strike does not enter the catch at the right position, try to realign the door, as described in Procedure #24: Adjusting Dryer Door. If either part has been damaged or appears worn, replace both the strike and the catch.



Door latch assembly

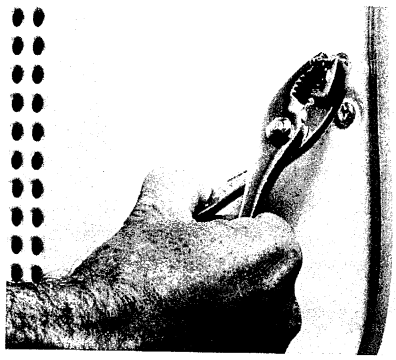


Strike in catch

22 Inspecting and replacing door latch assembly

Step 1: For your personal safety, exercise caution when working with any electrical appliance.

Step 2: To remove a defective catch, grip its edges inside chrome frame with a pair of pliers and pull gently out. The catch is spring-loaded and should come out easily. Insert new catch through frame and snap it into position.

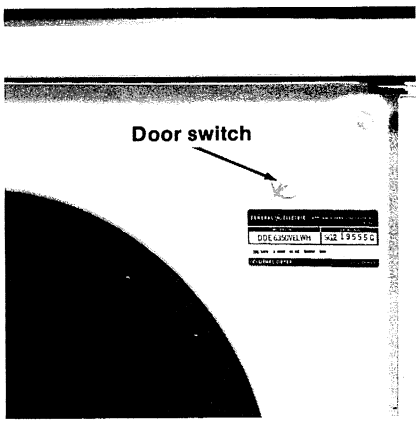


Step 3: To replace a defective strike, grip it with a pair of pliers or wrench. Unscrew strike from door liner. Replace new strike by screwing it into position.

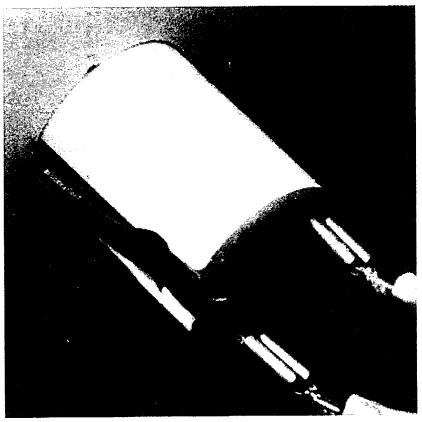
Door switch/dryer light

The door switch prevents the dryer from running when the door is open. The switch is located on the upper righthand side of the dryer front inside the door. As the door closes, the depressed switch completes the electrical circuit necessary for dryer operation. Some models have a light, located at the top of the front opening into the drum, that comes on when the door is open. The door switch on these models has three terminals, of which two of the contacts will be alternatively closed.

If the dryer does not run, or new light bulbs will not work, the contacts in the door switch may be defective and should be checked with an ohmmeter.



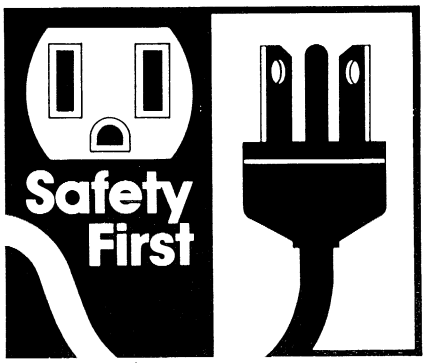
Door switch



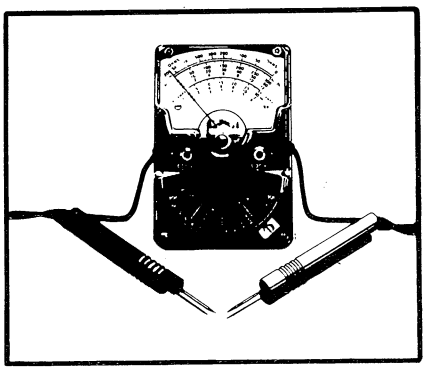
Internal wiring to switch

PROCEDURE

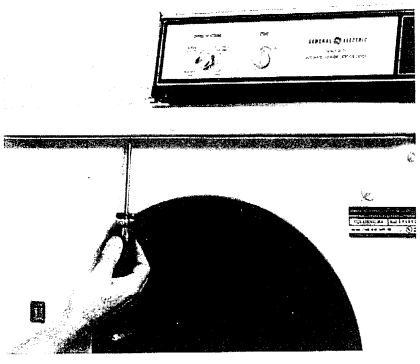
23 Inspecting and replacing door switch



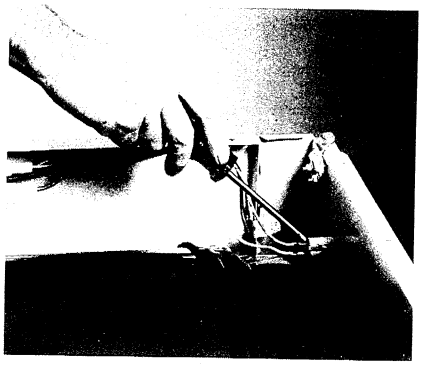
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels.



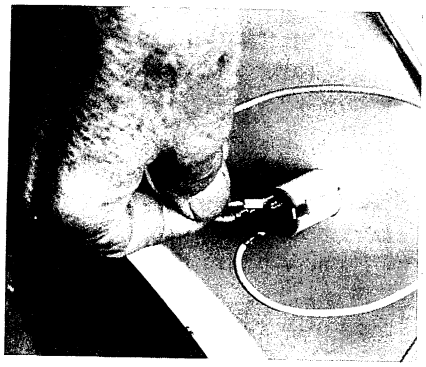
Step 2: This procedure requires the use of an ohmmeter. For instructions on how to use an ohmmeter, please refer to Tools and Testing Equipment, pages 89-91.



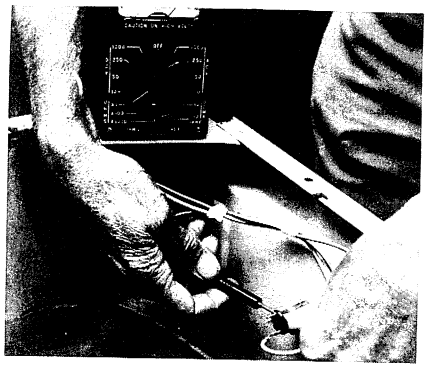
Step 3: Raise dryer top. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



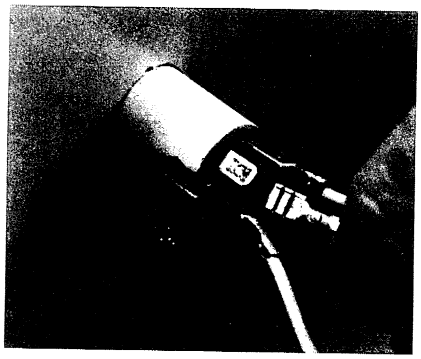
Step 4: When dryer top is raised, door switch is easily accessed inside upper righthand side.



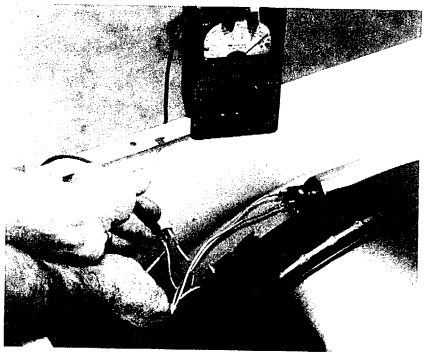
Step 5: To test switch connections to motor, remove wire leads from both terminals on 2-terminal switch. On 3-terminal switch, remove wire leads to the 2 smaller terminals.



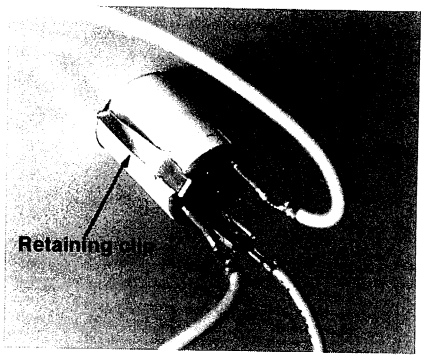
Step 6: Place ohmmeter probes across the 2 exposed terminals. Depress door switch on dryer front and test for continuity with ohmmeter set on R x 1 scale. If no continuity, replace switch.



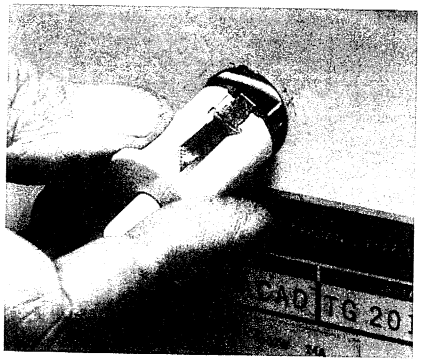
Step 7: With wire leads still removed from the two smaller terminals, remove wire lead from remaining terminal to test dryer light connection. Open dryer door.



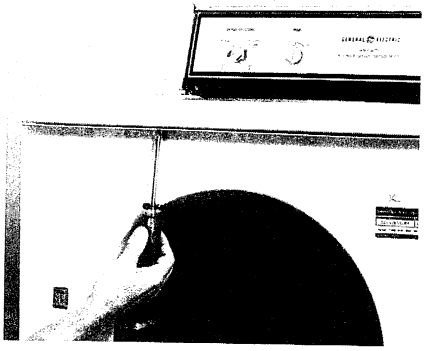
Step 8: Place probes across largest terminal and sequentially to each of the smaller terminals. On R x 1 scale, ohmmeter should show continuity across one but not both of the smaller terminals. If no continuity at either terminal, replace switch.



Step 9: To remove switch, some models have switch mounted with two retaining clips that squeeze together. Others have a mounting nut that is unscrewed.



Step 10: Once you have loosened switch, pull it through dryer front. Insert new switch through dryer front and snap retaining clips into position or reattach mounting nut. Reconnect wires.

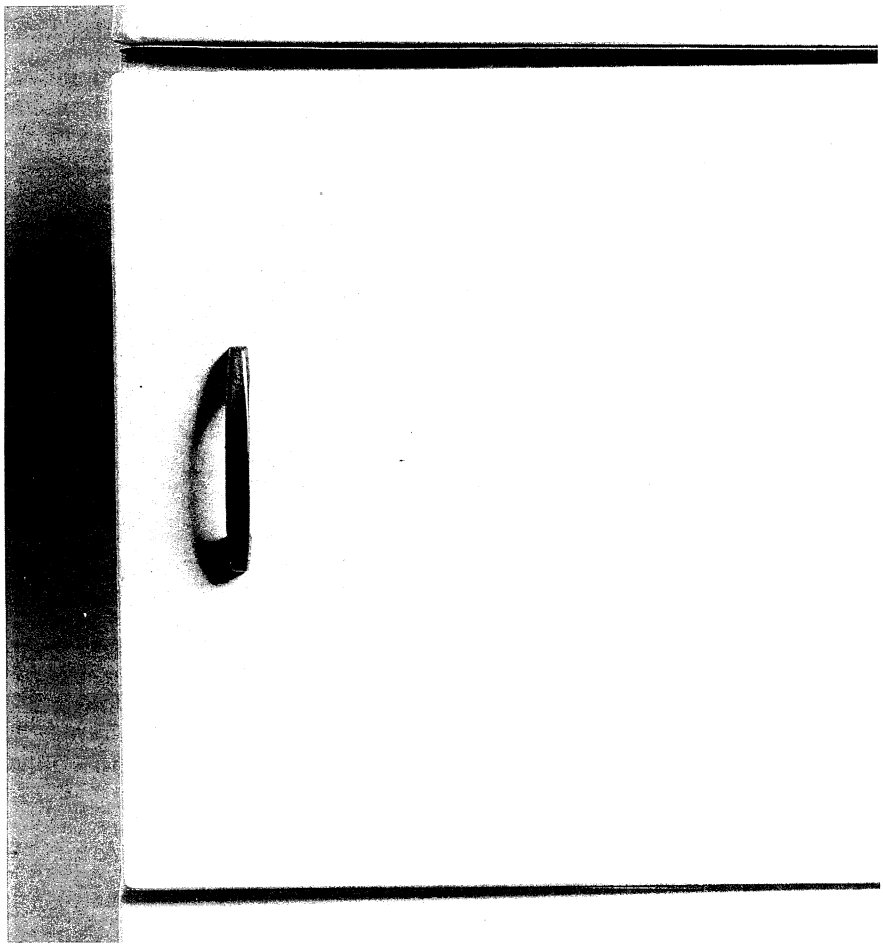


Step 11: Reassemble dryer and reconnect power supply.

Dryer door

If the dryer door is not properly aligned with the front of the dryer, the door may not close, or it may rub and scratch the dryer cabinet as it closes. A misaligned door can also affect dryer air flow and cause the dryer to overheat.

There are differences in how standard and large capacity dryer doors are hinged and therefore in how the doors can be adjusted. The standard capacity dryer door can only be adjusted at the upper hinge inside the dryer top. The large capacity dryer door can be adjusted at both the upper and lower hinges inside the door.

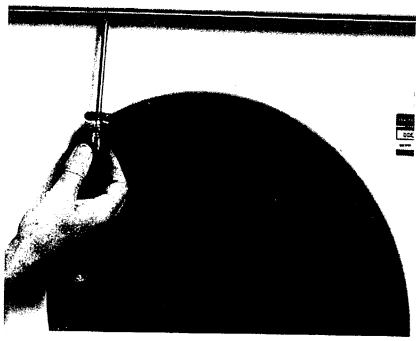


Door needing alignment

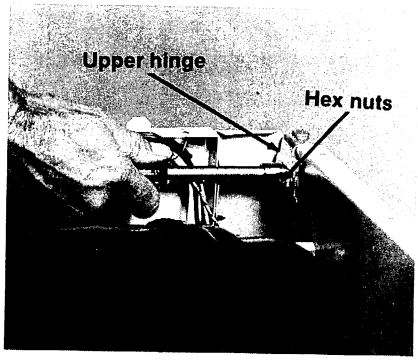
PROCEDURE

24 Adjusting dryer door

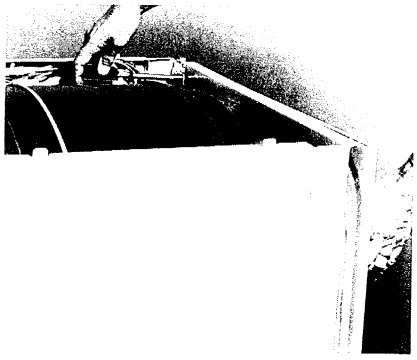
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges on access panels.



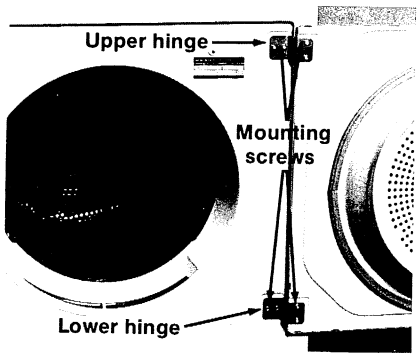
Step 2: To access upper hinge on standard capacity dryer, raise dryer top. If you are unfamiliar with this process, please refer to Procedure #4: Removing Access and Control Panels.



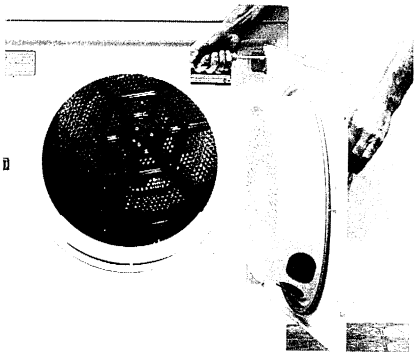
Step 3: The upper hinge of standard capacity dryer is located inside front righthand corner underneath top. To loosen door for adjustment, loosen two hex nuts on hinge.



Step 4: Move door around until it aligns with dryer front and tighten hex nuts. Make adjustments several times, if necessary, until door aligns properly with dryer cabinet.



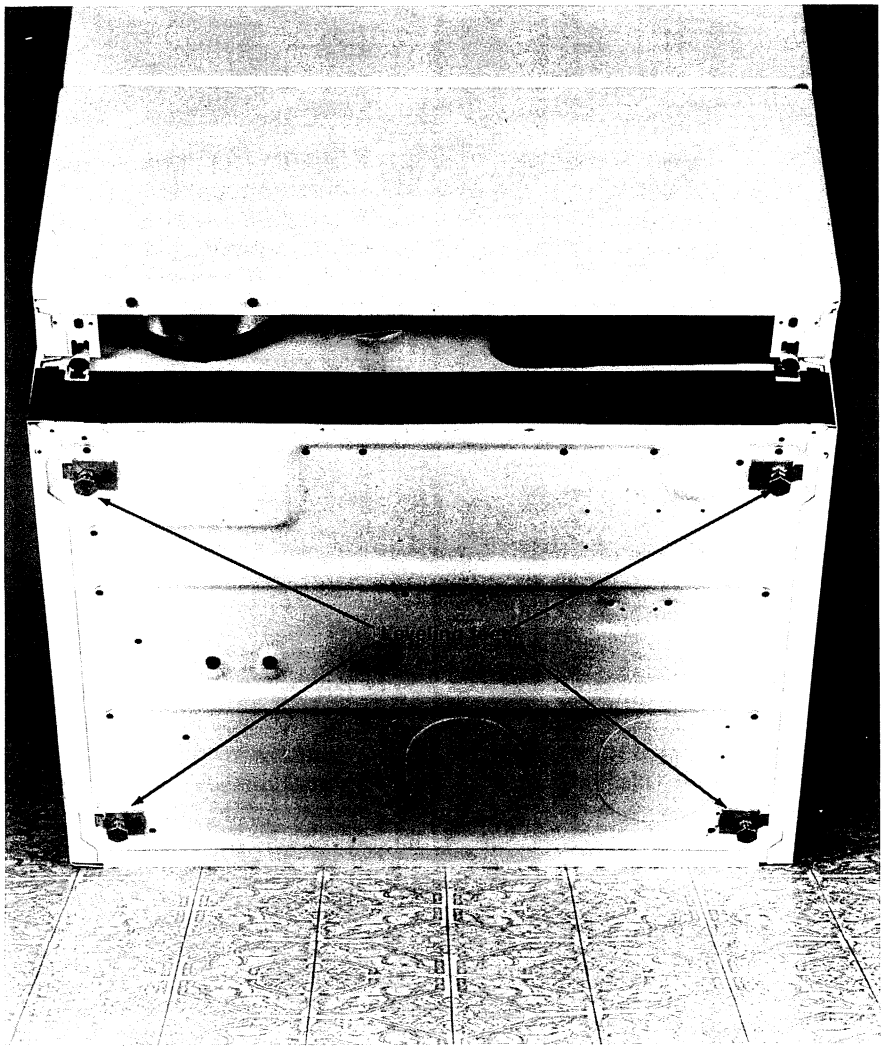
Step 5: Door hinges on large capacity dryer door are located on righthand side inside door. Mounting screws on both sides of hinge can be loosened for adjustment.



Step 6: Move door around until it aligns with dryer front and tighten screws, being careful not to overtighten. Make adjustment several times, if necessary, until door aligns properly with dryer cabinet.

Dryer leveling

Your dryer has four leveling feet, one in each corner on the dryer base. Each foot is threaded and screws into the dryer base. Jam nuts are used to lock the feet into position. Ideally, the feet should be adjusted such that the dryer is at the same height as the washer, and sits solidly on the floor. The feet need not be adjusted according to a carpenter's level. If your dryer does not sit solidly on the floor, it may move around.

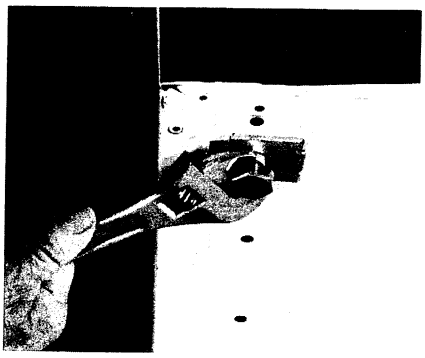


Dryer base

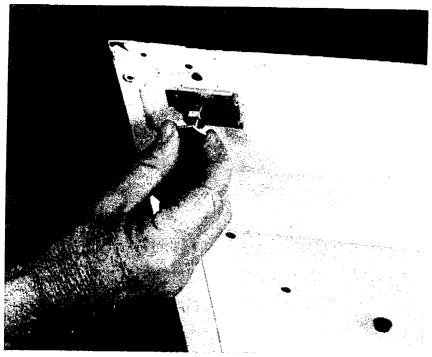
PROCEDURE

25 Leveling dryer

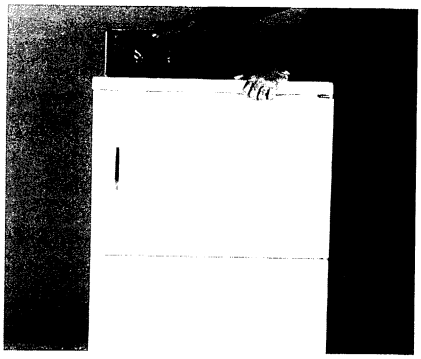
Step 1: Be sure all dryer controls are turned **OFF**. Disconnect power supply at distribution panel and unplug dryer from receptacle. Watch for sharp edges underneath dryer.



Step 2: To adjust leveling foot, loosen jam nut that holds foot to bottom of dryer. Always try to level the dryer by adjusting front feet first.



Step 3: With jam nut loosened, screw foot in or out such that dryer rests solidly on floor. Once foot is in position, tighten jam nut up against dryer base.



Step 4: With your hands on dryer top, try to rock dryer to see if it rests as solidly as possible on floor. If dryer still wobbles, make further adjustments on same foot or other feet.

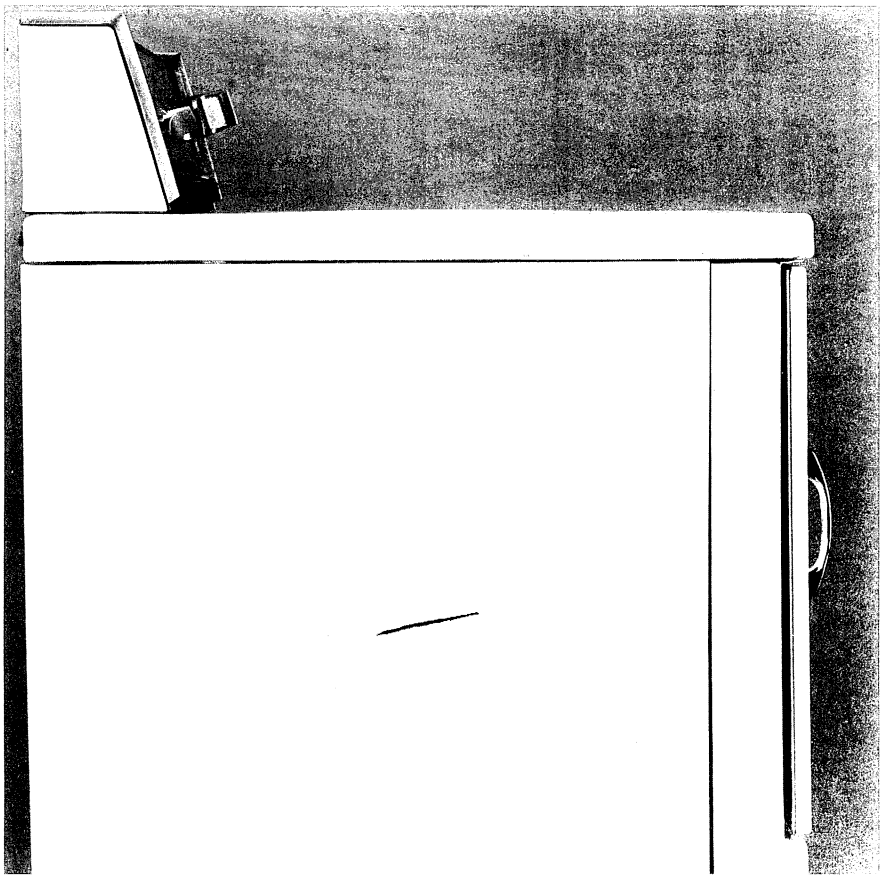
Cosmetic repairs

You can help keep the appearance of your dryer in "showroom" condition by following maintenance instructions in your *Use and Care Book* or in the preventive maintenance section of this manual. Properly applying a coat of appliance polish at least twice a year will help your appliance maintain a new look and provide protection against rust.

However, over the years, through accidents or moving, you may encounter problems that require more extensive repairs. Handles, nameplates, trim and cabinet panels can usually be replaced. Painted cabinet bodies can be touched up with spray paint or touch-up pencils. Porcelain enamel surfaces are difficult to repair. Although there are porcelain repair kits available, the recommended procedure is to replace the damaged part or panel. These products are usually available through your authorized local appliance parts dealer.

Note: Be sure to use the complete and correct model identification number when purchasing parts or paint.

CAUTION: Paint is flammable. Always paint in a well-ventilated area away from open flame. Read all instructions on paint container carefully. Do not allow paint to contact plastic surfaces.



Matching touch-up paint is available for repairing scratches

26 Cosmetic repairs

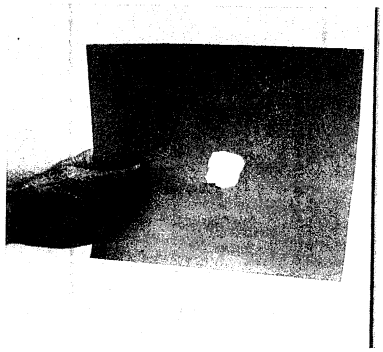
Step 1: For your personal safety, exercise caution when working with any electrical appliance. Watch for sharp edges on trim. Spray paint in well-ventilated area away from flame.

Step 2: Damaged trim is replaced by removing retaining screws. When removing or attaching trim, use care not to overtighten screws that attach trim to painted or porcelain finish. Overtightening screws can chip or scratch finish.

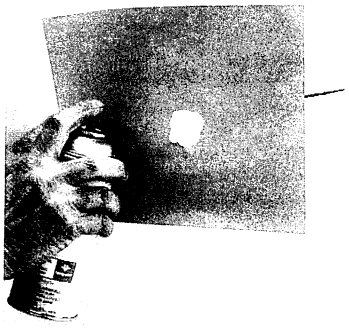
Step 3: To remove soil, wash cabinet with a liquid household detergent and warm water. Remove all traces of wax with a wax remover. Rinse with clear water.

Step 4: To repair small scratches, spray small amount of paint into top of can and apply with a torn match or use touch-up paint kit with brush applicator. Use paint sparingly to fill scratch.

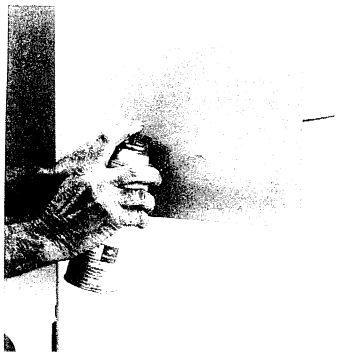
Step 5: Sand large scratches smooth with extra-fine sandpaper. Sand scratch until edge is "feathered" smoothly into exposed metal. Area to be painted must be clean, dry, and free of grease or rust.



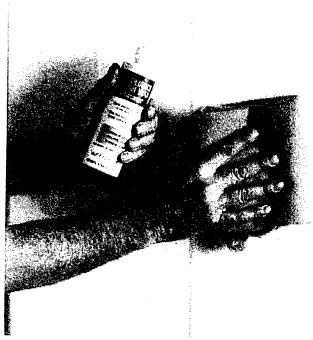
Step 6: Practice with spray paint before applying primer coat to dryer. Read and follow instructions on paint can. Do not aim paint directly at damaged area. Spray area through an irregular hole in a piece of paper.



Step 7: Spray paint through paper hole as you sweep across scratch. This practice allows paint to blend with original coat without obvious lines. Do not apply too much paint as it will run and sag.



Step 8: After primer coat has dried, sand lightly and spray again with matching appliance finish coat. Be sure to read all instructions on can carefully.



Step 9: Allow finish coat to dry and rewax with appliance polish. Be careful not to allow paint to come into contact with plastic surfaces.

Preventive maintenance

At General Electric/Hotpoint, we're committed to your satisfaction. The basic do's and don'ts included in this section are our way of helping you obtain the best results from your General Electric/Hotpoint dryer. The few minutes that you invest in caring for your dryer properly can save you a great deal of time and trouble.

This section outlines basic precautions and simple maintenance routines that will help prevent the small problems that can lead to big repair jobs. Take a little time to read this part of the manual and to follow the advice given.

Dryer exterior maintenance

- Never permit anyone to climb or stand on the dryer; damage or injury could result.
- Wipe off any spilled laundry compounds as soon as possible using a damp cloth. Keep stain remover or presoak products away from your dryer as these can damage outside surfaces.
- Do not use harsh or gritty cleaners. Clean control panel with a glass cleaner or a damp soft cloth.
- Keep sharp objects away from the surface.
- The ductwork should be arranged in the shortest and straightest path to the outside vent. Refer to the installation instructions that come with your dryer for proper venting.

Dryer interior maintenance

- Remove and clean the lint filter after each use.
- Remove the service panels yearly and vacuum any lint accumulation, especially around the heater housing and motor.
- Check the dryer vent periodically to remove any lint accumulation.

Improving the performance of your dryer

- Refer to the *Use and Care Book* for proper operation of your dryer.
- Do not overload your dryer. Allow more space to dry permanent press loads than for cottons and linens.
- Sort loads by fabric, weight, and color.
- Use heat settings according to fabric type as recommended in the *Use and Care Book.*
- Read garment label for drying instructions.
- To avoid wrinkling, remove clothes from dryer and place on hangers immediately after dryer stops tumbling. Wrinkles are often not removed in the dryer from clothes that were overloaded in the washer.

Dryer notes

Use this page to record important repair information

Model number: _____

Replacement parts or components needed:

_____

_____

_____

Notes on wiring connections:

_____

_____

_____

_____

Record of repairs or maintenance:

_____

_____

_____

Fuse or circuit breaker location: _____

_____

Size fuse required: (30 amp-electric dryer); (15-20 amp-gas dryer) _____

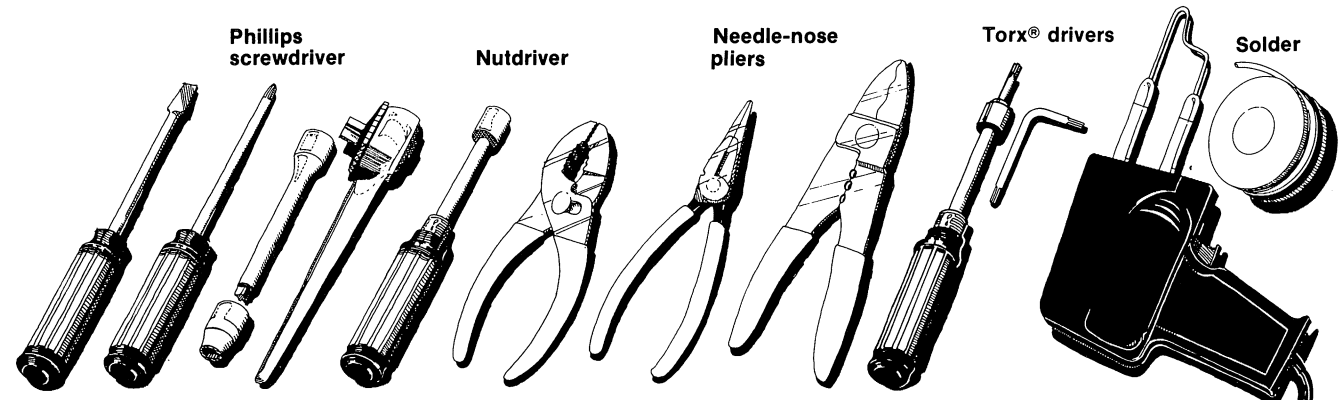
_____

Phone number and address of General Electric/Hotpoint Factory Service Center: _____

Phone number and address of authorized local appliance parts dealer: _____

Tools and testing equipment

Tools



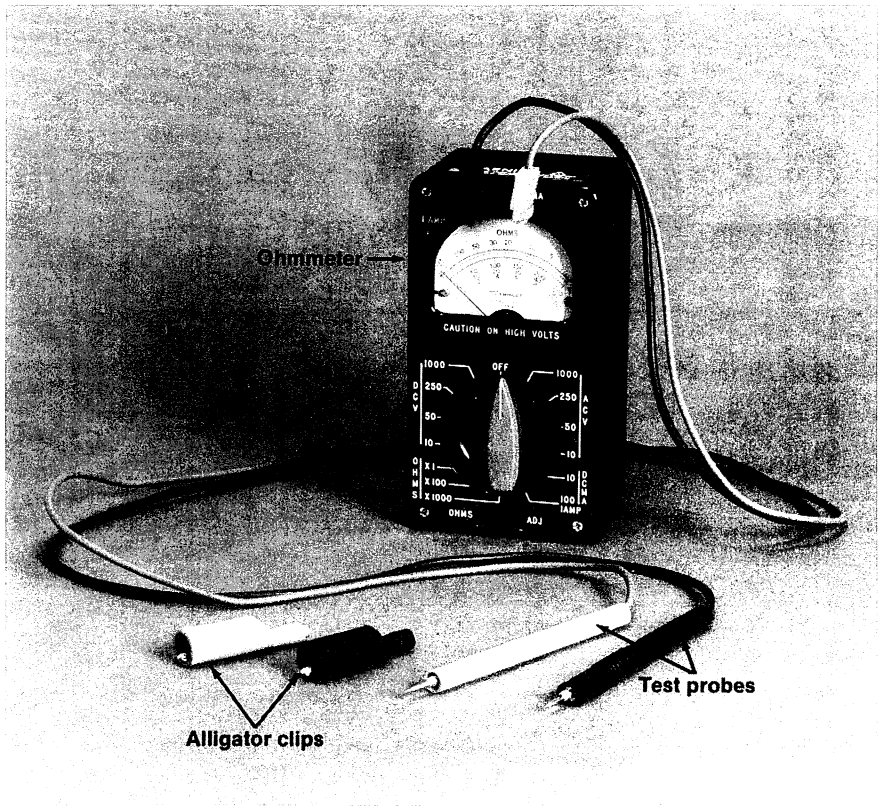
Chances are you already have some of the above tools in your home. For safety and efficiency reasons it is important to use the proper tools when making dryer repairs.

The tool you will use the most is the 5/16" nutdriver. The nutdriver is made like a screwdriver but has a small socket on one end. This socket fits over the hexagon head of the screw or nut. It's used just like a screwdriver.

The socket wrench usually has a handle with a ratchet (a hinged catch that can be set to tighten or loosen a nut), an extension, and various sockets. Sockets usually come in a set containing several sizes, and there are several sizes of nuts used with the dryer.

To use a socket wrench, place the socket on the nut and turn the handle counterclockwise to loosen it. If it makes a clicking sound and does not turn, flip the ratchet lever to the opposite direction and loosen the nut.

Testing equipment



Ohmmeter

An ohmmeter is required to diagnose the workings of the electrical components of your dryer. The ohmmeter is a simple device that measures the amount of resistance in an electrical circuit. Ohmmeters are usually combined with a voltmeter into an instrument called a multimeter, multitester, or volt-ohmmeter (VOM). Volt-ohmmeters can measure the amount of both resistance and voltage in an electrical circuit. A simple, inexpensive ohmmeter will be sufficient for any dryer repairs presented in this manual.

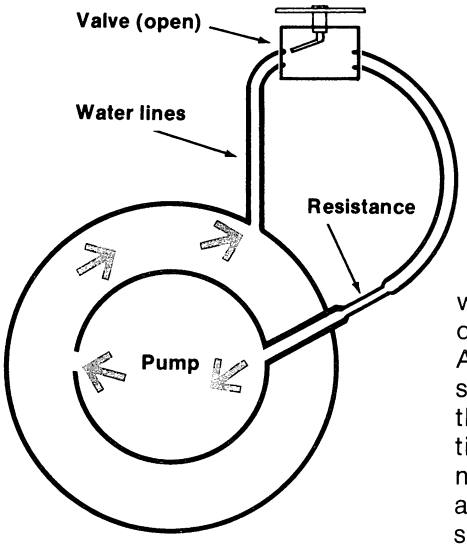
Most problems that occur in an electrical circuit are invisible. For example, it is difficult to see contacts that are not closing inside a switch, or to find a break in the wire inside its insulation. For the most part, you'll be using the ohmmeter only as a continuity tester to determine whether or not electrical current can pass through the circuit. By passing a small electrical current from a battery inside the ohmmeter through the circuit, you can tell if the circuit is complete.

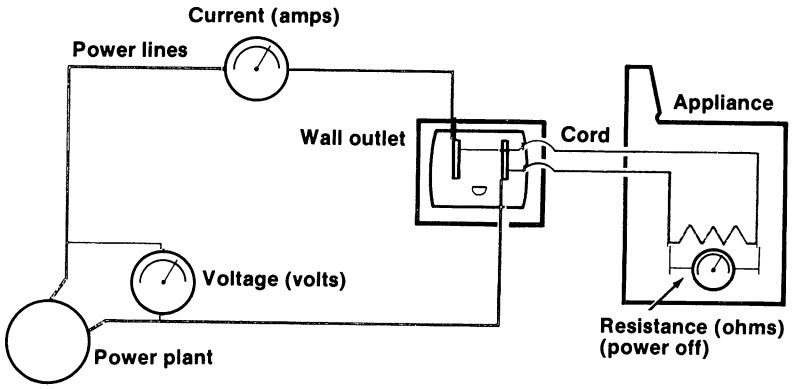
To understand the basic flow of electricity, think of it in terms of a water pumping station. For water to flow through the pipes, it must have a complete "closed loop" from the pump, through the valves, then back to the pump again. If the line is broken or opened at any point, water would eventually cease to flow.

The flow of electricity through your dryer is similar to the pumping of water, except that electrons instead of water are flowing through the dryer circuitry. The pump is the dryer plug-in receptacle that provides the force to circulate current through the dryer circuits. The electrical circuit uses wires rather than pipes as the conductors of electricity, and switches instead of valves to control the flow. Voltage corresponds to the pressure that exists in a water circuit, whereas electrical current could be compared to the flow rate of water flowing through the pipe.

the black lead goes to negative (-). If your meter gives you a choice of functions, select the range first, then "zero" the meter by touching the two test probes together. With the probes tightly in contact with each other, the needle of the meter should sweep toward "0" (zero) resistance. Now, while holding the probes together, adjust the knob marked "zero adjust" or "ohms adjust" until the needle rests directly over "0."

At this point, you can see exactly how the meter works. If, instead of touching the probes together, you touch them to each end of a wire, or to a fuse, the needle should sweep toward "0." Zero resistance indicates





Some tests with an ohmmeter will be needed for repair procedures presented in this manual. An ohmmeter will either have a switch or pair of jacks (plugs) that allow you to select the function of the meter. Resistance is measured in units called ohms and will be designated by the symbol (Ω), or the letter, R. Your meter may have more than one range scale. When set at R x 1, the reading should be taken directly from the meter. When set at a higher scale, such as R x 100, the reading on the scale should be multiplied by 100 to obtain the correct resistance. Most measurements for testing components or circuits are made on the lowest scale, usually R x 1.

Plug the test leads in the jacks marked "ohms." The red lead goes in the positive (+) jack, and

that the wire or fuse will conduct electricity. But if the wire or fuse is broken inside, the needle would not move toward 0. When this condition exists in a component or circuit, it is said to be "open," and it cannot conduct electricity. When the needle moves to indicate that the circuit is "closed" and conducts electricity, the component or circuit is said to have "continuity."

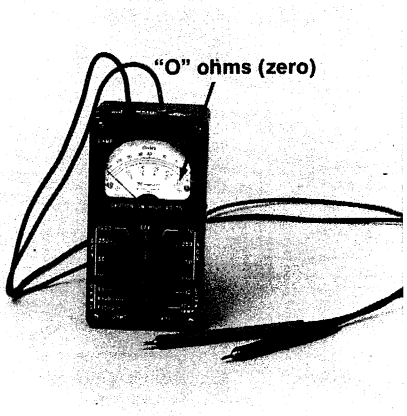
All wires in the electrical circuit should indicate "0" resistance when tested in this manner. Switches should indicate "0" resistance when they're turned on and should be open when turned off. Components that do work will offer some electrical resistance but will not be open. The meter reading for these instances should be somewhere between full scale and no reading.

Tools and testing equipment (cont.)

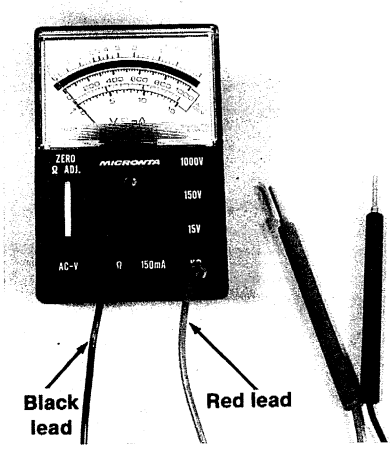
Many repair procedures in this manual advise you to test for grounds when checking a component. When doing this, you should select the highest resistance scale on the ohmmeter. You will be directed to place one test probe on a terminal of the component and the other test probe on a metallic portion of the component housing. No current should flow through those paths. If the meter indicates that little or no resistance exists under those conditions, the component is grounded and should be replaced.

The repair procedures in this manual will show you the test points, that is, where to place the test probes for various tests. You'll find the ohmmeter to be a valuable addition to your home tool collection.

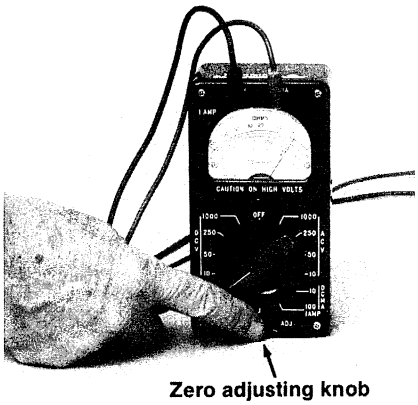
Using the ohmmeter



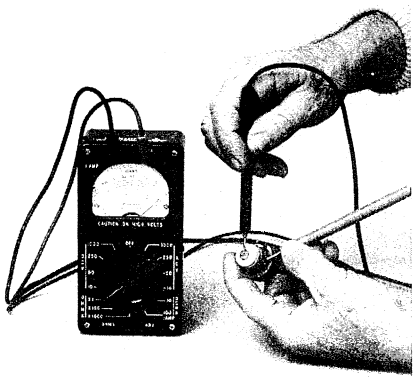
Full-featured ohmmeter has numerous switch-selected ranges. Note that ohms scale at top is reversed—zero resistance is at full sweep of scale.



Inexpensive ohmmeters use jacks rather than switches to select function, but still provide zero ohms adjustment. Note that red lead plugs into positive (+) jack, and the black lead plugs into the negative (-) jack.



To zero ohmmeter, touch probes tightly together and turn zero adjustment knob until needle is centered over "0" (ZERO) at full sweep of scale. Zeroing adjusts readout to the battery condition and to the resistance selected.



Sometimes you can't identify a blown fuse, even when it has a glass shell. Saving a single service call for a simple problem like this can pay for the price of a meter.

Note: Do not attempt to test resistance of any circuit with the power turned on. Checking a live voltage circuit will damage testing meter.

How to interpret circuit diagrams

The circuit diagram (schematic) that accompanies your dryer shows how wiring is connected between components, and how the internal electrical circuitry is arranged. The secret to using a circuit diagram is to simplify the diagram. When reading a diagram, focus your attention only on that part of the diagram that involves the area you are testing. (Relevant symbols and abbreviations are listed at the end of this section.)

Circuit diagrams may be drawn in several different ways. Some component symbols may be different, but all show the path of current flow from the lines through the switches and components. This flow of current depicts the continuous loop required to complete an electrical circuit.

For explanation purposes, let's study the circuit diagram of a typical electric dryer in the "ON" position. Electricity flows between L1 and L2 (240 volts) through the heaters and their control circuits. 120 volts flow between L1 and N through the drive motor circuit.

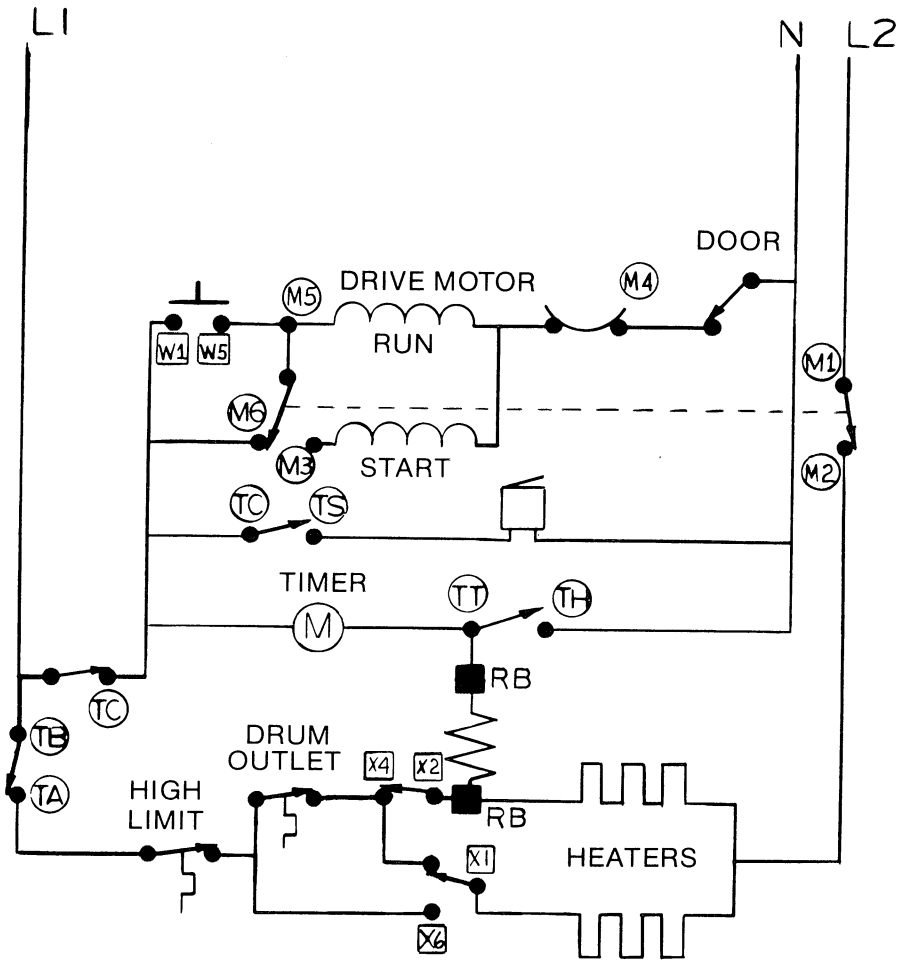
When the machine is first started, centrifugal switch contacts, M1-M2 and M5-M6, are open and M5-M3 are closed. When the start switch (W1-W5) is depressed, the start and run windings of the drive motor are energized.

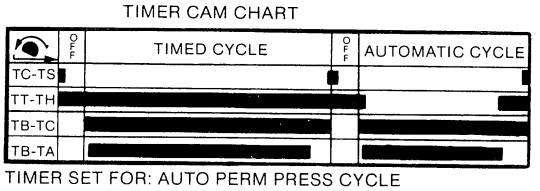
Centrifugal switch contacts, M1-M2, stay open until the motor reaches top speed to prevent electricity from reaching the heat source until the drum is turning and the blower is circulating air. The spinning force of the motor changes these centrifugal switch contacts, M5-M3 to M5-M6 (removing the start winding) and closes M1-M2 (energizing the heaters). The timer, thermostat, and selector switches control the amount of heat generated by the heaters.

The drum outlet thermostat is sensitive to the temperature of the air as it flows out of the drum. When the temperature reaches the trip point, the drum outlet thermostat opens to shut down the heaters. As the dryer cools down, the drum outlet thermostat will reset or close so that electricity can once again energize the heaters. The high limit thermostat acts as a safety switch should the air in the dryer become overheated due to a malfunction or insufficient airflow. It is set to open at a higher temperature than the drum outlet thermostat.

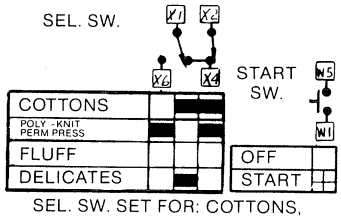
The fabric type or temperature selection is set on the selector switches. As seen in the selector switch chart for the electric dryer, contacts, X1-X4 and X2-X4, are closed for the cotton cycle, energizing both heaters for high heat. During the fluff or air only cycle, all of the selector switches are open, shutting down both heaters. For delicate fabrics only X1-X4 is closed, thus operating one heater and

Typical electric dryer diagram





TIMER SET FOR: AUTO PERM PRESS CYCLE



SEL. SW. SET FOR: COTTONS,
MACHINE: RUNNING

Tools and testing equipment (cont.)

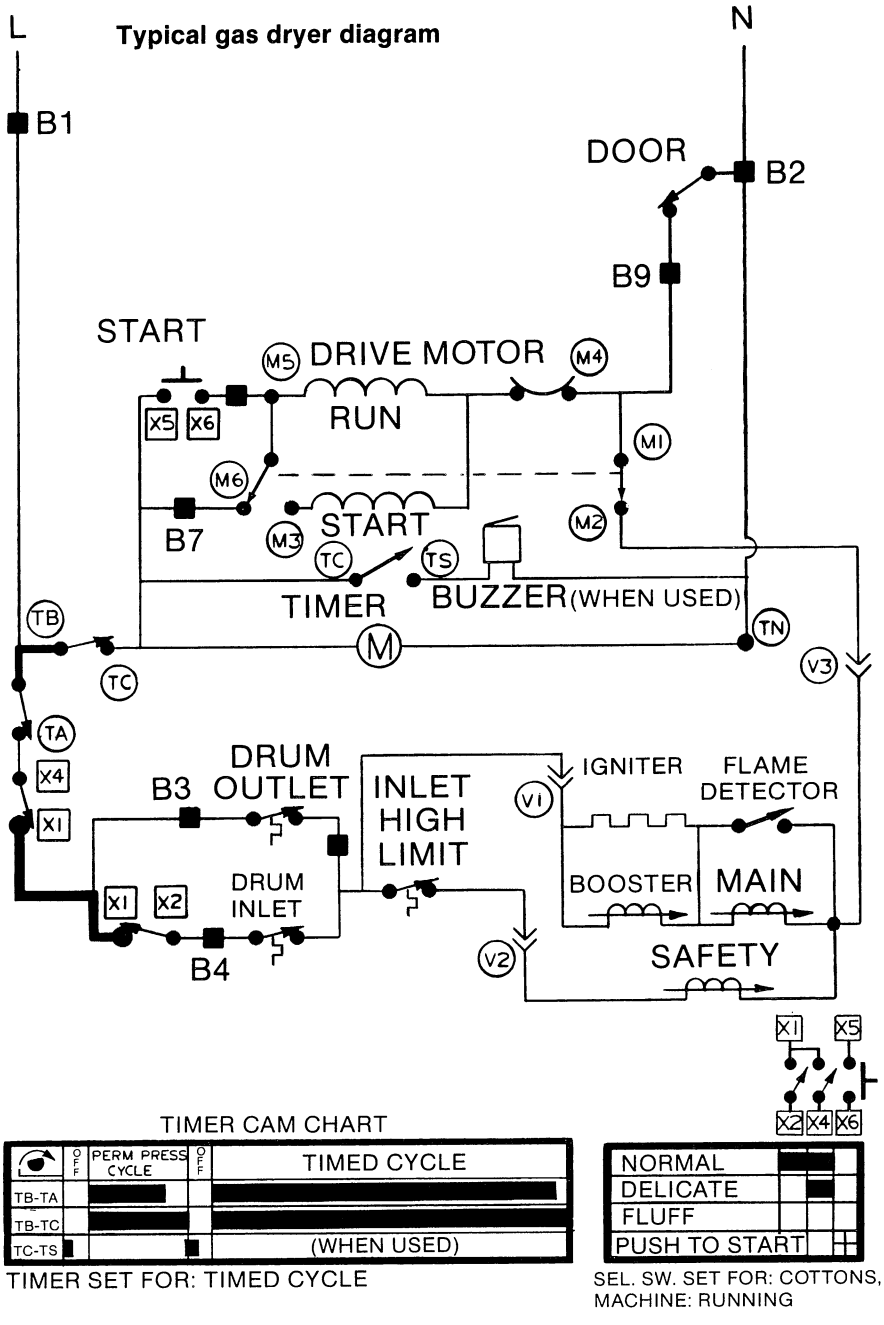
supplying low heat.

When the timed cycle is selected, the timer motor will run for the desired amount of time. TB-TA, TB-TC, and TT-TH are closed. When the cycle ends, TB-TA opens first to shut down the heaters, and then TB-TC opens to shut down the drive motor.

During the automatic cycle, the timer runs when the heat is off. For the automatic cycle, TT-TH remains open for most of the cycle. The resistor and timer motor provide a higher resistance over that part of the circuit, and electricity will preferentially flow through the thermostats rather than through the timer. Once the thermostat opens, however, electricity flows through the resistor and the timer motor. Because the resistor and the timer motor have approximately the same resistance, they divide voltage equally, so that the timer motor runs on 120 V rather than 240 V. Prior to the end of the cycle, TB-TA opens to shut off the heat and TT-TH closes to run the timer motor and allow for an 8-10 minute cool down.

The motor and timer circuit for a gas dryer resembles that observed in the electric dryer schematic. The centrifugal switch contacts operate in exactly the same manner. Electrical power for the gas dryer, however, comes from a 120-V line rather than a 240-V line. Because the heat comes from a gas burner rather than electric heaters, the energizing of the heat source and the thermostat system is also different.

Typical gas dryer diagram



TIMER CAM CHART

TIMER SET FOR: TIMED CYCLE

SEL. SW. SET FOR: COTTONS, MACHINE: RUNNING

Three circuits are completed to turn on the heat. One path is through the detector, igniter, and thermostats. Another path is through the detector, booster coil, and thermostats. The third path is through the safety coil and thermostats. When the booster and safety coils are energized, the safety valve is opened electromagnetically to start the gas flow. As the igniter becomes hot enough to ignite the gas, the flame detector (sensitive to a specific temperature) opens, routing the current through the main coil.

The energizing of the main coil opens the main valve, allowing gas to pass through the ignition port where it is ignited. The flame detector now stays open from the heat of the flame. Once the main valve is energized, there is less voltage reaching the igniter and booster. The igniter cools down but, the function of the booster coil is not materially affected.

The drum inlet thermostat, situated close to the heat source, will open first when the air gets warm enough. To shut off the gas flame, the drum outlet thermostat must also be open. Once the drum outlet has opened, the

drum inlet becomes the controlling thermostat. Because the drum inlet thermostat resets at a higher temperature than the drum outlet thermostat, the drum outlet thermostat will not have a chance to reset. As with the electric dryer, the inlet high limit thermostat acts as a safety switch, should the other thermostats malfunction or there is insufficient airflow.

The selector switches, X1-X2 and X1-X4, control the current flow to the thermostats and thus regulate the amount of heat used for each cycle. When X1-X4 is open, the heat system cannot be energized, so no heat is supplied (fluff cycle). When X1-X2 is open, the drum inlet thermostat is removed from the circuit, and the drum outlet becomes the controlling thermostat. Because the drum outlet thermostat resets at a lower air temperature than the drum inlet thermostat, low heat is supplied as in the delicate cycle.

By learning to properly interpret circuit diagrams, you will have an insight into your dryer's electrical function. This insight should allow you to use your ohmmeter to pinpoint a problem quickly and accurately. Circuit diagrams are located in an envelope glued inside the backsplash control panel, or glued to rear of the cabinet.

Note: Some of the contacts you will be testing are shown in separate areas on your dryer circuit diagram. On other diagrams the contacts are marked at various points in the circuit diagram. All contacts are not shown together because they pertain to specific circuits.

Symbols

The following Legend of Symbols and Abbreviations will assist you in reading the circuit diagrams.

BUZZER

HEATING UNIT

MOTOR

OVERLOAD PROTECTOR

RESISTOR

SOLENOID OR MOTOR WINDING

SWITCH OR CONTACT

TERMINAL BOARD

THERMOSTAT

WIRES CONNECTED

WIRES CROSSING

Abbreviations

B—TERMINAL BOARD

T-TIMER

X-SELECTOR SWITCH

V-GAS VALVE

Glossary of terms

Advance
To move forward in a cycle.

Backsplash
Control housing on top of dryer.

Bearing
Device that supports, guides, and reduces friction between fixed and moving parts.

Bell connector
Solderless connector for splicing wiring. Insulating cover crimps onto ends of wires to assure solid connection.

Belt
Continuous band of flexible material that transfers motion or power from motor pulley to drum.

Cam chart
Chart showing which switches are opened and closed in timer at various points in drying cycle. A cam is a notched wheel mounted on a rotating shaft in timer. As it turns, it activates switches that regulate drying cycles.

Catch
Female portion of door latch assembly that secures door to dryer front when door is closed. See also STRIKE.

Centrifugal switch
A switch in the motor that disengages start winding and energizes heaters after motor reaches top speed.

Circuit
Path of electrical current from power supply through wiring to point of use and back to source.

Circuit breaker
Device to protect circuit from current overload. "Tripped" circuit breaker interrupts circuit when current exceeds specified amount. See also FUSE.

Circuit diagram
Drawing using standard symbols to represent path of current from power supply through switches and components and back to source. Shows how wiring is connected between components and how internal wiring of components is arranged.

Closed (circuit)
Complete circuit which can conduct electricity.

Combustion chamber
Enclosure behind gas valve assembly in gas dryers where the ignition of gas occurs.

Component
An individual electrical or mechanical part of a dryer system.

Contact
Switch component which opens and closes to complete or break an electrical circuit.

Continuity
Ability of completed circuit to conduct electricity.

Cycle
As a verb, to repeatedly turn components on and off. As a noun, a particular sequence of events that occurs in a given dryer selection.

Defective
In this manual, used to mean a component which does not function properly and which must be replaced.

Distribution panel
Fuse or circuit breaker box that distributes incoming power from outside line into a number of household circuits.

Drum
Rotating component of the dryer which contains the clothes load.

Energize
To supply electrical current for operation of a component.

Flame detector
Component of gas assembly that senses when gas flame has been lit and turns off igniter.

Fuse
Device to protect circuit from current overload. "Blown" fuse automatically interrupts circuit when current exceeds specified amount. See also CIRCUIT BREAKER.

Fuse block
Separate part of distribution panel that contains large fuses used for electric dryer circuit. Usually two cartridge-type fuses joined at the handle.

Gas valve & burner assembly
Components of a gas dryer that regulate flow and ignition of gas.

Ground
Connection to earth or to another conducting body which transmits current to earth. Metal components in a circuit must be grounded to prevent their accidentally becoming electrically charged, causing injury.

Glossary of terms (cont.)

Housing
Plastic or metal casing that covers a component.

Idler assembly
A pulley system on a shaft that rests or presses against a drive belt. Also includes a spring-loaded arm to maintain a specified tension on the drive belt.

Igniter
Part of gas valve and burner assembly that ignites gas.

Inoperative
In this manual, used to mean a component which does not function, but which can be checked and possibly repaired.

Lead
Portion of electrical wiring attached to component.

Nutdriver
Tool used to remove and reinstall hexagonal-head screws or nuts. Resembles a screwdriver with a small socket at the end instead of a blade.

Ohm
Measurement unit for electrical resistance.

Ohmmeter
Battery operated test instrument for determining the continuity of a circuit and measuring its resistance.

Open (circuit)
Incomplete circuit which cannot conduct electricity.

Pulley
A wheel turned by or driving a belt.

Resistance
Restriction of current in an electrical circuit.

Resistor
Electrical component used to add resistance to a circuit.

Schematic
Another term for circuit diagram. See CIRCUIT DIAGRAM.

Short (circuit)
Accidentally created circuit between hot wire and any ground, allowing excessive current with little or no resistance.

Solenoid
Cylindrical coil of insulated wire that establishes a magnetic field in presence of current.

Strike
Male portion of door latch assembly that protrudes from inside of door. See also CATCH.

Switch
Device to turn current on and off in an electrical circuit.

Terminal
Connection point between wiring and electrical components. Commonly used terminals in dryers are push-on terminals, which are held in place by their snug fit.

Terminal block
Board on back of electric dryers for connecting power cord.

Terminal board
A board containing multiple electrical connections; in gas dryers where the wires for lower part of dryer meet those from upper part.

Test probes
Metal components of ohmmeter which are attached to either end of a circuit during testing for continuity or resistance. See also OHMMETER.

Thermostat
Heat-sensing component that controls temperature levels by turning heat source on and off.

Upscale
Reading from ohmmeter that indicates continuity in a circuit.

Volt
Measurement unit for electrical pressure.

Wall cap
Portion of dryer exhaust ductwork that passes through wall to outside.

Winding
One or more turns of wire forming a continuous coil for a relay or other rotating machine. A conductive path is formed by the wire.

Index

Index (cont.)

Whether you're a beginner or an expert, this book may eliminate the needless expense of unnecessary service calls! If you use the book only once—perform just one of the repair or maintenance procedures inside—it will have paid for itself!