LAUNDRY CENTER
Volume 77, Number 3

TECH-TALK

LAUNDRY CENTER

Frigidaire
Home Environment Products

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General Motors Corporation

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APRIL 1977 LAUNDRY CENTER VOL. 77-3

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84-177-40 *General Motors Corporation* *Printed in U.S.A.*

INDEX

LAUNDRY CENTER
PRODUCT SPECIFICATIONS

WASHER	MODELS LCT-2, LCT8-2	MODELS LC-2, LC8-2 LC-3, LC8-3	MODELS LCT-120 LC-115	MODELS LCA-120
Controls				
Timer—Time Fill	X	X	X	X
—Dual Cycles				
—Regular and Delicate	X	X	X	—
—Regular and Soak	—	—	—	X
—Manual Variable Wash				
Reset After Fill	X	X	X	X
—Rotary Dial and Knob	X	X	X	X
Water Temperature Control—Rotary Knob	X	X	X	—
—Hot Wash, Warm Rinse	X	X	X	—
—Hot Wash, Cold Rinse	X	X	X	—
—Warm Wash, Cold Rinse	X	X	X	—
—Cold Wash, Cold Rinse	X	X	X	—
Water Temp. Control—Manual	—	—	—	X
Interior Design and Features				
Agi-Tub—Polypropylene Material	X	X	X	X
—Capacity, family size load				
Dry Clothes	X	X	X	X
—Capacity—Water				
11 Gallons	X	X	X	X
Mechanism and Operations				
Two Speed Motor—Cap. Start	X	—	—	—
Two Speed Motor—Split Phase	—	X	X	—
Single Speed Motor—Split Phase	—	—	—	X
Mechanism Speds				
—Agitate—Regular				
—Rotary, S.P.M.—68-72	X	X	X	X
—Agitate—Delicate				
Rotary S.P.M. 44-48	X	X	X	—
—Spin—Regular 575 R.P.M.	X	X	X	X
—Spin—Delicate 380 R.P.M.	X	X	X	—
Hot Water Usage—Normal Load—Gallons				
Hot Wash, Warm Rinse—15	X	X	X	—
Hot Wash, Cold Rinse—10	X	X	X	—
Warm Wash, Cold Rinse—5	X	X	X	—
Cold Wash, Cold Rinse—0	X	X	X	—
Hot Water Usage—Manual Control	—	—	—	X
Water Valve—Dual Solenoid	X	X	X	—
—Flow Rate 2.8 to 3.3 G.P.M.	X	X	X	—
Maximum Unbalance Pressure—Hot vs Cold—Flowing 10 P.S.I.	X	X	X	X
Water Valve—Single Solenoid	—	—	—	X
Total Cycle Time				
Regular Cycle—Fill (Variable Wash Time) 34 Min. 48 Sec. Maximum	X	X	X	X
Delicate Cycle—Fill (Variable Wash Time) 27 Min. 36 Sec. Maximum	X	X	X	—
Soak Cycle—Fill—27 Min. 36 Sec. Maximum	—	—	—	X

LAUNDRY CENTER
PRODUCT SPECIFICATIONS

DRYER	MODELS LCT-2, LCT8-2	MODELS LC-2, LC8-2 LC-3, LC8-3	MODELS LCT-120 LC-115	MODELS LCA-120
Controls				
Timer—Rotary Dial and Knob Timed Cycle	X	X	X	X
—Time Cycle 110 Min. Maximum	X	X	—	—
—Time Cycle 140 Min. Maximum	—	—	X	X
—Permanent Press 25-45 Minutes	X	X	—	—
—Automatic Cycle	—	X	—	—
—Numbered Markings at 10 Minutes, Lines at 5 Minutes	X	X	X	X
Fabric Selector—Rotary Dial and Knob	X	X	X	—
—Three Position				
Regular—Permanent Press				
Delicate—Sheer				
No Heat—Air Fluff	X	X	—	—
—Two Position				
Heat—No Heat	—	—	X	—
Safety Start Switch	—	X	X	X
Cycle End Buzzer	—	X	X	—
Lockout Relay	—	—	X	X
Fuse Link—Refer Schematics	X	X	—	—
Interior Design—Family Size				
Drum Capacity—Family Size Load	X	X	X	X
Drum Speed 56-59 R.P.M.	X	X	X	X
Polypropylene Drum Vanes 3	X	X	X	X
Drum Support—4 Rollers	X	X	X	X
C.F.M.—100 ± 5	X	X	X	X
Blower—Centrical Type	X	X	X	X
Motor—Single Speed, Split Phase, 1750 R.P.M.	X	X	X	X
Open Coil Electric Heating Unit	X	X	X	X
—Wattage @ 240V or 208V				
Reg. 3000, Del. 1800	X	X	—	—
—Wattage @ 115/120V				
Reg. 1400	—	—	X	X
Air Discharge—Rear or R. Side	X	X	X	X
Electrical Requirements				
—208 or 240 Volts	X	X	—	—
—115-120 Volts	—	—	X	X
—Amps 30	X	X	—	—
—Amps 15	—	—	X	X
Uncrated Weight—Approx. 185 lbs.	X	X	X	X
Shipping Weight—Approx. 217 lbs.	X	X	X	X
Serial Plate Location—Left front corner of top	X	X	X	X

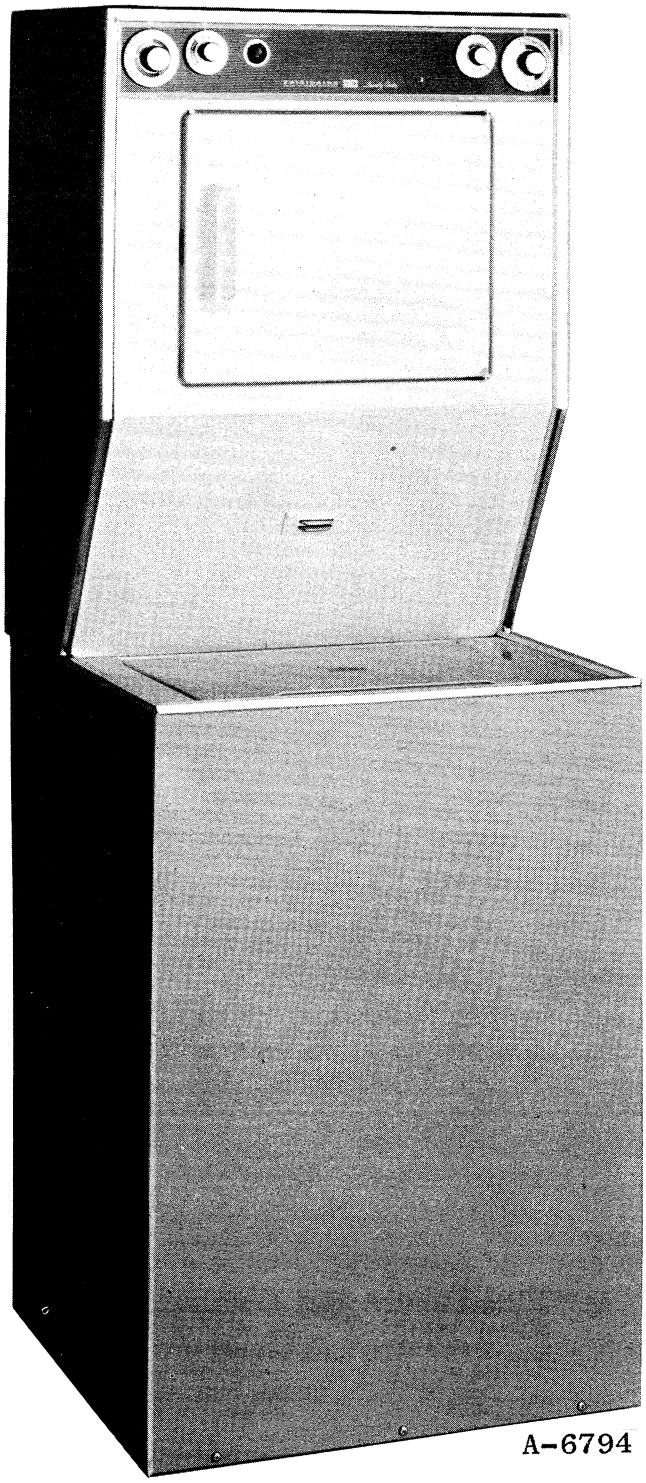


Figure 1
Models LCT-2, LCT8-2, LC-2, LC8-2, LCT-120, LC-3, LC-115, LC8-3

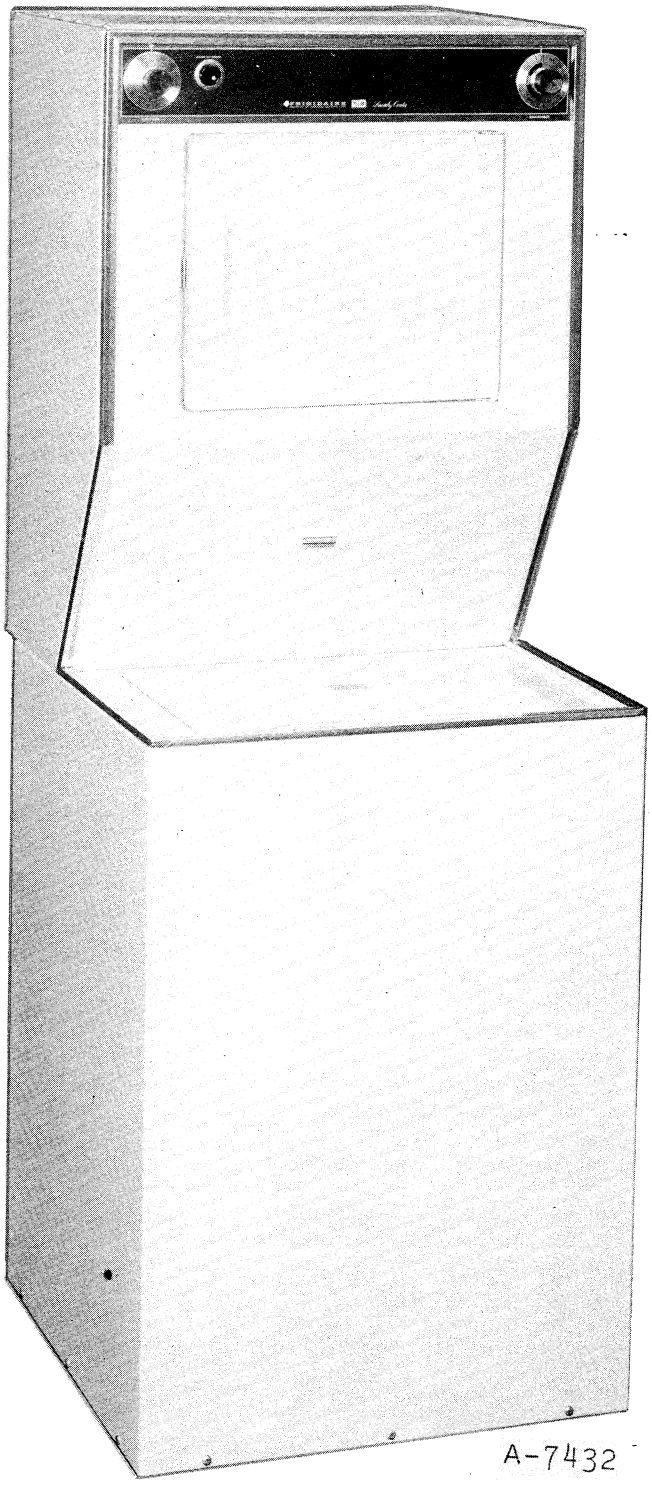


Figure 2
Model LCA-120

INTRODUCTION

The Laundry Center was first produced during the 1970 model year. Since that time, this product has been improved in many functional areas, but the basic design has remained the same. All of the improvements that have taken place have been described in several informative publications, but this information proves unwieldy in its present state. This issue will bring all of the pertinent technical information printed to date into a consolidated form to assist service procedures.

These products have been produced in three basic modes of electrical operation (208, 240, 120) within four model groupings without a specific model year reference as follows.

LCT-2	LC83-2	LC8-2	LC-3
LCT8-2	LCT3-120	LCT-120	LC8-3
LC3-2	LC-2	LCA-120	LC-115

For complete information on product operation and warranty information, refer to the appropriate use and care instructions.

Model code description:

LC = Laundry Center
T = Timed Dry Cycle
8 = 208 Volt
3 = Produced during 1973 model year, when it precedes -.
3 = Produced during 1976 model year if follows -.
A = Economy Features
120 = 115/120 Volts
115 = 115/120 Volts

Color Codes:

AD = Almond
WH = White
HG = Harvest Gold
GN = Avocado Green
CO = Colonial Copper
PY = Poppy
WG = Wood Grain

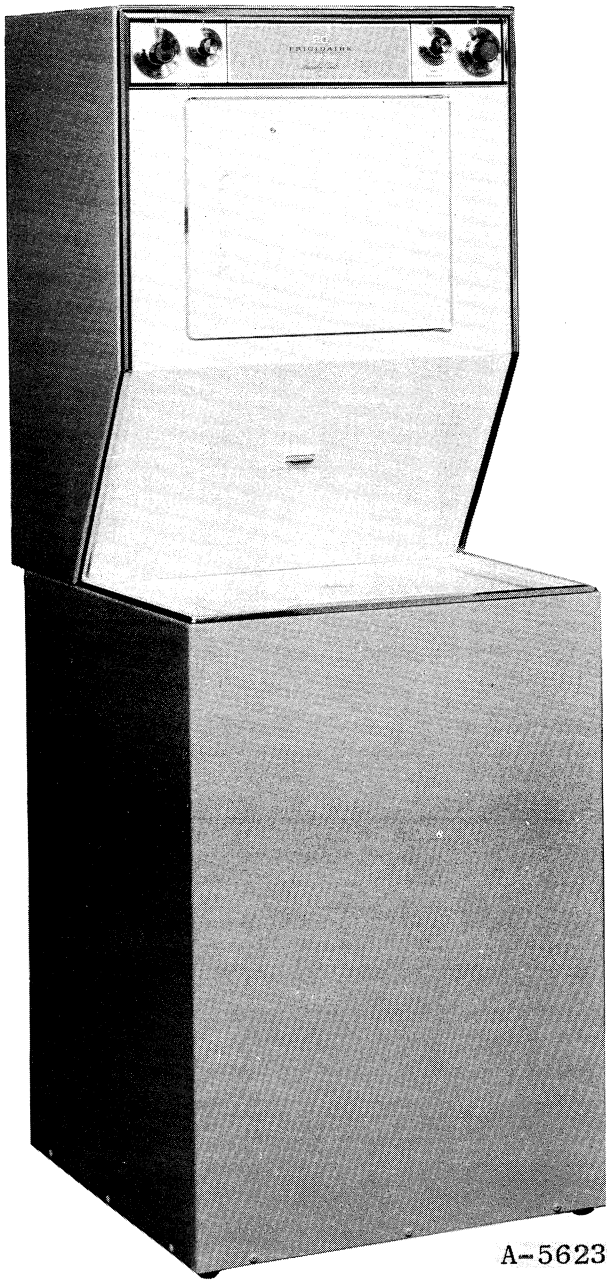


Figure 3
Models LCT-2, LCT8-2

NOTES

MECHANISM OPERATION

OPERATION OF THE SYNCHRO-SWING WASHER MECHANISM

Note: All mechanism operations are described as they are observed viewing the mechanism from below.

Agitate Operation:

The rotary motion that drives the mechanism in agitate begins with a clockwise rotation of the motor. The sheave or driver on the motor shaft drives a pair of belts that rotate the intermediate pulley clockwise. A second pair of belts is used to transfer this motion to the drive pulley—see Figure 4.

Belt tension for the two pairs of drive belts is provided by the belt tension spring, balancing spring, arm and stud. The stud acts as the shaft for the intermediate pulley, thus producing tension on both belt sets as shown. The balancing spring reduces the tension on the primary belt set.

The one directional rotary motion is then changed to two directional in-line motion by means of a drive brace pinned to the drive pulley as illustrated. Figure 5.

The two directional in-line motion is then changed to a reversing rotary motion by the drive cable set and agitate drum, as illustrated. Figure 6.

The drive cable set is placed in tension by means of a set screw in one end of the drive brace. The other end is held to the brace with a retaining spring. The construction of this spring and the brace cable adjusting lug provides automatic cable adjustment. See Figures 6 and 7.

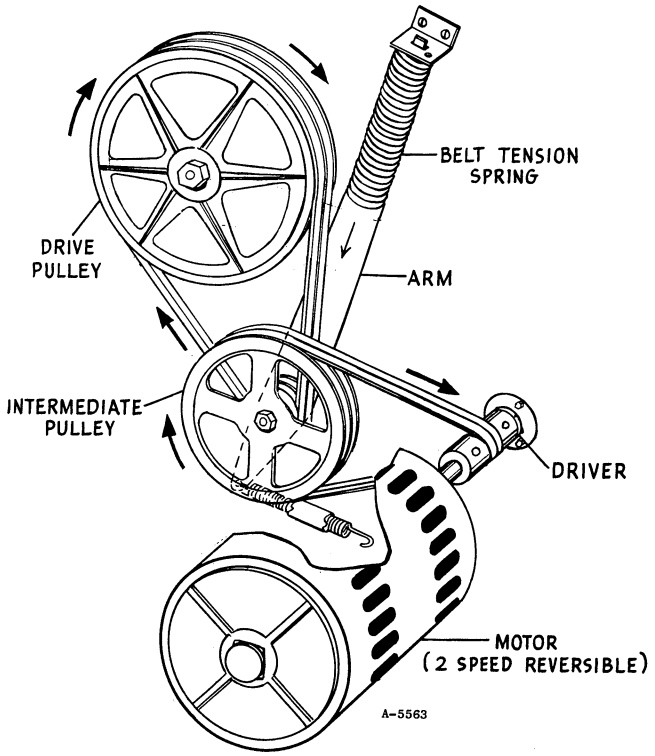


Figure 4
Mechanism Belts and Pulleys

The rocking motion of the drive brace and cable action around the agitate drum provides a small variation of speed during oscillation. This results in the Agi-tub moving slightly

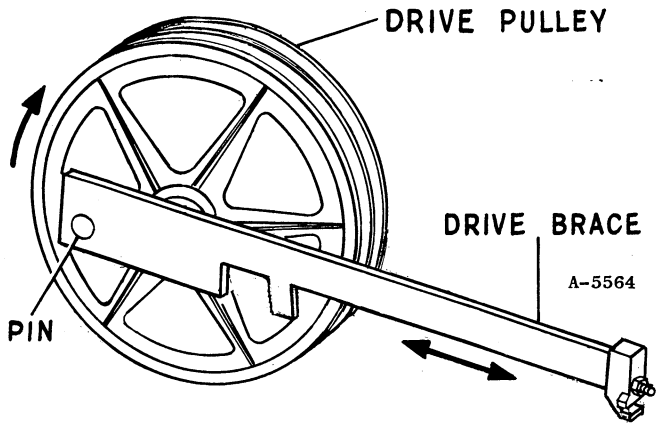


Figure 5
Pulley and Brace

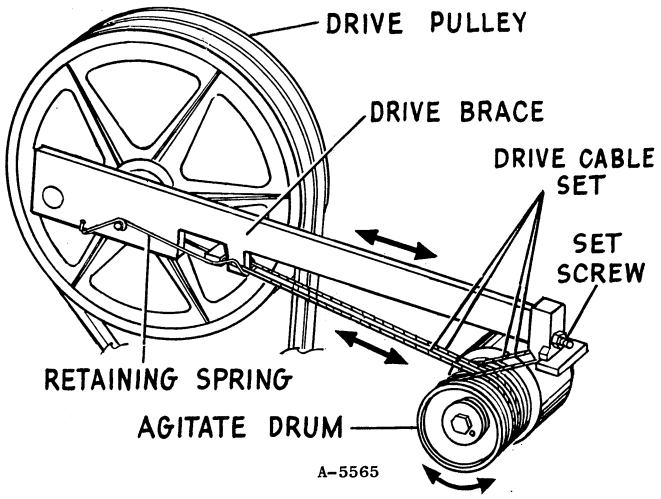


Figure 6
Pulley, Brace, Cable and Drum

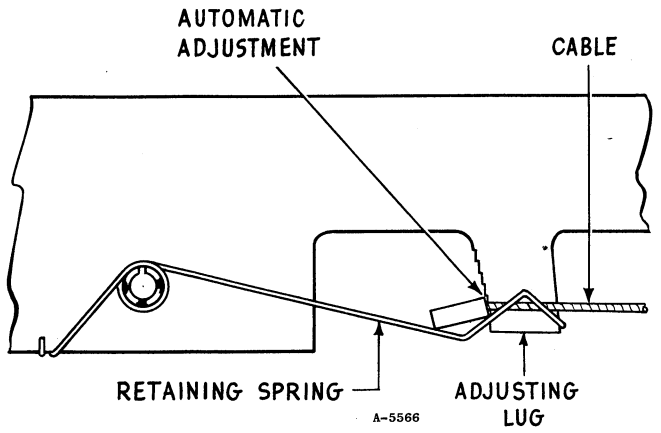


Figure 7
Cable Adjusting Spring

faster on the return stroke of the drive brace. See Figure 8.

The agitate drum is held to the tub support shaft by means of an agitate clutch with pressure from the agitate spring located in the spin wheel and clutch assembly housing. See Figure 8. This spring presses the pressure plate and the stack-up of the clutch plates and linings together against the agitate drum. The drum is held secure to the agitate clutch hub by means of a clutch retaining plate.

The agitate clutch hub is secured to the shaft by means of a taper and bolt in the shaft end as shown.

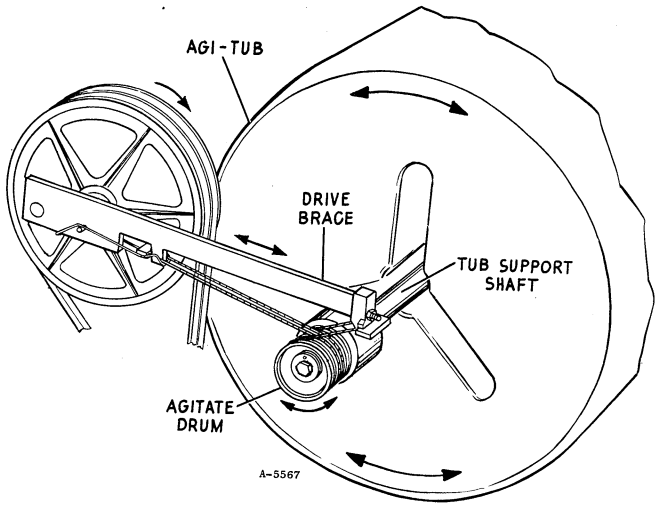


Figure 8
Tub in Agitate

During agitate operation, the spin roller is driven by the motor shaft driver. However, due to the direction of the motor rotation and the toggle action in the spin roller assembly, the roller is out of pressure contact with the spin wheel and clutch assembly. The spin wheel and clutch assembly is thus in oscillating motion with the agitate drum, clutch and tub support shaft. See Figure 9.

Spin Operation:

First, a simple explanation of the Spin Operation:

When the motor shaft drives counterclockwise it pulls the spin roller in so that it wedges and drives the spin wheel and clutch assembly as shown in Figure 10. To initiate the spinning action, the agitate clutch must be free to slip between the linings and clutch plates. Figure 11. The agitate drum and clutch linings are always controlled by the cable set and are the only parts (Figure 11) that will not spin.

Now a more detailed explanation:

The spin roller is held in light contact with the driver and spin wheel and clutch assembly by its tension springs, Figure 10. As the motor driver starts to rotate, the toggle action of the spin roller in its mount causes a positive driving contact between the surfaces of the driver, spin roller and spin wheel and clutch assembly. Thus the rotational torque of the motor is transmitted through the spin roller to cause the spin wheel and clutch assembly to rotate counterclockwise.

As the spin wheel is driven counterclockwise, it carries the spin clutch plate and spin clutch cam with it. See Figure 12.

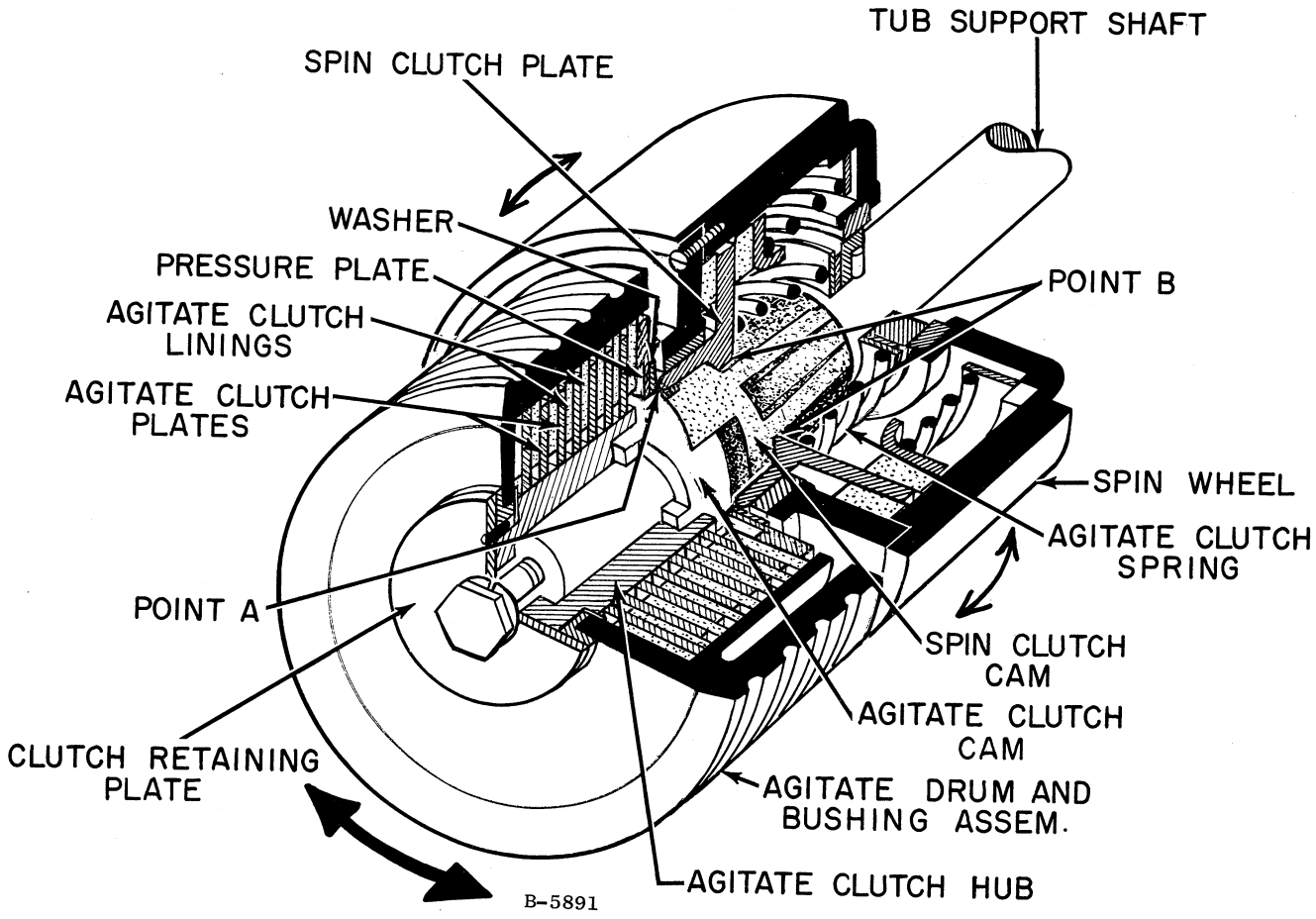


Figure 9
Clutches in Agitate

(**Note:** The spin clutch plate and spin clutch cam are interlocked—see Point B.) This forceful movement causes the spin clutch cam to ride up the camming surface of the agitate clutch cam at point C. This camming action causes the spin clutch plate (as well as the rest of the spin wheel and clutch assembly) to move up. When the spin clutch plate moves up at point A (partially compressing the agitate spring), it also releases the pressure plate allowing slippage between the agitate clutch plates and linings. These parts are separated by the force of the bow in each clutch plate. This results in a minimum drag on the clutch surfaces during slippage in spin. The tub support shaft and components are now free to spin while the agitate drum continues to be oscillated by the drive cables as in agitate.

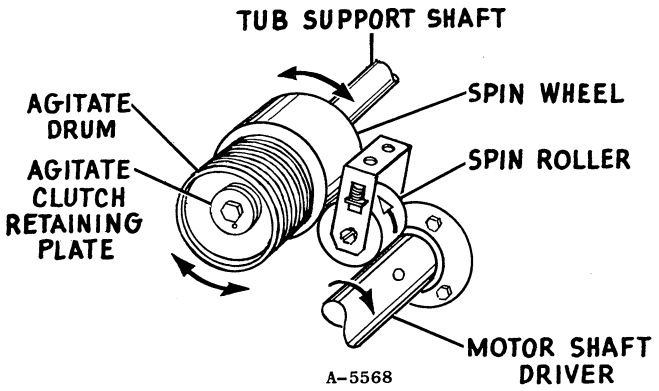


Figure 10
Spin Roller in Agitate

The torque required to start and accelerate the tub to final spin speed is greater than the operating speed. The spring loaded spin wheel and clutch assembly is designed to allow slipping of the clutch plate between the clutch linings at a controlled torque during acceleration.

An unbalanced tub load requires greater torque to accelerate. Should the unbalanced load requirement be greater than the clutch torque, full tub speed will not be accomplished, thus protecting the mechanism and cabinet from damage in an unbalanced condition.

Brake Operation:

Removing the spin force applied to the spin wheel and clutch assembly by de-energizing the motor allows the spin clutch cam to back down from its pressure contact on the slipping surface of the agitate clutch cam. Point C. This results in an

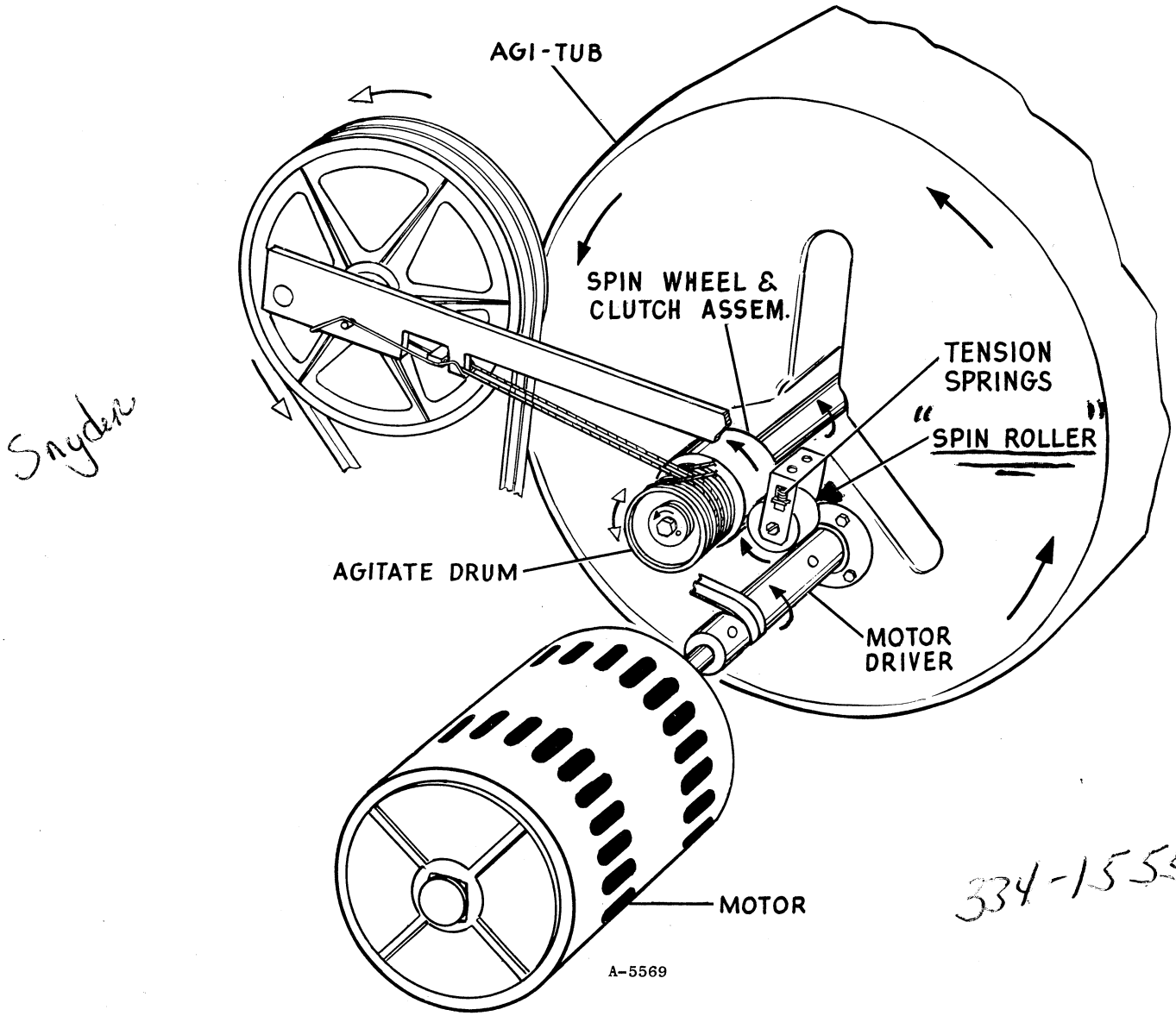


Figure 11
Tub in Spin

immediate response of spring tension to the agitate pressure plate, producing braking torque from the agitate clutch. This creates a positive brake for the spin cycle capable of bringing an empty tub to a full stop in approximately 3 seconds.

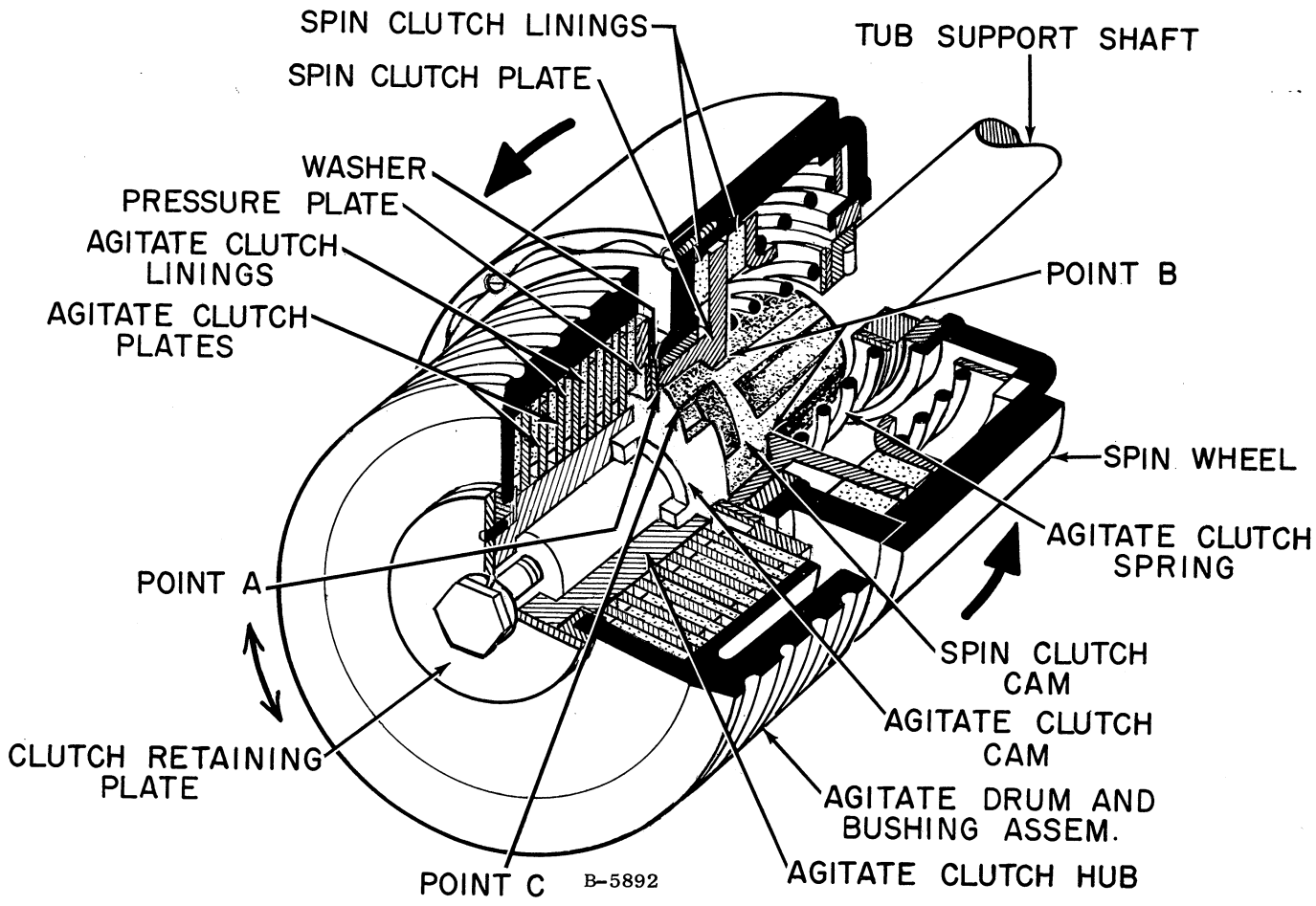


Figure 12
Clutches in Spin

WASHER SECTION IMPROVEMENTS

WASHER MECHANISM

Many mechanism improvements have become effective since the inception of the Laundry Center. They are covered individually in the succeeding items. Refer to Figure 13.

Mechanism Mounting Plate—Improved:

This plate supports all of the mechanism components. It has been increased in thickness for greater strength and to achieve closer assembly tolerances which reduces sound levels and improves reliability of associated components. Its configuration has also been changed to provide a flat surface and an additional screw hole to attach the fourth supporting boss of the new outer tub assembly, see Figure 28.

Outer Tub—Improved:

A new outer tub became effective in production in conjunction with the improved mechanism mounting plate. The outer tub has been altered to accommodate an improved rotary seal under the agi-tub support, plus, it has been improved by utilizing the fourth tub support boss, which until then had been unsupporting and unfastened to the mechanism mounting plate. Securing the fourth supporting boss will provide additional rigidity to the outer tub base. Figure 13.

3

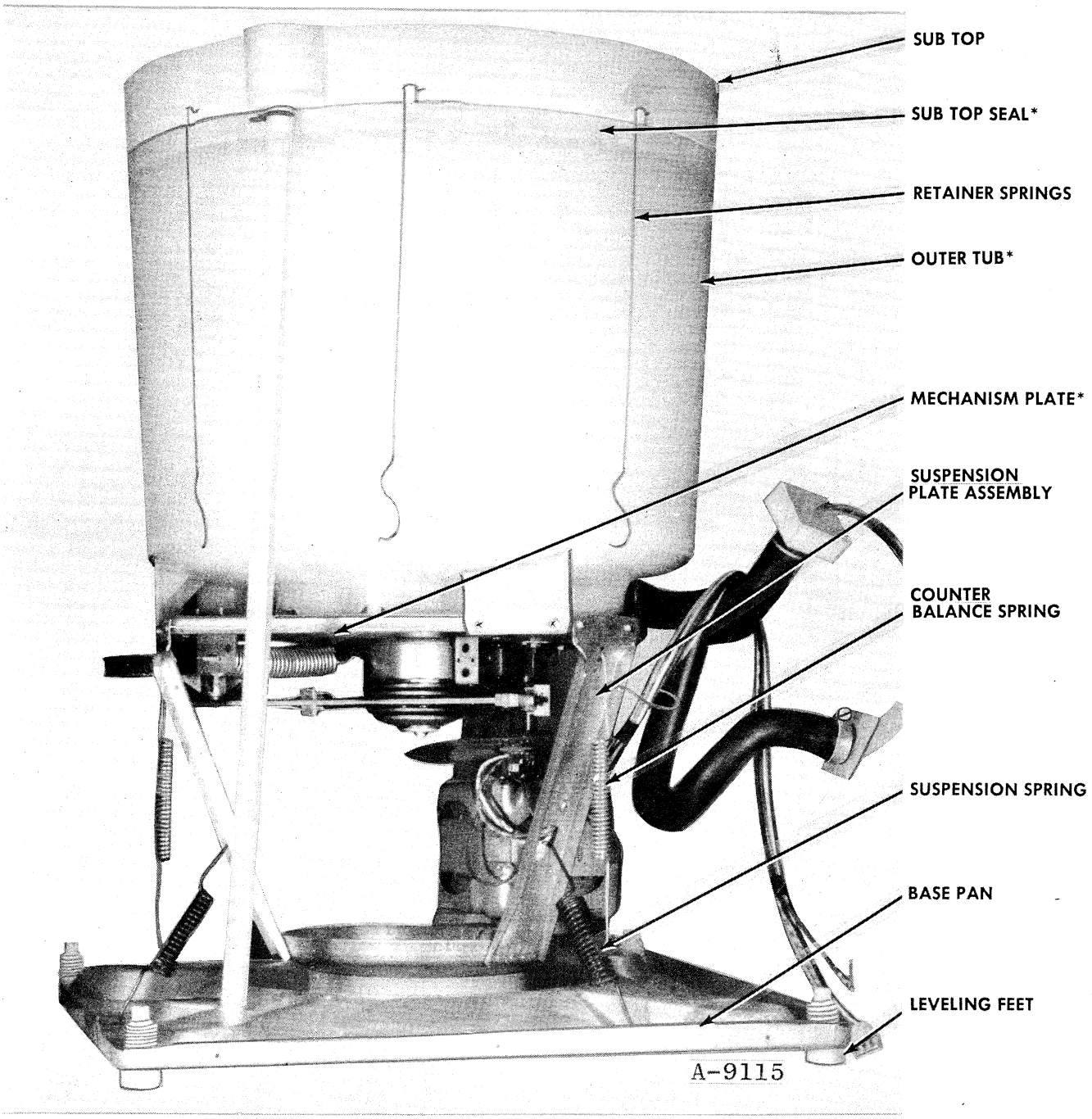


Figure 13
Washer Unit and Snubbing System

Sub Top—Improved Sealing:

The sub top has remained the same since inception, but the method of applying the sealing strip has been improved. Figure 14.

Agi-tub—Improved:

When assembled, the rim of the inner tub is snapped into place over hook shaped tabs at the top edge of the inner tub. To further assure that the rim will remain locked to the lower portion of the tub, an additional assembly operation has been added. After the rim is interlocked over the tabs projecting up from the tub, the tabs are contacted with a hot tool to cause them to deform. This mushrooming of the tabs permanently interlocks the two parts. See Figure 15.

Tub Cap—Improved:

The three parts used on the original design, Figure 16, have been replaced by the single tub cap of the later design. In conjunction with the new cap, the tub retaining rod was increased in length to provide more thread engagement with the cap to improve its retention.

Agi-Tub Support—Improved:

The original agi-tub support consisted of an aluminum die cast tri-armed assembly attached to a stainless steel pan that supported the agi-tub. See Figure 17. The newer design illustrated in Figure 18 performs the same function, but the stainless steel pan has been replaced by six integral die cast arms that extend under the tub for support.

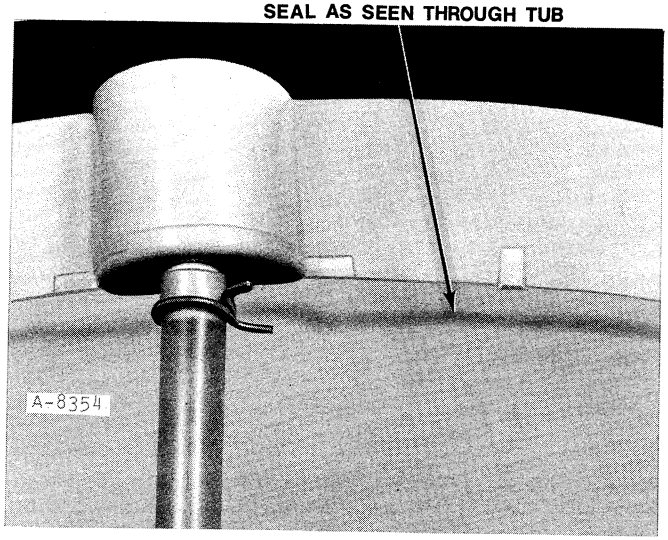


Figure 14
Sub Top Seal

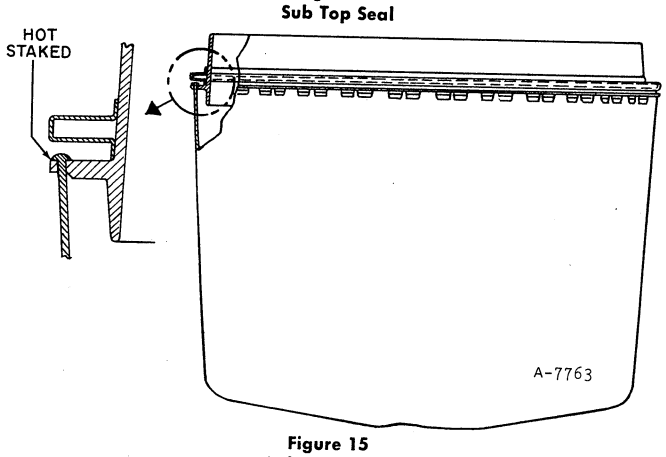


Figure 15
Tub Assembly

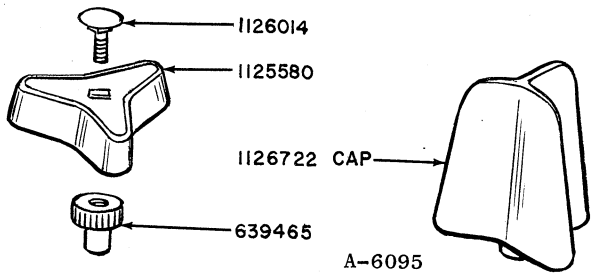


Figure 16
Tub Caps

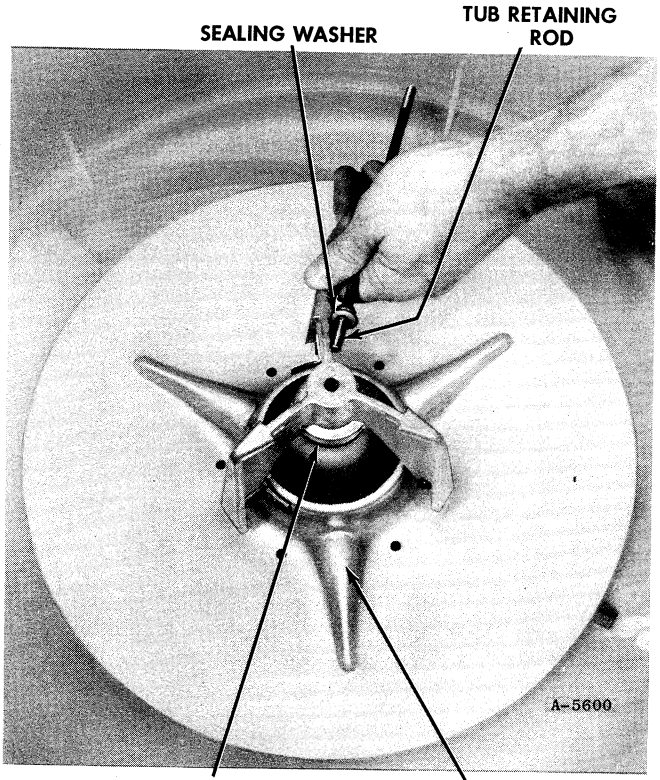


Figure 17
Tub Support Original

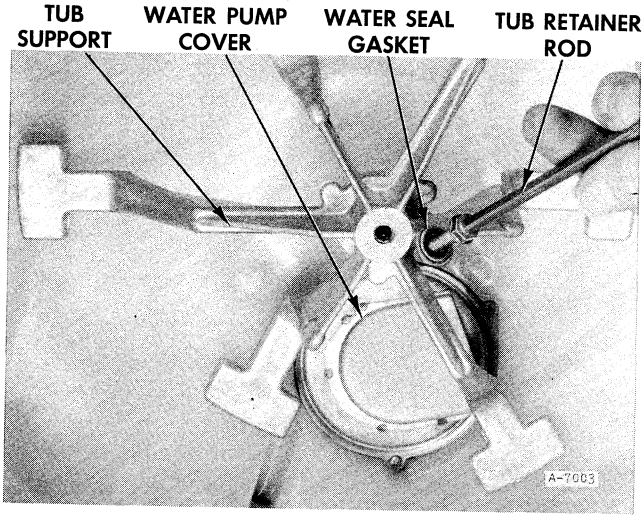


Figure 18
Tub Support Revised

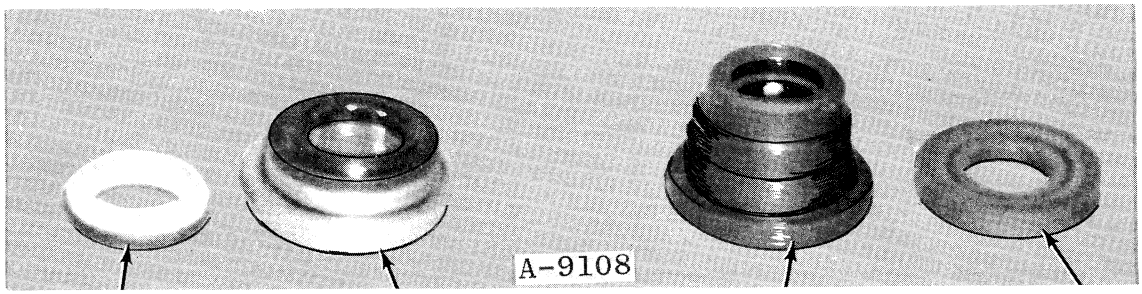


Figure 19
Tub Seals

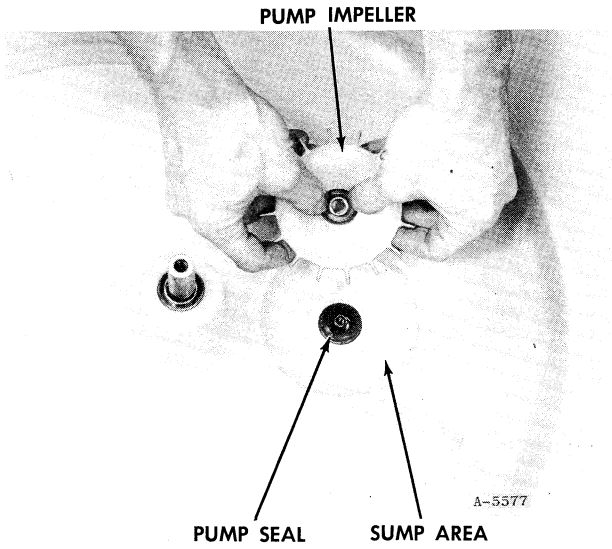


Figure 20
Water Pump

The newer design provides more consistant support to the agi-tub during operation, plus, it provides easier access to the pump assembly for service operations.

The six armed support must be used with the later tub having flat areas molded into the bottom surface to contact the arm pads. The original support with the stainless pan will accept either type tub.

Tub Seal—Improved:

The original seal assembly consisted of a rotating spring loaded member with a phenolic face which was mounted in a cavity under the Agi-Tub support. A mating stationary ceramic seal ring was imbedded in a rubber retainer, which was seated in the outer tub. See Figure 19. This seal functions well, but spacing is more critical.

A new design tub shaft seal assembly and associated parts was placed into production during March, 1976. The new, larger 1-9/16″ diameter seal assembly is designed to operate over an extremely wide dimensional range at similar seal pressures. This eliminates the need for shimming or gaging to compensate for other parts dimensions as required with the original design.

On the new seal assembly, the mating surface of the seal ring has been changed to a filled Teflon material and has now become the rotating member since it is mounted in the cavity under the agi-tub support. The spring loaded member of the assembly is now seated in the outer tub and remains stationary. See Figure 19.

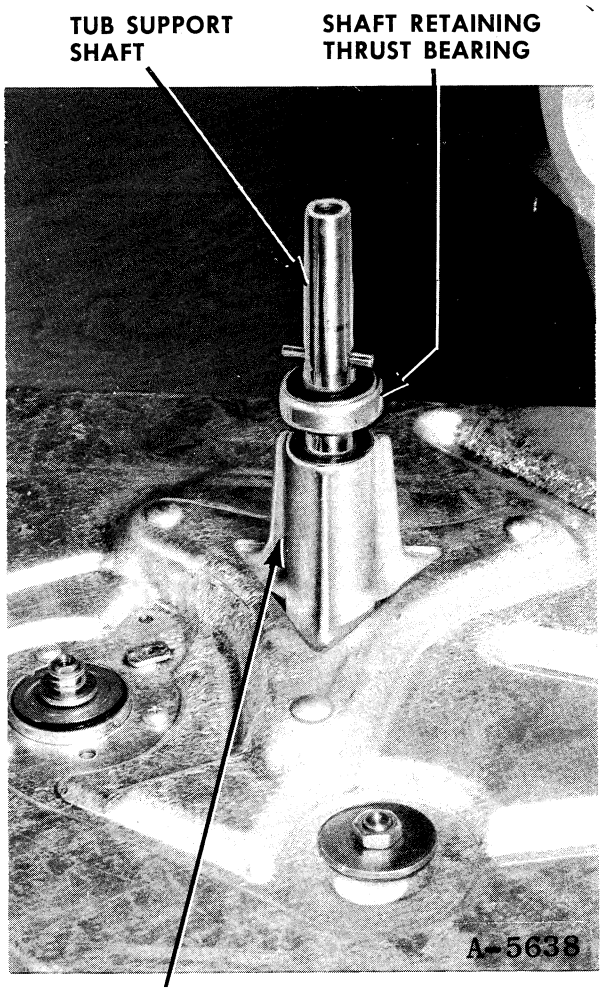


Figure 21
Tub Support Assembly

Water Pump—Revised:

The water pump is a high capacity pump driven directly by the motor through the motor driver. The impeller is made of a die cast zinc material and is recessed into the sump area of the outer tub. See Figure 20. There was an interim period when this impeller was made of polypropylene, but field results indicated that the original metal impeller proved superior under existing operating conditions. The polypropylene impeller has been discontinued and replaced by the original.

Water Pump Seal—Improved:

The water pump seal assembly, Figure 20, has remained basically the same but greater emphasis has been placed on spacing to extend its reliability. This same emphasis should be adhered to during service procedures.

See instructions included with the seal assembly.

Tub Mounting Support Assembly—Improved:

An aluminum die cast support that is bolted to the mechanism mounting plate supports the tub support shaft.

The original assembly incorporated needle bearings pressed into each end and were lubricated for the life of the product. See Figure 21.

An improved assembly incorporates a larger sealed ball bearing assembly with the inner race an integral part of the tub shaft. No pin retaining holes or thrust bearing is required with the new assembly. As a complete assembly the new part can be adapted to older products. See Figure 22.

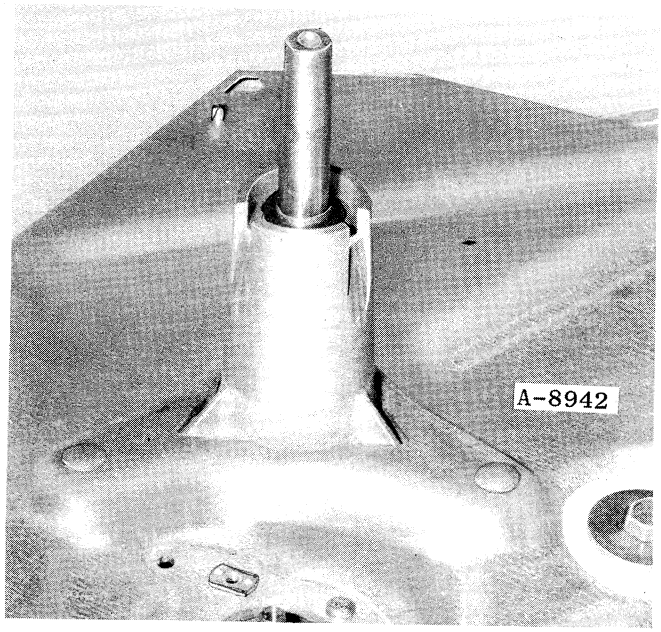


Figure 22
Revised Tub Support Assembly

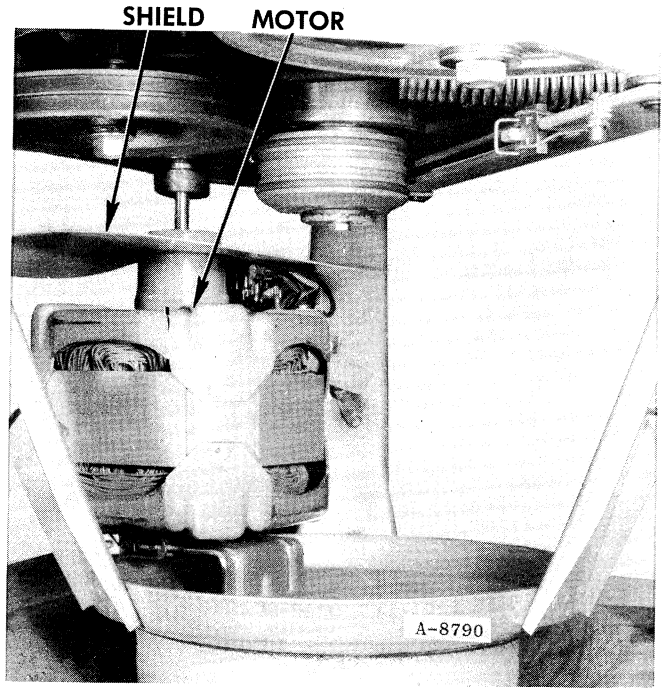


Figure 23
Revised Motor with Shield

Motor—Improved:

A motor of compact design was placed in production during March, 1976. This motor, refer to Figure 23, has a shorter frame, allowing a greater accessibility to the agitate and spin clutch assembly during service operations. Another improvement to the motor was the addition of a plastic protective shield, see Figure 23, to divert water away from it in the event of water overflow or a pump seal failure.

Spin Roller—Improved Mounting:

The angle at which the spin roller engages the spin driver and spin wheel assembly has been changed to reduce sound level and improve its reliability by insuring that the roller does retract when in the agitate mode. The angle was changed from that illustrated in Figure 24 to that shown in Figure 25. The original roller bracket was symmetrical in design and could be mounted with either side of the bracket up. The newer roller

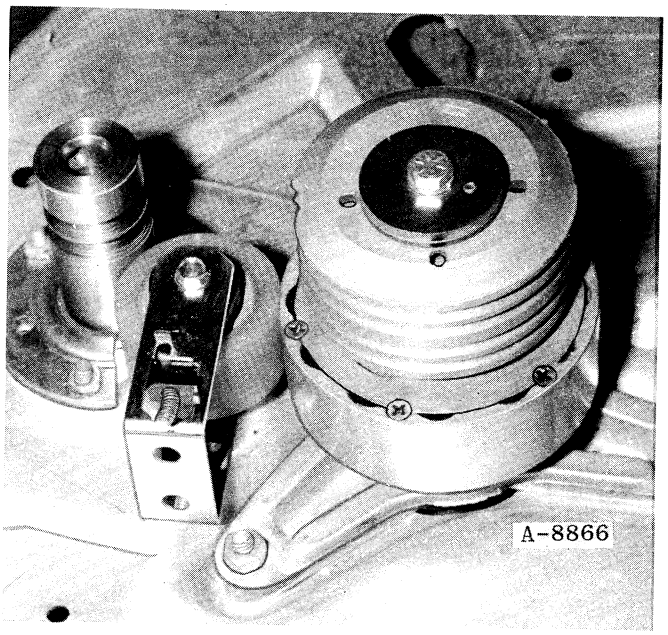


Figure 24
Original Spin Roller

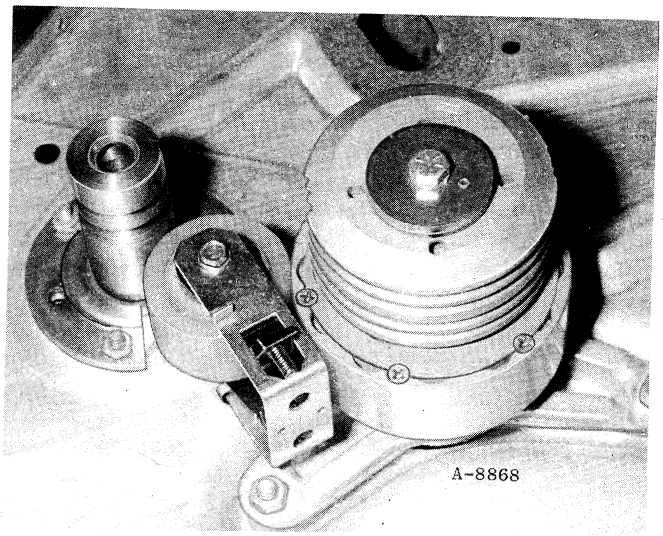


Figure 25
Revised Spin Roller

bracket incorporates repositioned locating tabs of different widths to assure that the roller is located in its correct mounting position with the smaller tab in an upward position and inserted into the locating hole in the mechanism mounting plate. See Figure 26.

This improved spin roller was placed into production April 15, 1976.

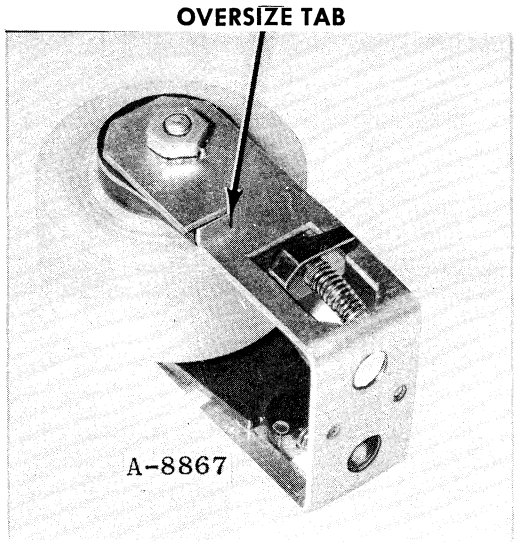


Figure 26
Positioning Tab

Intermediate Pulley—Mounting Improved:

In conjunction with the new mechanism plate assembly mentioned before, a marked reduction in sound level of the intermediate pulley has been accomplished.

This was achieved by realigning the position of the intermediate pulley with relation to the belts and other pulleys. This was done by moving the arm mounting hole in its mounting bracket downward as indicated in Figure 27. The belt ten-

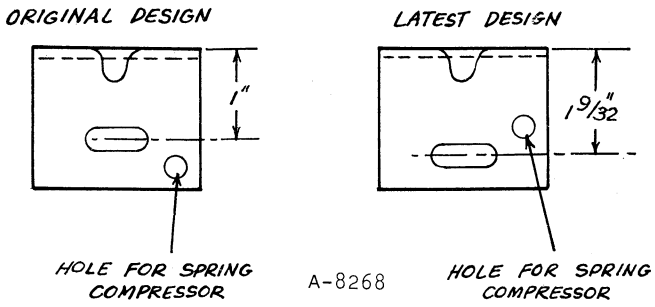


Figure 27
Belt Tension Arm Bracket

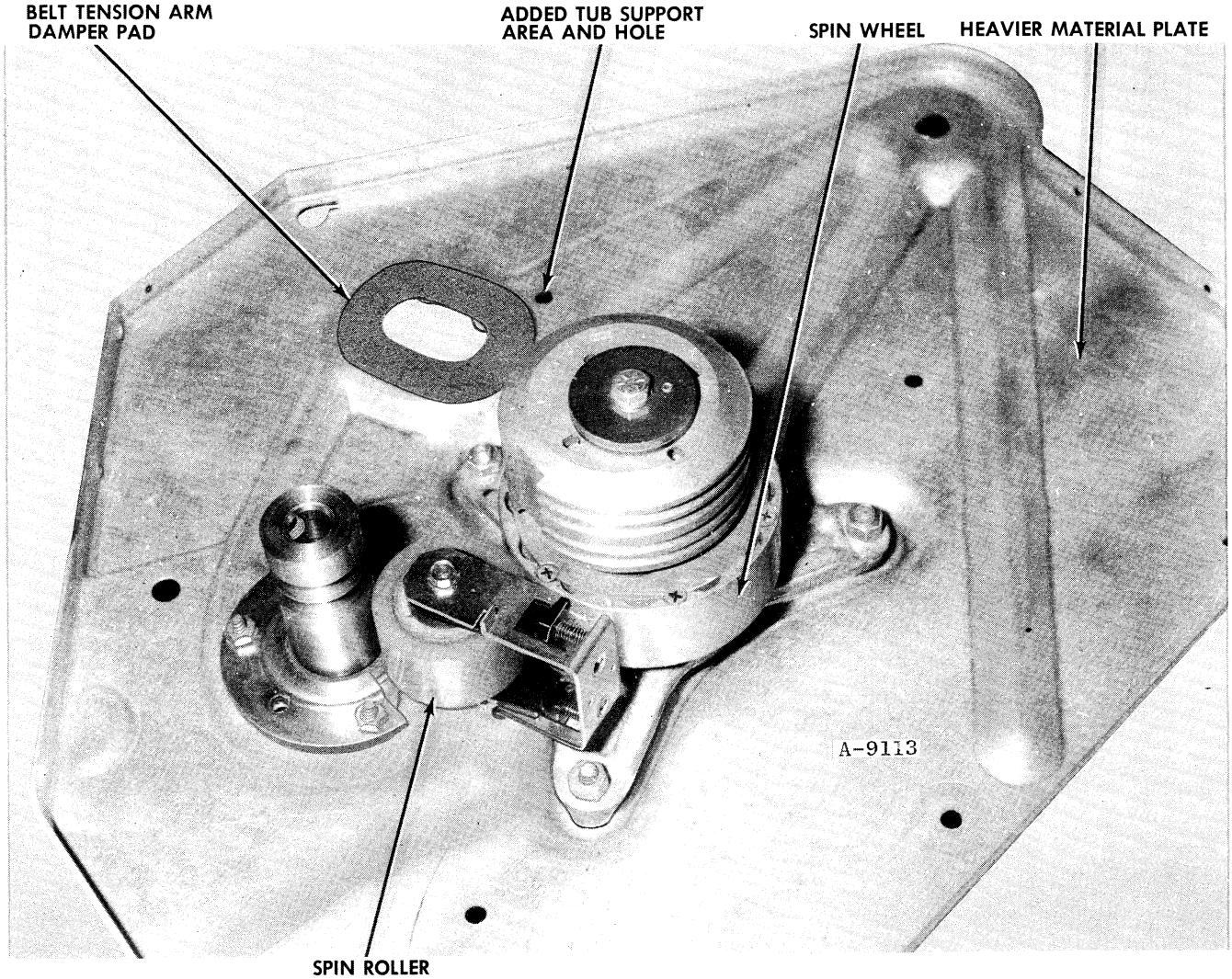


Figure 28
Improved Mechanism Base

sion arm is therefore mounted at a slight angle from the mechanism mounting plate, which assists the belt and pulley alignment during operation with a resulting reduction in sound level.

A cork composition damper pad was added between the mechanism plate and the belt tension arm at the intermediate pulley mounting. Sound level is reduced by isolating vibrations in the belt tension arm. With the added thickness of the cork material a thicker spacer is required in the belt tension arm to mechanism plate area. See Figure 28.

The fit and tolerances of the intermediate pulley bearings were tightened to further reduce sound level.

Drive Brace—Improved:

It has been noted that some drive cables cannot be set with the proper cable tension because of limited adjustment offered by the drive brace. Two major improvements were designed into the drive brace to remedy this problem as follows.

1. Added clearance at the end of the drive brace within the cable adjusting block. See Figure 29.
2. Additional steps added to the self adjusting lug of the brace for more cable take up if required. Figure 30.

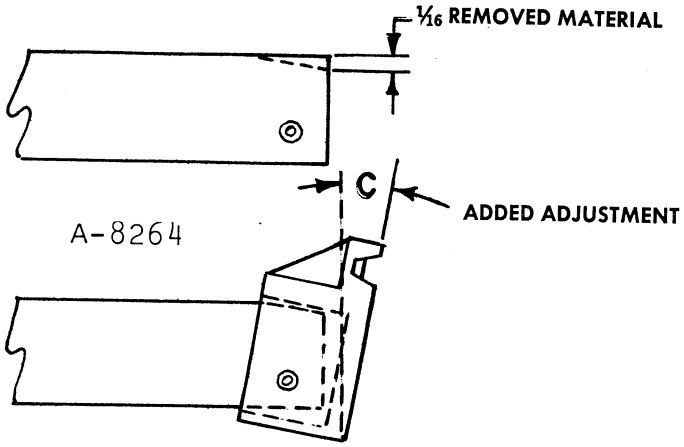


Figure 29
Drive Brace End

Drive Cable Assembly—Improved:

The assembly drives the agitate drum through the center mounting key and is held and driven by the drive brace.

An improved cable assembly was designed with the cable ends cast within the center and end plates, Figure 31. This new cable also has a tougher black nylon coating for greater resistance to wear.

Spin Wheel and Clutch Assembly—Improved:

Figure 28. This assembly consists of the basic spin wheel and cover plate, clutch spring, guide and retainer, clutch linings and clutch plate.

The bearing inserts located in the upper and lower spin wheel opening were improved.

The output torque of the spin wheel was reduced to assure that it would not spin water over the top of the tub under any operating conditions.

Drive Pulley—Revised Assembly:

To assure adequate drive pulley mounting bolt length, and clearance between the bolt and the drive brace under all operating conditions, the bolt length and mounting method was revised. The use of a longer bolt requires that the head end of the bolt is mounted downward and the nut is located above the mechanism mounting plate as shown in Figure 32.

Drive Belt—Improved:

A new cogged belt was placed into production in January, 1977. This type belt will extend its life expectancy. See Figure 32.

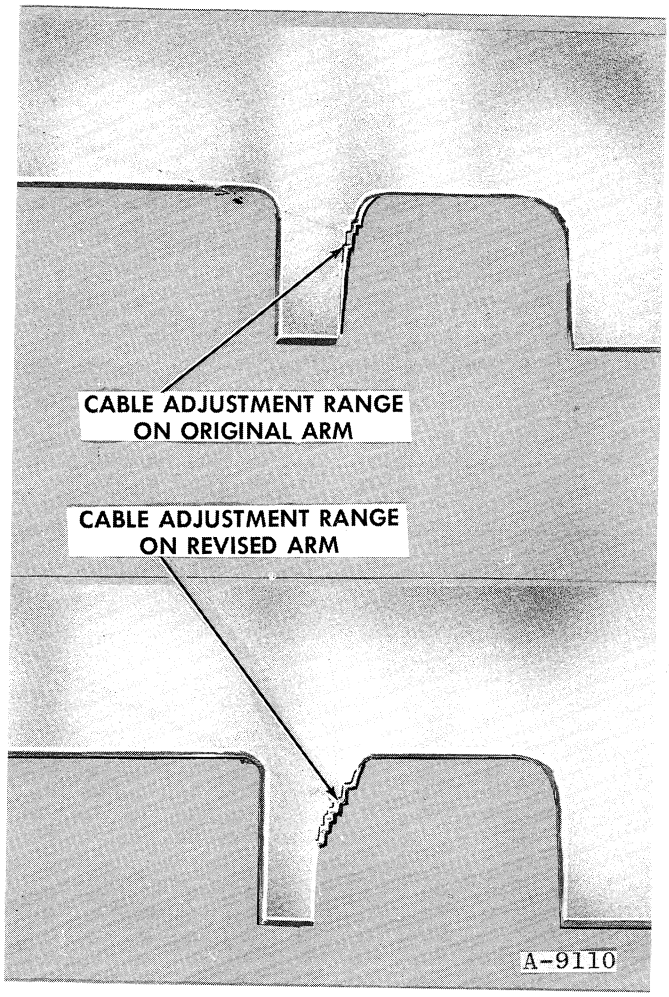


Figure 30
Improvement of Adjusting Lug

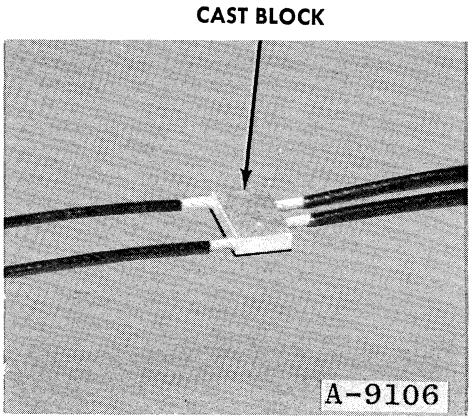


Figure 31
Cast Cable Block

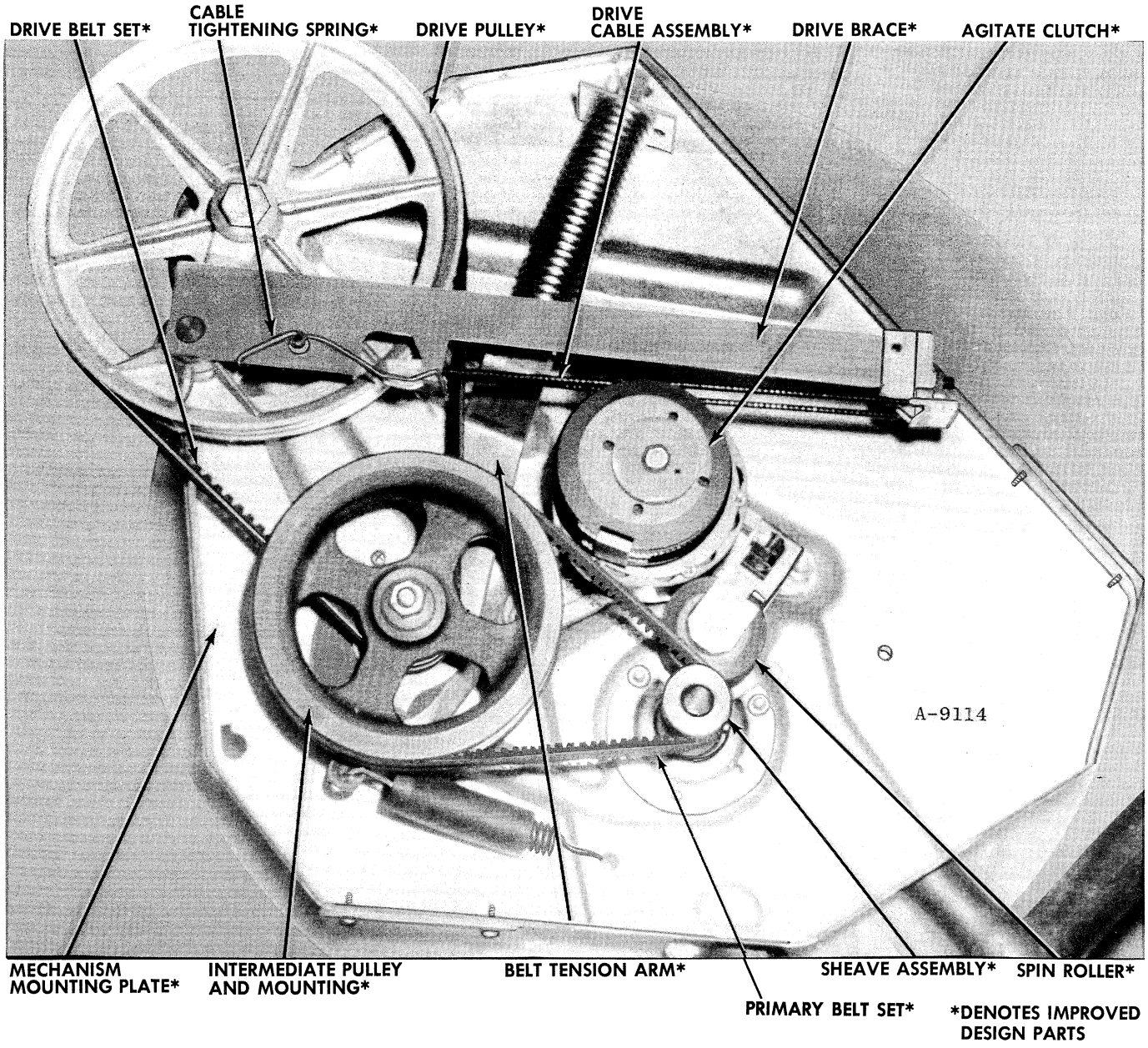


Figure 32
Washer Mechanism, Motor and Snubber Parts Removed

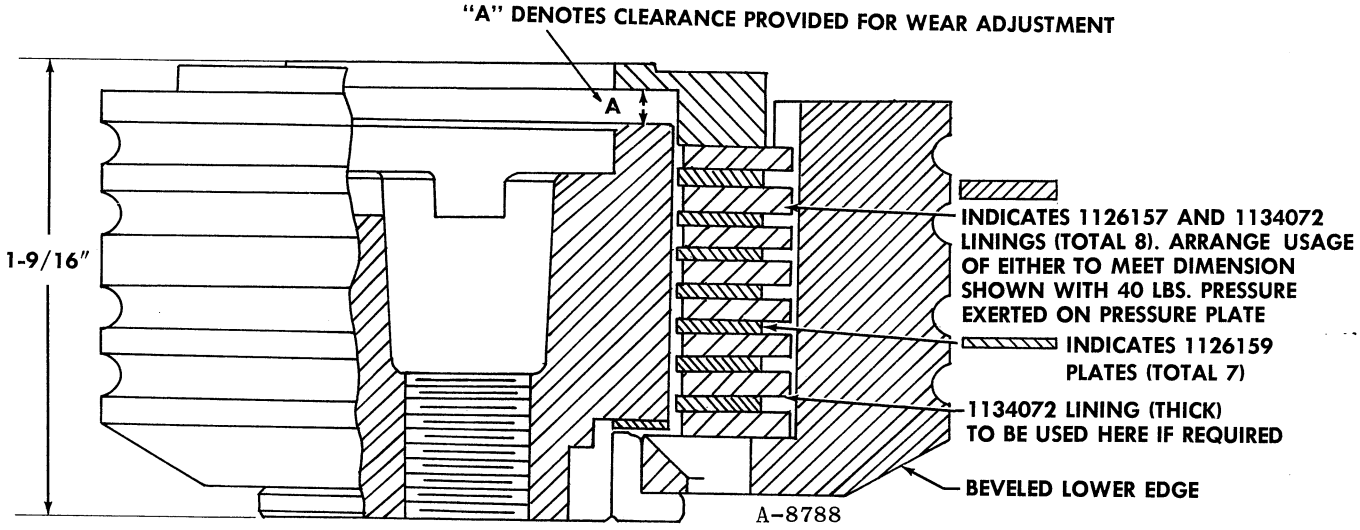


Figure 33
Revised Clutch Assembly

Agitate Clutch Assembly—Improved:

The agitate clutch assembly has been improved in many areas that will be covered individually as follows.

1. AGITATE DRUM—
   The drum casting was made deeper to accept 2 additional linings and one additional clutch plate for greater driving surface contact. This made a total of 9 linings and 8 clutch plates. A further improvement increased the thickness of the lining material for added strength which reduced the number to 8 linings and 7 clutch plates. See Figures 32 and 33.

   Holes were added in the bottom of the drum casting to allow dispersal of lining material as normal lining wear is experienced.

2. AGITATE CLUTCH HUB—
   It was possible for the original clutch hub to break while it was being removed during service procedures. This was corrected by reducing the depth of the tapered base, thus increasing the cross sectional thickness at the area involved in the breakage.

   A newer agitate clutch hub of greater height was placed into production in conjunction with the deeper clutch drum casting to accommodate the thicker clutch linings. See Figure 34.

3. AGITATE CLUTCH CAM:
   The original clutch cam was fabricated from a phenolic material which was changed to the present zinc die casting to improve life expectancy in November, 1971.

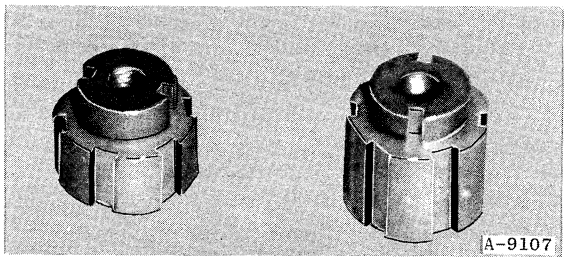
   The cam was increased in height when the new clutch drum was placed into production. At this time an additional improvement was accomplished by relocating the lower lugs of the cam to straddle the sharp notch of the cam above. See Figure 35. This improves the cam's resistance to splitting at this point during the stresses of product operation. Since the new cam is dimensionally taller than the original, it cannot be used as a replacement for the original cam unless the entire clutch assembly is replaced.

4. PRESSURE PLATE:
   The original pressure plate was manufactured as a sheet metal stamping. See Figure 36. The newer version entered production with the deeper drum casting. It is of sintered iron construction and much thicker. This added thickness provides some bearing support for the top of the agitate drum casting during spin operation.

5. CLUTCH LININGS—
   The linings have been improved by re-dimensioning to closer tolerances to permit the use of thicker linings with longer wear characteristics. See Figure 37.

6. CLUTCH PLATES—
   The finish is now held to closer tolerances to eliminate noise. See Figure 37.

All of the improvements mentioned have been incorporated into the new clutch assembly. As a service kit the new clutch assembly is adaptable to all previous Laundry Centers.



ORIGINAL CLUTCH HUB REVISED CLUTCH HUB

Figure 34
Agitate Clutch Hubs

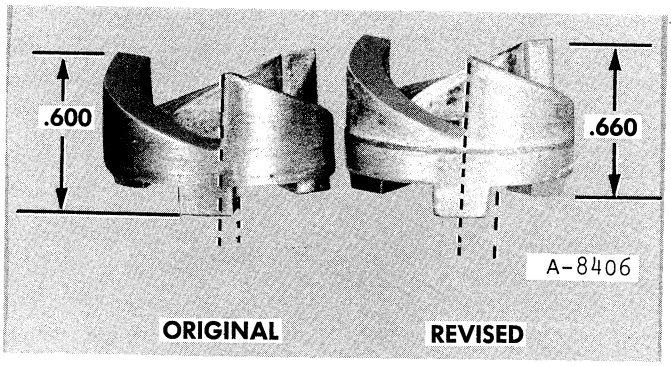


Figure 35
Clutch Cams

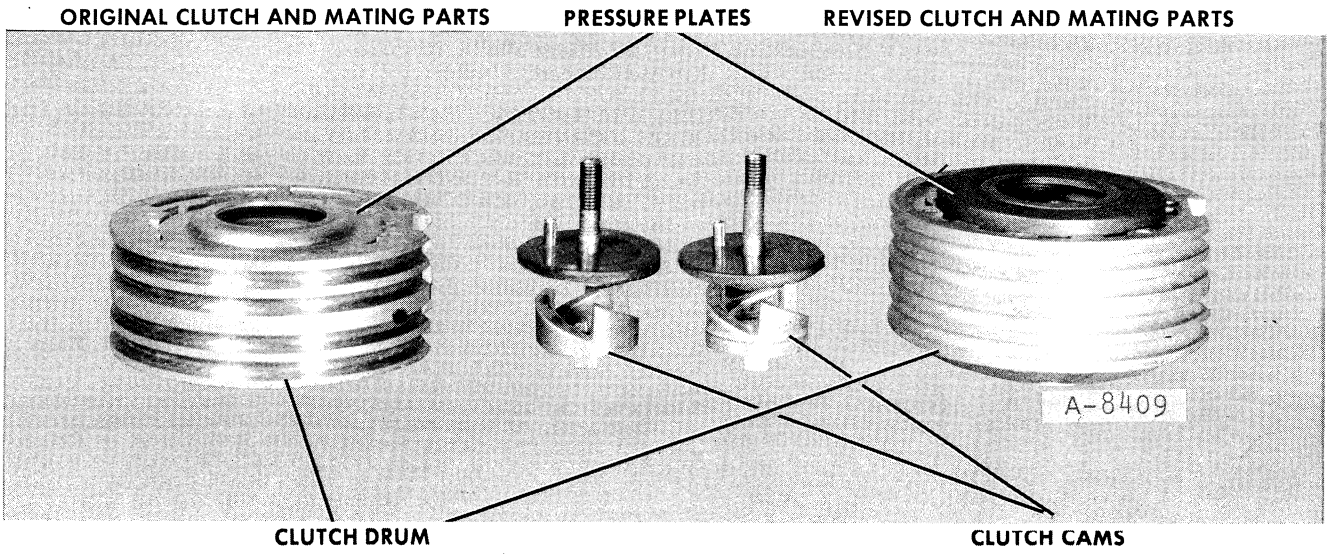
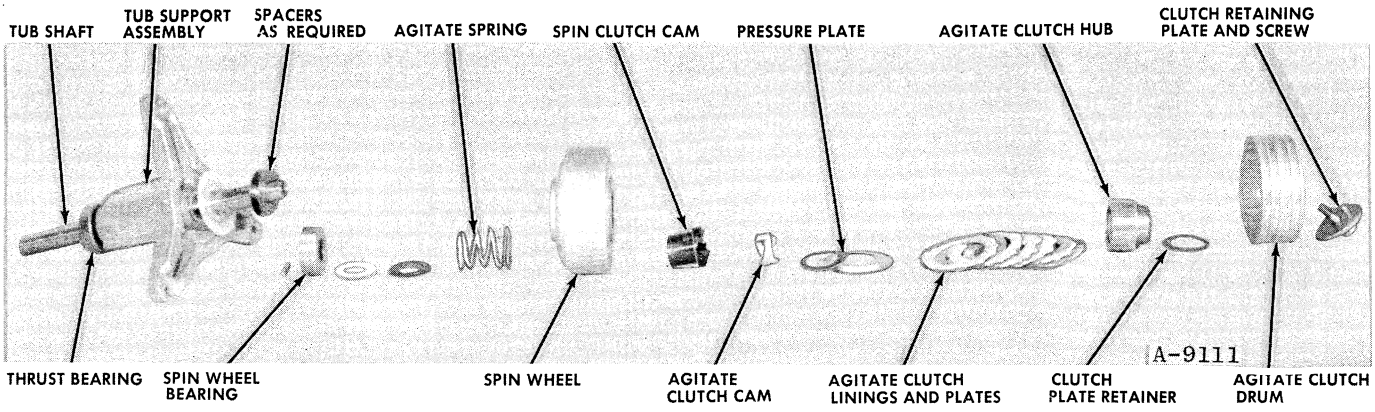


Figure 36
Agitate Clutch Assemblies



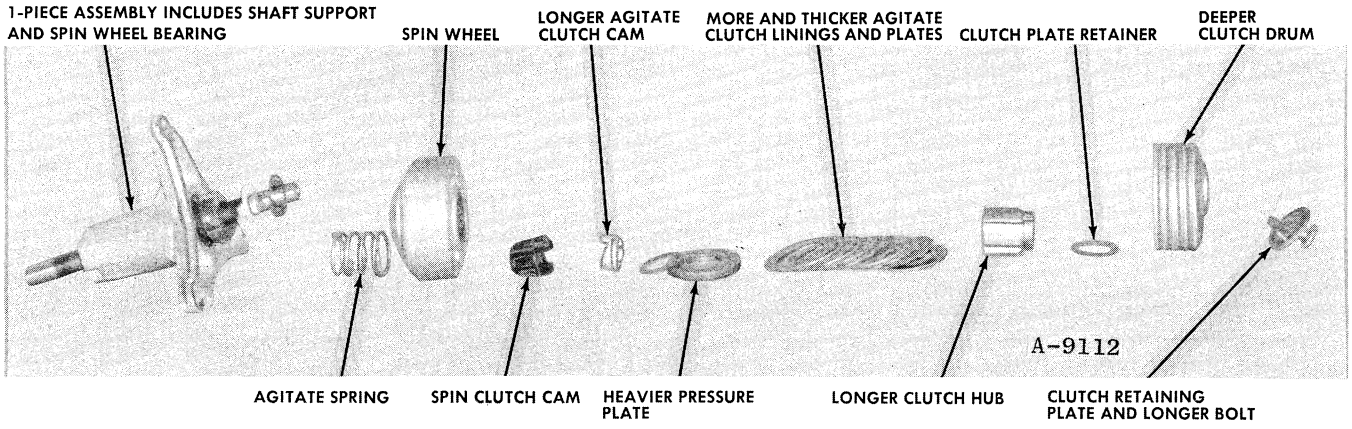


Figure 37
Tub Shaft and Driving Parts

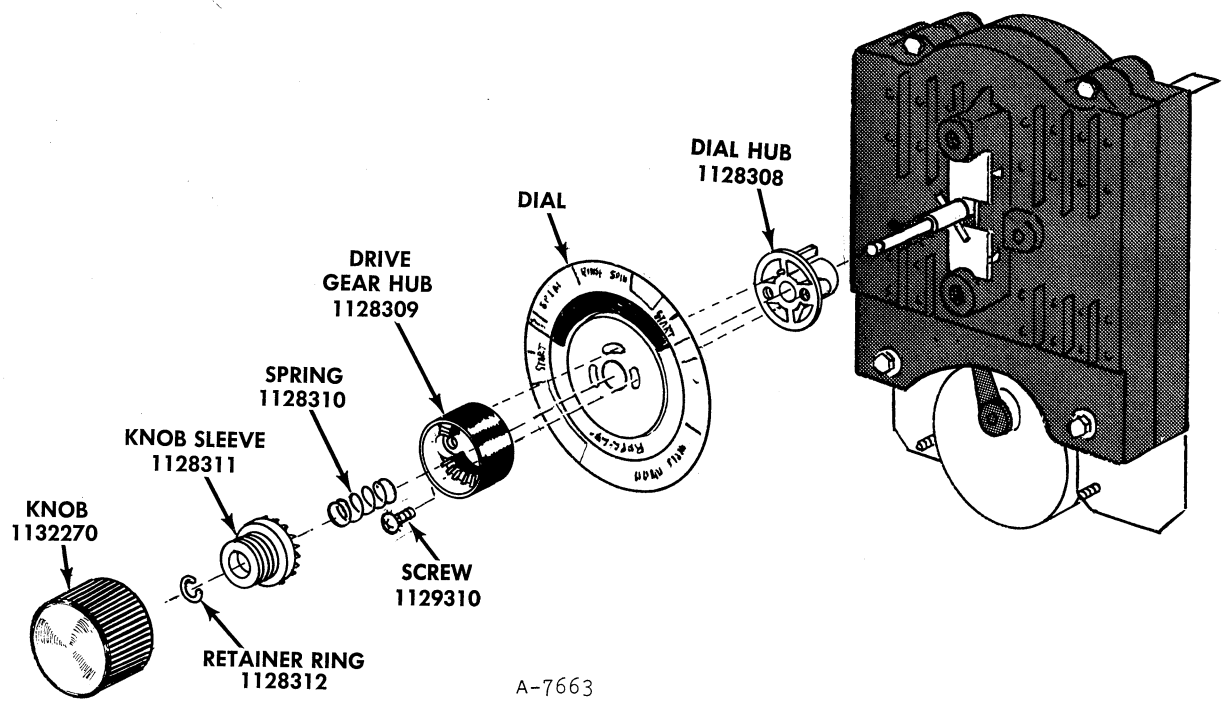


Figure 38
Revised Timer and Knob

Washer Timer—Improved:

To prevent the timer from being advanced with the contacts energized which resulted in welded or damaged contacts, a clutch has been incorporated in the timer knob. When the contacts are energized, timer shaft in the out position, the knob will be disengaged. When the timer knob is pushed in to de-energize the contacts, the timer shaft can only be rotated clockwise. See Figure 38.

Water valve improved:

An improved design water valve assembly was placed in production in October 1974. The construction and operation of the new valve is similar to the original with the following exception. The solenoid plungers have a flat resilient seating surface on the bottom end. This seating surface contracts a tapered plastic insert in the center of the diaphragm that controls water flow through the valve. As this valve is supplied by two different suppliers, internal replacement parts will have to be selected by valve manufacturer as noted on the illustration, Figure 39. These parts are not interchangeable and must be ordered accordingly.

Water Fill Nozzle—Improved:

Water is directed into the Agi-tub from the Water Valve through a rubber fill hose and fill nozzle.

A clamp and baffle was added to help direct the water into the tub, see Figure 40.

For more positive control of the fill spray, a slotted tubular polypropylene nozzle was placed in production in November 1971. Because of the difference in location of the mounting screw holes, like for like replacement should be made. Figure 41.

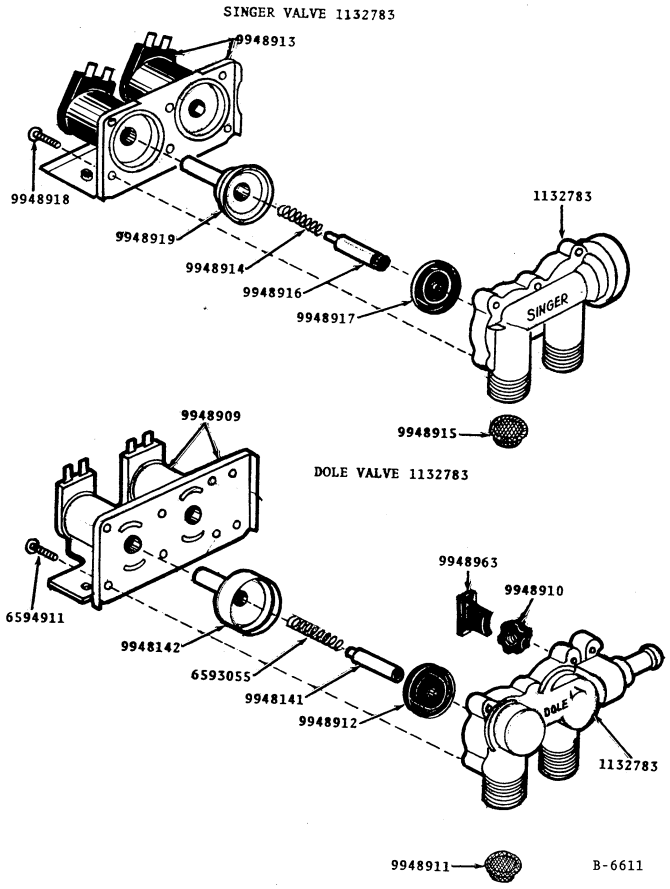
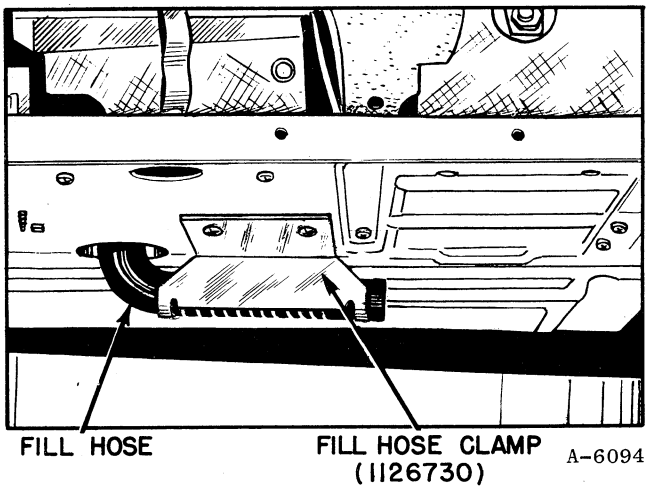


Figure 39
Water Valve Parts and Assembly



REAR VIEW OF FILL HOSE AND CLAMP

Figure 40
Original Fill Hose

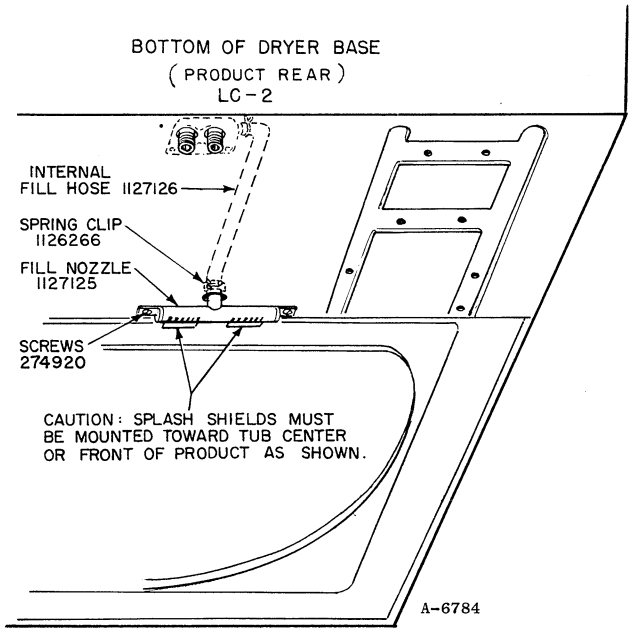


Figure 41
Fill Hose and Nozzle

SERVICE OPERATIONS MECHANISM

AS A SAFETY PRECAUTION

Always disconnect the electrical power supply cord when servicing an electrical component or any component which might come in contact with a lead or terminal during its replacement.

Whenever replacing an electrical component with multiple leads, it is advisable to transfer the electrical leads one at a time from the component being replaced to the new component. If the new component is color coded, be sure that all leads are connected accordingly. Reference should also be made to the wiring diagram on the product.

Always double check all electrical connections for tightness after replacing an electrical component.

When replacing motor, pulleys or belts, the belt tension spring should be compressed to avoid damage.

GENERAL INSTRUCTIONS

When screws are threaded into a plastic part they are of the Hi-Lo variety. This indicates they have a double thread of different diameters. When reinstalling this type screw into prethreaded holes it is desirable that the threads match those in the holes to avoid stripping. To start these screws, turn counterclockwise until the screw noticeably drops a slight amount. Proceed to turn the screw clockwise. If the threads are aligned, the screw will thread in easily. If any restriction is felt, back up and restart.

To eliminate needless repetition of steps during the following service operations, it will be assumed that the product is in a serviceable position, disconnected electrically, with water hoses and dryer vent disconnected when applicable. Only the sequence of removal will be given in most instances. Reassembly will be the reverse of removal unless specified otherwise. If specific installation procedures are required, they will be noted as such. See the product assembly views Figures 42 and 43 for assembly sequence.

The following service operations will apply to all Laundry Center models, unless noted differently. The pictorial views will not always be of the particular product series you may be servicing, since this is meant to be an all inclusive publication.

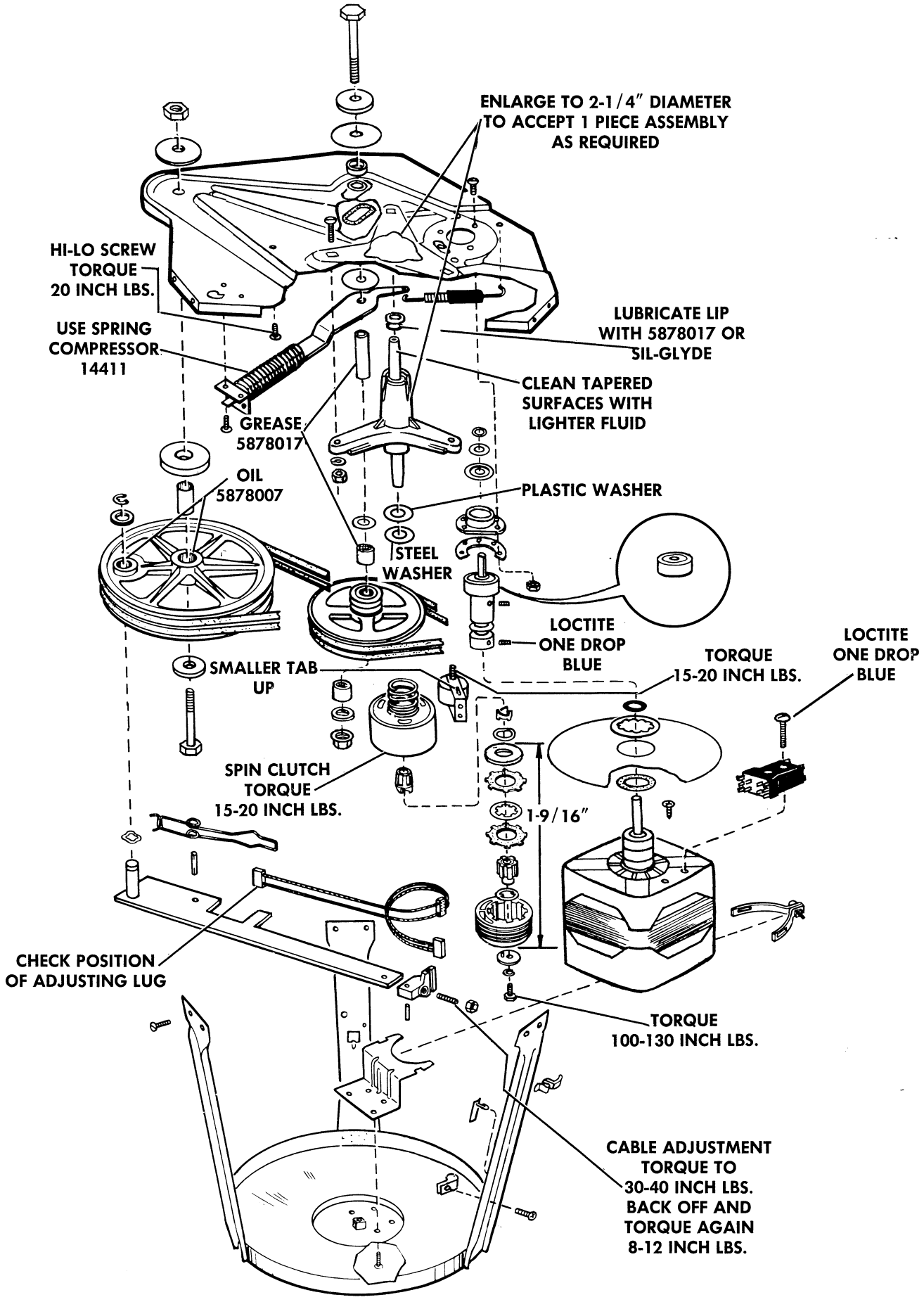
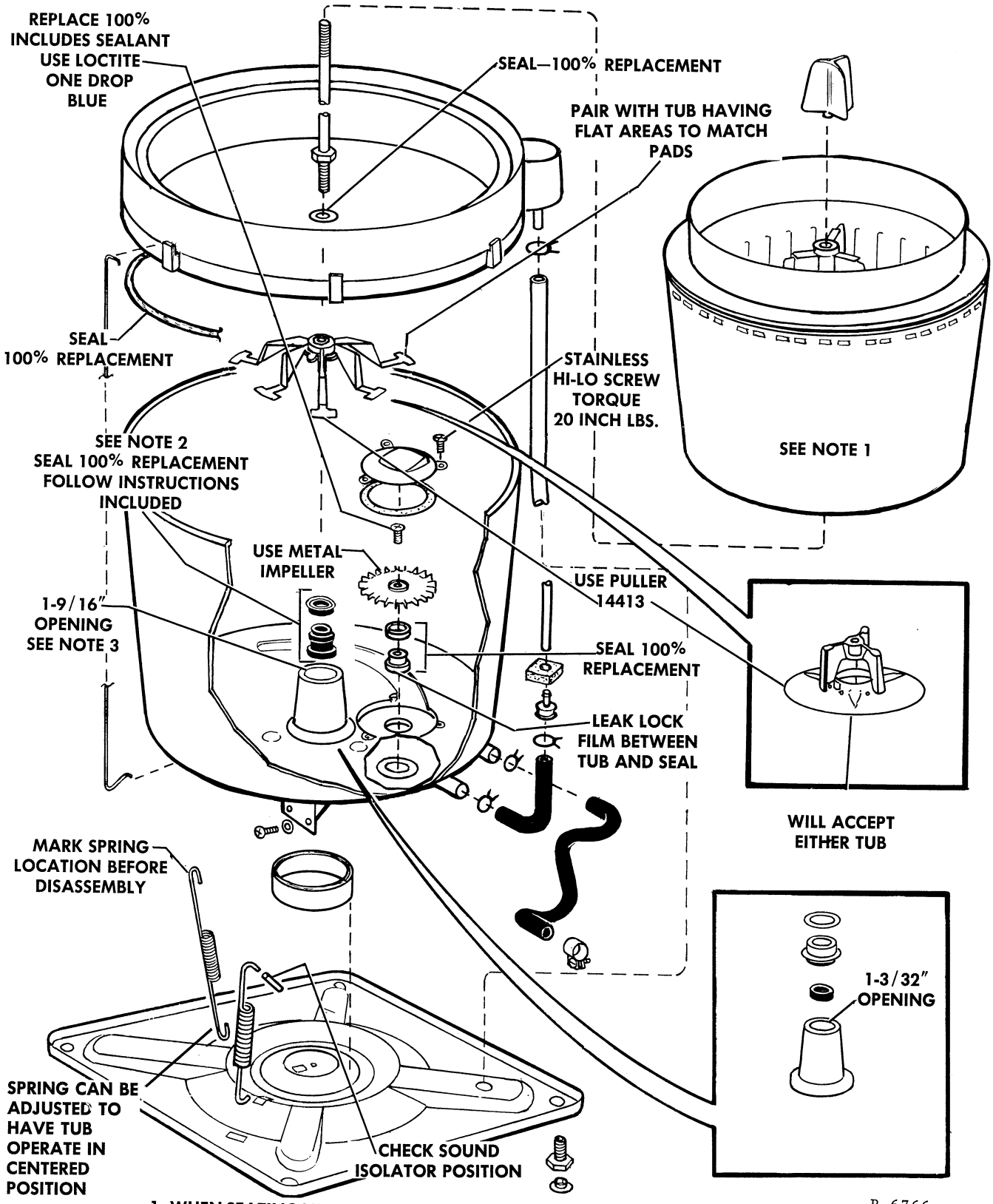


Figure 42
Mechanism Assembly Notes



1. WHEN SEATING NEW TUB FILL WITH HOT WATER AGITATE, APPLY PRESSURE AND TIGHTEN TUB NUT
2. WHEN HANDLING AND DURING INSTALLATION AVOID DAMAGE TO SEALING SURFACES, USE SOAP SOLUTION TO AID INSTALLATION. DO NOT LUBRICATE SEALS
3. ON OLDER MECHANISM PLATE, TUB LEG MAY REQUIRE TRIMMING INSTRUCTIONS INCLUDED

Figure 43
Tub and Suspension Notes

Sub-Top—Removal:

1. Remove sub top retaining springs.
2. Place feet on leveling legs and exert a steady pull on the sub top until the sub top sealant frees itself from the outer tub.

   Note: *Do not* place feet on base pan for this operation, since a great deal of pressure may be needed, resulting in damage to the base pan. If the sub top is difficult to separate from the outer tub, move to another side of the washer unit and try again.

   The sub top sealing material is most effective if applied as shown in Figure 44.

Agi-Tub—Removal:

1. Remove sub top.
2. Unscrew and remove tub cap.
3. Remove the agi-tub by first breaking it loose from the tub support by hitting the inside of the tub with the heel of your hand.

   Reassembly Note: See Figure 43.

Tub Support—Removal:

1. Remove the sub top.
2. Remove the Agi-tub.
3. Remove the tub retaining rod and sealing washer.
   Reassembly Note: See Figure 43.
4. Install the tub support puller tool 14413 and pull the tub support off of the tub support shaft taper. See Figure 45.
5. Maintain close vertical alignment of the tool during this operation to avoid damage to any of the parts or tool.

Washer Unit Suspension Parts—Removal:

1. Remove washer unit from cabinet.
2. Mark locations of counterbalance springs in holes of support legs and in coils of suspension spring also if the two springs are to be separated.
3. Remove the suspension springs with the counterbalance springs intact.
4. Remove the counterbalance springs from the holes in the support legs and lay on base pan on side removed.
5. Lift washer mechanism from snubber and base pan.

Cable Set—Removal:

1. Lift cable retaining spring to permit removal of cable set end from the drive brace.

   Note: DO NOT REMOVE RETAINING SPRING.
2. With the one end free, it is then possible to remove the cable set from around the agitate drum and remove it from the cable mounting block on the other end of the drive brace.

   Cable Adjustment Note: After the cable set is reinstalled on the drive brace and agitate drum, position the small end on the top notch of the adjusting lug of the drive brace, then tighten the adjusting set screw enough to hold the cable set in position then proceed as follows.

   a. Using a torque wrench 12934-7 tighten the set screw 30 to 40 inch lbs.

   b. Gently tap the center key of the cable set into its mounting position on the agitate hub with a plastic hammer.

   c. Back off the set screw and then re-tighten it 8 to 12 inch lbs.

   d. Tighten the locking nut on the set screw, being careful not to alter the adjustment made on the set screw.

Cable Retaining Spring—Removal:

1. Remove cable set.
2. Pry end of spring from brace and off around pin.
3. Pry other end of spring in a similar manner and slide from contact with pin.

   Replacement Note: When replaced, be sure that the coiled portion is secure around pin. This spring has been reformed

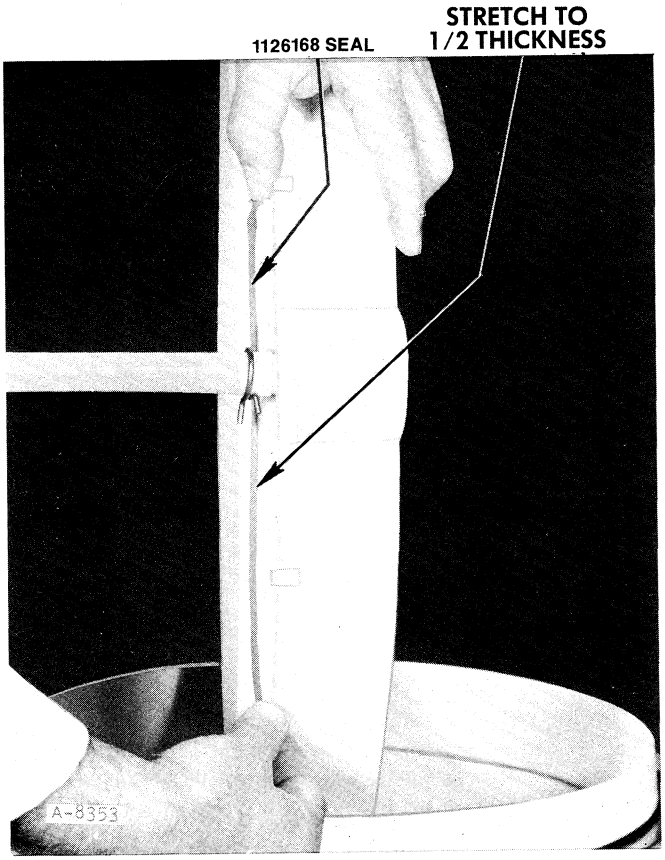


Figure 44
Seal Application

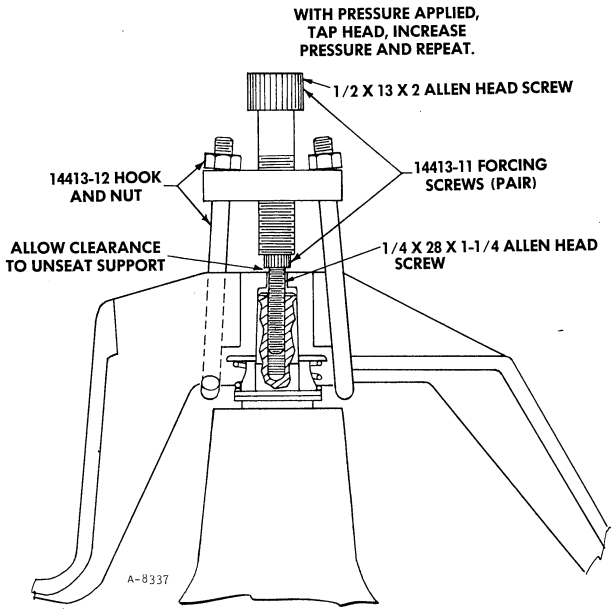


Figure 45
Revised 14413 Puller

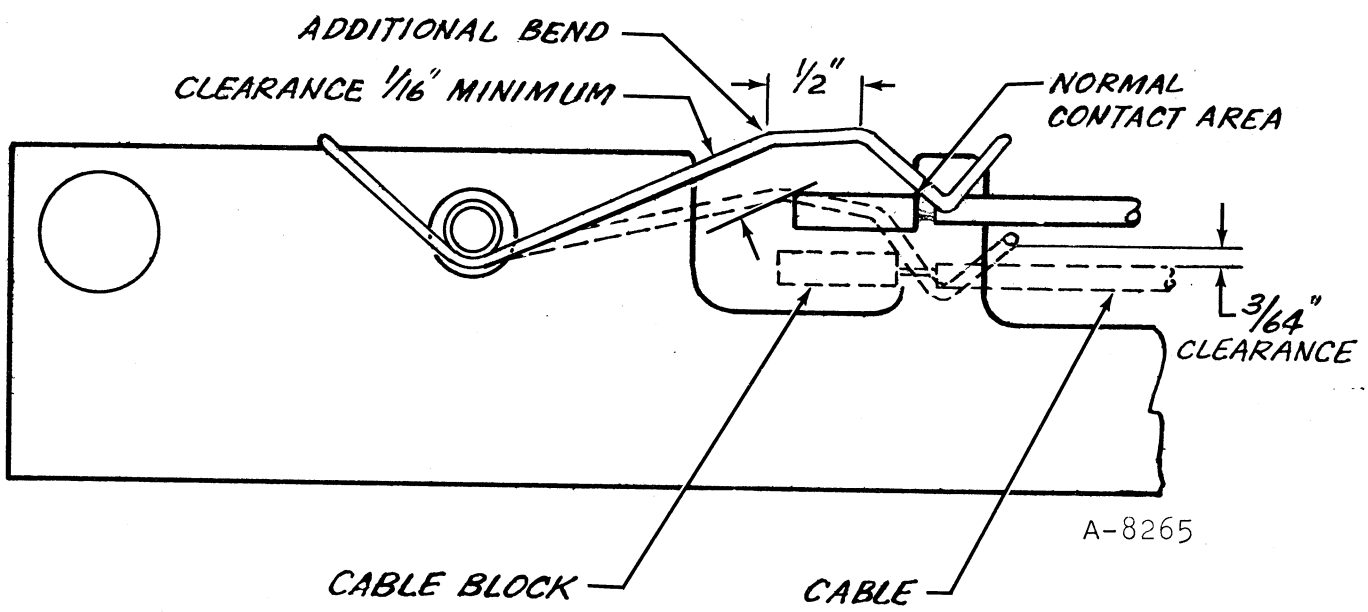


Figure 46
Correct Spring Formation

in production to assure clearance between the rear of the cable block and the adjustment spring. The spring should be in contact with the cable block at the point shown as normal contact area in Figure 46. If springs are found that do not meet this requirement, they may be reformed by adding an additional curve 1/2" from the original as shown in Figure 46. Springs that are not properly formed may not advance the cable block to the next notch when required.

Agitate Clutch—Removal:

1. Remove cable set.
2. Exert force on the spin wheel toward the mechanism plate to compress the agitate clutch spring, then place a flat bladed screwdriver or a bar like a Laundry Center shipping brace under the idler pulley and over the spin wheel as shown in Figure 47.
3. Remove bolt, lock washer and clutch retaining plate as shown in Figure 47.

   Note: It may be necessary to hold the Agi-Tub to loosen bolt.
4. Install clutch puller bolt (7/16-14 x 1"). Obtain bolt locally.
5. Hold the outer agitate clutch drum and tighten the puller bolt until the clutch hub is released from the tub support shaft. To avoid excessive pressure being applied to the puller bolt and possible parts damage, intermittently tap it with a hammer.

   Important: Keep all of the agitate clutch parts contained as an assembly and remove the puller bolt.

   Note: Should the agitate clutch hub be broken during disassembly, the rest of the agitate clutch parts will have to be disassembled individually. Install a driver puller 14158 and remove the broken hub with a pulley puller 12461 as shown in Figure 48.
6. Holding the complete agitate clutch assembly, rotate it until the narrowest side of the clutch drum (in relation to the tub support shaft) is nearest to the motor, remove it from its mounted position as shown in Figure 49 as a complete assembly. It should be reassembled in the same manner.

Note: Removal of the agitate clutch assembly offers access to the agitate clutch linings, plates, pressure plate, clutch plate retainer, clutch hub, agitate clutch cam, spin clutch cam, spin wheel agitate clutch drum, pressure plate washer and clutch retaining plate as illustrated in Figure 37.

Reassembly Note: The agitate clutch assembly has been manufactured in two basic versions as illustrated in Figure 36. The original clutch assembly 635147 has been discontinued and replaced by the newer clutch assembly 9956784 in service stock. The total assemblies are interchangeable but only the linings and clutch plates will be supplied for the original clutch.

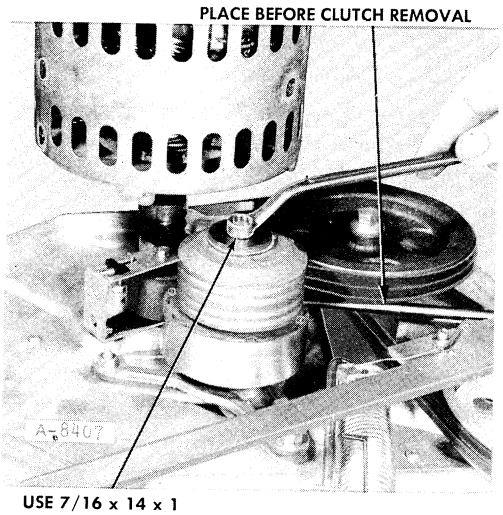


Figure 47
Removing Agitate Clutch

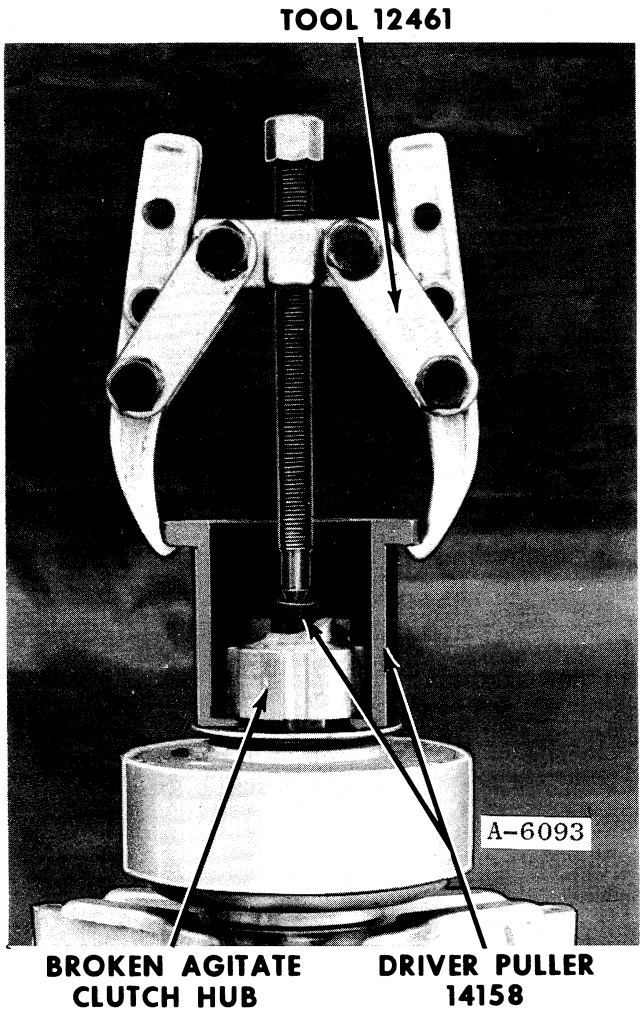


Figure 48
Broken Clutch Hub Puller

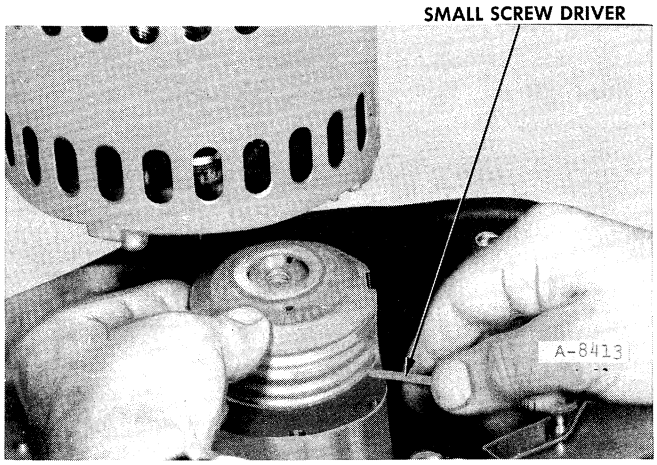


Figure 49
Lifting of Assembled Clutch from Shaft

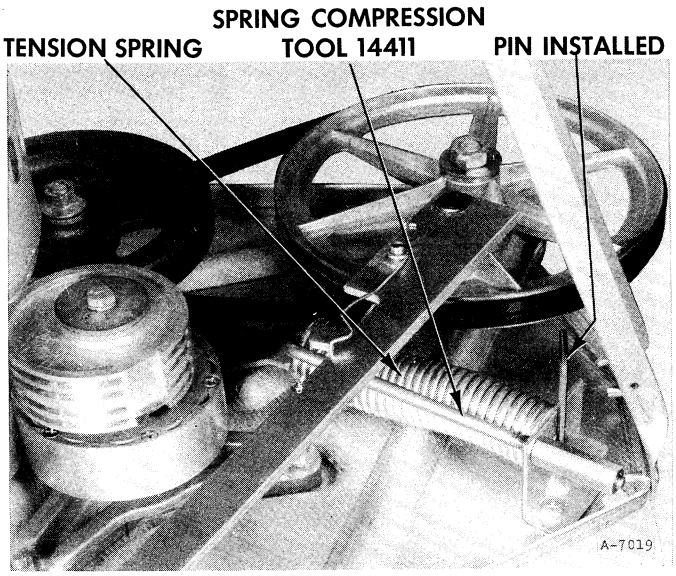


Figure 50
Compressing Belt Tension Spring

Drive Belt Set—Removal:

1. Compress the belt tension spring, using tool 14411. See Figure 50.
2. Remove cable set.
3. Slip primary belt set off intermediate pulley for access to drive belt set.
4. Remove the drive belt set from the drive pulley, then slip them over the drive brace and intermediate pulley to remove.

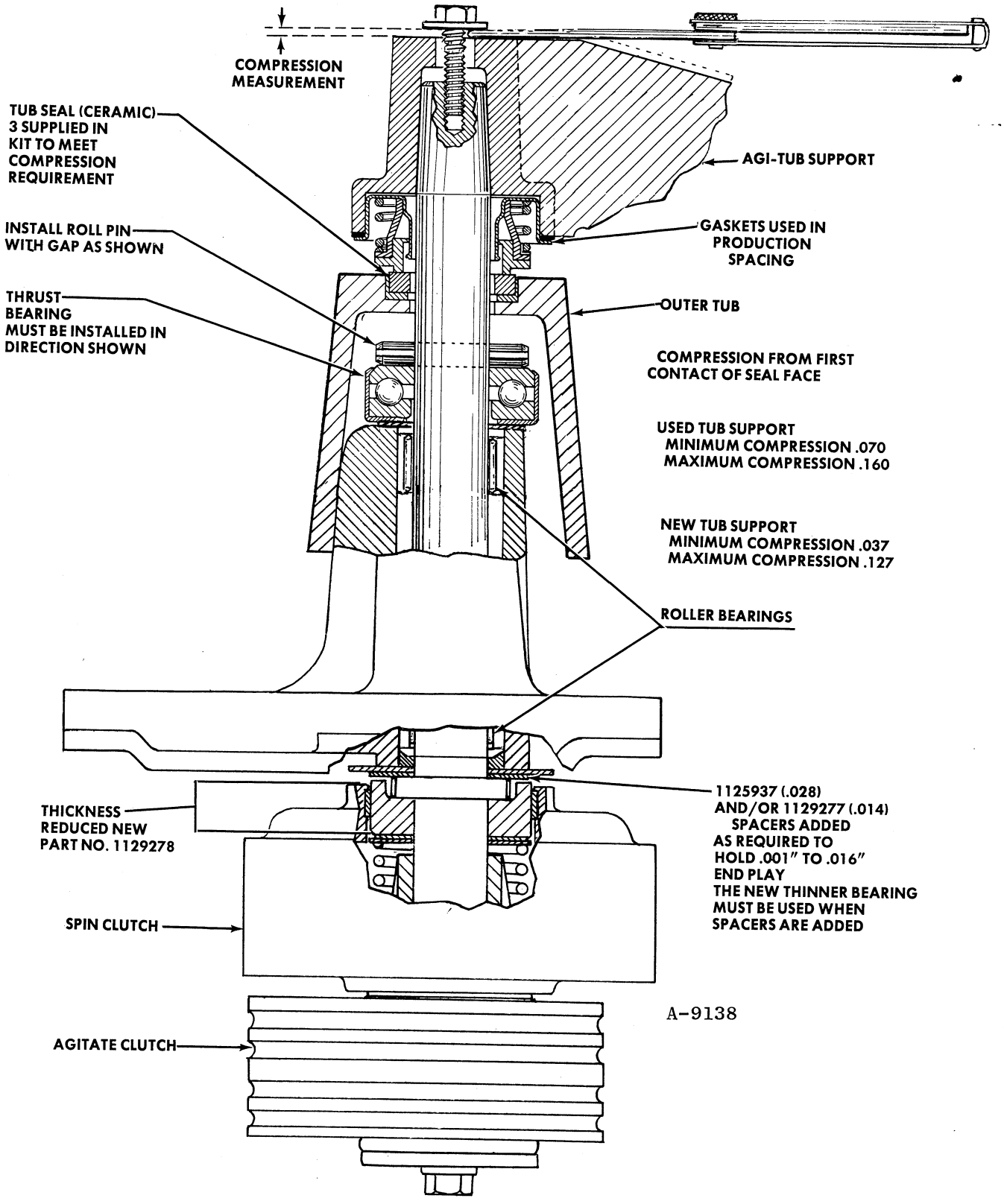


Figure 51
Original Tub Seal, Support and Shaft Assembly

Tub Support Shaft—Mounting Support Assembly—Removal:

1. Remove the sub top, agi-tub, tub support, agitate clutch and spin clutch. Figure 51.

   Note: At this point the tub support shaft can be removed individually without disturbing the mounting support assembly if desired. This procedure doesn't apply to products incorporating the new mounting support assembly.

2. Remove the three hold down nuts holding the mounting support assembly to the mechanism mounting plate.
3. Lift the mounting support assembly off of the carriage bolts protruding through the mechanism mounting plate as

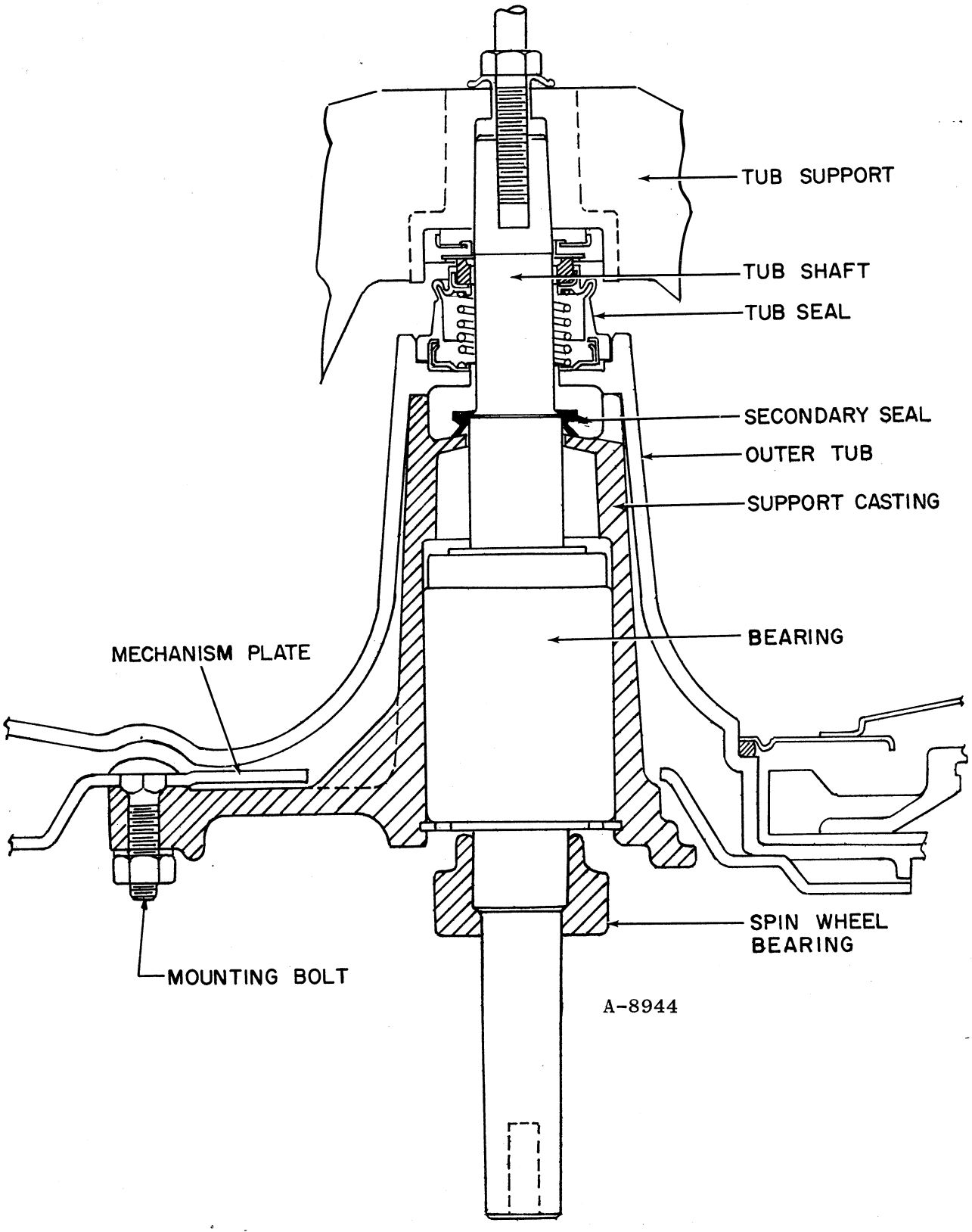


Figure 52
Sectional View of Revised Assembly Showing Tub Seal and Support

shown in Figure 53.

Reassembly Note: When the major parts of the tub support shaft and bearing assembly require replacement, the new tub support and shaft assembly must be used as a replacement. This assembly, Figure 52, combines the tub shaft, bearing, and casting into a one piece pre-assembled unit. The tub shaft is an integral part of the bearing forming the inner race. The bearing assembly is pressed into the casting and is not replaceable. A small secondary water seal is installed in the recessed area of the casting to protect the bearing should the tub seal fail. The spin wheel bearing is pressed onto the lower part of the shaft and is not available for replacement. Complete instructions for installation are included with the assembly.

Revised assembly sequence for original tub shaft and mounting support. In April 1974 the spin wheel bearing thickness was reduced to allow use of steel spacer washers as required to control shaft end play. This in turn assures that adequate water seal pressure is maintained under all operating conditions. Whenever a mechanism is reassembled using the original type shaft and casting, the revised bearing and spacers should be used as shown in Figure 51.

Support Plate Assembly with Motor—Removal:

1. Compress belt tension spring with tool 14411.
2. Remove the screws that secure the legs of the support plate assembly to the mechanism plate.
3. Support the weight of the motor and support plate assembly and loosen the set screws in the drive sheave.
4. Carefully lift the support plate assembly with motor straight up until the motor shaft clears the drive sheave. See Figure 53.

   Note: Do not under any circumstances bend the legs of the support plate assembly to gain access for motor or belt removal. This will place the motor out of alignment with the sheave bearing.

Reassembly Notes: Do not tighten the set screws in the drive sheave until after the mechanism is assembled and placed in

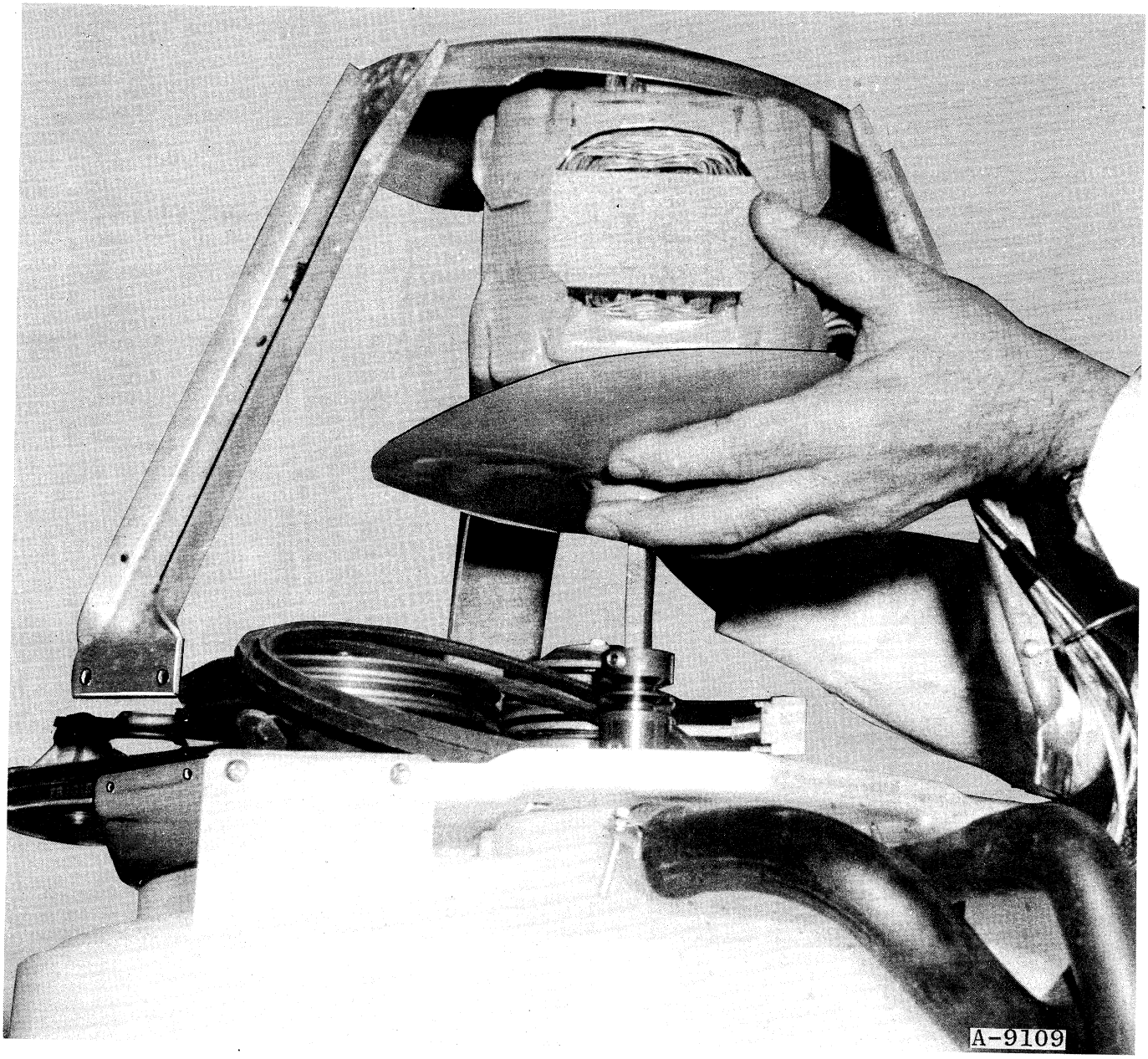


Figure 53
Lifting off Motor and Support Plate

an upright position. This will allow the weight of the motor to rest on the support plate instead of hanging on the drive sheave bearing. Figure 54.

When installing a replacement motor after removing a D27 or D29 motor it will be necessary to remove the multiple lead plug from the cabinet harness.

Primary Belt Set—Removal:

1. Compress belt tension spring with tool 14411.
2. Remove the support plate assembly with motor.
3. Replace the primary belt set.

   Note: It is not advisable to just loosen the lower motor retainer clamp and pull the motor aside to remove the belts. This can cause severe damage to the pump seal assembly and result in an unnecessary water leak.

Reassembly Note: Tighten the set screws in the drive sheave as mentioned in motor removal.

Belt Tension Arm and Spring Assembly—Removal:

1. Compress belt tension spring with tool 14411 and pin with a cotter pin or equivalent.

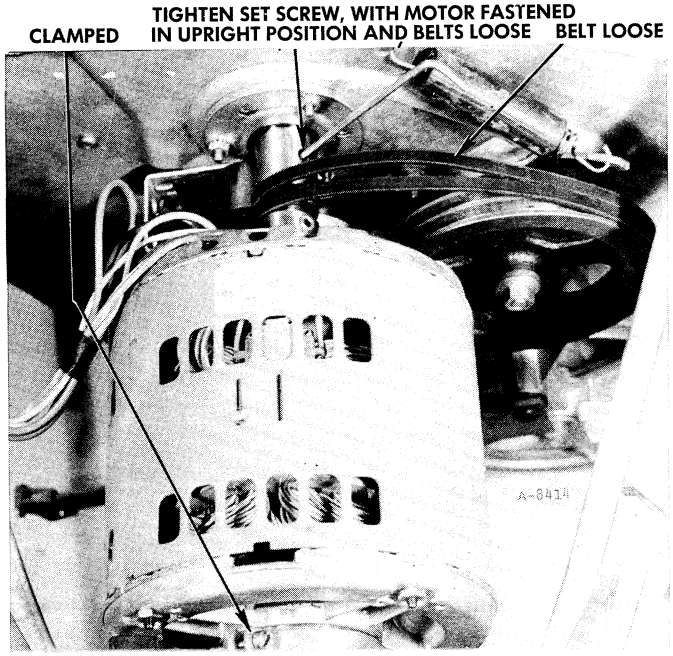


Figure 54
Motor Reassembly

Note: It is difficult to compress the tension spring enough to pin the tension without damaging the compression tool 14411. Use a hammer handle or similar tool to assist compressing the tension spring while inserting the pin. See Figure 55.

2. Remove the belts from the intermediate pulley.
3. Remove the intermediate pulley.
4. Remove the two screws that mount tension guide bracket to mechanism plate and remove belt tension arm and spring assembly.

   Caution: It may be necessary to remove tool 14411 in order to remove these screws. Be sure the cotter pin is secure in the tension arm and DO NOT remove it as this can result in the bracket becoming a projectile.

Reassembly Note: Be sure replaced assembly is in final position with screws and intermediate pulley installed before removing the pin from spring assembly.

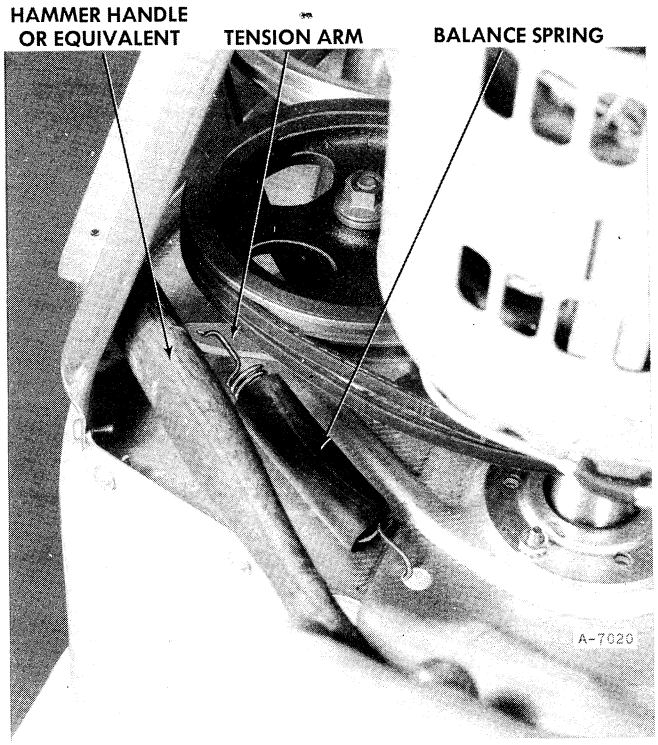


Figure 55
Assist in Pinning Belt Tension Spring

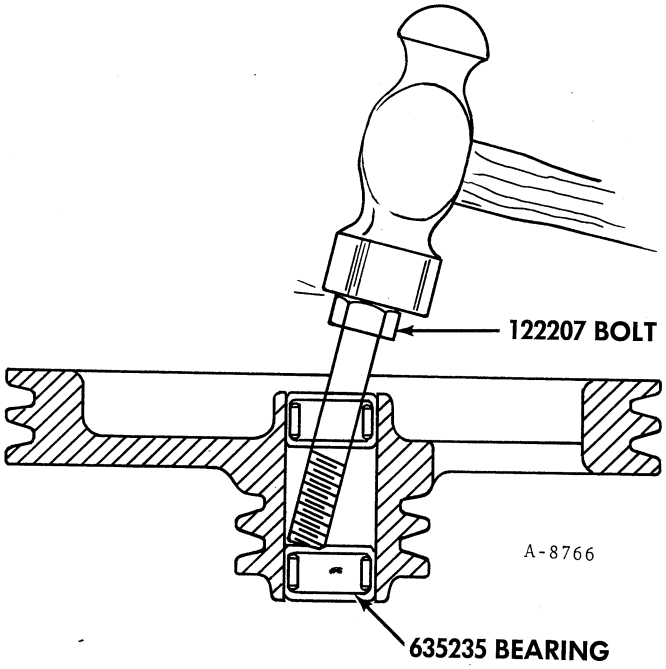


Figure 56
Removing Intermediate Pulley Bearing

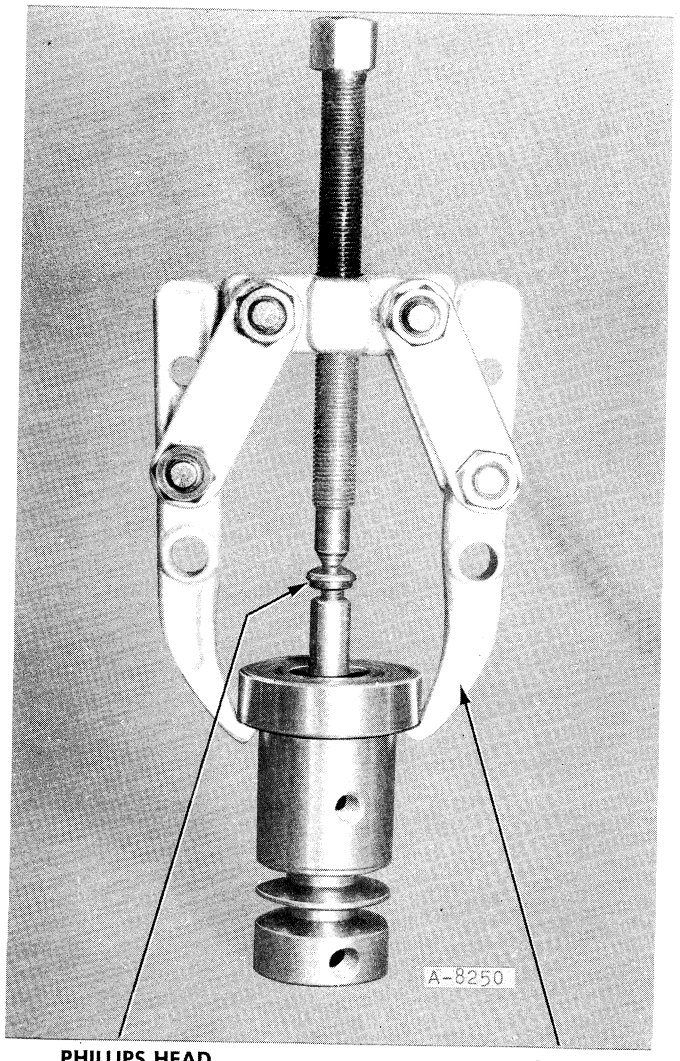


Figure 58
Removing Sheave Bearing

Sheave and Intermediate Pulley Bearing-Replacement:
These bearings may be removed and replaced by referring to Figure 56 through 59.

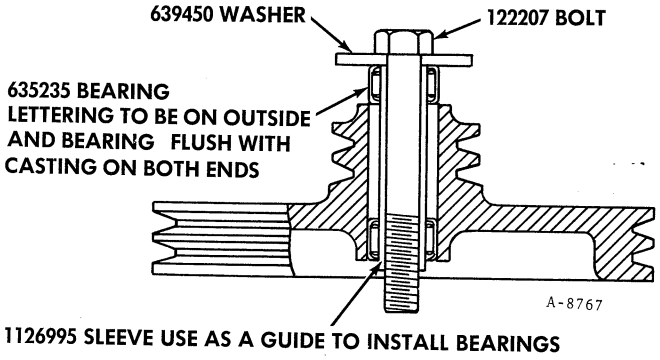


Figure 57
Installing New Bearing

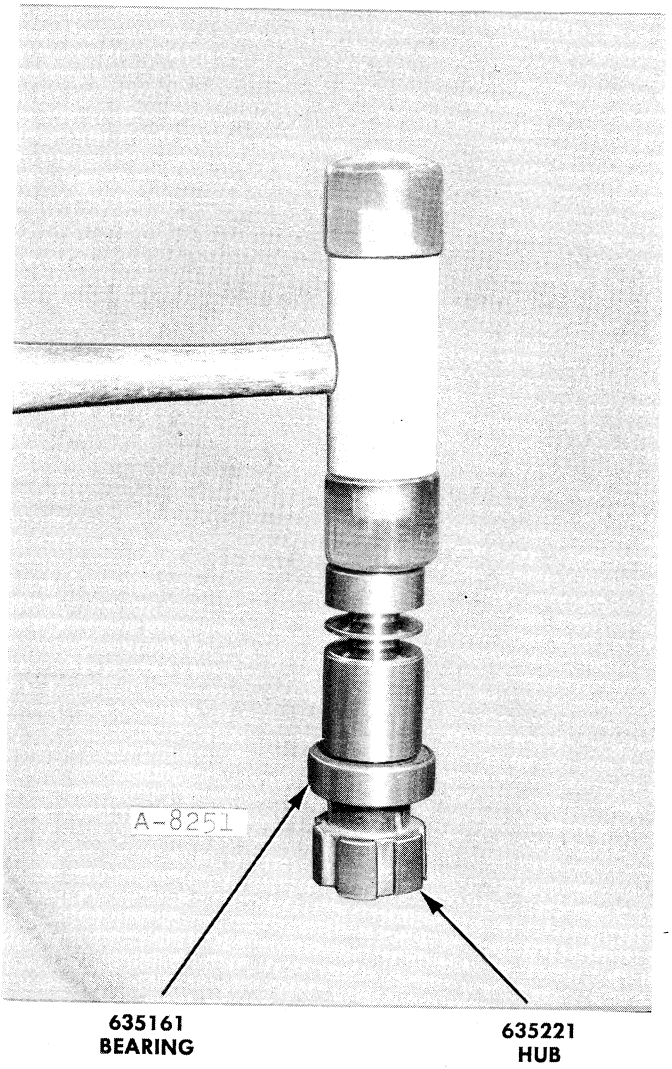


Figure 59
Installing New Sheave Bearing

WASHER CONTROLS IMPROVEMENT AND DIAGNOSIS

WASHER CONTROLS

Washer Timer—Figure 60:

The washer timer is the electric control that is set by the user to select the sequence of operation of the washer unit. It consists of a motor, an escapement and a switching mechanism. The timer motor drives the escapement through gear reductions. The escapement, in turn, controls the time interval between timer advances and drives the switching mechanism. The switch mechanism consists of a notched cam that makes and breaks movable contacts as it rotates in operation. This movement controls the operation of the washing cycle.

Component Identification Code Figure 60

- **A** Dryer Timer
- **B** Washer Timer
- **C** Start Button and Door Switch
- **D** Water Temperature Selector
- **E** Fabric Selector
- **F** Washer Timer Motor
- **G** Timer Index Pin

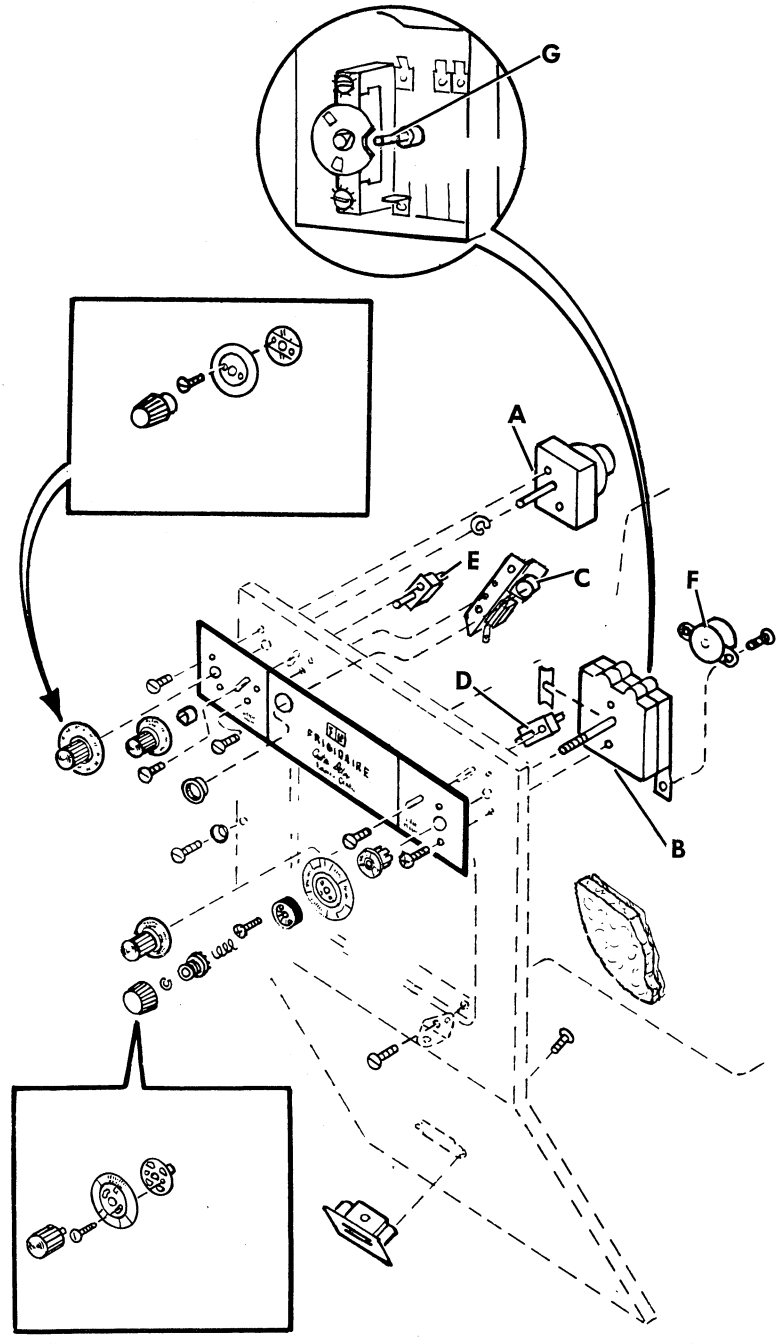


Figure 60

Lid Safety Switch:

A push button type switch that is actuated by the hinge pin arm in the washer lid. It will shut off all washer operations when the lid is raised approximately 3″ or less. The switch is mounted in the dryer base. Figure 61.

Water Valve—Figure 61:

The electrical components that control the fill water to the washer unit. The actual water selection is made by the user through the setting of the Water Temperature Selector Switch. The water flow rate is controlled by a flow washer in the outlet of the valve. Screens are installed in each inlet to restrict foreign material from getting into the valve. Passage of water through the valve is controlled by two sets of coil and valve components inside the valve.

Water Fill Nozzle—Figure 61.

Water is directed into the Agi-tub from the Water Valve through a rubber fill hose and fill nozzle.

Water Temperature Selector Switch—Figure 60:

A rotary type switch that is set by the user to select wash and rinse water temperature.

Water Level Safety Switch—Figure 61:

A pressure-operated switch that breaks electrical connections to the fill valve in the event of an overfill situation. This switch is mounted in the dryer base with a pressure tube running down to an outlet hose section from the outer tub near the water pump. As water overflows from the Agi-tub into the outer tub during an overfill, the water level rises in the outer tub. This compresses the air in the pressure tube and exerts an equal pressure on a diaphragm in the water level switch. The switch is set to actuate with 6″ to 8″ of water in the outer tub.

Component Identification Code Figure 61

A Water Valve	I Belt
B Lid Switch	J Blower
C Pressure Switch	K Motor
D Temperature Control Thermostat	L Blower Housing
E Fuse Link	M Duct
F Lockout Relay	N Fill Nozzle
G Buzzer	O Belt Idler Pulley
H Driver	P Motor Switch

SAFETY FEATURES

PULL TYPE TIMER SWITCH to start washer prevents accidental start. (Must pull timer knob to start.)

LID SWITCH—Automatically opens the electrical circuit to the washer timer; thereby, halting all washer action until the lid is closed.

MOTOR PROTECTOR. Automatically opens the electrical circuit inside the washer motor in the event of a motor overload. The motor becomes inoperative and opens one side of the power source to all components. The protector is self resetting after approximately 5 minutes.

THREE PRONG POLARIZED ELECTRICAL SUPPLY CORD 120V models.

EXTERNAL GROUNDING safety kit.

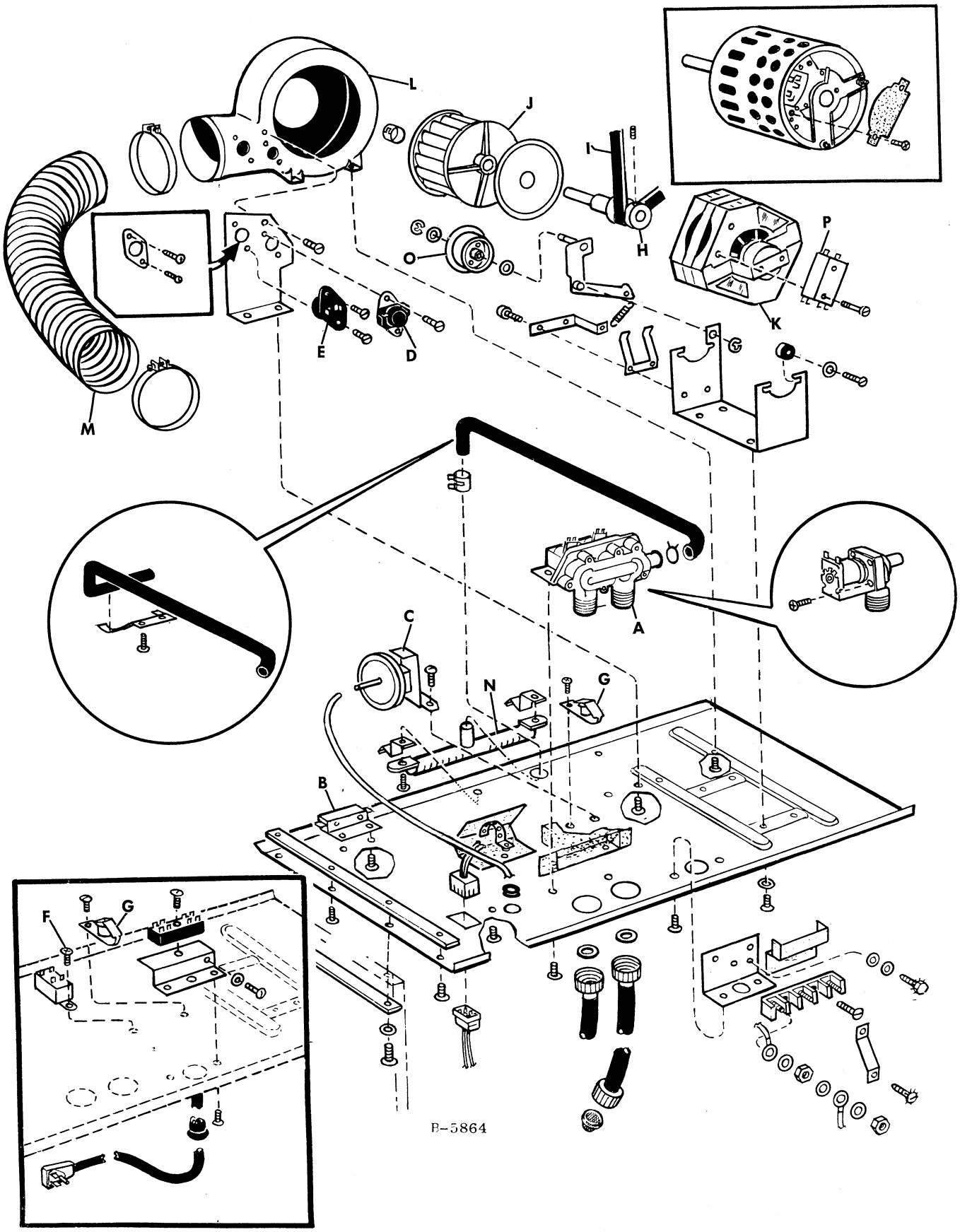


Figure 61

SERVICE DIAGNOSIS

CHECK INSTALLATION

1. Power Supply 115V, 208V, 240V.
2. Separate 12 Ga. Wire Circuit, 115V Prod.
3. 15 amp. Time Delay Fuse, 115V Prod.
4. Check Drain for kinks or restriction.

CHECK TIMER DIAL

Calibration per Tech Talk. Refer to Figure 38.

FILL PROBLEM

WATER LEVEL

NO WATER FILL

Check the following:

A. Unplug Product from power supply.

B. Remove top from cabinet.

C. Energize both water valve solenoids with a Test Cord.

Refer to Page 66.

Leave the water supply connected. Hot Solenoid R to W-R Cold Solenoid T to W. Observe water flow and listen for audible sound of the Solenoids being energized.

NOTE: Circuit is completed through the Motor Overload Protector.

D. If Valve does not function in Step C, check electrical connections and Ohmic Values of Solenoids at Valve. Repair or replace as required.

E. If Valve does function in Step C, the problem will be in the Controlling Circuit. Refer to Related Schematic and "Controlling Circuit Check" under Water Temperature.

FILL LEVEL INCORRECT

Fill level is controlled by the timer giving a fixed water level. (Timed Fill)

Screens in valve inlets clogged.

Wrong flow washer in valve. Low water pressure

Low water pressure. Slow Timer Motor Pc No. 6594953

CONTINUOUS FILL

Check the following:

A. Unplug Product from power source. If water stops flowing, check for faulty timer contacts.

B. If Step A does not shut off water, disassemble Water Valve and clean or replace Armature and/or Valve Seat.

WATER TEMPERATURE

Water Temperature is regulated by the mixing action of the Fill Valve on the Washer as follows: (LCA-120-Manual Reg.)

A. Hot—Only hot water solenoid is energized.

B. Cold—Only cold water solenoid is energized.

C. Warm—Both solenoids are energized.

Check the following:

A. Hot water temperature should be 140° to 150° at Fill Inlet during Hot Fill Period. A temperature drop could exist if the Hot Water Heater is located too far from the Washer.

B. Check Fill Valve Solenoid operation as indicated in "No Water Fill." If Fill Valve operation is correct, only the controlling circuit remains to regulate water temperature.

Check Controlling Circuit as follows:

A. Unplug Product from power source.

B. Remove Top Panel and check for loose or burned connections and correct Product Wiring per Related Wiring Schematic.

C. Remove Fill Valve Assembly and disconnect the Red and Tan Leads from the Fill Valve Terminals. (LCA-120-Tan Lead).

D. Connect the Ohmmeter between the Hot Side of the Appliance Cord Plug and Red or Tan Lead from the Fill Valve.

E. Close the Lid and set User Controls to settings suspected of malfunction.

NOTE: Timer and Selector Switches must correspond with appropriate Fill Lead during increment of Wash Cycle being checked.

F. If an open circuit exists, remove the Ohmmeter Probe from Fill Valve Lead. Refer to Related Wiring Schematic and check back through the circuit until open circuit is located.

PRODUCT OPERATION

AGITATE

MOTOR IS OPERATING

Check Power Transfer:

A. Broken or loose drive belts.

B. Broken agitate drive cable set.

C. Broken drive brace.

D. Agitate clutch slipping. See clutch assembly.

E. Tub support loose on tub support shaft.

F. Agitate clutch hub loose on tub support shaft.

MOTOR NOT OPERATING

Check Motor:

A. Unplug Product from Power Source.

B. Remove Top Panel and disconnect Pu, Or Br, W Wires from Timer.

C. Refer to Wiring Schematic and check Ohmic Value of Four Pole Main and Phase Windings at Cabinet Side of Plug. Main Winding is Pu to W. Phase Winding is Or to Br.

D. Use two lead Test Cord and operate Product in Agitate and Spin. Test all speeds applicable to Product involved. Refer to Fig. 66.

NOTE: The multiple speed motors start on the four pole windings. When slower speed is selected, they switch to the six pole windings after the motor accelerates to actuate the motor governor operated switch. If an open circuit exists in the slower (6 pole) windings or motor switch contact the motor will repeatedly start and stop.

Check Motor Circuit:

A. Close Lid and set Timer in operating position.

B. Set speed selector switch.

C. Unplug Product from power source.

D. Gain access and disconnect Harness from Motor.

E. Plug Product into power source.

F. Take Voltage Reading between Purple and White Leads at Motor Plug.

G. If open circuit is indicated in Step F, unplug Product and check Continuity between White Wire at the Motor Harness Plug and the common side of the Appliance Cord with an Ohmmeter.

NOTE: Ribbed side of Cord is common. (115/120V Product)

H. Refer to Related Wiring Schematic and check back through circuit at all connections and components until open circuit is isolated.

I. Connect Ohmmeter between Purple Lead of Motor Harness Plug and hot side of Appliance Cord and repeat checks in "H."

J. Check Continuity with Ohmmeter between Purple and White Leads at Motor Plug to Ground Terminal of Appliance Cord. An open circuit should exist. A Continuity reading would indicate a short to ground.

SPIN

MOTOR IS OPERATING

Check Power Transfer:

A. Broken or loose drive belt.

B. Moisture or foreign material on spin driver, spin roller or sure spin clutch. Clean with lighter fluid.

C. Roller retractor stuck holding spin roller away from spin driver or spin clutch.

D. Check alignment of spin roller and driver.

E. Driver loose on motor shaft.

F. Cams sticking. Check for cam engagement and spin clutch camming up going into spin.

G. Connect product and check torque of sure spin clutch. Check that clutch torque is 15 to 20 lbs.

WATER LEAKS

DURING FILL

Water valve cracked, loose screws.

Fill hose from valve to fill nozzle off or ruptured.

Overfill—Water valve or timer malfunction and water level safety switch inoperative.

- Check water level safety switch for operation with outer tub ⅓ to ½ full. Check fill period for proper timer sequencing and water valve operation. With continuous fill, disconnect electrical supply and observe the action. If water fill stops, trouble is indicated in timer or electrical connections. If water fill continues, trouble is indicated in water valve. Repair or replace as necessary.

DURING AGITATE

Water level too high.

Discharge pump seal in pump cracked or torn.

DURING SPIN

Water thrown out over top.

- Check spin acceleration. If spin clutch torque is too high, water can be spun out over top of tub.

Leak at seal between outer tub and sub-top.

- Remove sub-top and adjust sealing compound between sub-top and outer tub.

Drain hose clamps loose and/or hoses ruptured.

Outer tub split.

Sub-top hold down clips missing or loose.

Leak at pump seal or tub shaft seal.

- Check for source of water and reinstall new seal as necessary. Check seal compression on reassembly.

Tub rotary seal surface split or improperly installed.

SERVICE DIAGNOSIS

NOISY OPERATION

NOISE DURING AGITATE

- Knocking Sound—Driver Brace
  - Check cable set for proper adjustment. Tighten as necessary.
- Knocking Sound—Hose Clamp
  - Hose clamps out of position, vibrating against mechanism plate. Reposition as necessary.
- Suspension springs not properly adjusted. See Figure 43.
- Tub Reinforcing Ring loose use RTV between ring and tub to prevent movement.

NOISE DURING SPIN

- Tub seal chattering or groaning sound. Replace tub seal. Figure 43.
- Screeching during spin. Check snubber ring.
- Tub shaft bearings noisy. Replace bearings. See Page 16.
- No Brake or long brake time. Slippage in agitate clutch.
  - Agitate clutch adjustment, see Figure 33.
- Tub separation and striking sub top. Replace tub. Page 14.

NOISE DURING AGITATE AND/OR SPIN

- Tub shaft bearings noisy. Spin or agitate. See Page 16.
- Roller retractor damaged or roller surface damaged. Either could cause noisy operation spin or agitate cycle. See Page 16.
- Bent or loose roller mounting bolt.
- Dirt or moisture on roller driver. Clean with lighter fluid.
- Suspension springs not properly adjusted. See Page 43.
- Slapping sound—Water level safety switch line hitting outer tub.
  - Check pressure tube. Sound isolator in place and tension on tube. Adjust as necessary.
- Motor bearing noisy—replace motor. Figure 54.
- Product not level, causing vibration.
- Cabinet mounting screws loose.
- Chattering or squealing noise during spin and/or agitate. Check pump seal and seal ring on discharge pump impeller. See Figure 43.
- Loose bolt in motor mounting bracket.

MISCELLANEOUS WASHING PROBLEMS PRODUCT OPERATION REFER TECH TALK VOL. 76 NO. 6

CLOTHING NOT CLEAN

- Check for proper water level.
- Check water temperature. 140°-150° for best results.
- Improper use of detergents. Consult Home Ec. Section.
- Check user for overload of clothing.

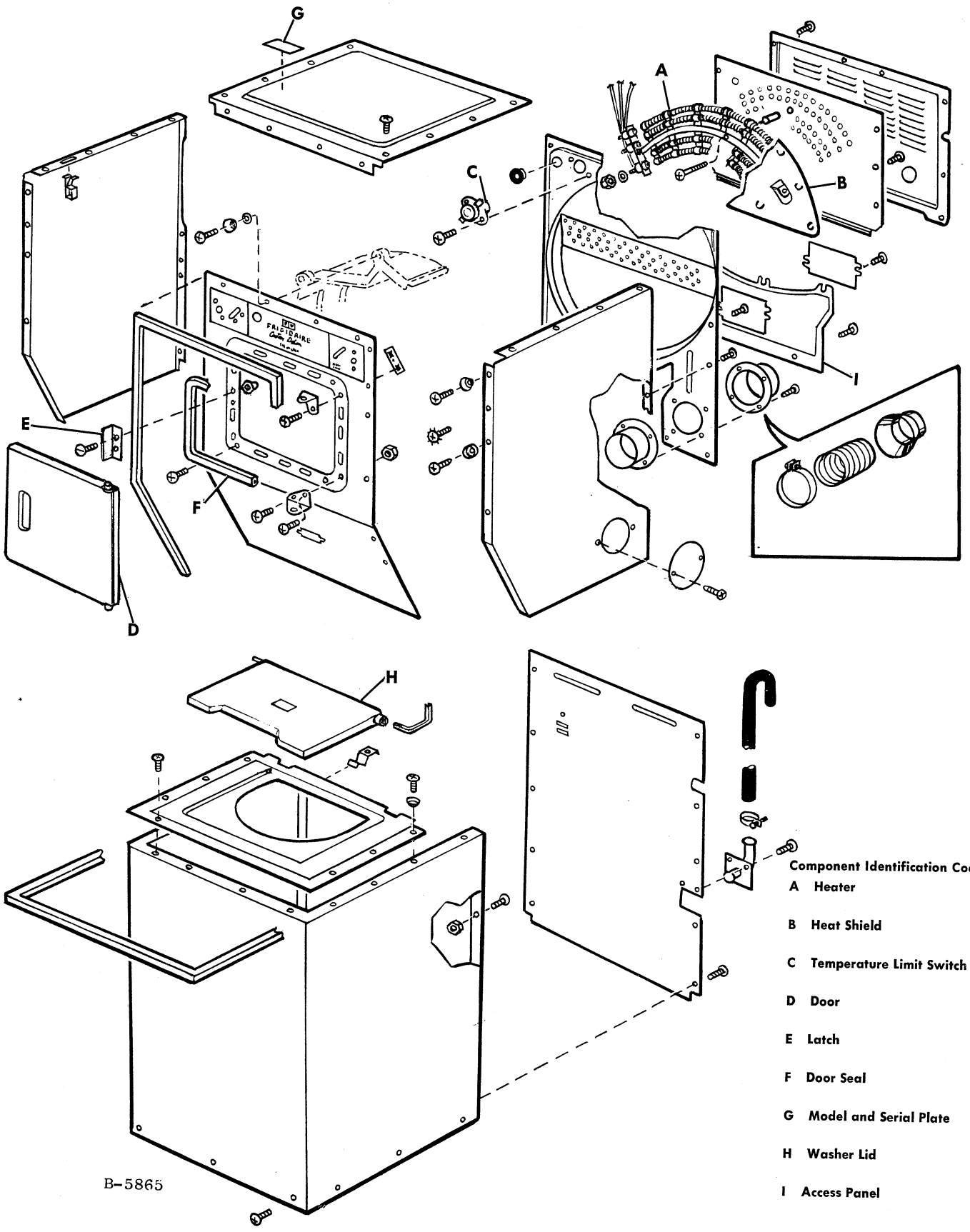
CLOTHING WET AFTER SPIN CYCLE

- Check speed selector switch for correct selection.
- Check for drain restriction—water not being discharged fast enough.
- Check for out-of-balance condition.
- Check clutch torque for proper operation. Should read 15-20 in. lb.

CLOTHES TORN

- Check all interior surfaces of tub with old silk hose. Remove any burrs that may be found.
- Check top surfaces of washer and dryer for sharp edges in control panel areas which may snag clothing that is placed on these surfaces prior to loading or after unloading.
- Check clothing for bleach burns. Advise user of bleach. Consult Washer Tips Booklet.

5



Component Identification Code Figure 62

- **A** Heater
- **B** Heat Shield
- **C** Temperature Limit Switch
- **D** Door
- **E** Latch
- **F** Door Seal
- **G** Model and Serial Plate
- **H** Washer Lid
- **I** Access Panel

Figure 62

DRYER CONTROLS AND DIAGNOSIS

CONTROLS

Dryer Timer:

The timer Figure 60 is the electrical control which determines how long the dryer will run before automatic shut off at the end of the cycle. On timed cycle settings the timer motor will advance the internal cams opening the contacts as indicated on the bar chart on the schematic wiring diagram.

During Automatic cycle operation the Purple terminal contact is not closed continuously but alternates with open and closed segments as noted on the bar chart on the schematic wiring diagram. During the periods of operation, with the Purple or timer motor operating contact open, current for timer motor advance is from contact No. 2 of the temperature control thermostat. This contact is closed only when the drum air temperature requirement has been satisfied and the control thermostat contacts have been transferred from No. 3 to No. 2.

Should the timer motor fail to advance the timer during automatic cycle settings and advance normally during timed cycle settings because of limit switch cycling the product and its installation should be checked for the following possible causes.

1. Restricted lint screen.
2. Excessive duct length or reduced diameter.
3. Stuck closed exhaust duct hood.
4. Overloaded drum.

On products equipped with only timed drying cycle the timer advances continuously to complete the cycle in the number of minutes selected. The heating element is disconnected 5 minutes before the end of the cycle to provide a cool off period.

Heat Control Thermostat Automatic Cycle Models:

The heat control thermostat located on the blower housing is a bi-metal disc snap action type. The temperature of the air passing across the switch causes the bimetal disc to distort, from concave to convex or convex to concave, according to temperature rise or fall, opening or closing the internal contacts. The switch on automatic cycle models is of a single pole double throw type, opening the contacts between terminals 1 and 3 and closing contacts between 1 and 2 on temperature rise. On temperature fall contacts between terminals 1 and 2 open and contacts between 1 and 3 close.

The thermostat incorporates an internal biasing heater that is used to change the air temperature required to warp the bimetal disc that operates the internal contacts. The heat produced internally by the disc heater reduces the temperature intensity requirement of the circulating air by approx. 15 degrees.

The internal disc heater enables the same thermostat to be used to control the product air temperatures at two different temperatures depending upon whether the biasing or disc heater is energized or not by the heat selector switch contact 2.

Note: One end of the 240 (208) volt biasing heater is connected internally to terminal 3 and is therefore energized only when the thermostat contact is closed to energize the heating element on Delicate cycles. This results in a reduced thermostat differential as well as reduced operating temperature on the Delicate setting. See wiring diagram.

The heat control thermostat on products with only timed drying cycles is of a single pole, single throw type. It is used to control the temperature of the circulating air only.

Fabric Selector Switch (When Applicable):

Figure 60. A rotary type switch that is set by the user to select the proper temperature for the clothes load being dried. Contacts within the switch determine the flow of current to different segments of the dryer heater.

The selection of delicate results in lower air temperature during the drying cycle provided the preset time setting is not too long for the load being dried.

Safety Thermal Fuse (When Applicable):

A heat operated thermal fuse is located in the blower housing as additional protection against overheating of the circulating air. If the air temperature rises to the melting point of the fuse link, the dryer motor circuit is thus broken, resulting in shut down of the motor and disconnecting the heater circuit through the motor speed switch contacts. This thermal fuse is located next to the heat control thermostat, Figure 61.

Note: When a fuse link is found to have an open circuit it is recommended that the temperature control thermostat be replaced along with the fuse link. This recommendation is made because a relationship between open fuse links and intermittent abnormal temperature control thermostat operation was found. Thermostats have been observed to operate between normal cutin and cutout temperatures for a number of cycles, then remain closed to allow a higher than normal temperature to be reached. This may occur at varying intervals causing the fuse link to become opened. Whenever a fuse link is found open the heater element should be checked for a grounded condition.

Safety Limiter Thermostat:

Figure 62. A second "snap" action thermostatic switch provides a back-up to the Heat Control Thermostat. This thermostat is located in the back panel near the heating element and operates in the same manner as the Heat Control Thermostat. This provides the drying system with protection in the event of blocked exhaust, clogged lint screen, an overloaded drum, etc.

Pushbutton Starting Switch and Dryer Door (When Applicable):

The pushbutton starting switch and dryer door switch Figure 60 are single pole single throw switches riveted to a common mounting bracket.

The start push button when depressed closes a circuit to the motor running and starting windings. The button must be held in until the motor comes up to operating speed, approximately one second, at which time the single-pole, double-throw, motor governor operated switch, changes contacts and allows the motor to run without the start button.

The dryer door switch actuating arm extends through a slot in the front panel in the dryer door opening. When its contacts are held closed by the dryer door it maintains a circuit to the dryer motor.

Cycle End Buzzer (When Applicable):

The cycle end buzzer Figure 61 sounds for approximately 1 second at the end of either cycle indicating to the user that the clothing should be removed from the dryer at that time, to avoid wrinkling. Cycle end buzzer operation is as follows:

During dryer motor operation the circuit to the motor windings is from the Black terminal block, through the timer contacts. Black to Brown, through the dryer door switch contacts, through the thermal fuse, through the double throw governor

operated motor switch contacts, the dryer motor main winding, motor overload to the grounded or White terminal block connection. The buzzer coil is in effect connected across the Black to Brown timer contact. The timer contact when closed maintains a no resistane circuit to the dryer motor and no current flow through the buzzer coil. As the timer cams open the Black to Brown contact at the end of the cycle, the buzzer coil carries the circuit to the dryer motor through the door switch, the thermal fuse, the governor operated motor switch, etc., to the White terminal block connection. The power to the motor windings through the buzzer coil is not enough to maintain motor operation and the motor stops. During the period of time that the motor switch remains closed to the Brown motor terminal, the buzzer will sound. The period of time that the buzzer is operating is determined by the motor's rate of deceleration.

Lockout Relay:

120 VOLT MODELS ONLY:

THE LCT-120, LC-115 AND LCA-120 LAUNDRY CENTER MODELS are designed for operation on a 120 volt, 15 ampere electrical circuit. Basic construction and operation of the Washer and Dryer sections is similar to the LCT-2 model. However, with the design changes necessary to operate the product on a 120 volt power supply the following exceptions should be noted.

1. Use of a heat lockout relay, Figure 61, to disconnect the dryer heater element and timer motor if the washer motor is in operation. (Tumbling will continue with room temperature air flow but the dryer timer will not advance when the washer motor is operating.)
2. Since the dryer heating element is of reduced wattage, the heat shield, Figure 62, that is normally found between the heater element and the dryer rear panel on higher voltage models is not required.
3. Reduced wattage and temperatures on this model eliminate the need for the thermal fuse used on earlier, higher voltage models. The opening normally used for the thermal fuse installation is closed with a cover plate.
4. The washer timer has an additional terminal, Y-R to energize the heat lockout relay coil when the washer motor is in operation. See wiring schematic. As a component standardization this same timer will be used on the higher voltage models as well as for service replacements. When not required, the Y-R terminal will be left vacant.
5. The fabric selector switch is also a standardized part and has an unused PU terminal on this application. (R-W and PU-W terminals are used.)
6. A factory installed 3 wire cord (with ground) is provided with a strain relief bushing at the terminal block mounting bracket. The cord should be connected to a grounded receptacle on a separate 15 ampere circuit equipped with a time delay fuse.
7. Heat control thermostat has lower cutout and cutin settings than the higher voltage models. See wiring schematic.

LCA-120

In 1973 the Frigidaire line of laundry products was expanded to include an economy model Laundry Center, the LCA-120. Its single speed washer unit provides 68-72 agitate strokes per minute with a spin extraction speed of 575 R.P.M. Two washer timer cycles are incorporated, Regular and Soak. A single fill hose and water control valve are used, water fill temperature is regulated by manually setting the hot and cold faucets. The water connection is made to a single outlet mixing fixture or by use of a "Y" connection hose to standard 3/4" shut off valves.

The dryer heating element is an open coil type providing 1300 watts at 115 Volts. A lockout relay disconnects the heating element and dryer timer motor while the washer motor is in operation. The dryer timer can be set for 140 minutes of timed drying with a 5 min. cool of period. The basic construction and operation is the same as the LCT 120 without the water temperature or heat selections.

SERVICE DIAGNOSIS

PRODUCT PROBLEM

DRYER OPERATING Clothing Damaged

Check for:
a. Foreign objects in drum.
b. Rough drum or vane surface; check with old nylon stocking or equivalent.
c. Rough surface on rear duct, lint screen or housing. Repair or replace as needed.
d. Clothing previously damaged by improper use of chlorine bleach or other chemicals before drying. Review use and laundering procedure of torn articles.

IMPROPER OR NO OPERATION

Check power supply to receptacle.

DRYER OPERATES NOISY

Check for:
a. Foreign objects tumbling in drum; remove.
b. Loose screws in rear panel, drum vane, motor mounting, allowing vibration or rattle.
c. Worn motor bearings; replace motor.
d. Blower moved on motor shaft, strikes housing; reposition or replace as indicated by blower condition.
e. Roller rim, or roller damaged; replace as needed.
f. Belt frayed or idler pulley worn; replace as needed.

DRUM ROTATING

HEAT ON—WRONG TEMPERATURE

a. Check cutoff and cuton temperature of thermostat with oven tester. Place thermocouple in lint screen housing. Temperatures to be as per schematic.
b. Check to determine heater is not being controlled by limiter thermostat. See slow drying for possible reasons.

HEAT ON—SLOW DRYING

Check condition of following:
a. Lint accumulation on lint screen.
b. Check performance with times recommended in Use and Care information.
c. Drum seal leakage; replace if excessively worn.
d. If vented duct to be 4″. Length not more than 14′ max. with not more than two 90° elbows.
e. Check drum R.P.M. to be 56-59. If excessive check belt location on pulley. If properly installed and speed is not correct, replace belt.

HEAT OFF—NOT DRYING

Check for voltage at heater terminals with product running.

VOLTAGE NOT PRESENT

Consult electrical circuit schematic.
a. Check timer contacts B to OR to be closed.
b. Temperature control thermostat contacts to be closed.
c. Limiter thermostat contact to be closed.
d. Motor speed switch to be closed with the motor running.
e. Check leads for loose connection or broken wire.

VOLTAGE PRESENT

Check heater element. If open circuit or grounded, replace as needed.

DRUM NOT ROTATING

HEAT ON—MOTOR RUNNING

Check for:
a. Belt broken, worn, or off idler.
b. Pulley loose on motor shaft.
c. Idler pulley spring broken.

MOTOR HUMS WHEN START BUTTON IS PRESSED

a. Check blower position on motor shaft for binding on housing.
b. Check drum and support rollers for jammed condition.
c. Check motor for condition of bearings.
d. Consult wiring schematic, check starting switch contacts and/or windings with ohmmeter for short, open or grounded condition.

HEAT OFF—MOTOR NOT RUNNING

MOTOR DOES NOT HUM

a. Check door switch for possible open circuit.
b. Test timer contacts B to BR to be closed.
c. Test motor overload protector through main winding with ohmmeter or continuity tester.
d. Assure all wiring connections are made and are on proper terminals.

Note: If motor only runs when the start button is held, check motor switch BU to BR to be closed when motor is up to speed, replace as needed. Also, check fuse link where used.

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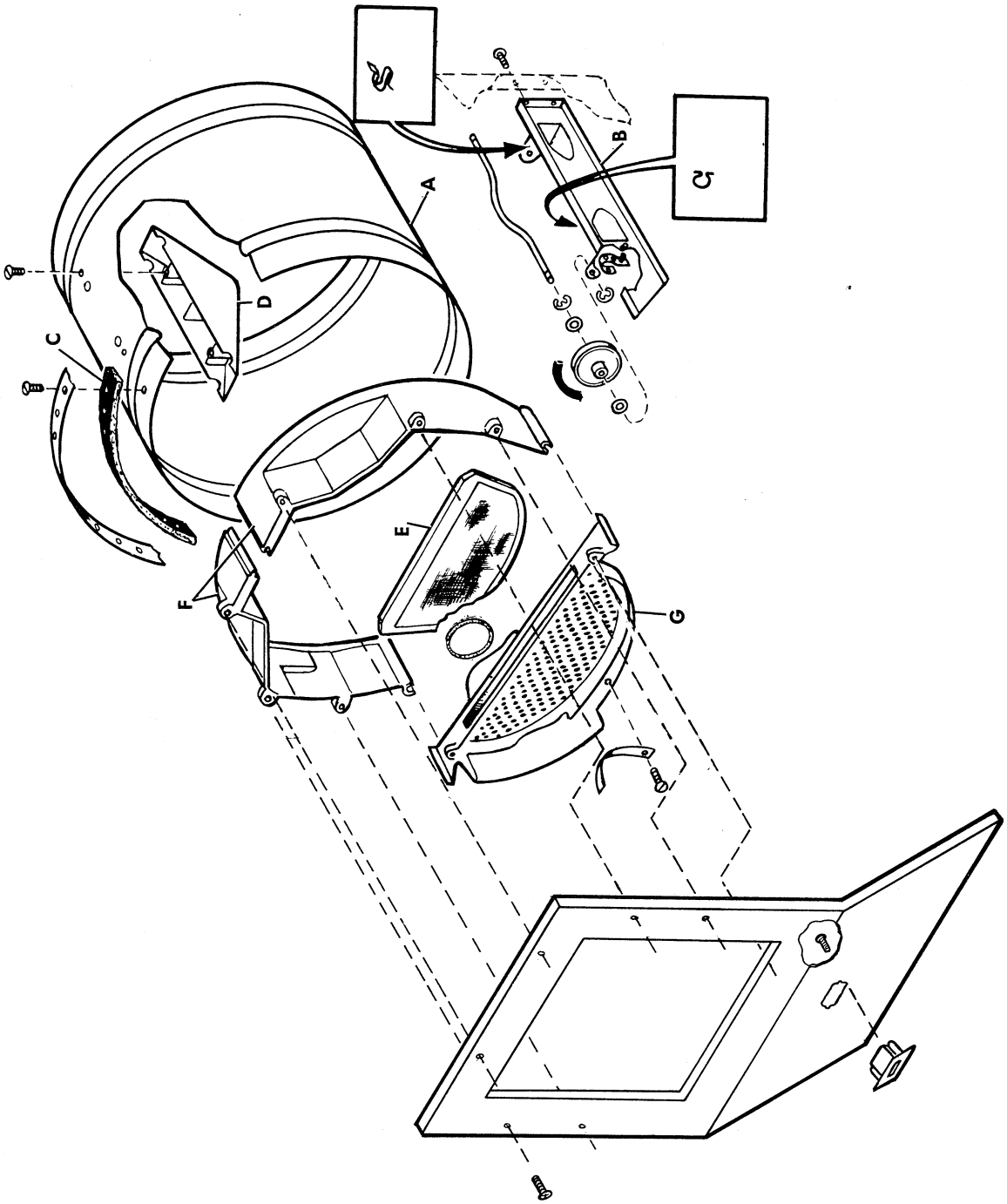


Component Identification Code Figure 63

A Drum

B Drum Support

C Drum Seal

D Drum Vane

E Lint Filter

F Drum Collar

G Exhaust Duct Housing

Figure 63

CONSTRUCTION AND OPERATION

Door:

A full 180° door swing provides complete access to the dryer and to the dacron lint screen that is located at the bottom of the door opening. A recess in the opening edge of the door accommodates the door latch, Figure 62.

Door Seal:

An extruded seal that is secured to the face of the dryer front panel with tabs providing a seal with the dryer door, Figure 62.

Door Latch:

Made of stainless spring steel and riveted to the cabinet face recess. Figure 62.

Dryer Drum:

Figure 13. A heavy gage steel cylinder that rotates between a stationary front rim and the stationary rear panel. Both surfaces are finished with epoxy paint and each edge has a felt seal secured to it with a perforated band and screws. The drum interior includes three vanes that are fastened to it with screws. The drum is supported by four drum support rollers and is driven by a 3-ribbed poly V rubber belt.

Exhaust Duct and Rim:

Figure 63. The exhaust duct and two rims interlock and make up the front collar for the dryer drum. The exhaust duct and rims are molded phenolic. The exhaust duct houses the lint screen assembly.

Lint Screen Assembly:

Figure 63. A plastic frame with fine mesh screen. It filters lint from the air during the drying cycle and is housed in the exhaust duct directly below the door opening.

Drum Support:

Figure 63. Support for the drum is provided by two pairs of rollers that are mounted on shafts that are secured to the cabinet side panels through a bracket. The rollers have a neoprene rim that provides for quiet, smooth operation.

Dryer Motor:

Figure 61. The dryer drum and blower are both driven by a single speed, 1725 RPM, 120 Volt 60 cycle motor. This motor includes two windings, a phase or starting winding and a main or running winding. The main winding is continuously energized during operation while the phase winding is energized only during start up. A centrifugal speed switch within the motor is in the closed position until the motor approaches rated speed. At this time the switch opens a set of contacts removing the phase winding from the circuit. At this same time a second set of contacts close and completes the electrical circuit to the heater, thus the heater cannot be energized unless the motor is at normal operating speed. An overload protector is built into the motor and will automatically open to protect the motor windings if an overheating condition exists. It is self-resetting after the windings cool down, approximately 3 to 5 minutes.

Driver:

A steel driver or sheave is located on the motor "D" shaft and is triple V cut to receive and drive the rubber belt. The other end of this driver is machined to provide a "D" shaft for the blower. The driver is secured to the motor shaft with two set screws. Figure 61.

Blower Wheel:

Figure 61. A centrifugal cage type blower that is utilized to draw air through the exhaust duct. The blower hub is secured to the driver "D" shaft by means of a steel spring clip.

Blower Housing:

Figure 61. A housing containing the centrifugal blower. It seals against the exhaust duct with a foam seal. This housing directs the air to the exhaust duct tubing. It also provides for the location of the heat control thermostat and the safety thermal fuse where used.

Exhaust Tubing:

Figure 61. The flexible tubing that connects the blower housing with the exhaust rear duct of the product. The exhaust end may be secured to exhaust the dryer out the rear or right side of the product.

Heating Element:

Figure 62. The heater is located between the dryer rear panel and the outer vent panel. It produces heat to raise the temperature of the air circulated through the clothes load. It is an open coil type heater made with two coils of resistance wire and formed to pass through ceramic insulators. One coil is energized for the delicate cycle while both coils are energized for the regular cycle. 120 Volt models use a single coil.

Heat Shield:

An aluminum clad sheet metal panel that lies between the heating element and the dryer back panel and produces an air space inside the back panel. Because of the reduced temperatures in 120V model the heat shield is not required.

Dryer Air Circulation System

The Laundry Center drying system utilizes an efficient air circulation system. Air enters the drum through openings located in the stationary rear panel after it has passed over the heating element, also located in the rear panel of the dryer. The heated air passes through the circulating clothes that are being tumbled by the rotation of the drum cylinder. The moisture-laden air then passes through the perforated front panel of the lint screen compartment and through the lint screen filter. Lint is filtered out of the air and the moist air then passes into the duct and on to the blower housing. This air is then blown through the blower housing outlet, through the flexible duct to be discharged through the exhaust opening. Figure 64.

The efficiency of the air circulation system depends on proper sealing of the drum at its front and rear felt seals and proper placement of all dryer exterior panels. These include top panel, sides and rear panels, access panel and vent cover panel. The lint screen must be in place when dryer is in operation. It should be cleaned with every load to maintain drying efficiency and should be replaced should it become damaged.

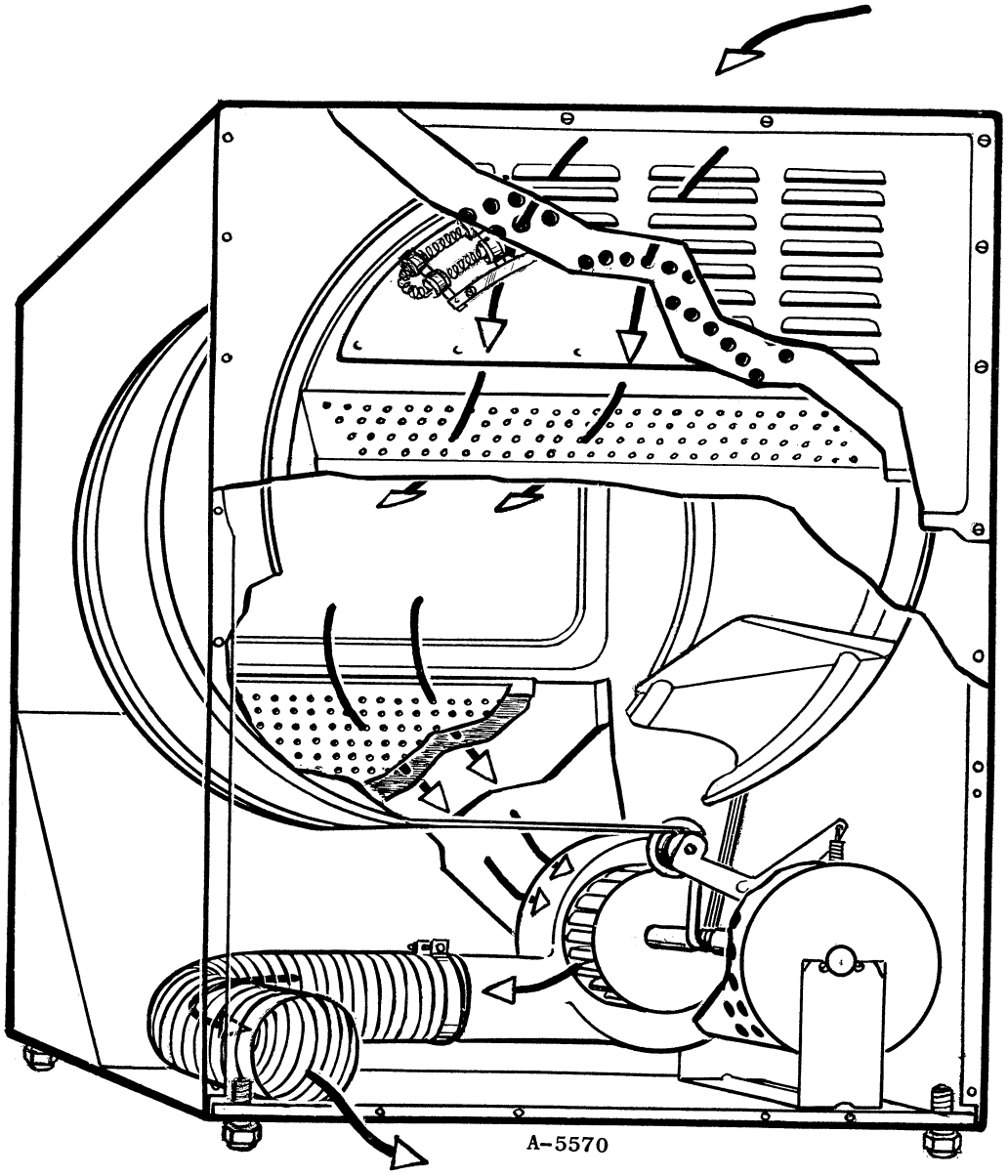


Figure 64
Dryer Air Circulation

COMPONENT ACCESSIBILITY

Always disconnect the electrical power supply cord when servicing an electrical component or any component which might come in contact with a lead or terminal during its replacement.

Whenever replacing an electrical component with multiple leads, it is advisable to transfer the electrical leads one at a time from the component being replaced to the new component. If the new component is color coded, be sure all leads are connected accordingly. Reference can also be made to the wiring diagram on the product.

Always double check all electrical connections for tightness after replacing an electrical component.

REPLACEMENT OF TIMERS, SELECTOR SWITCHES, STARTING BUTTON, DRYER DOOR SWITCH, AND TEMPERATURE LIMIT THERMOSTAT.

These components are accessible through the top of the dryer. Remove the dryer top by taking out the screws fastening it to both side panels.

Note: Some dryer tops are also retained by the two center trim retainer screws. On these products the dryer front trim will have to be freed to provide access to these screws.

The control mounting screws are located under their respective knob assemblies. See Figure 60.

THE WASHER WATER VALVE, LID SWITCH, PRESSURE SAFETY SWITCH, THE DRYER THERMOSTAT, FUSE LINK (WHERE USED) LOCK OUT RELAY AND BUZZER are all mounted as shown in Figure 61.

These components are replaceable after removing the rear access panel of the dryer.

Note: To replace the dryer drive belt the motor and blower assembly will have to be removed.

Refer to Figure 62 for cabinet assembly sequence.

Note: When removing the washer top and lid assembly, raise the lid to the partially open position to avoid lid switch and actuator interference.

Note: Three of the screws fastening the dryer door hinges are fastened with loose nuts. Do not drop when removing screws.

THE DRYER HEATER ASSEMBLY, DRUM, DRUM SEALS, FRONT COLLAR ASSEMBLY AND FRONT DUCT are accessible for replacement after removing the dryer top and rear panel. The front exhaust duct may be removed with the motor and blower housing in position after removing the drum and both halves of the upper collar. Collar and duct mounting screws also mount the dryer trim retainers. See Figures 63 and 65.

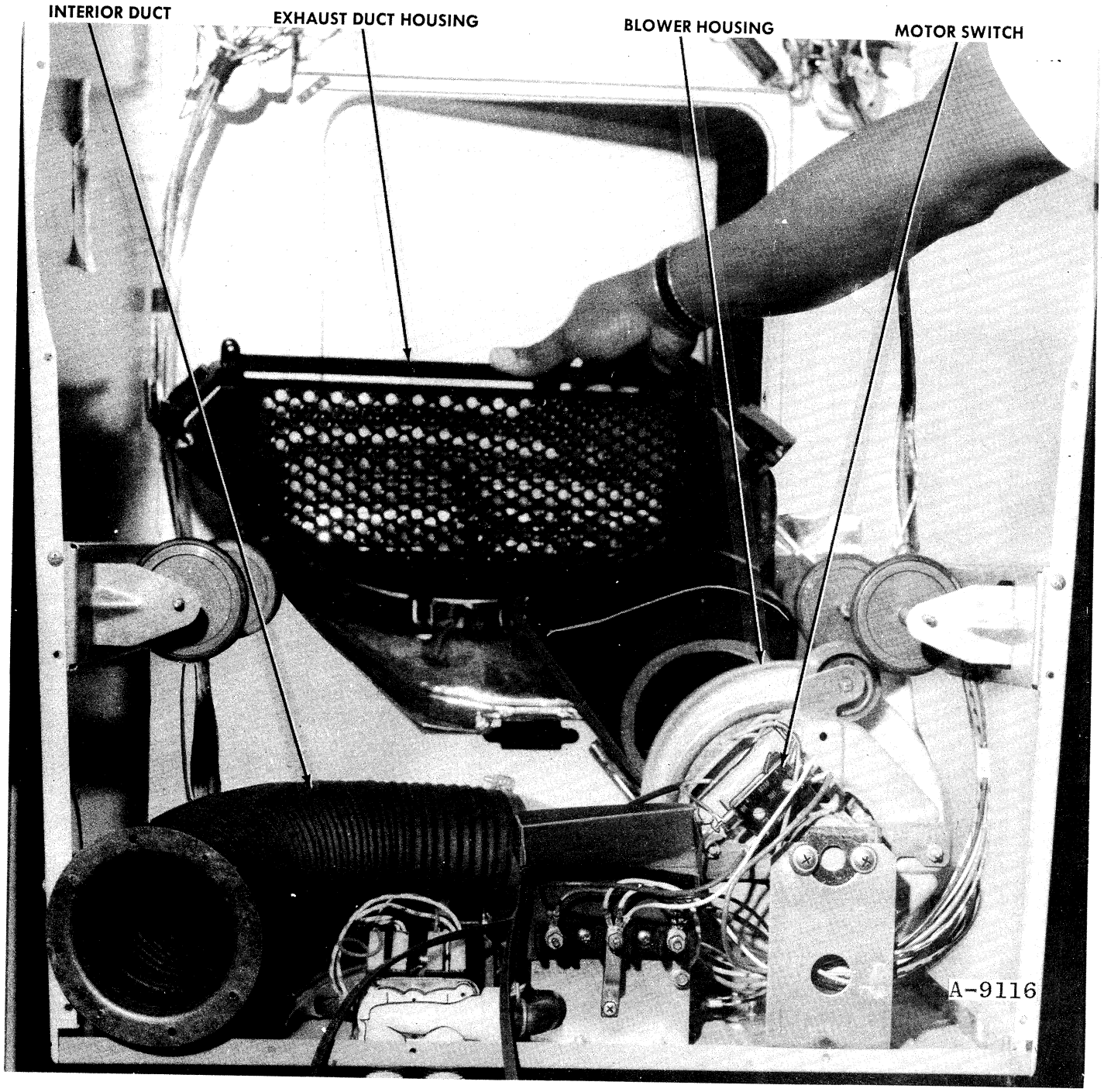
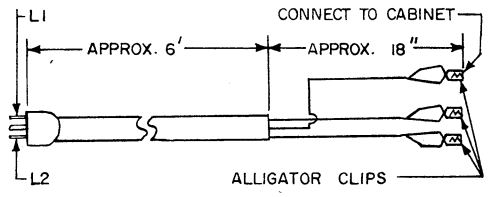


Figure 65
Rear Interior View

TWO LEAD TEST CORD



A heavy duty 3-wire cord should be used for the basic test cord. The ground wire in the 3-wire cord should be utilized when checking to provide maximum safety.

Safety First

1. Always disconnect the product electrically before performing tests.
2. Make electrical connections and attach grounding lead to the product cabinet per related wiring diagram.
3. Observe that terminals or test cord connections do not touch cabinet.
4. Plug the test cord into a 115 volt receptacle with an effective ground.

This test will aid in isolating a product malfunction as follows:

1. If the motor functions normally during related test, the product problem would exist in the controlling circuit (timer, selector switch, lid switch, wiring, connections, etc.).
2. If the motor doesn't function during related test, it would indicate that the product problem exists in the motor circuit (starting capacitor, motor winding, motor switch, wiring, connections, etc.).

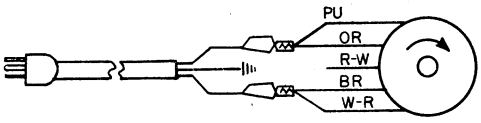
NOTE: These tests are intended as part of the total diagnosis. The ability to read and understand the product wiring schematic is required to complete the diganosis.

Check as follows:

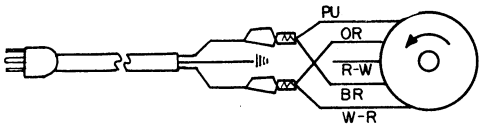
1. Disconnect product electrically and remove top of Laundry Center.
2. Disconnect the following leads from timer:
   Pu, Br, Or, W-R, R-W on two speed Models.
3. Connect test cord as illustrated and plug into 115 volt outlet.

ALL MODELS

AGITATE-HIGH SPEED



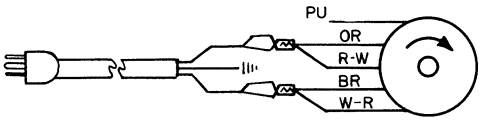
SPIN—HIGH SPEED



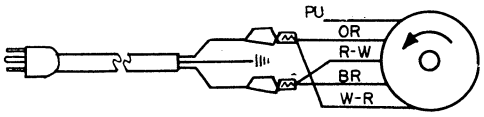
LCA-120 SINGLE SPEED

DIAGRAM BELOW NOT APPLICABLE

AGITATE—SLOW SPEED



SPIN—SLOW SPEED



8

Figure 66
Two Lead Test Cord

SCHEMATICS AND WIRING DIAGRAMS

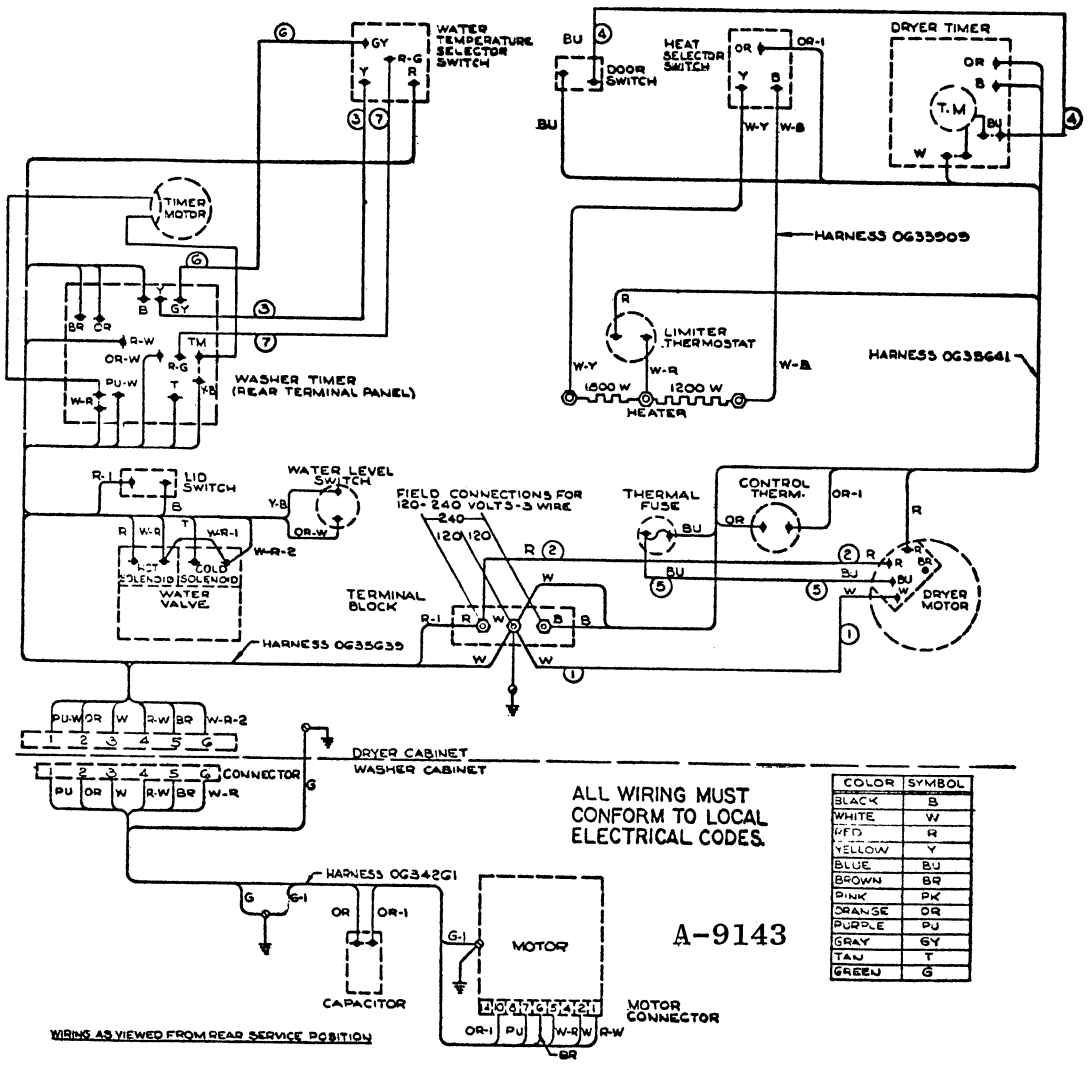


Figure 67
Wiring Diagram LCT-2

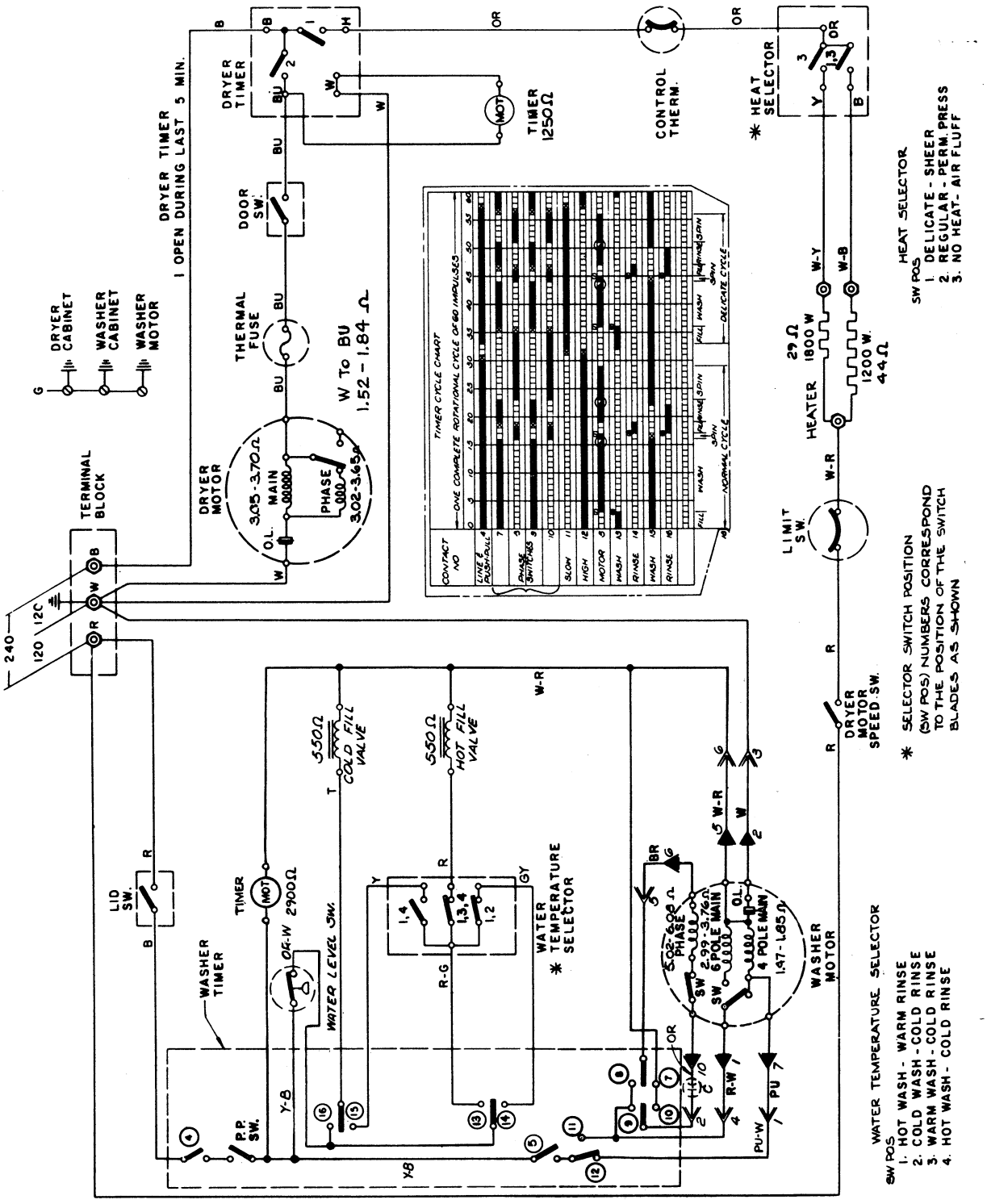
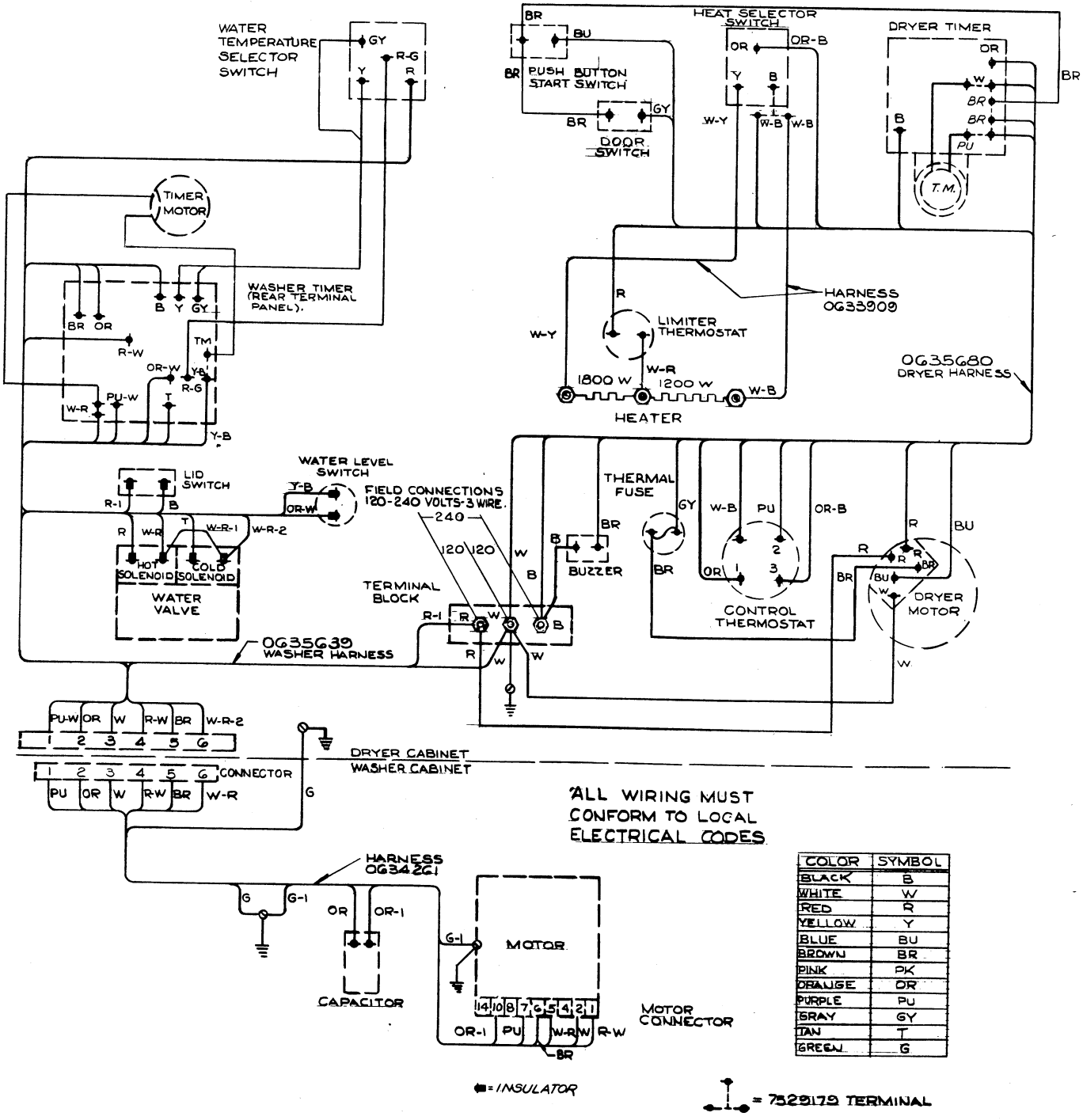
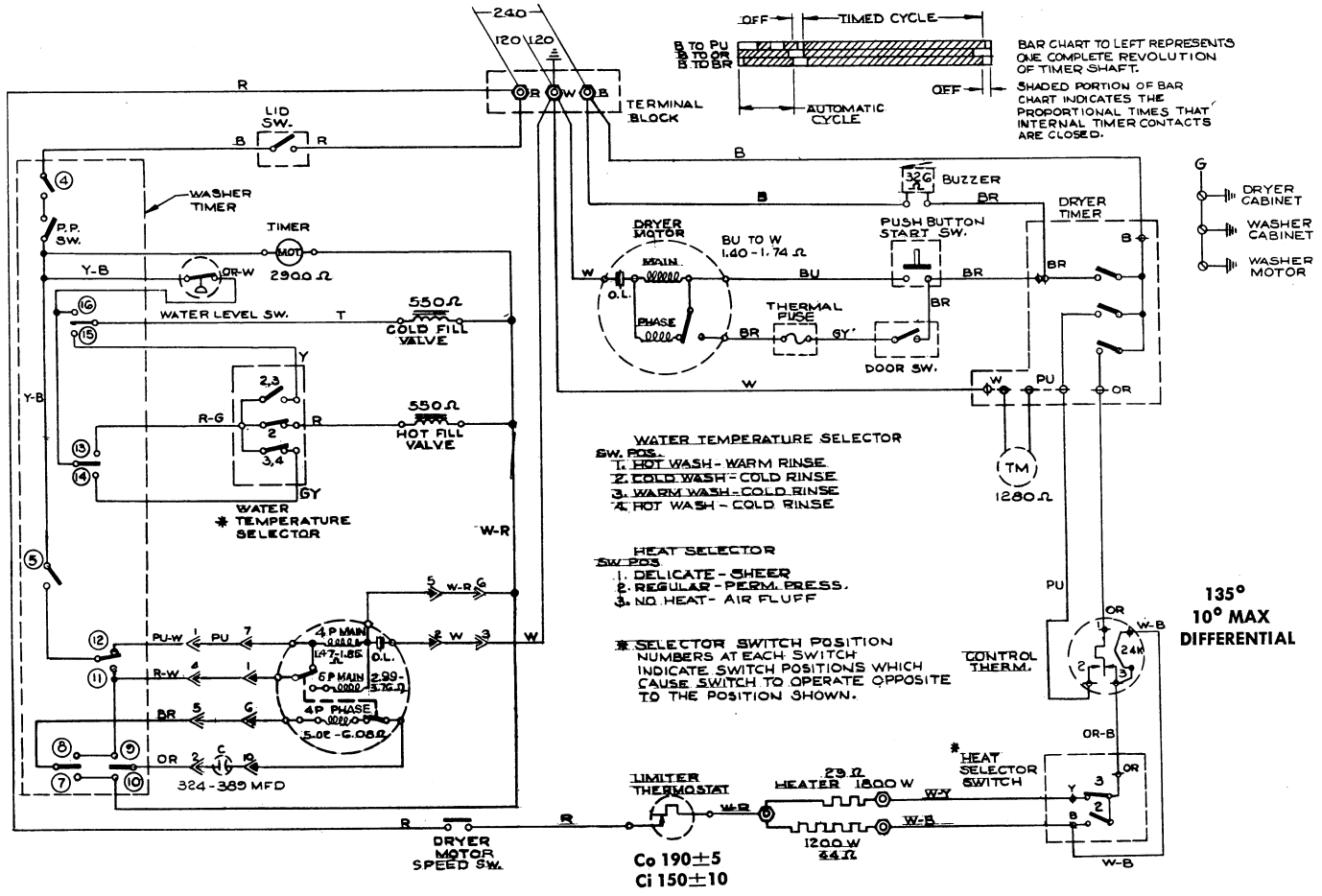


Figure 68
Schematic Diagram LCT-2



COLOR	SYMBOL
BLACK	B
WHITE	W
RED	R
YELLOW	Y
BLUE	BU
BROWN	BR
PINK	PK
ORANGE	OR
PURPLE	PU
GRAY	GY
TAN	T
GREEN	G

Figure 69
Wiring Diagram LC-2



SCHEMATIC NOTES:

④⑦⑧⑨ ETC ARE TIMER CONTACTS.

◀ = MOTOR CONNECTOR TERMINALS.

◀ = CABINET CONNECTOR TERMINAL.

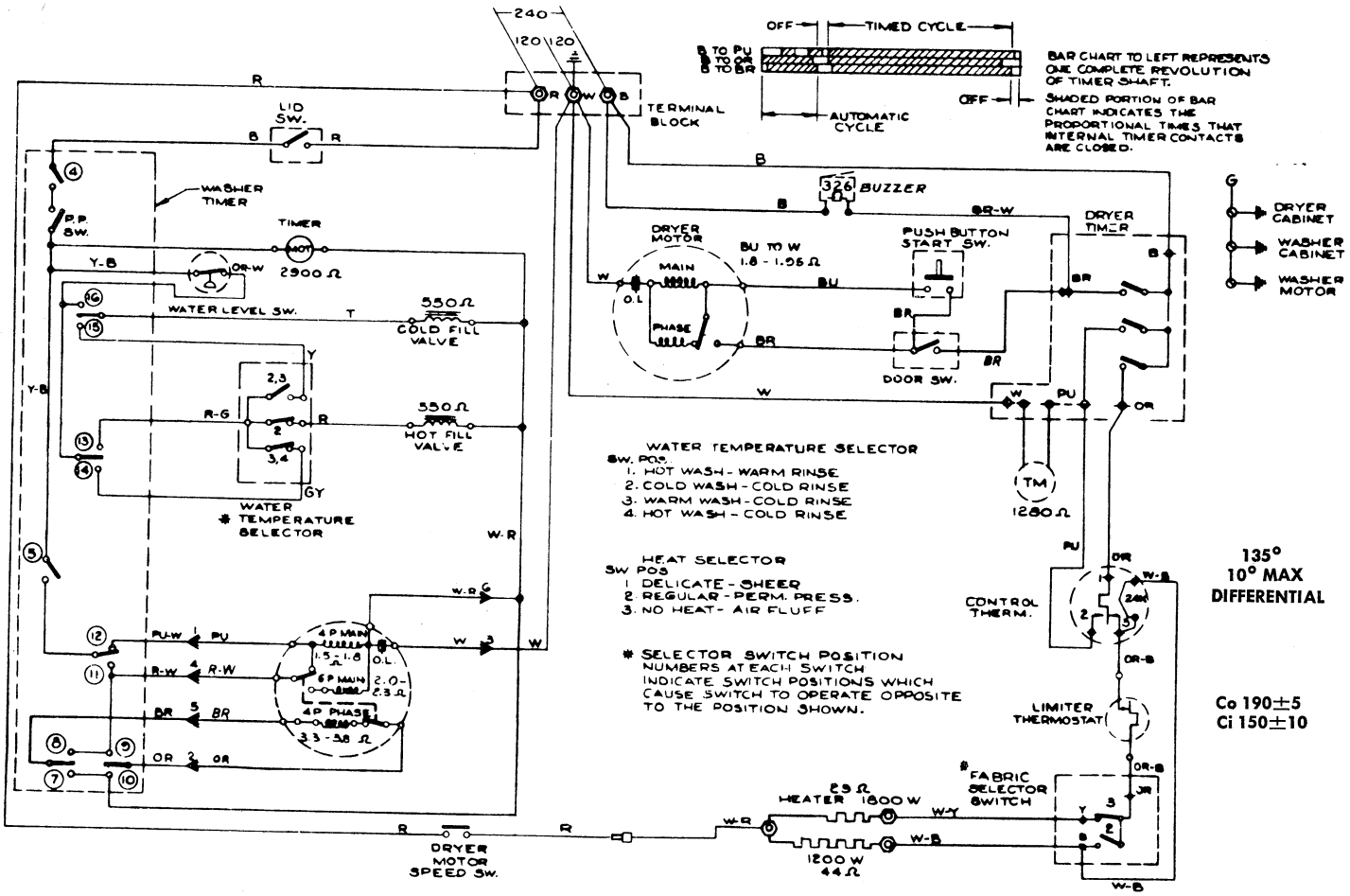
PP = PUSH-PULL SWITCH

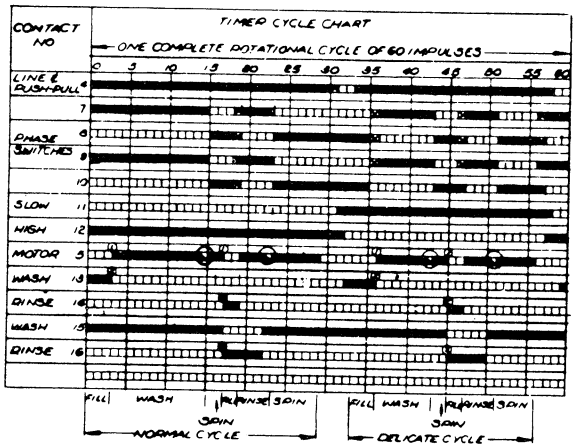
O.L. = MOTOR OVERLOAD PROTECTOR

SW = SWITCH

C = CAPACITOR

Figure 70
Schematic Diagram LC-2





FILLED IN AREAS INDICATE CONTACT CLOSED.
■ - CONTACT MAY BE OPEN OR CLOSED.
EACH IMPULSE = 72 SECONDS

SCHEMATIC NOTES:

④, ⑦, ⑧, ⑨ ETC ARE TIMER CONTACTS

=□= SPLICE CONNECTOR

◀ = CABINET CONNECTOR TERMINAL

PP = PUSH-PULL SWITCH

O.L = MOTOR OVERLOAD PROTECTOR

SW = SWITCH

1 **BE SURE THIS APPLIANCE IS PROPERLY GROUNDED**

2 **CONNECT TO A SINGLE OUTLET CIRCUIT MAXIMUM 30 AMPERES**

3 **DO NOT OIL MECHANISMS**

Figure 71
Later Production LC-2

NOTES

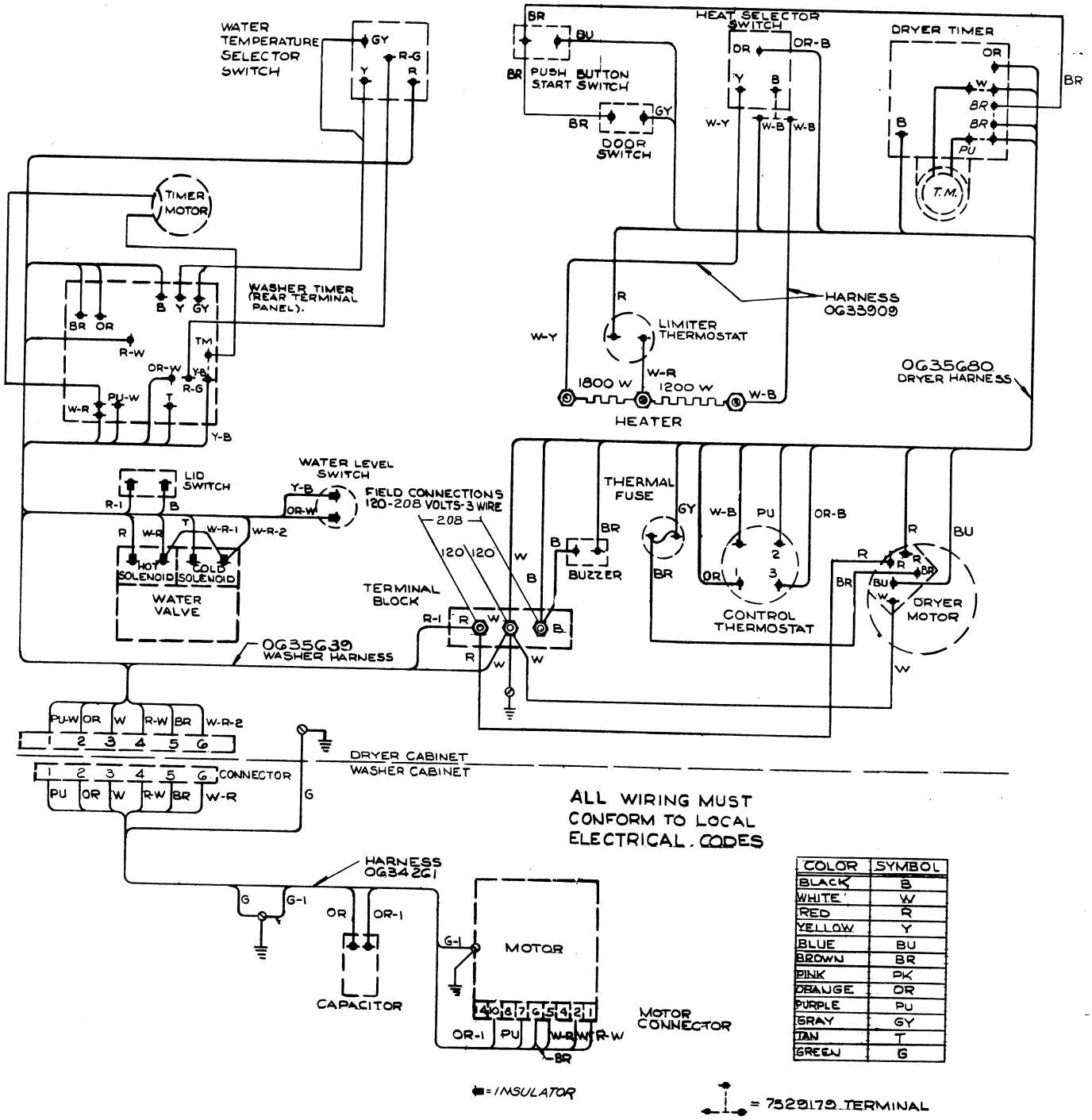
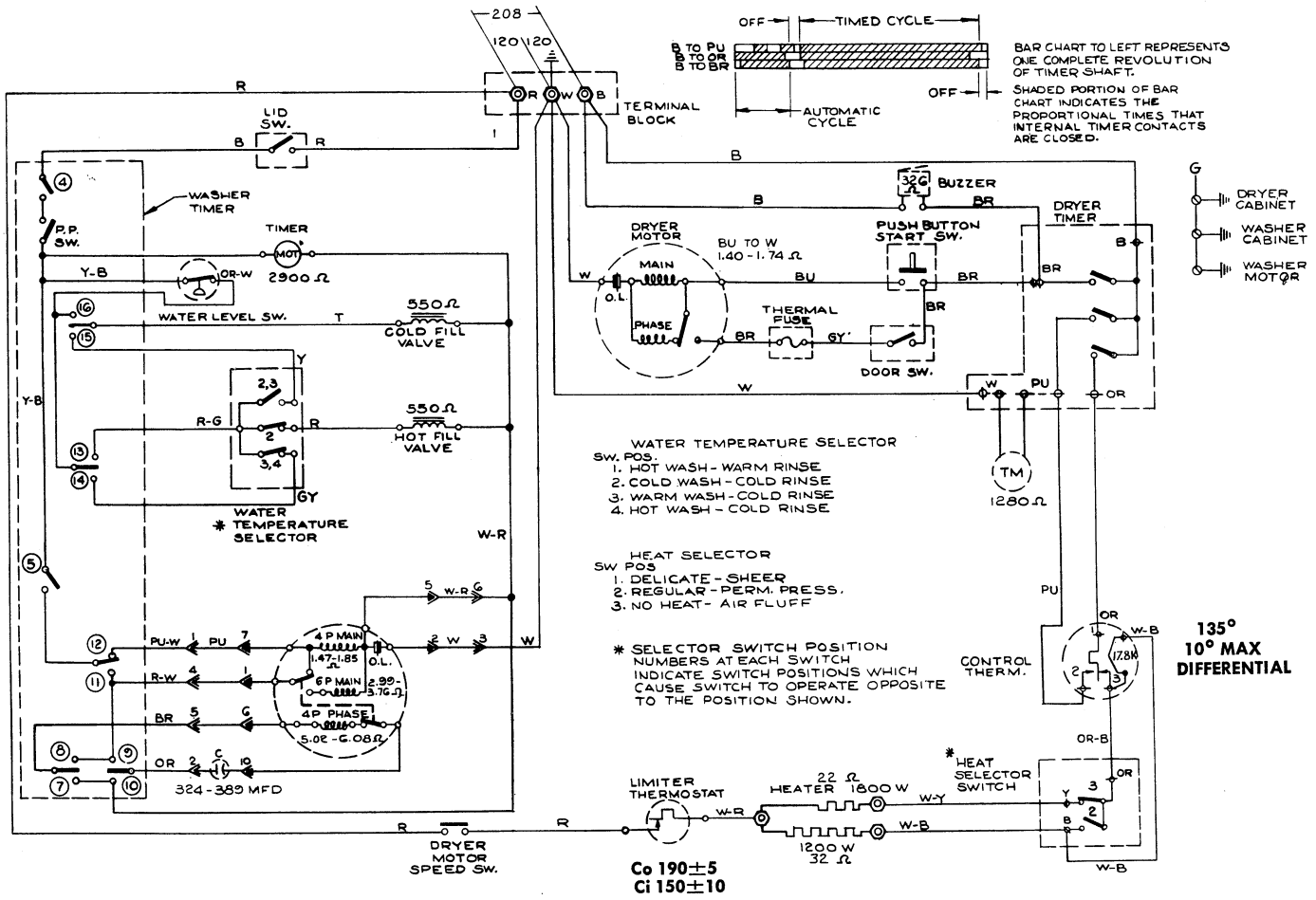


Figure 72
Wiring Diagram LC8-2



SCHEMATIC NOTES:

④,⑦,⑧,⑨ ETC ARE TIMER CONTACTS.

◀ = MOTOR CONNECTOR TERMINALS.

◀ = CABINET CONNECTOR TERMINAL.

PP = PUSH-PULL SWITCH

O.L. = MOTOR OVERLOAD PROTECTOR

SW = SWITCH

C = CAPACITOR

Figure 73
Schematic Diagram LC8-2

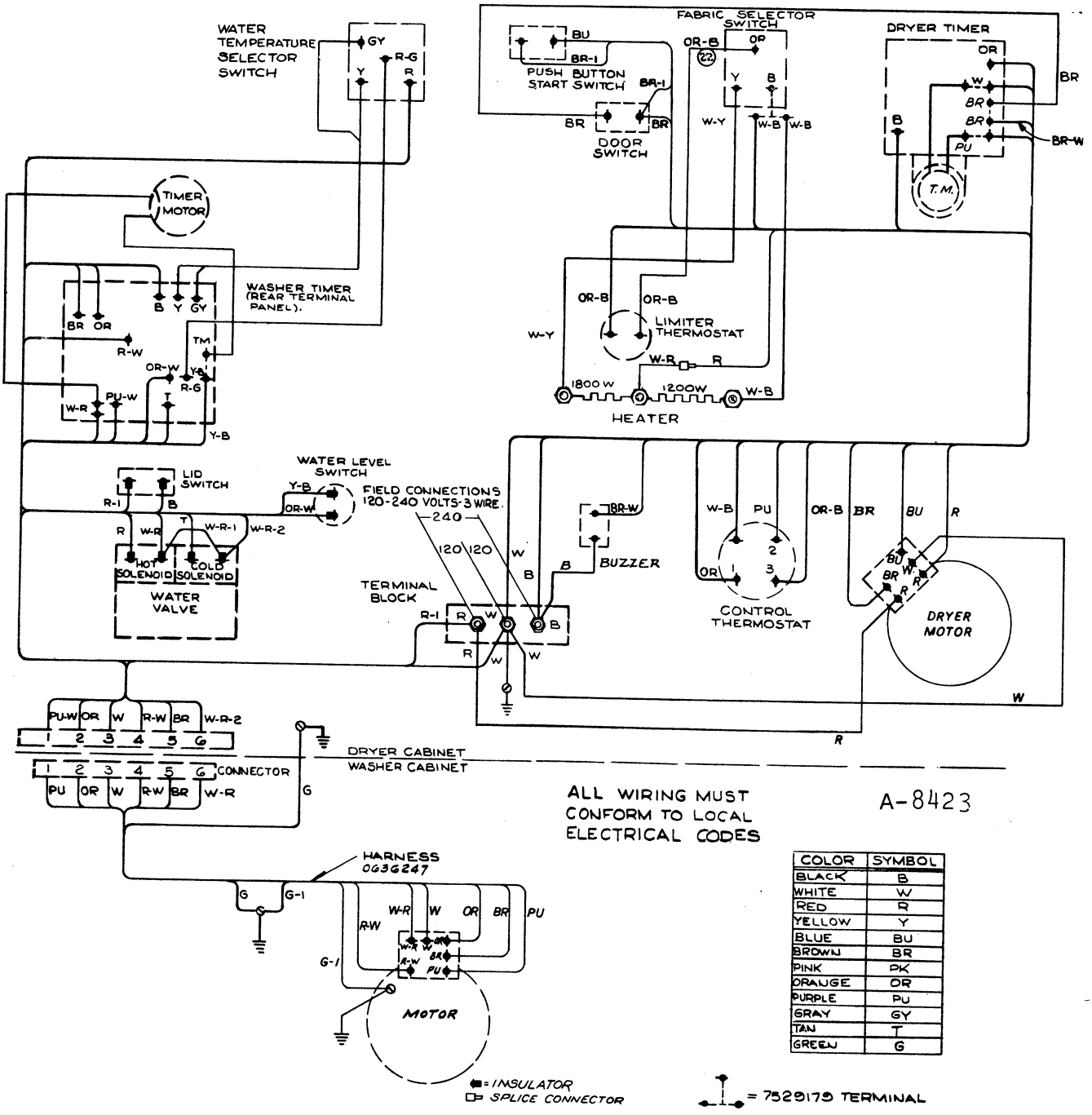
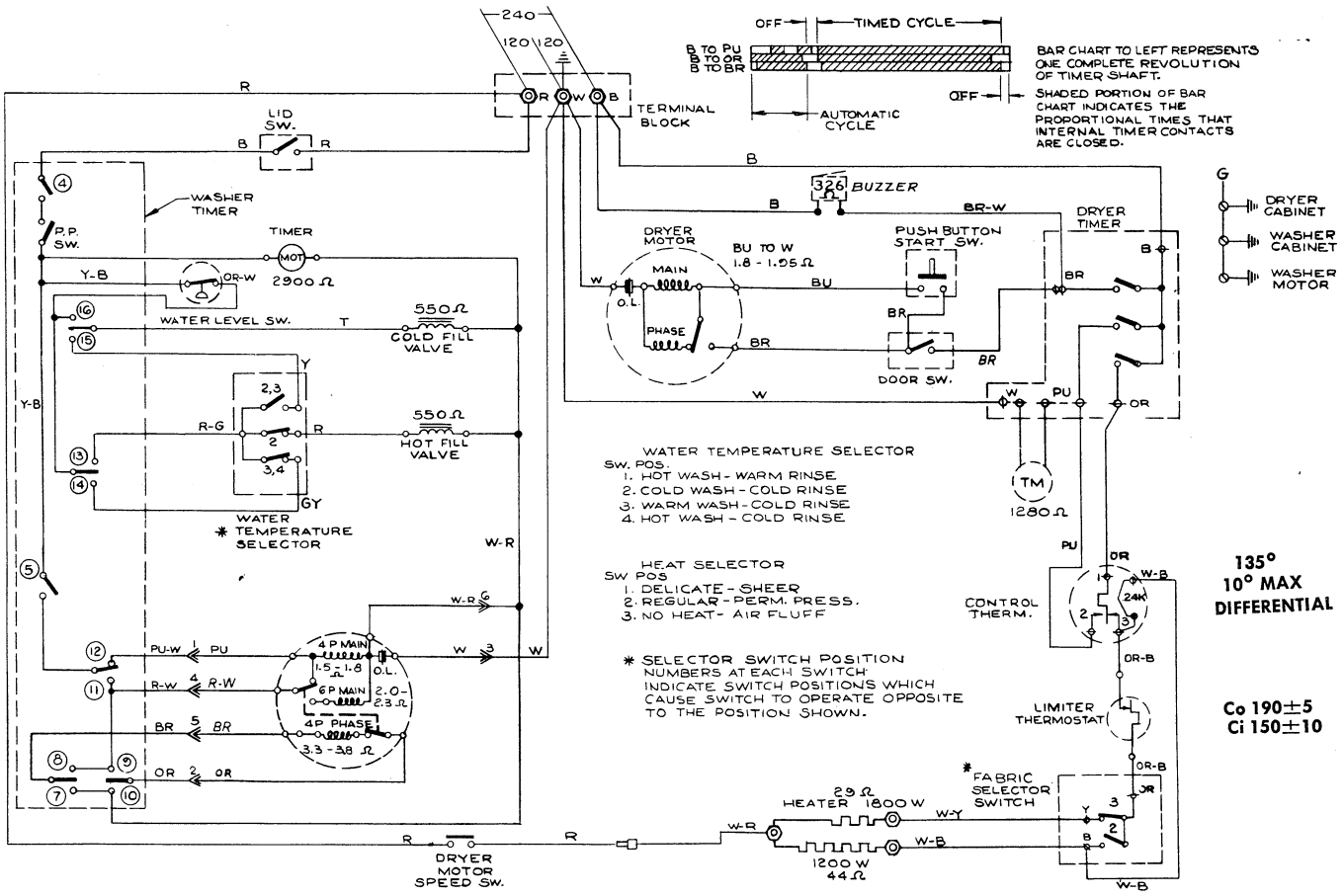


Figure 74
Wiring Diagram without Fuse Link LC-2



SCHEMATIC NOTES:

④,⑦,⑧,⑨ ETC ARE TIMER CONTACTS.

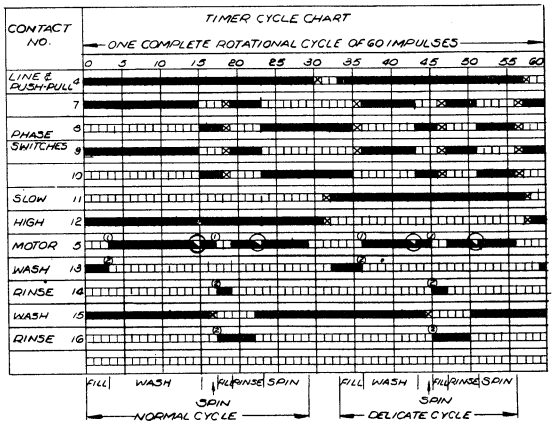
⊐□ = SPLICE CONNECTOR

⋖ = CABINET CONNECTOR TERMINAL

PP = PUSH-PULL SWITCH

O.L. = MOTOR OVERLOAD PROTECTOR

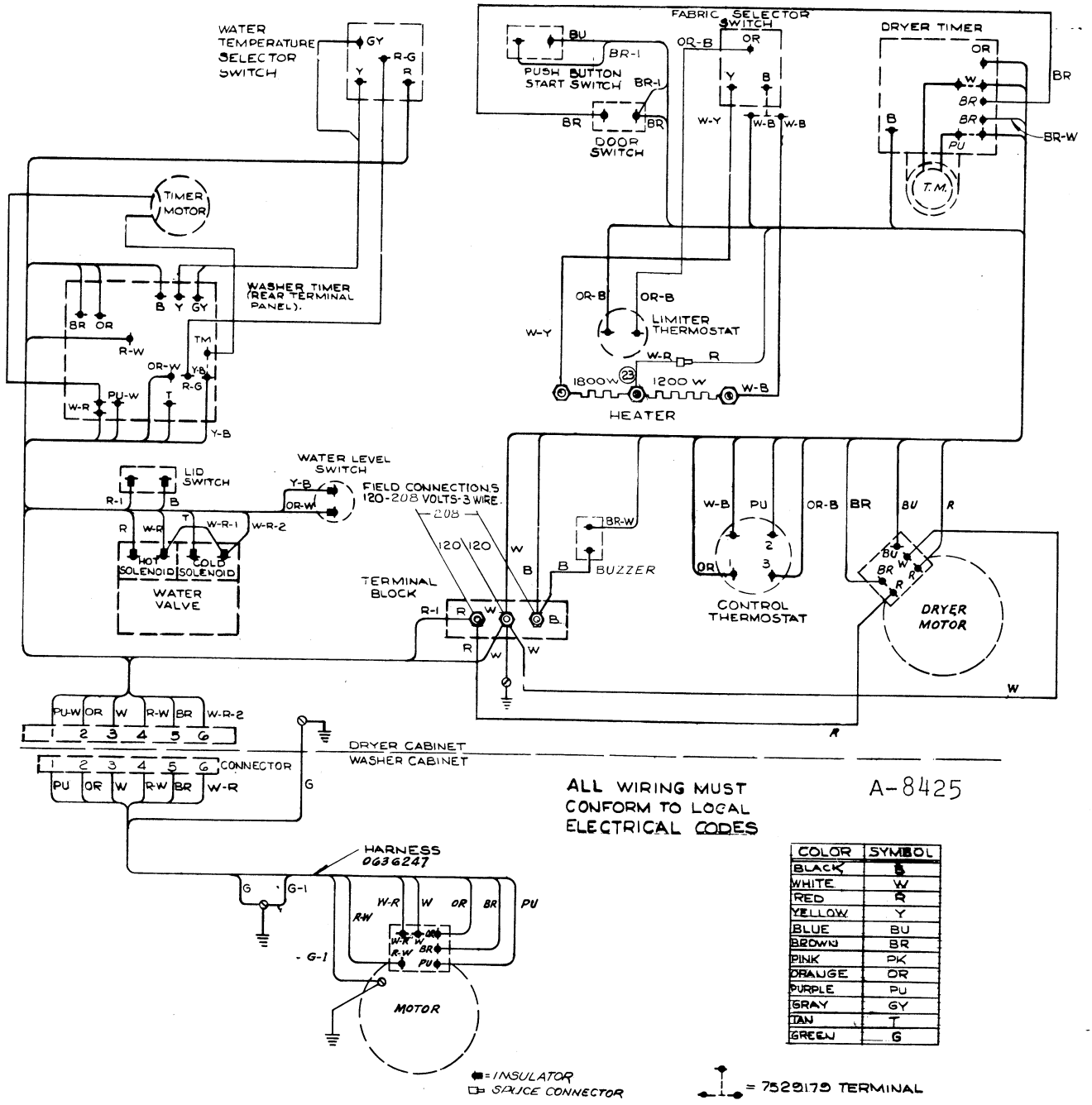
SW = SWITCH



A-8422

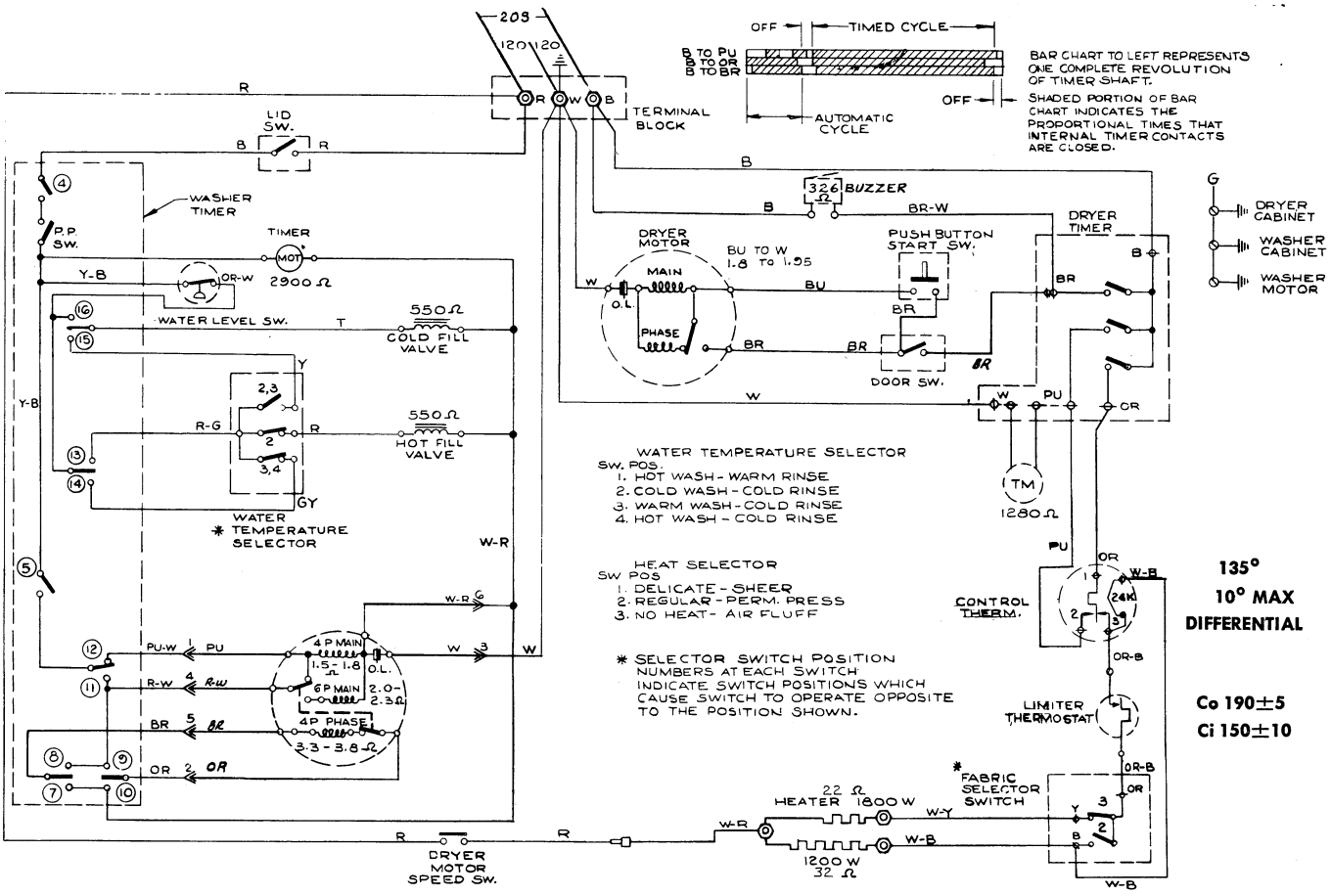
FILLED IN AREAS INDICATE CONTACT CLOSED.
⊠ = CONTACT MAY BE OPEN OR CLOSED.
EACH IMPULSE = 72 SECONDS.

Figure 75
Schematic Diagram without Fuse Link LC-2



COLOR	SYMBOL
BLACK	B
WHITE	W
RED	R
YELLOW	Y
BLUE	BU
BROWN	BR
PINK	PK
ORANGE	OR
PURPLE	PU
GRAY	GY
TAN	T
GREEN	G

Figure 76
Wiring Diagram LC8-2



SCHEMATIC NOTES:

④,⑦,⑧,⑨ ETC ARE TIMER CONTACTS.

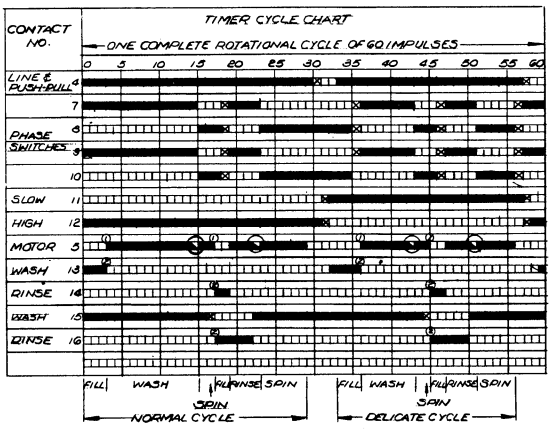
⊏□⊐ = SPLICE CONNECTOR

⋖ = CABINET CONNECTOR TERMINAL

PP = PUSH-PULL SWITCH

O.L. = MOTOR OVERLOAD PROTECTOR

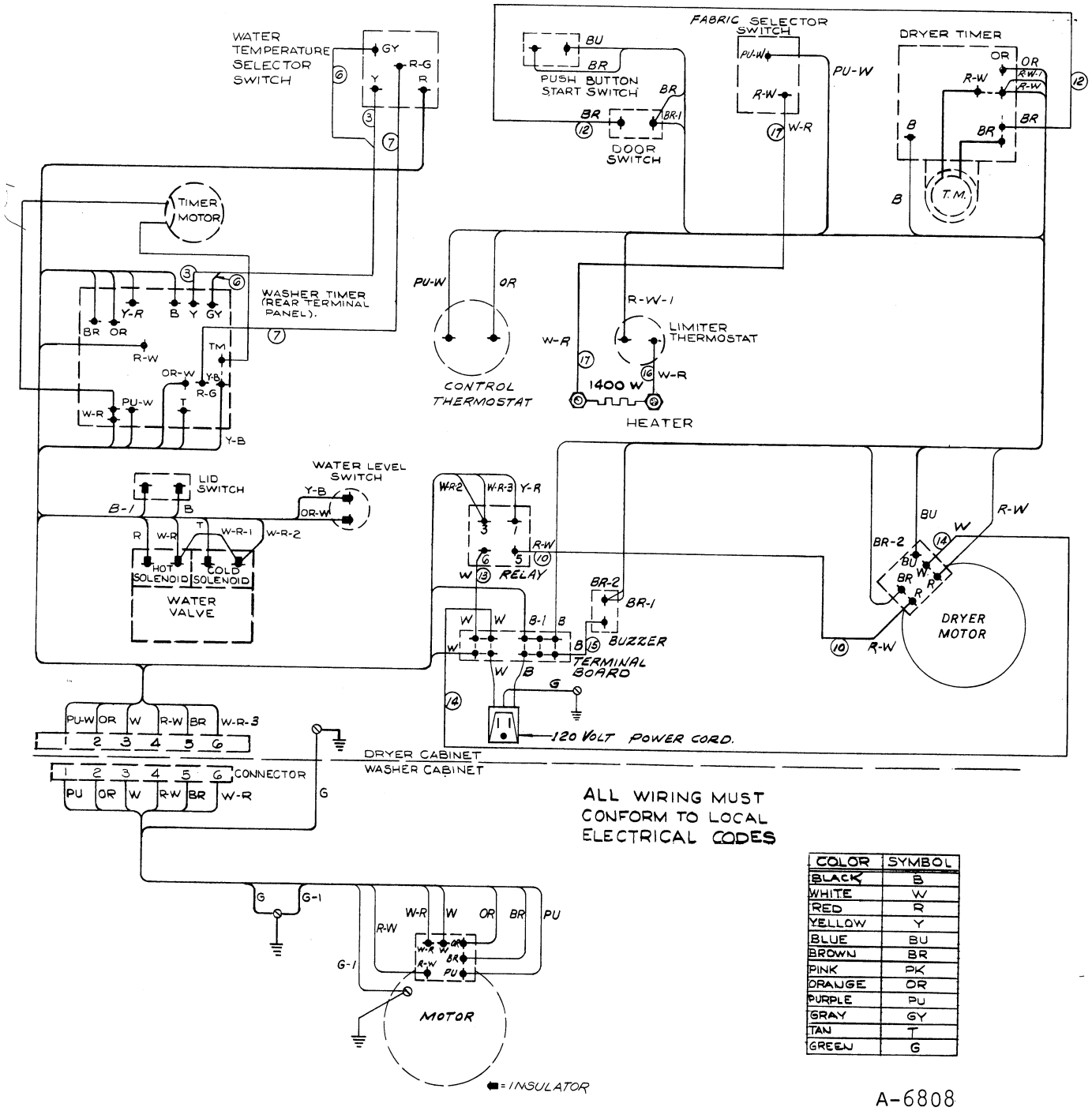
SW = SWITCH



A-8424

FILLED IN AREAS INDICATE CONTACT CLOSED.
⊠ = CONTACT MAY BE OPEN OR CLOSED.
EACH IMPULSE = 72 SECONDS.

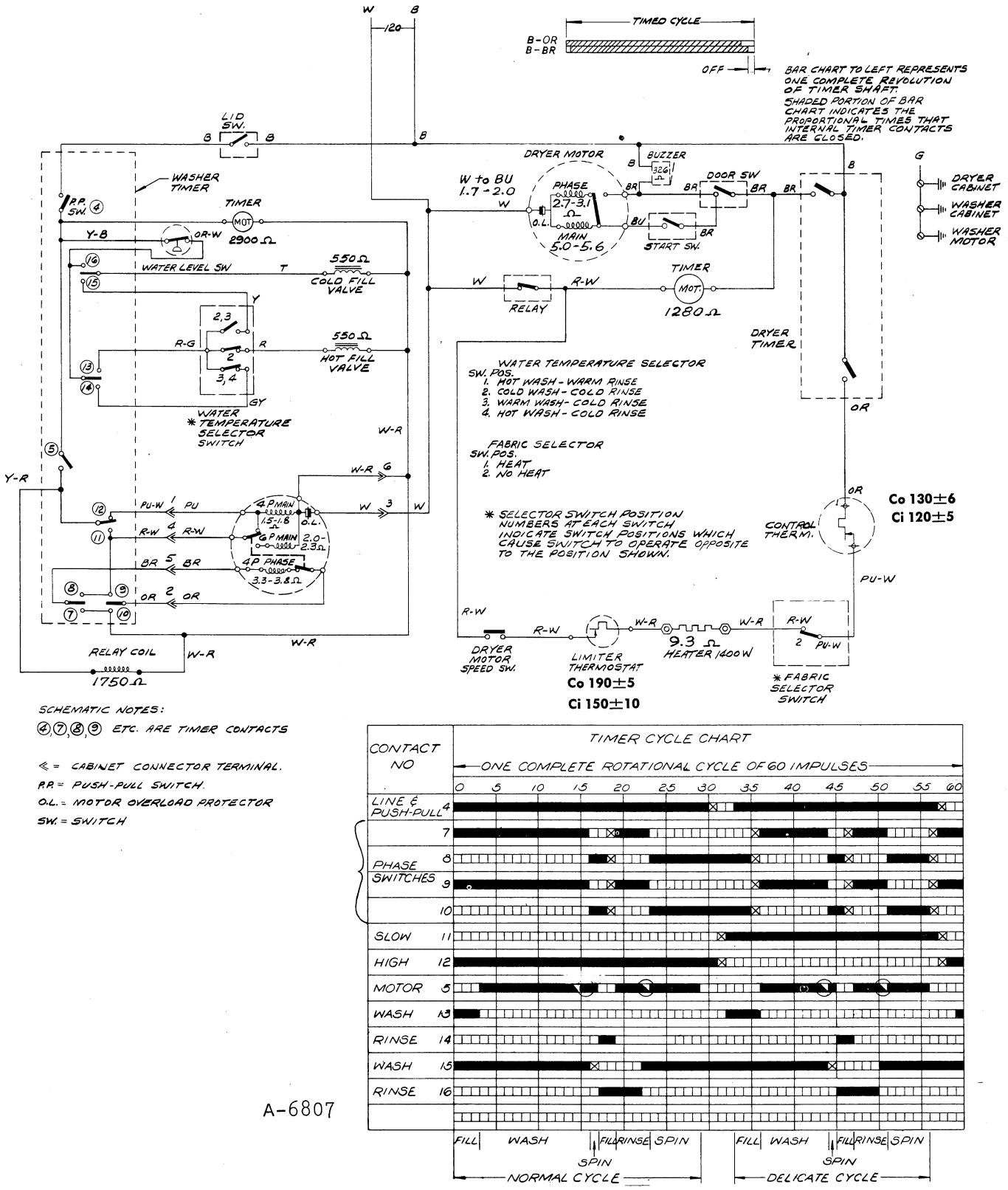
Figure 77
Schematic Diagram LC8-2



COLOR	SYMBOL
BLACK	B
WHITE	W
RED	R
YELLOW	Y
BLUE	BU
BROWN	BR
PINK	PK
ORANGE	OR
PURPLE	PU
GRAY	GY
TAN	T
GREEN	G

A-6808

Figure 78
Wiring Diagram LCT-120



SCHEMATIC NOTES:

④,⑦,⑧,⑨ ETC. ARE TIMER CONTACTS

⋖ = CABINET CONNECTOR TERMINAL.

P.P. = PUSH-PULL SWITCH.

O.L. = MOTOR OVERLOAD PROTECTOR

SW. = SWITCH

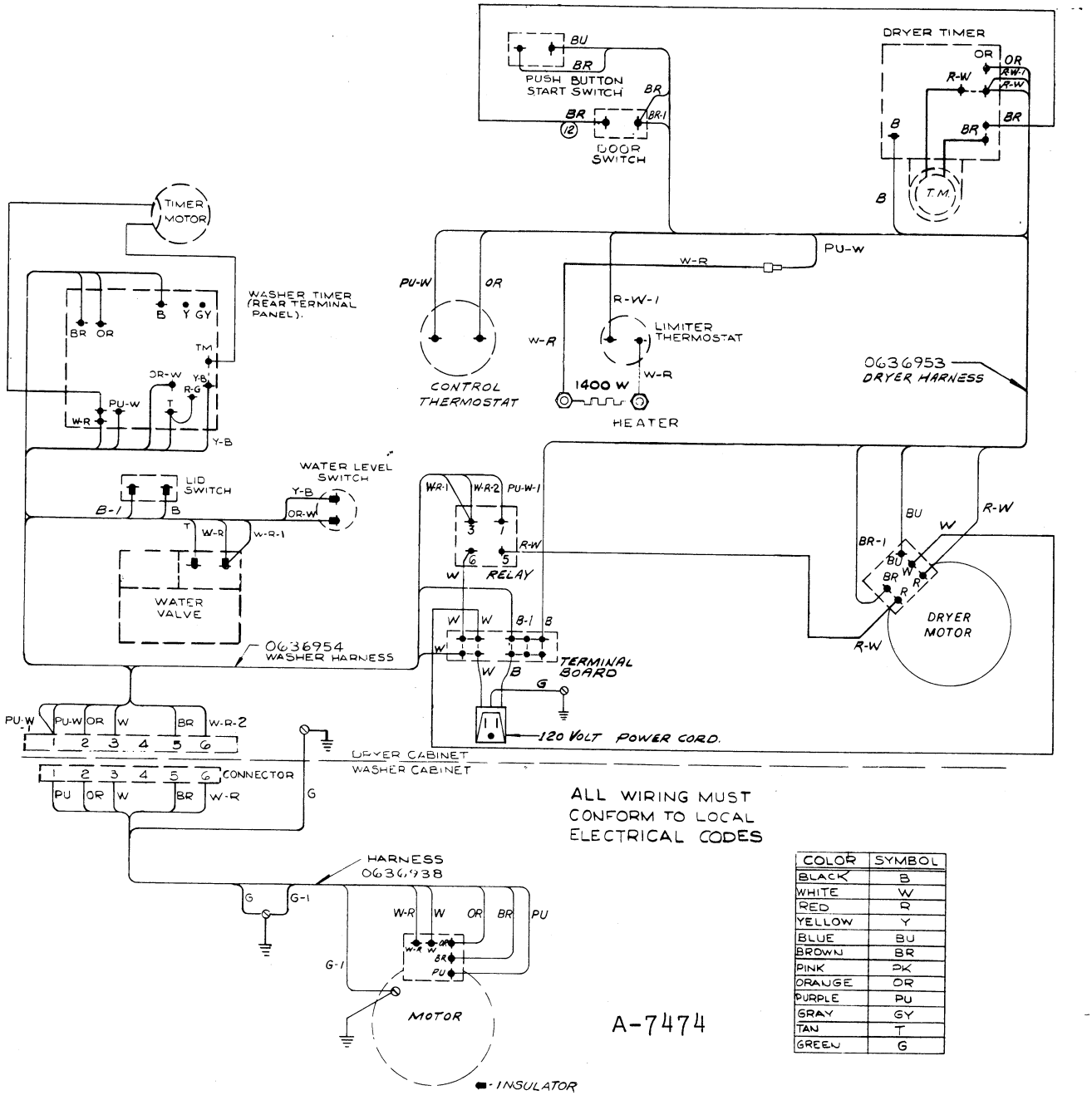
A-6807

■ FILLED IN AREAS INDICATE CONTACTS CLOSED

⊠ CONTACT MAY BE OPEN OR CLOSED

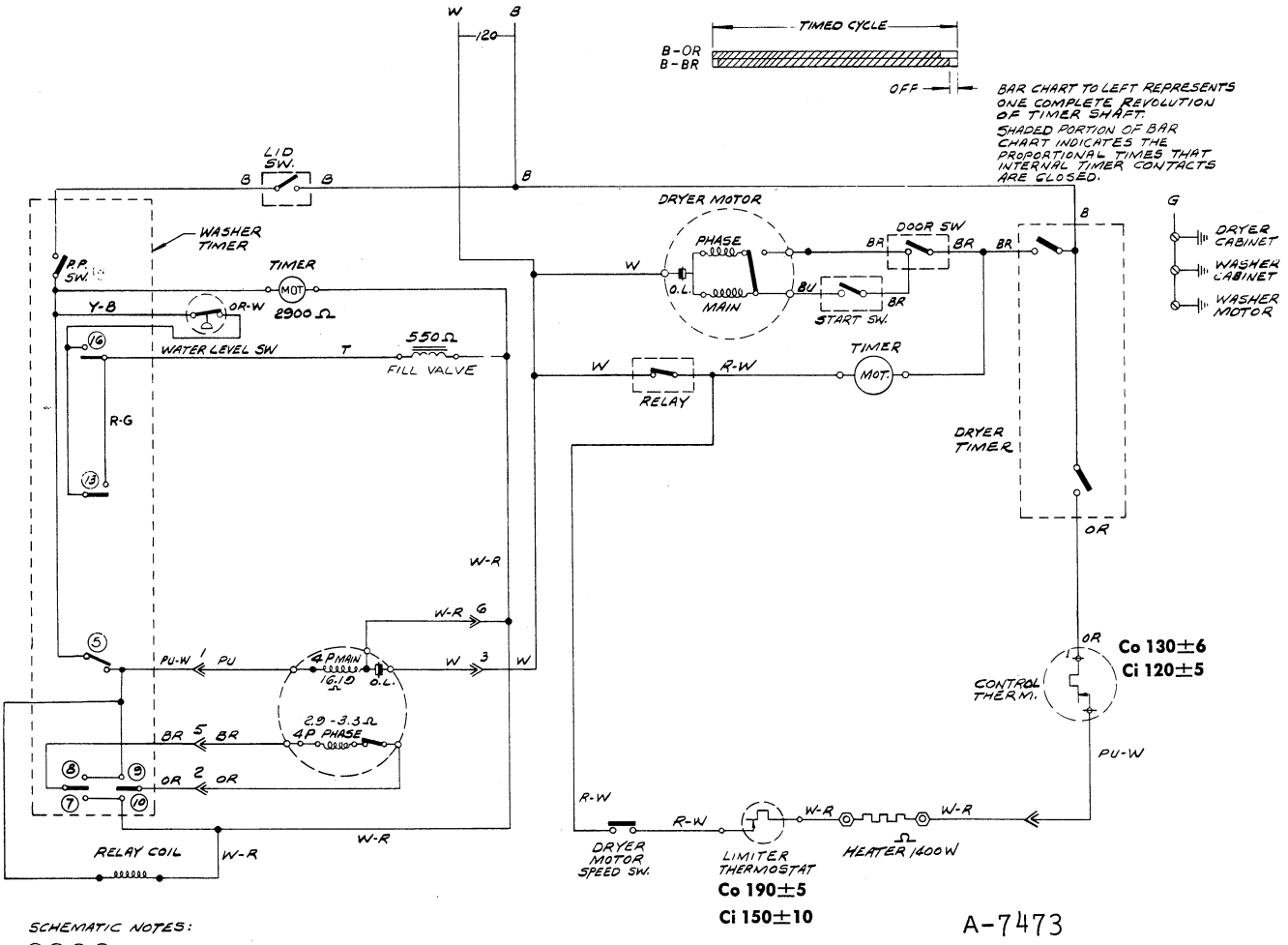
◪ PROVIDES PAUSE AT END OF WASH AND SPIN PERIOD EACH IMPULSE - 72 SECONDS

Figure 79
Schematic Diagram LCT-120



COLOR	SYMBOL
BLACK	B
WHITE	W
RED	R
YELLOW	Y
BLUE	BU
BROWN	BR
PINK	PK
ORANGE	OR
PURPLE	PU
GRAY	GY
TAN	T
GREEN	G

Figure 80
Wiring Diagram LCA-120



SCHEMATIC NOTES:

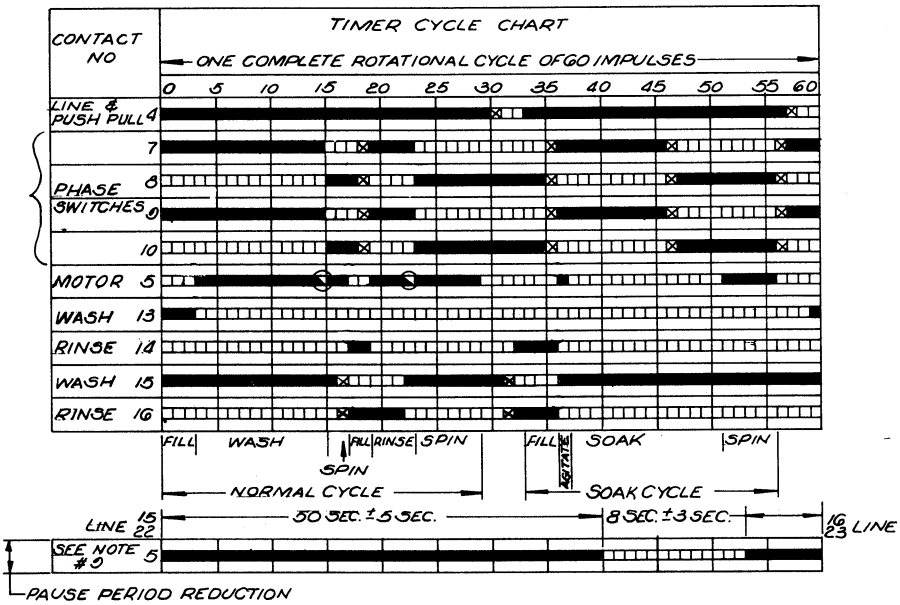
④⑦⑧⑨ ETC. ARE TIMER CONTACTS.

⋘ = CABINET CONNECTOR TERMINAL.

P.P. = PUSH-PULL SWITCH.

O.L. = MOTOR OVERLOAD PROTECTOR

SW. = SWITCH



FILLED IN AREAS INDICATE CONTACT CLOSED.

⊠ = CONTACT MAY BE OPEN OR CLOSED.

EACH IMPULSE = 72 SECONDS.

Figure 81
Schematic Diagram LCA-120

TABLE VI

Laundry Aids and Their Uses

LAUNDRY AID	USE	CAUTIONS
AMMONIA	• Use in Soak or Wash cycle with deterbent or soap for greasy soil. • Can also be used with enzymes or water conditioners. • Can be used on all types of fibers but check color first.	• DO NOT USE WITH CHLORINE BLEACH.
BLEACH Chlorine	• Use in Soak and Wash to whiten clothes and to remove some stains. • Can be used on most fibers. • Dilute before adding to soak or wash. • Can be used with detergents, soaps and water conditioners.	• Never use in rinse. Bleach must be rinsed out. • DO NOT USE ON WOOL, SILK OR SPANDEX. Chlorine bleach will turn wool and silk yellow and will damage the fibers causing holes in the fabric. • Some spandex fibers will yellow, but otherwise will not be damaged. This yellowing cannot be removed. • Concentrated chlorine bleach will damage fibers, even cause holes. • Do not use with enzymes. Enzymes will be deactivated by chlorine bleach.
Oxygen-type	• Use in Soak or Wash. • Safe for all fibers but check color. • Can be used with detergents, soaps, water conditioners and enzymes.	• Never use in rinse. • May damage color if put directly onto fabric.
DETERGENTS	• Use in Soak or Wash to remove dirt and soil. • Can be used in all Frigidaire washers. • Can be used on all types of fibers. Will not cause fiber damage. • Can be used with bleaches, water conditioners and enzymes. Brands can be used interchangeably or mixed.	• If too little is used will cause cloth to become yellow or gray. Follow package instructions for amount. • Do not use with fabric softeners. Grayish greasy stain will result.
ENZYMES or Detergents with Enzymes	• Use in Soak or Wash to loosen protein type stains. • Can be used with detergent, oxygen type bleaches, water conditioners, or ammonia. • Can be used on all fabrics. Enzymes will not damage fibers.	• Do not use with chlorine bleach. Enzymes will be deactivated. • Add chlorine bleach last 5 minutes of wash cycle. • Check dyes to be sure they are stable to longer soaking times.
FABRIC SOFTENERS	Use in rinse to soften bath towels, diapers, etc. and to reduce static electricity in man-made fibers.	• Do not use with detergent, bleach or water conditioners. Greasy curd or fabric stain will result. • Do not pour directly onto fabric. Some may cause blue stain.
WATER CONDITIONERS	• Use in Wash to reduce amount of detergent or soap required. • Must be used with soap to prevent soap curd. • Use in rinse to aid in removing soap. • Use in detergent, soaps, and bleaches.	• Do not use with fabric softeners in the rinse. Greasy curd will be formed which can stain clothes.
SOAP	• Use in Soak and Wash to remove soil. • Use with bleach or water conditioners.	• Must be used in soft water or with water conditioner to prevent soap curd.

The Washing Action:

Because of the design of the Agi-tub the washing action of the Laundry Center is unique. The currents of water are created by the movement of the tub and agitator, and the Action Ribs on the side of the tub. The currents of water move through the clothes to wash out the dirt and soil. The action provides thorough washing but is gentle and safe for all clothes.

Using the Laundry Center Washer:

Since the Laundry Center is new and there have been many changes in laundry aids and fabrics, let's review a few facts and tips that will help you to better understand use of the Laundry Center.

What size load can be washed?

The Laundry Center is a smaller unit designed for the smaller family, and will wash most family size loads found in the weekly wash. The following are typical loads that can be washed and dried in the Laundry Center. This should be used only as a guide:

LOAD A

2 permanent press double sheets, 2 pillow cases, 2 bath towels, 2 hand towels and 2 wash cloths.

LOAD B

3 twin cotton sheets, 3 pillow cases, 2 bath towels, 2 hand towels, 4 wash cloths.

LOAD C

5 bath towels, 3 T-shirts, 3 knit undershorts, 4 or 5 wash cloths.

LOAD D

3 men's sport shirts, 2 pairs men's slacks, 3 women's blouses, 1 pair women's slacks, 1 woman's skirt, 2 girl's dresses.

LOAD E

2 throw rugs, 27 inches by 48 inches.

There are a few items which should not be washed in this washer because of the size of the tub.

1. Pillows
2. Large bulky blankets
3. Large area rugs

How should the washer be loaded?

The clothes should be loaded loosely in the tub and only to the top of the agitator. Do not wind clothes around the agitator.

How should the laundry aids be added?

Detergent should be put in the bottom of the tub before the clothes are loaded or poured down the side of the agitator so it will go to the bottom of the tub. If the detergent is in the bottom of the tub, it will dissolve as the washer is filling with water and start to soak and loosen the soil in the clothes. If the detergent is poured on top of the clothes, it may not dissolve easily and quickly at the beginning of the wash cycle. This could result in part of the detergent being caught in folds of the clothes.

USE ENOUGH DETERGENT TO DO A GOOD JOB. For normally soiled clothes generally 3/4-cup of granular detergent (either high or low sudsing) is a minimum requirement. At least 1/2-cup of liquid detergent should be used per load of clothes. For heavier soil, increase amount of detergent used. MORE COMPLAINTS CAN BE TRACED TO INSUFFICIENT DETERGENT THAN TO TOO MUCH.

If enough high sudsing detergent cannot be used in soft water without oversudsing, recommend low sudsers such as Ajax, All, Bold or Dash.

Some liquid detergents may leave blue stains on the clothes which are difficult to remove in subsequent washings. Bleach must be used to remove stain.

Although cold water detergents are being heavily promoted we still believe that they give better results in *hot* water. Cold water washing is not recommended for anything but very lightly soiled garments.

Occasionally we will get letters from customers who have been told that they should not use detergent in their Frigidaire washers but must use soap. THERE IS NO BASIS FOR SUCH INFORMATION WITH THE REGULAR LINE OF FRIGIDAIRE JET ACTION WASHERS NOR WITH THE NEW FRIGIDAIRE LAUNDRY CENTER. DETERGENTS WILL NOT CAUSE DAMAGE TO FABRICS OR TO ANY PART OF THE FRIGIDAIRE LAUNDRY CENTER.

Chlorine bleach should be added to the washer only after the tub has filled with water and agitated for several minutes. IT IS IMPORTANT THAT THE CHLORINE BLEACH BE DILUTED BEFORE IT IS ADDED TO THE WASH. Use 1/4- to 1/3-cup liquid chlorine bleach for a normal load but dilute it with at least 1 quart of water. Bleach burns occur when concentrated chlorine bleach comes in direct contact with the fabric or is not completely rinsed out. The damage may show up as holes or tears on the clothes immediately; or it may not show up for several washings depending on the extent of the damage. However, each time the fabric is laundered, the fibers become weaker and finally break.

Fabric softener should be added only to the rinse. If it is added with detergent or other laundry aids, a greasy grayish stain may result. Concentrated blue fabric softeners should not be poured directly on the fabric as they may stain the clothes. These can be added to the rinse water after agitation has started.

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Using the Laundry Center Dryer:

Generally, items that have been washed in the Laundry Center washer can be dried together in the dryer.

Drying timetables are included in the Use and Care Instructions. They are intended only as a guide to approximate drying times. Each individual load will vary depending on the garments included, the weight of the fabric and the size of the load.

Is there any item that should not be dried in the dryer?

In addition to the pillows, large bulky blankets or large area rugs, STIFF ITEMS SUCH AS SNEAKERS OR STUFFED TOYS SHOULD NOT BE DRIED IN THIS DRYER.

ALSO, A LARGE LOAD OF ONLY TERRY TOWELS OR SIMILAR WEIGHT FABRICS SHOULD NOT BE DRIED. Mix other items with the bath towels.

Are there different instructions for different fabrics?

Untreated cotton, linen, nylon—In fact, most clothes except Permanent Press should be removed from the dryer while slightly moist. Remove the garment from the dryer to test for dryness since it will feel damper in the warm moist air of the dryer than at room temperature.

Permanent Press garments and linens should be completely and thoroughly dried. For them to come out ready to wear, the fabric must be heated to about 140 to 160 degrees F. and imme-

diately cooled to set the press. Overcrowding the dryer can cause wrinkling; generally, a smaller load than average will give better results. Most garments require 45 to 60 minutes in the compact dryer. See the Use and Care for special items.

Synthetic knits can be turned inside out to prevent pilling. Dry small loads. These knits should complete the cool-down for best results. Remove as soon as tumbling stops to prevent wrinkling.

Cotton knits should be removed from the dryer while slightly damp, stretched into shape and left on a flat surface to finish drying.

Plastics that are soft and pliable can be tumbled in the dryer with no heat. Add a few bath towels to absorb moisture and help tumbling. Hard plastics should not be put in the dryer.

Woolens that have a special finish are marked machine washable and generally have instructions for laundering. Other sturdy wools that have been machine washed can be dried in the dryer if special care is taken. Preheat the dryer to avoid overtumbling; add a few bath towels to act as buffers.

Sheer nylon or polyester curtains should be started in a cold drum, have a few bath towels added for better tumbling. They should be removed as soon as tumbling stops.

Fiber glass drapes should be dryer dried only if the manufacturer recommends it. Different processes are used in producing these fibers and some are damaged by abrasion in tumbling. If fiber glass items are put in the dryer, the drum should be wiped with a damp cloth after the cycle to remove any of the fiber glass that might remain.

Cleaning the Dryer:

Cleaning the lint screen after every use is important to good drying.

Normally, wiping the cabinet with a damp, sudsy cloth is enough to remove surface dust. If extra cleaning is required, use Frigidaire Surface Renewer.

The dryer door is ABS plastic and can be wiped clean. The inner panel of the door might become slightly discolored by brightly colored or dark clothes such as bath towels or jeans. The dye stains can be removed with Frigidaire Surface Renewer or a paste of powdered Bon Ami and water. This discoloration will not rub off on other wash loads.

The sorting vanes in the dryer are polypropylene and normally require no special care.

Washer Lid:

To clean the washer lid, use liquid detergent and a little water. For stubborn soil and dirt, it may be necessary to use a small brush. If laundry aids, such as fabric softeners, stain the washer lid, clean the lid with diluted solution of chlorine bleach (1/2-cup in 1 quart water). Rinse the lid several times with clean water.

Washer Tub:

The washer tub is generally self-cleaning. Occasionally bright colored or dark clothes such as bath towels or blue jeans may stain the tub. In this case the tub should be cleaned by adding 1 cup liquid chlorine bleach to the tub, setting the water temperature controls for a HOT WASH and COLD RINSE. Allow the washer to fill and go through a complete cycle.

The washer tub, after dyeing or tinting, will be discolored but can be cleaned by adding 1 cup liquid chlorine bleach to a hot wash cycle as described above. The tub may be slightly discolored after this cleaning process, but it will whiten with further use. The dye stain will not rub off on other wash loads.

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