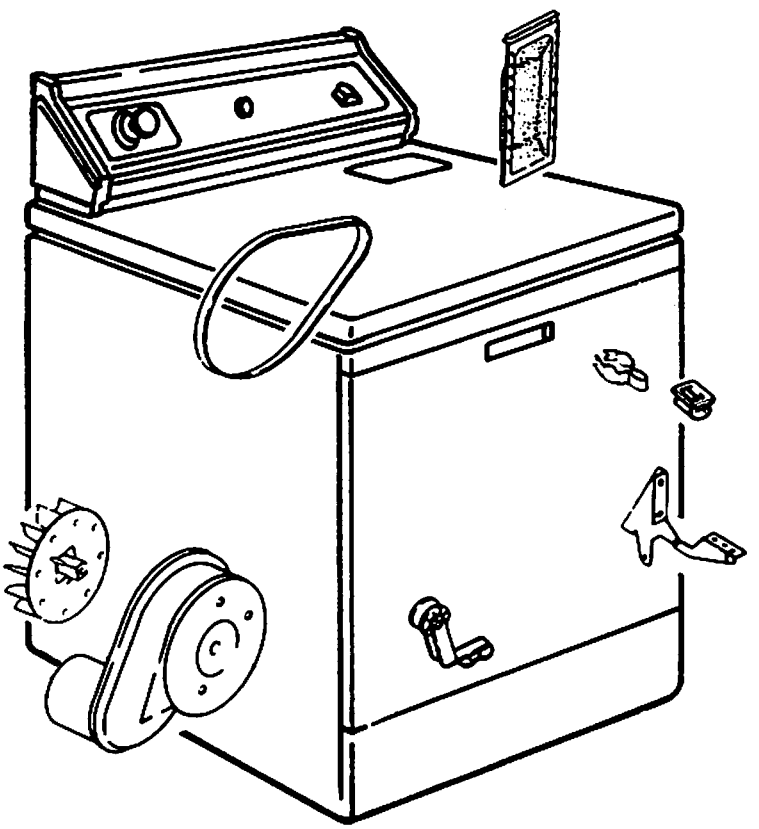
DRYER

STUDY COURSE

UNDERSTANDING DRYER:

- MECHANICAL COMPONENTS



MODULE 3

LIT787850-A

INTRODUCTION

The material presented in this module is intended to provide you with and understanding of the fundamentals of gas and electric dryer servicing.

Major appliances have become more sophisticated, taking them out of the screwdriver and pliers category. Their electrical circuits include several different types of automatic controls, switches, heaters, valves, etc.. Semiconductors, solid-state controls, and other components usually associated with radio and television electronic circuits are being engineered into automatic washers, dryers, dishwashers and refrigerators.

The appliance technician is emerging into a professional status of his own. He must prepare himself now to be able to perform his duties today as well as to retain his professionalism in the future.

No longer is on-the-job training sufficient to prepare technicians for the complicated procedures required for todays sophisticated appliances. This training can best be obtained through organized classroom study and application. However, much of the knowledge necessary to service todays appliances can be obtained through study courses. Completion of this and other courses will provide you with sufficient understanding of appliances and their operation to enable you to do minor service. It will also serve as a valuable stepping stone to more advanced study and on-the-job training to improve your servicing skills.

Information contained in this module is used on WHIRLPOOL® appliances.

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**NOTE:* *We recommend taking the TEST for MODULE 3, right after studying it.*

CHAPTER 1
MECHANICAL COMPONENTS

LINT SCREEN

This lint screen, (Figure 1) located in the right rear of the top, under the lint screen cover, is used to catch lint as the air leaves the dryer drum.

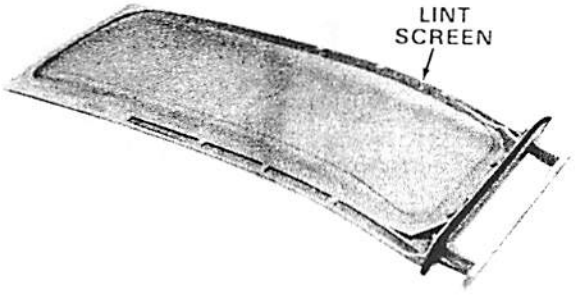

Fig. 1. Lint screen.

Failure to push the screen all the way down could cause lint to pass under the bottom of the screen. This could cause lint to build up in your exhaust system, causing a possible fire hazard.

FRONT BEARING and SEAL

This bearing and seal (Figure 2) is located on the inside flange of the front cabinet panel and is used to support the drum and make a seal between the front drum and panel openings.

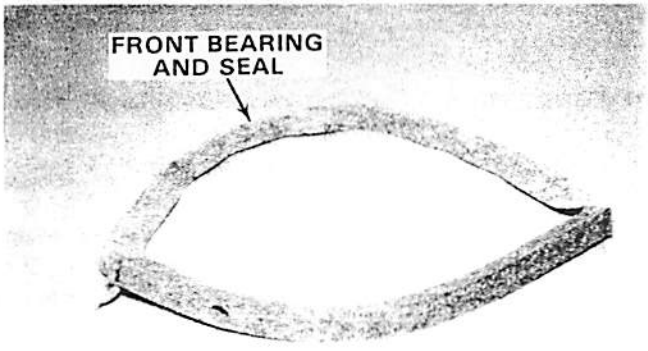

Fig. 2. Front bearing and seal.

When replacing this seal, make sure the folded edge of the seal is facing away from the front cabinet panel and the two holes in the bearing fit over the two rubber plastic clips.

Reduced air pressure in the drum during operation draws the seals in and effectively seals the drum ends.

The two seals, one at the back and one at the front, are the points most susceptible to leaking. If either does not seal effectively while the drum is rotating, there would not be enough air passing through the heater box.

If air is allowed to leak in through any point other than the heat source, drying efficiency is greating affected. Not only is the lack of heated air a factor, but it must also be remembered that the heater is generating a predetermined amount of heat. If not enough air is passing to carry off the heat as fast as it is being produced, the excessive temperature building up in the heat duct will open a high-temperature-limiting safety thermostat switch and shut off the heat source.

DOOR Seal

This part (Figure 3) is located on the rear door panel and is used to form a tight seal between the door and front cabinet panel when the door is closed.

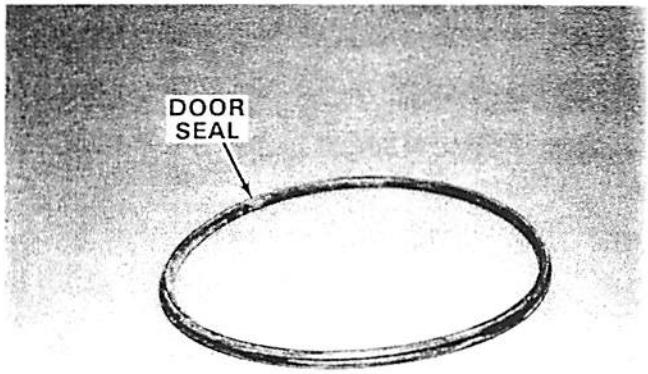

Fig. 3. Door seal.

When replacing this seal place a bead of silicone rubber adhesive/sealant around the groove in the rear door panel. Place the door seal with the round side in the groove in the rear door panel.

Door Hinge

We have four types of door hinges that could have been used on dryers (Figure 4). These hinges are used to support the door.

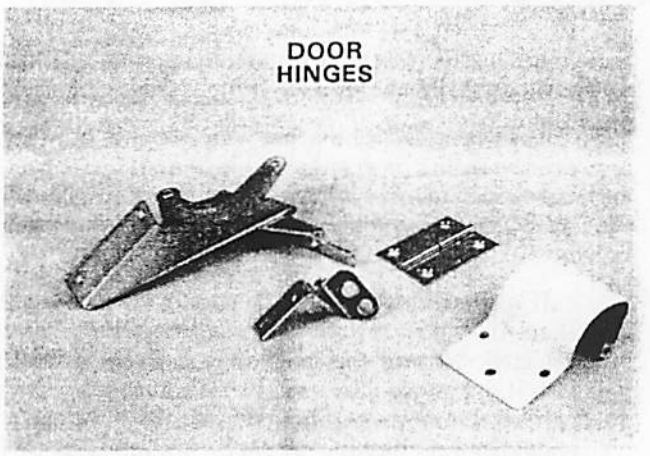

Fig. 4. Door hinges.

Door Strike and/or Door Catch

These two parts (Figure 5) fit together and hold the door in a closed position.

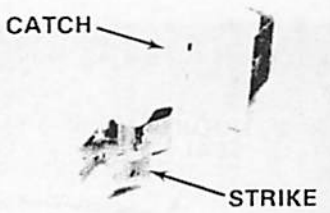

Fig. 5. Door catch/strike.

Models were built with either the catch or strike on the front cabinet panel and the mating part on the rear of the door.

Leveling Feet

These plastic or metal feet (Figure 6) are screwed into the front and rear corners of the dryer.

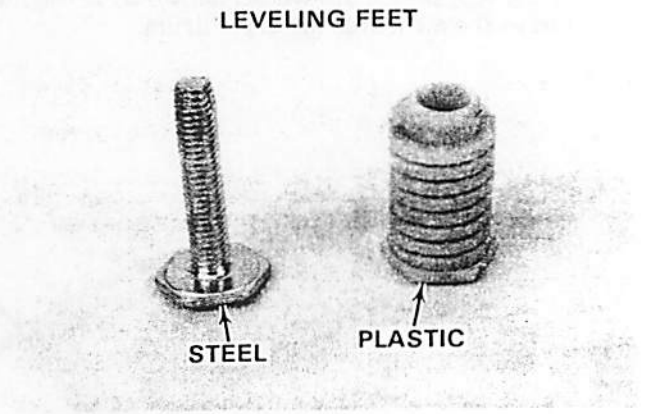

Fig. 6. Leveling feet.

Drive Motor Pulley

This pulley (Figure 7) is located on the end of the drive motor and is used with the drive belt in order to turn the drum.

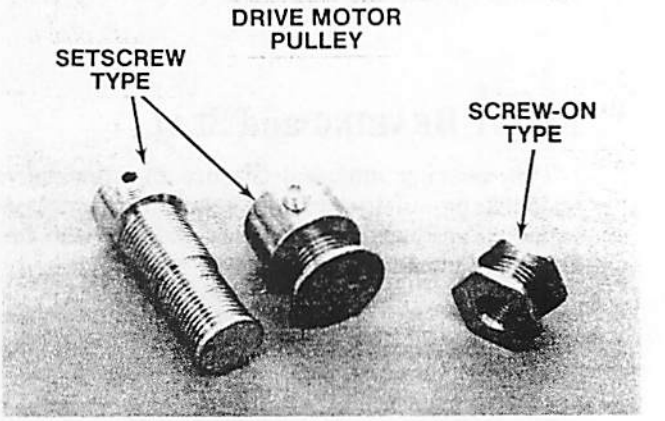

Fig. 7. Drive motor pulley.

NOTE: On some models the cone-shaped motor pulley was used with an idler pulley and shifter assembly, which changes the speed of the drum through a shifter control in the console area.

IDLER PULLEY

This part (Figure 8) is located below the drum and in line with the drive motor pulley. The function of this part is to supply tension to the drive belt.

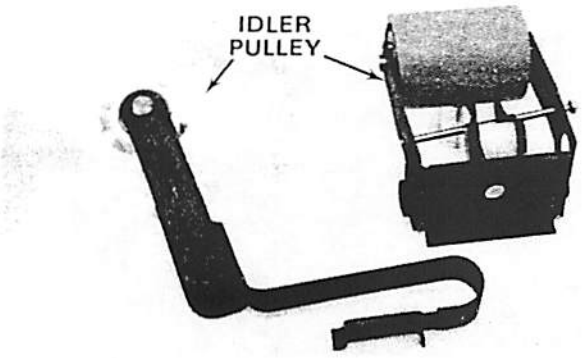

Fig. 8. Idler pulley.

NOTE: On some models the idler pulley and shifter assembly changes the speed of the drum through a shifter control in the console area and a cone-shaped motor pulley.

DRIVE BELT

The drive belt (Figure 9) fits around the drum, under the idler pulley and around the motor pulley. The motor pulley moves the belt which turns the drum, causing the clothes to tumble. The idler pulley maintains drum belt tension.

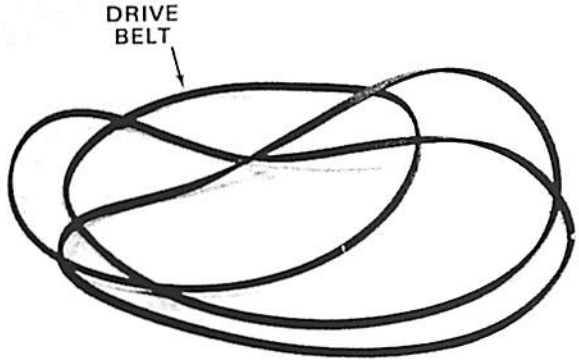

Fig. 9. Drive belt.

NOTE: It is recommended that anytime the front cabinet panel is removed, the drive belt be checked for frayed spots or wear, and replaced.

V-belts and pulleys have been changed several times since they were introduced. The belt must be compatible with the correct pulley for proper rpm. (Figure 10). There are also belts and pulleys with five grooves. However, a 4-rib belt can be used on a 5-rib pulley.

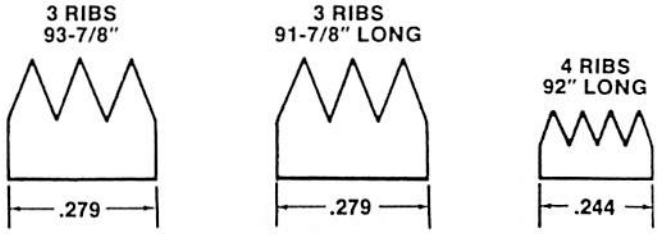

Fig. 10. Poly-V belts.

Belt "Vees" must fit evenly into the grooves on the motor pulley. If the "Vees" are out of the grooves, higher-than-normal drum speeds will be attaind, causing the clothes to cling to the drum sides, resulting in prolonged drying time or excessive wrinking of clothing.

For proper tumbling of garments, all dryer drums should revolve at 48 rpm's or 55 rpm's if it is a compact dryer. Always check the service parts list to be sure that you have the correct belt for the model you are repairing. An incorrect drum drive belt or one not fitting in the pulley grooves can cause very high drum speeds.

To install the drum belt, begin by removing the dryer front panel. Then place the belt over the drum in the driving position, and install it under the idler pulley and over the motor pulley.

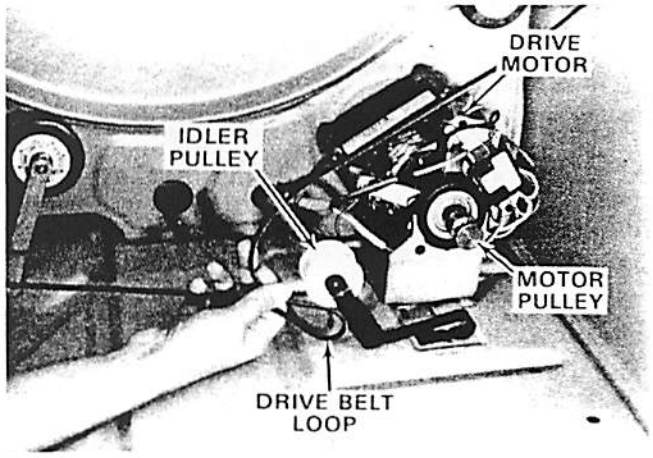

Fig. 11. Installation of belt.

When assembling the belt on the motor pulley, first form a small loop, then slide the drive belt under the idler pulley. Push the idler assembly to the right, and at the same time place the loop of the belt over the end of the motor pulley. See Figure 11.

Lint Chute

This lint chute (Figure 12) is located in the right rear corner. The lint screen is housed in this part. Air passes through the screen and chute before it is exhausted to the outside.

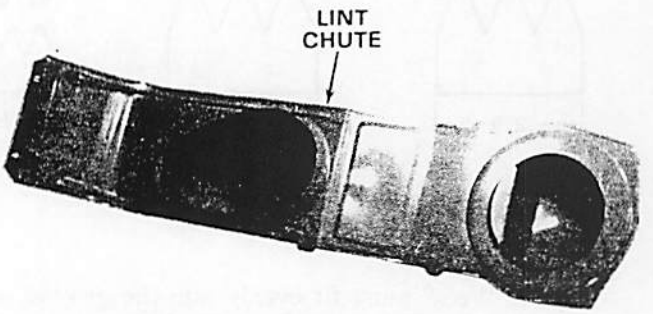

Fig. 12. Lint chute.

Blower Housing

This blower housing (Figure 13) is located in the back of the dryer. The blower wheel and thermostats are housed in this part.

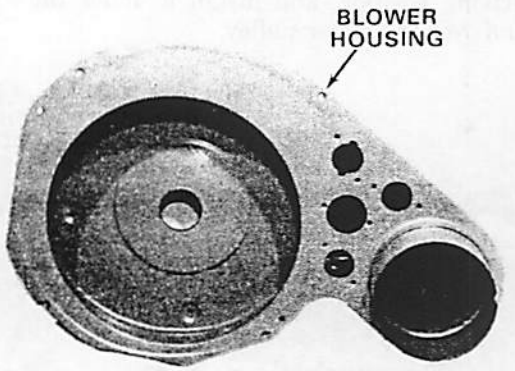

Fig. 13. Blower Housing.

Blower Wheel

This blower wheel (Figure 14) pulls the air out of the drum and pushes it out the exhaust duct.

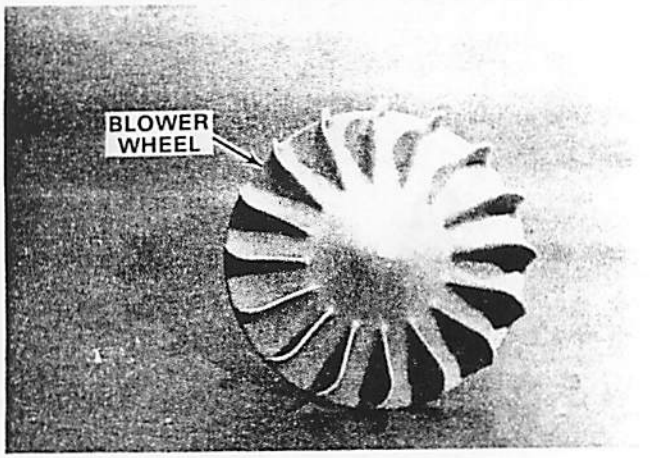

Fig. 14. Blower wheel.

Heater Box

The heater box (Figure 15) houses the heat element on electric dryers and carries the heat from the gas burner to the drum on gas models. This heat is pulled into the drum area by the blower wheel.

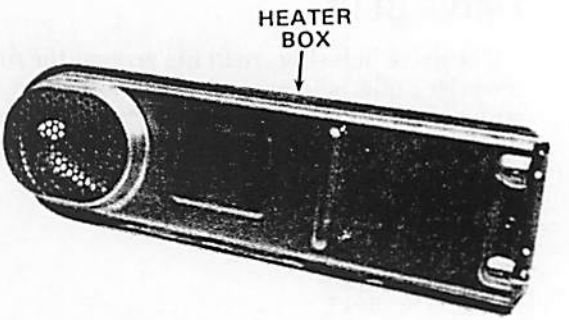

Fig. 15. Heater box.

Manifold Cover

This part (Figure 16) is located behind the bulkhead and in front of the heater box.

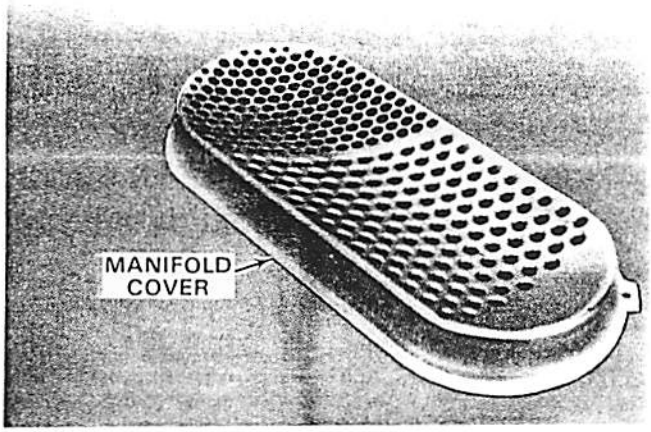

Fig. 16. Manifold cover.

Drum

The drum (Figure 17) is the large, round container mounted for rotation within the cabinet. Wet clothing is placed within the drum, to be heated and tumbled dry.

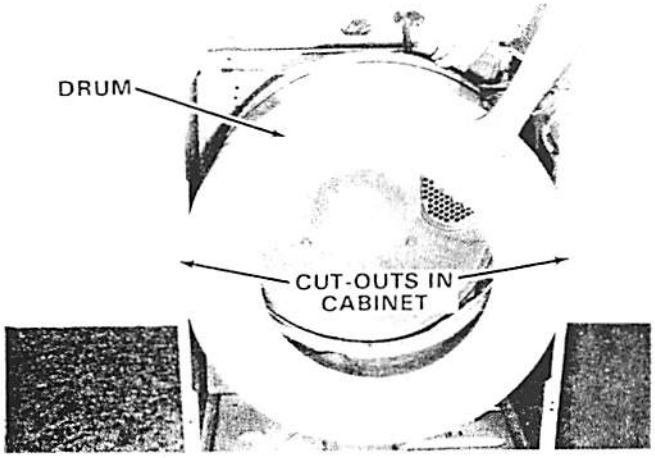

Fig. 17. Drum.

Baffles within the drum lift and tumble the clothing during drum rotation.

Drum Baffle

This drum baffle (Figure 18) attached to the inside of the drum, is used to tumble the clothes when the drum turns.

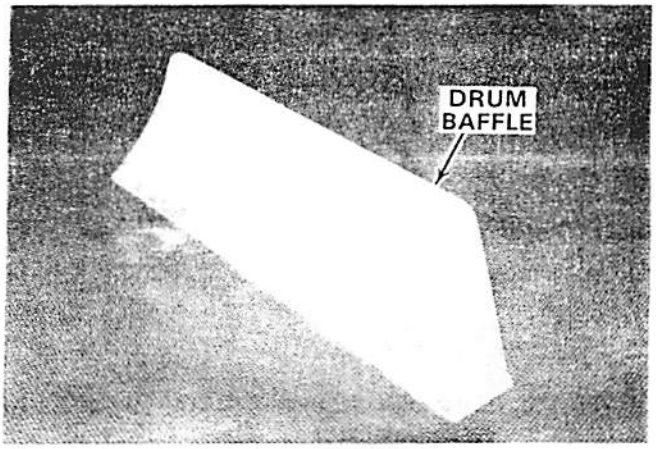

Fig. 18. Drum Baffle.

Bearing Ring

The bearing ring (Figure 19) snaps into place within the round opening in the front of the dryer drum. This bearing ring rides on the outer surface of the bearing and seal fastened to the outside of the flange formed in the center of the front cabinet panel.

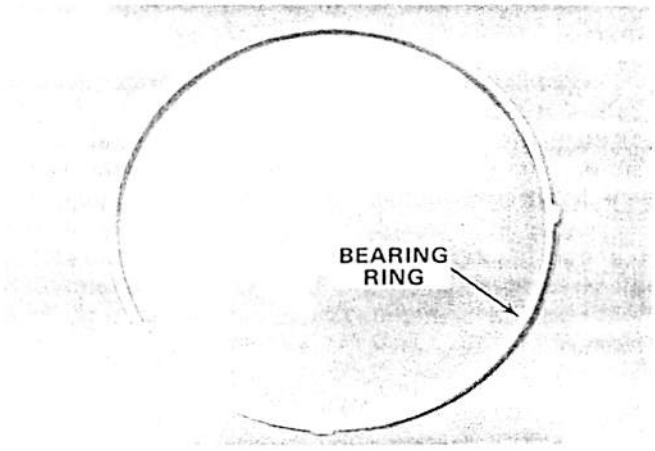

Fig. 19. Bearing Ring.

To insure the minimum of air leakage and proper drum alignment when replacing the bearing ring, the bearing and seal should be changed at the same time.

Rear Drum Seal

This rear drum seal (Figure 20) is used to keep cool air from being drawn into the drum area and the heated air from escaping.

It is cemented to the rear of the drum and rides on an embossed area of the bulkhead.

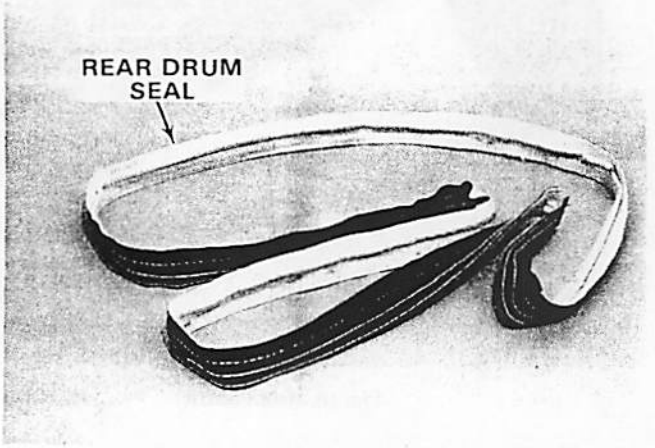

Fig. 20. Rear drum seal.

Reduced air pressure in the drum during operation draws the seals in and effectively seals the drum ends.

The two seals, one at the back and one at the front, are the points most susceptible to leaking. If either does not seal effectively while the drum is rotating. There would not be enough air passing through the heater box.

If air is allowed to leak in through any point other than the heat source, drying efficiency is greatly affected. Not only is the lack of heated air a factor, but it must also be remembered that the heater is generating a predetermined amount of heat. If not enough air is passing to carry off the heat as fast as it is being produced, the excessive temperature building up in the heat duct will open a high-temperature-limiting safety thermostat switch and shuts off the heat source.

Support Roller

These two rollers (Figure 21) are located on the bulkhead. They support the rear of the drum while the drum turns.

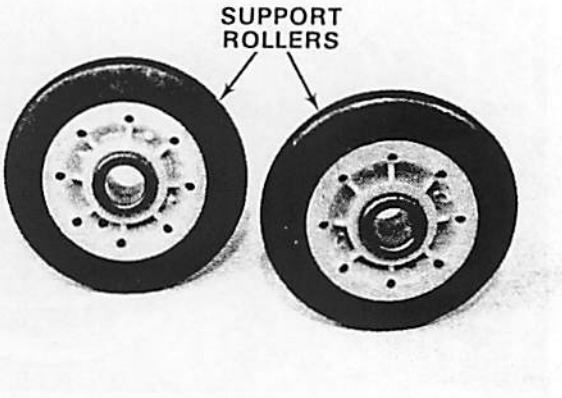

Fig. 21. Support rollers.

The drum has a groove (Figure 22) embossed into its outer circumference, which acts as a track for the rollers. The track keeps the drum in alignment with the bulkhead and the front panel.

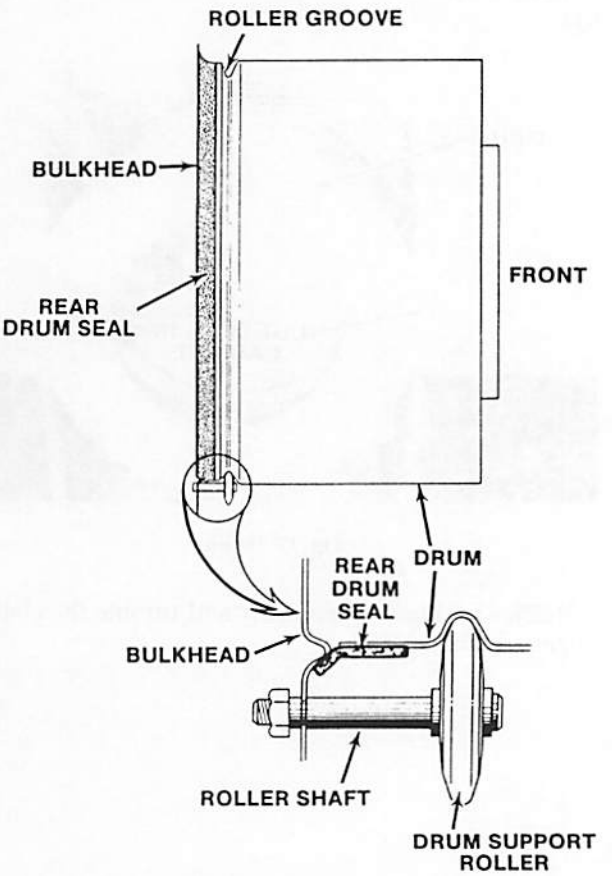

Fig. 22. Drum roller groove.

Roller Shaft

These two shafts (Figure 23) are located on the bulkhead. The drum support rollers ride on them.

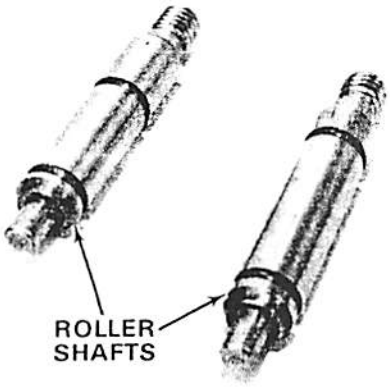

Fig. 23. Roller shafts.

Bulkhead

This part (Figure 24) located inside the cabinet, is used as a back for the drum and supports the sides of the cabinet. This bulkhead also supports parts of the heat and air systems.

Fig. 24. Bulkhead.

This bulkhead can be repainted if it has been scratched or nicked, caused by belt buckles, etc.

Lint Alert

This lint alert (Figure 25) is located on the lint chute. When the lint screen is blocked with lint, the lint alert sounds off a musical tone informing the consumer to clean the lint screen.

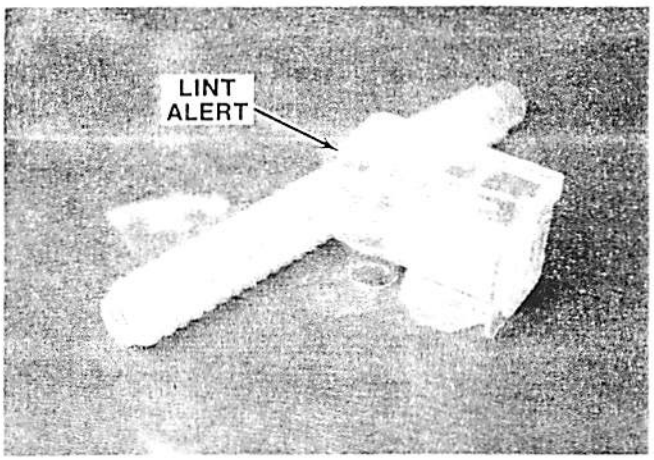

Fig. 25. Lint alert.

NOTES

QUIZ
MODULE 3

1. As the drum turns, a groove in the back of the drum acts as a track for the rollers, keeping the drum in alignment.
   A. True
   B. False

2. If air is allowed to leak in through any point other than the heat source, drying efficiency is greatly affected.
   A. True
   B. False

3. The_____makes a seal between the front drum and panel.
   A. door seal
   B. bearing ring
   C. bearing and seal

4. The bearing ring snaps into the front opening of the drum.
   A. True
   B. False

5. The_____pulley maintains drum belt tension.
   A. motor
   B. idler

6. The blower wheel is located in the_____.
   A. lint chute
   B. blower housing

7. A 4-rib belt can be used on a 5-rib pulley.
   A. True
   B. False

8. If belt "Vees" do not fit properly in the grooves on the motor pulley,_____.
   A. slower than normal drum speeds will occur
   B. higher than normal drum speeds will occur
   C. none of the above

9. The catch and strike hold the door in a closed position.
   A. True
   B. False

10. Silicone rubber adhesive/sealant is used to hold the door seal on the rear door panel.
    A. True
    B. False

The following is the grading system for this module.

GRADE	WRONG ANSWER
A—Excellent	0-1
B—Good	2
C—Satisfactory	3
F—Failure	4 or More