

TECHNICAL FLASH

Department 731A Toronto

T.F. 26 - 30 May 8, 1986

SERVICE INFORMATION

DIVISION 26

KENMORE MID-SIZED DRYER
NEW PRODUCT LINE

SOURCE C968

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PRODUCT INFORMATION

The mid-size dryer is available in two categories, 115 volts and 230 volts AC, 60 HZ,.

ELECTRICAL REQUIREMENT

This dryer must be connected to an individual circuit identical to the one specified on the rating plate of the appliance.

115 Volt Model: Protected by a 15 or 20 ampere time-delay fuse or a circuit breaker, conforming to local codes.

230 Volt Model: Protected by 30 ampere fuses or circuit breakers, conforming to local codes.

IMPORTANT - THIS APPLIANCE MUST BE PROPERLY GROUNDED.

The power cord of this appliance is equipped with a three (3) or four (4) prong plug which mates with an appropriate dryer wall receptacle.



TYPICAL 15 AMP. RECEPTACLE



TYPICAL 30 AMP. RECEPTACLE

CIRCUIT PROTECTION REQUIRED:

115 Volts Model *15 or 20 amps 230 Volts model *30 amps *CONFORMING TO LOCAL CODES

PRODUCT SPECIFICATION

MODEL - 66500

- Voltage - Two Rotary Controls - Four Cycle Selections

- Heat Temperature

- Heating Element - Rated Current

- Motor

- Dimensions

- Air Flow

- Drum Rotation - Venting

115 Volts

Start Switch and Timer Normal, Perma Press. Delicate and Fluff Pre-set on Timer 54°C -42°C (130°F - 108°F) One coil - 1,300 watts 13 amps.

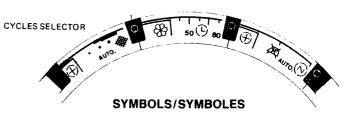
1/4 H.P.

H. 84cm (33") W. 60cm (24") D. 56cm (22")

135 CFM

47 to 50 RPM

Rear plus provisions for Sides and Bottom.



PERMANENT PRESS SANS REPASSAGE

DELICATE DÉLICAT

NORMAL TIMED RÉGULIER MINUTÉ

START DÉMARRAGE

- 42°C

MODEL - 66600

- Voltage

- Three Rotary Controls

Start Switch, Heat Selector Switch and

Timer.

230 Volts

- Six Cycle Selections

Normal. Perma Press & Knit Auto.

Normal, Delicate & Fluff Timed.

Normal 54°C

- Heat Temperatures

 $(130^{\circ}F - 108^{\circ}F)$ Delicate 52oC - 46oC $(125^{\circ}F - 115^{\circ}F)$

Knit 54°C 1st cycle. then 52°C - 46°C

(130°F 1st cycle, then 125°F - 115°F) Fluff - No Heat

- Heating Element One coil - 3,300 watts - Rated Current

17 amps. 1/4 H.P.

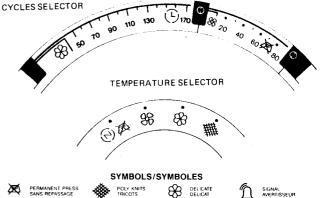
H. 84cm (33") W. 60cm (24") D. 56cm (22")

Shipped with 4' cord set

135 CFM

47 to 50 RPM

Rear plus provisions for Sides and Bottom.











NORMAL REGULIER

- Motor

- Dimensions

- Drum Rotation

- Cord Set - Air Flow

- Venting

OFF ARRET



The unique design and construction of this dryer allow an invert (upside down) operation and thus offer four practical installation modes.

A. SIDE-BY-SIDE

The dryer may be installed as unpacked on four adjustable levelling feet.

B. PERMANENT INSTALLATION - Using the Stack Rack Kit No. DSR46T.

The dryer may be inverted and mounted above a permanently plumbed-in washer.

C. MOBILE INSTALLATION - Using The Stack Rack Kit No. DSR36T.

The dryer may be installed right side up, control at eye level, above a mobile washer.

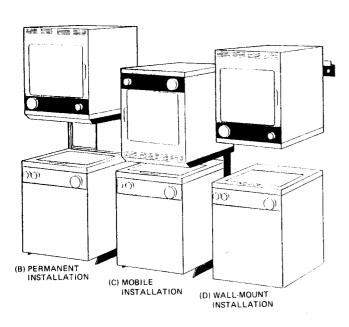
D. WALL MOUNT - Using The Wall Mount Hang Kit No. DWM-2.

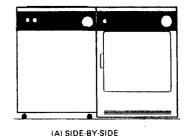
The dryer may be inverted and installed with a wall hang kit, above a mobile or a permanently plumbed-in washer.

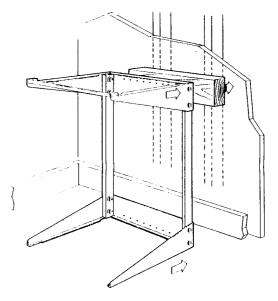
NOTE: All above accessory kits are optional.

IMPORTANT - PLEASE READ

For safety purpose, the stack rack or hang support must be permanently installed to a wall by securing a long piece of wood to wall study or masonry. Complete instructions are included in kits.





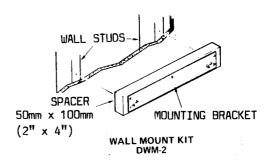


DSR46T DELUXE RACK

H W D 117cm 62cm 60cm 46" 24-1/4" 23-5/8"

DSR36T REGULAR RACK

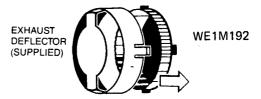
H W D 91cm 62cm 60cm 36" 24-1/4" 23-5/8"



INSTALLATION INSTRUCTIONS ARE INCLUDED WITH ACCESSORY KITS

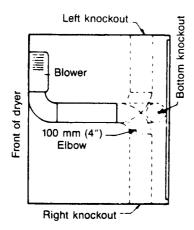
EXHAUST TO INSIDE

Only the 115 volts model can be exhausted to the inside. A deflector, supplied with the product, must be fastened over the exhaust port. The 230 volt model must be exhausted to the outside.



EXHAUSTING

This dryer offers four exhausting possibilities. Released from the factory ready for rear exhausting, it can be modified to exhaust either through one of the side knockouts or through the bottom.



To Change from Rear to Side or Bottom Exhaust:

- Remove rear access panel.
- Remove duct extension from the blower outlet.
- Install on blower outlet a standard 100mm (4") adjustable metal elbow.
- Add a length of straight 100mm (4") diam. metal duct extension through either one of the sides or bottom knockouts.

NOTE: Non-metallic duct must never be used inside the dryer cabinet.

EXHAUST LENGTH CALCULATION

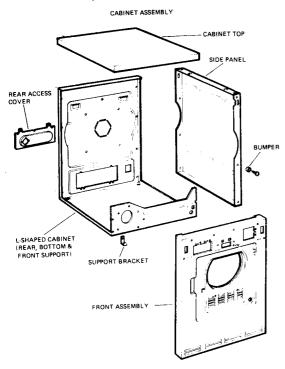
The permissible exhaust lengths are the same for the standard capacity. Refer to section B for more details.

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The cabinet assembly consists of the following:

- One piece L-shaped galvanized part that serves as the rear, bottom and front support.
- Rear access panel.
- Two interchangeable side panels.
- Cabinet top.
- Front assembly.
- Door assembly.



Once the dryer has been installed, all functional components can be accessed from the front.

NOTE: The following information applies only to dryers installed in the normal position. If the dryer is inverted, words like top, bottom and upward should be taken into consideration.

CABINET FRONT

To remove the cabinet front, remove the knobs and two screws from the switch trim, one on each side. The switch trim is held in place by three hidden metal spring clips at the top and three hidden nylon trim holders at the bottom. Pull the bottom part of the trim in order to release it from the bottom nylon holders and finally, push trim upward and remove.

The front is held in place by two Phillips head screws, one at each top corner of the front. Loosen each screw and slide downward into the unlock position (slotted holes). Pull the front assembly from the top and lift out the assembly

from the lower brackets. (Refer to illustration on page G5.)

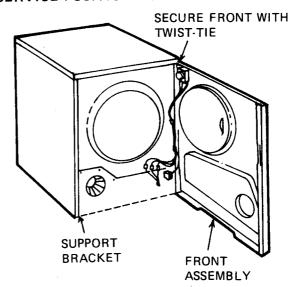
Since the harness wires are connected, the front assembly cannot be set aside. The following is the recommended servicing position for the dryer front:

*For a dryer installed in the normal position -

- Rotate the dryer front assembly 900 to the right and position the bottom of the front assembly in the support bracket.
- With a solid twist-tie, secure the top of the front panel assembly to the side panel. Use the front slotted holes at the top of both parts.

With the front in this position, the harness wires can be disconnected and the front assembly can be removed to gain access to the motor blower assembly, heater coil, thermostats and drum assembly.

SERVICE POSITION FOR FRONT ASSEMBLY

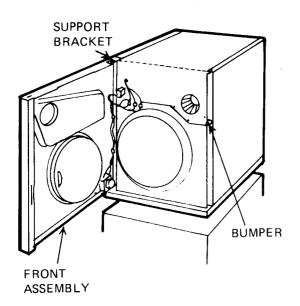


NORMAL INSTALLATION

*For a dryer installed in the inverted position:

- Move the front to the right approx. 100mm
 (4"), until the left bumper is exposed.
- Using a Phillips head screwdriver, remove the left bumper.
- Rotate the dryer front 90o to the left and position the top of the front under the top support bracket. Allow the bottom of the front to rest on the edge of the mounting panel (dryer top).

With the front in this position, the harness wires can be disconnected, and the front assembly can be removed to gain access to all components.



INVERTED INSTALLATION

Please note that when the front is reassembled to the cabinet, the harness wires have to be reconnected, the bumper guide re-attached and the door must be in the open position. This door position is necessary to align the drum bearing surface to the drum bearing attached to the front.

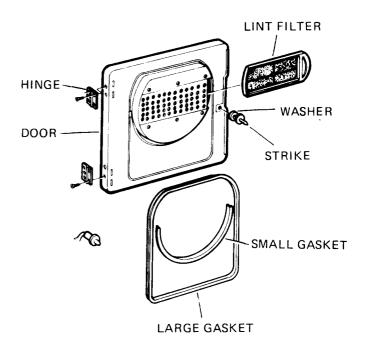
DOOR ASSEMBLY

All components of the door assembly are replaced separately. The door assembly consists of the following:

- One outer door panel with an aluminium inside deflector.
- One plastic inner door assembly.
- One lint filter.
- Two door gaskets, one to seal the complete door and one to seal the loading port in order to force the air ciculation through the lint filter.
- Two door hinges with mounting hardware.
- Door strike with mounting hardware.

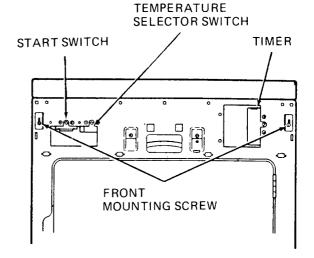
NOTE: There is no adjustment associated with the hinges, but the door strike can be loosened and repositioned if necessary.

To dissassemble the door, remove the two hinges and separate the panel and liner. Either of the door gaskets can be replaced by simply removing the old gasket from the retaining groove in the door liner and press fitting a replacement gasket in the same relative position.



NOTE: The above illustration represents the door in the inverted position.

DOOR



GENERAL

The drive system consists of the motor, belt, idler, drum and baffles, and the front and rear drum bearings. Also discussed in this section is the ground strap.

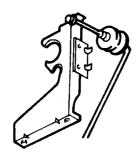
DRUM AND BEARINGS

To remove the drum, the front must be removed and the drive belt must be disconnected from the idler system. Note that when the front is removed, the drum actually drops to the bottom of the dryer. To release the belt, the torsion spring idler arm must be pulled to the right (installed in normal position) and hooked on the motor bracket. The belt can then be removed from the motor pulley and draped on the heater housing. The drum is now in a position to be removed.

Note: There are no "C" type retaining rings on the drum shaft to remove.



MOTOR BRACKET



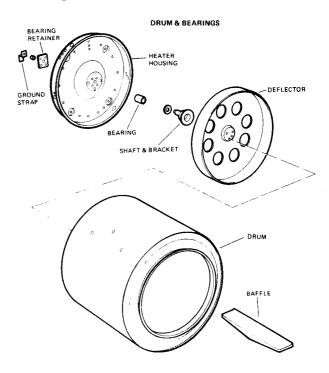
IDLER ARM HOOKED ON THE MOTOR BRACKET

The drum construction is an assembly of three galvanized steel parts. The front and rear drum heads have a vitreous enamel finish while the drum wrapper has a rough epoxy type paint finish. The drum has three polypropylene baffles attached to the assembly with mounting screws. Only the baffles are replaceable. If any other drum component is defective or damaged, the drum assembly must be replaced.

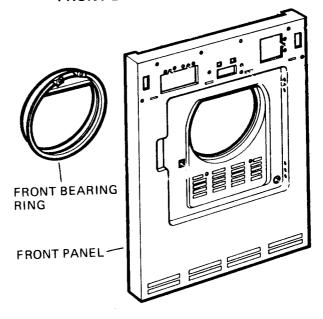
One of the unique features of this dryer is the design of the front and rear bearing system. The drum rides on two celcon bearings, a "T" shaped bearing at the rear and a spherical ring at the front. The rear bearing is installed on the drum shaft with the bearing shoulder against the drum while the front ring is mounted to the cabinet front.

To replace the front bearing ring, remove two mounting screws and pull the ring to separate it from the front. The slots around the perimeter of the ring actually fit into formed embosses on the loading port of the front. Make sure the ring is seated properly before the dryer is reassembled.

NOTE: There is no lubricant required on the front bearing ring. Should it become necessary to lubricate the rear bearing, use high temperature lithium grease.



FRONT BEARING RING



The torsion spring (idler arm) is retained utilizing lances and embosses in the dryer base. One end of the torsion spring is inserted into a retaining hole in the blower housing. The end of the torsion spring holding the pulley is longer and has a cap nut attached to the end. This allows the torsion spring to be hooked on the motor bracket while servicing the belt, drum, etc.

To remove the idler assembly, the front and drum must be removed. Release the torsion spring if it is hooked on the motor bracket. Grasp the pulley end of the assembly and pull upward. The assembly must be rotated slightly to free it from the retaining hole in the blower housing. To reassemble, reverse the above.

BELT

To replace the drive belt, the front must be removed and the torsion spring idler arm must be hooked on the motor bracket. It is assumed that the old belt has been removed. Position the belt around the drum with the grooved side of the belt contacting the drum surface. Align the belt around the drum and the motor pulley. The belt is placed under the idler pulley and then the idler arm is released from the motor bracket. Lift and rotate the drum to check the belt alignment. Reassemble the dryer after the belt is properly aligned.

GROUND STRAP

The ground strap is not accessible from the rear of the dryer. To service the ground strap, the front, drum and heater housing must be removed.

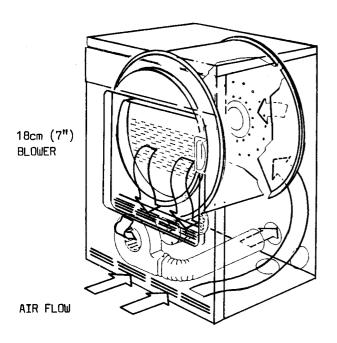
MOTOR

The double ended shaft drive motor is a 1/4 H.P., 120 Volt, 60 Hz, single phase motor. It operates at 1725 RPM and is manufactured with an internal automatic reset overload protector. The motor pulley is pressed on one end of the shaft and is sized to allow the drum to turn at 47 to 50 RPM. The blower wheel is attached to the other end of the shaft

GENERAL OPERATION

The cool air is pulled through the louvers in the cabinet front and drawn into the heater housing located at the drum rear. The hot air is pulled into the drum, across the wet clothes load, through the lint filter in the door and down the trap duct into the blower. From the blower, the air is pushed out the external exhaust system.

By having the blower pull the air from the drum instead of pushing it into the drum, a negative pressure or slight vacuum is created. This negative pressure allows for faster evaporation of moisture at a given temperature.



BLOWER AND MOTOR ASSEMBLY

The blower and motor assembly is mounted on the base of the L-shaped cabinet. To gain access to the assembly, the front and drum must be removed.

Discussion of the drum removal is covered under the DRIVE SYSTEM.

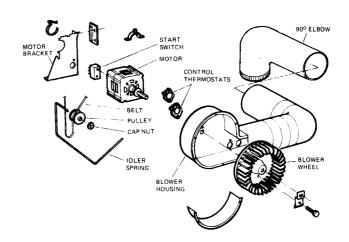
The blower wheel (18cm (7") diameter) is attached to the motor shaft in the same manner as the standard capacity electric dryer. Therefore, if the blower wheel is loose the mounting screw can be secured without removing the complete motor and blower assembly. If the blower wheel is broken, the motor and blower assembly must be removed as

an assembly. Before removing the mounting hardware, it is recommended that the clamps holding the wire harness to the base of the dryer be removed. This will allow the motor and blower assembly to be removed without disconnecting the harness wires. Remove the exhaust retaining screw located on the base of the dryer and any tape or screw holding the external duct to the 90 degree elbow. Next, remove the blower mounting screw and motor bracket mounting nuts.

NOTE: If dryer is inverted, the assembly will have to be supported with your free hand. After the hardware is removed, allow the assembly to rest on the bottom of the dryer. Service the necessary components and reassemble in the reverse order as discussed above.

NOTE: The control thermostats are mounted to the blower housing. Servicing the thermostats are discussed in the Electrical Section.

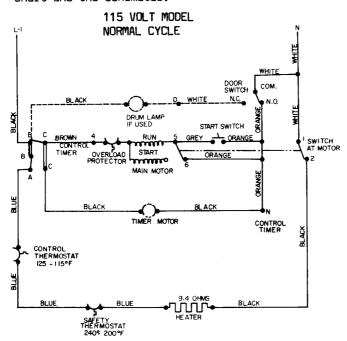
AIR FLOW SYSTEM



WIRING DIAGRAM AND CAM CHART

The wiring diagram is located in an envelope glued to the back of the switch trim.

Reviewing the electrical circuit of the 115 volt model, the following figures show the timer cam chart and the schematic.



TIMER SET FOR 30 MINUTES IN NORMAL CYCLE MACHINE RUNNING

360°=300 M	
NORMAL CYCLE	
160 140 120 100 80 60 40 20	

Assume the dryer timer is set about 30 minutes into the NORMAL CYCLE with the motor running. In this position, both timer contacts are closed and the motor start winding is not energized. Under normal conditions the dryer control thermostat located on the blower housing will open around $51^{\circ}\text{C} \stackrel{+}{\ } 3^{\circ}\text{C} \ (125^{\circ}\text{F})$ and reset when the thermostat reaches $46^{\circ}\text{C} \stackrel{+}{\ } 3^{\circ}\text{C} \ (115^{\circ}\text{F})$. If the door is open during the cycle, the start switch must be rotated to restart the dryer.

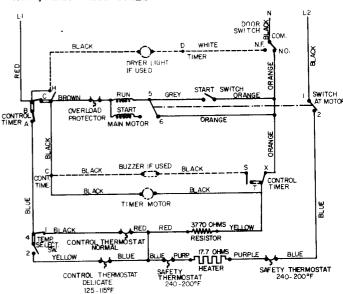
NOTE: If the dryer door is opened during the cycle and the start switch is not activated, the timer will continue to advance to the "Off" position.

Assuming the dryer is operating as stated above, but with a poor exhaust system, the safety thermostat may be controlling the heater. This thermostat is mounted to the heater housing and opens if the ambient temperature surrounding the component reaches $115^{\circ}\text{C} \stackrel{t}{=} 3^{\circ}\text{C}$ (240°F). The thermostat will reset at $95^{\circ}\text{C} \stackrel{t}{=} 3^{\circ}\text{C}$ (200°F).

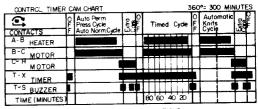
The 230 volt version in the following figure, shows the schematic, temperature selector switch and the timer cam chart.

NOTE: This circuit has two safety thermostats. They are mounted on the heater housing.

230 VOLT MODEL NORM/PERM PRESS CYCLE



DRYER IS RUNNING WITH SELECTOR SWITCH IN NORM/PERM PRESS POSITION & TIMER SET FOR 30 MINUTES IN TIME CYCLE



____ TIMER & SELECTOR SWITCH POSITIONS



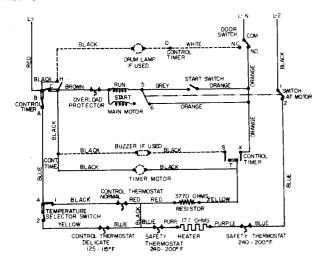
With the dryer running, the temperature selector switch set on NORM/PERM PRESS, and the timer pointer located at the 30 min. position in the

time cycle as shown above, in normal operation the dryer would cycle on the control thermostat. The thermostat would open at $55^{\circ}\text{C} \stackrel{+}{_} 3^{\circ}\text{C}$ (130°F) and reset at $43^{\circ}\text{C} \stackrel{+}{_} 3^{\circ}\text{C}$ (108°F). Under poor air flow conditions the dryer could cycle on the safety thermostat.

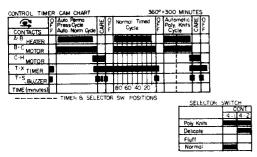
As in the 115 Volt version, the safety thermostat opens at 115°C (240°F) and closes at 95°C (200°F).

The following schematic shows the circuit when the dryer is running and the timer is in the KNITS CYCLE.

230 VOLT Model AUTO. KNITS CYCLE



DRYER IS RUNNING WITH SELECTOR SWITCH IN KNIT POSITION & TIMER SET AT AUTOMATIC KNITS CYCLE



In this configeration both control thermostats are part of the control circuit. The heater continues to be energized until the normal control thermostat opens. After this happens the heater is controlled by the delicate thermostat.

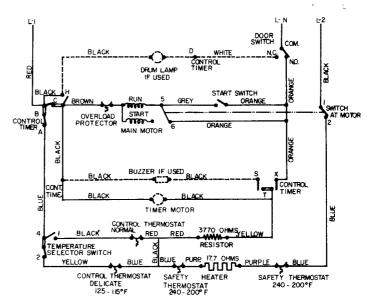
the timer only advances when the heater is off.

When the temperature selector switch is set in the DELICATE position, only the delicate thermostat is controlling the heater.

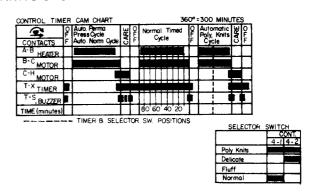
Note in the following schematic, the selector switch contacts.

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230 VOLT MODEL LOW HEAT SELECTION



DRYER IS RUNNING WITH SELECTOR SWITCH IN DELICATE POSITION & TIMER SET IN AUTOMATIC KNITS CYCLE



NOTE: The timer, temperature selector switch, and start switch can be electrically checked and replaced from the front. Removing the knobs and switch trim exposes the component mounting screws. Remove the two mounting screws and pull the component forward to the servicing position.

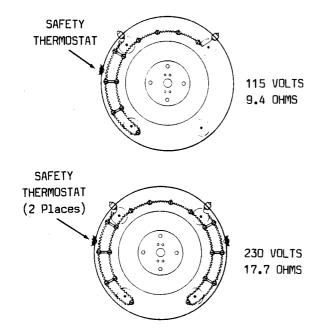
HEATER

The heating coil is located behind the drum in the heater housing. To service the heater, the front and drum must be removed. Both 115 volt and 230 volt dryers have single coil heating elements.

The replacement coil must be stretched to the following "free" length prior to assembly:

230 Volts 167 cm (66 inches) 115 Volts 99 cm (39 inches)

The 115 Volt coil has a resistance of 9.4 Ohms and the 230 Volt coil has a resistance of 17.7 Ohms.



SAFETY THERMOSTATS

The safety thermostats are mounted to the heater housing. The front and drum must be removed to gain access to this control. The control is a single-pole, single-throw switch, and is wired in series with the heating coil. Should the control thermostat fail or an air blockage occur, raising the heater housing temperature to 115°C (240°F), the safety thermostat opens the circuit to the heat source and allows the heater housing to cool down to 95°C (200°F).

To check for stuck contacts in the safety thermostat, start the dryer and run on HIGH heat with the exhaust system completely blocked. The safety thermostat MUST open before the following time limit:

To check for an "Open" safety thermostat, remove the wires from the thermostat terminals. Test for continuity with an Ohmmeter. You should have continuity through a good thermostat at room temperature.

CONTROL THERMOSTATS

The Control thermostats are located on the blower housing. The front and drum must be removed to gain access to these controls. To check for an open thermostat, remove the harness wires from the thermostat terminals. Test for continuity. You should have continuity through a good thermostat at room temperature. To check for stuck thermostat contacts, apply heat (lighted match) to the thermostat to determine whether the contacts "open" and later "close" when the thermostat cools. Use an Ohmmeter to check the contact action.

The following is the recommended procedure for checking the calibration of the control thermostats:

115 VOLT DRYER

- 1. Block off 2/3 of the exhaust duct.
- Place thermocouple of test device in the lint trap opening.
- 3. Allow thermostat to cycle 3 or 4 times.
- 4. Trip temperature should register between 52°C to 57°C (124°F to 136°F) with no load in the Dryer.

230 VOLT DRYER

Use same procedure as 115 Volt Dryer with the following exceptions:

- It is not necessary to block off 2/3 of the exhaust duct.
- The trip temperature reading should register as shown below for the two heat selections:
- (A) NORM/PERM PRESS 54°C to 60°C (129°F to 141°F) with no clothes load.
- (B) DELICATE 52°C to 57°C (124°F to 136°F).

MOTOR

This component is electrically checked by using the following procedures:

- 1. Disconnect electrical current and remove the front and the drum.
- 2. Disconnect harness wire leads from centrifugal switch.

Operate motor by connecting a properly fused service cord to terminal 4 and 5. Test harness WX5X184 can also be used. The shorting block must be in place and alligator clips connected to motor terminals as follows:

BLU/WHT TO #6
PINK TO #5
RED TO #4
BLUE NOT USED (INSULATE)

The motor must continue to run after push-button is released.

- 4. If motor runs, the problem is open circuits in the dryer electrical or control system. If motor does not run, check the centrifugal switch.
- 5. When the motor runs and the problem is NO HEAT, check continuity between terminals 1 and 2 with the switch button out (run position). No continuity shows the switch is inoperative and must be replaced.

To replace a defective motor, the motor and blower assembly must be removed as a unit. This procedure was covered in the AIR FLOW SECTION. The blower wheel and motor clamps must be removed to free the motor. After the replacement motor is installed, rotate the blower to see if it is aligned properly in the blower housing.

DEPARTMENT 731A - L. SIDES