OPERATING & MAINTENANCE MANUAL
WASCOMAT
W 245 Emerald

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WARNING: ALL OPERATING AND MAINTENANCE PROCEDURES SHOWN ON THE NEXT PAGE OF THIS MANUAL MUST BE FOLLOWED DAILY FOR PROPER OPERATION OF YOUR WASCOMAT MACHINE.

PLEASE ENTER THE FOLLOWING INFORMATION AS IT APPEARS ON THE WASHER DATA PLATE LOCATED AT TOP LEFT OF THE REAR PANEL. SERIAL NUMBER IS ALSO LOCATED ON A STICKER ON THE INSIDE OF THE DOOR.

MACHINE TYPE OR MODEL	
MACHINE SERIAL NUMBER(S)	
ELECTRICAL CHARACTERISTICS: _____ VOLTS, _____ PHASE, _____ HZ.	

MAKE CERTAIN TO KEEP THIS MANUAL IN A SECURE PLACE FOR FUTURE REFERENCE.

NOTICE TO: OWNERS, OPERATORS AND DEALERS OF WASCOMAT MACHINES

IMPROPER INSTALLATION AND INADEQUATE MAINTENANCE, POOR HOUSEKEEPING AND WILLFUL NEGLECT OR BYPASSING OF SAFETY DEVICES MAY RESULT IN SERIOUS ACCIDENTS OR INJURY. TO ASSURE THE SAFETY OF CUSTOMERS AND/OR OPERATORS OF YOUR MACHINE, THE FOLLOWING MAINTENANCE CHECKS MUST BE PERFORMED ON A DAILY BASIS.

1. Prior to operation of the machine, check to make certain that all operating instructions and warning signs are affixed to the machine and legible. (See the following page of this manual for description and location of the signs.) Missing or illegible ones must be replaced immediately. Be sure you have spare signs and labels available at all times. These can be obtained from your dealer or Wascomat.

2. Check the door safety interlock, as follows:

   (a) OPEN THE DOOR of the machine and attempt to start in the normal manner:

   For coin-operated models, select a program, insert the proper coins and press the START button.

   For manually operated models, select a cycle and press the START button.

   THE MACHINE(S) SHOULD NOT START !

   (b) CLOSE THE DOOR and press the START button. Now attempt to open the door by turning the door handle. The door should remain locked!

   If the machine can start with the door open, or can continue to operate with the door unlocked, the door lock is no longer operating properly. The machine must be placed out of order and the lock immediately replaced. (See the door lock section of the manual.)

3. DO NOT UNDER ANY CIRCUMSTANCES ATTEMPT TO BYPASS OR REWIRE ANY OF THE MACHINE SAFETY DEVICES AS THIS CAN RESULT IN SERIOUS ACCIDENTS.

4. **Be sure to keep the machine(s) in proper working order**: Follow **all** maintenance and safety procedures. Further information regarding machine safety, service and parts can be obtained from your dealer or from Wascomat through its Teletech Service Hotline - (516) 371-0700.

All requests for assistance must include the model, serial number and electrical characteristics as they appear on the machine identification plate at the top rear of the washer. Insert this information in the space provided on the previous page of this manual. You can also find the serial number on a sticker on the inside of the door.

5. **WARNING**: DO NOT OPERATE MACHINE(S) WITH SAFETY DEVICES BYPASSED, REWIRED OR INOPERATIVE! DO NOT OPEN MACHINE DOOR UNTIL DRUM HAS STOPPED ROTATING!

SAFETY AND WARNINGS SIGNS

Replace If Missing Or Illegible

One or more of these signs must be affixed on each machine as indicated, when not included as part of the front instruction panel.

LOCATED ON THE OPERATING INSTRUCTION SIGN OF THE MACHINE:

CAUTION

1. Do not open washer door until cycle is completed, operating light is off, and wash cylinder has stopped rotating.
2. Do not tamper with the door safety switch or door lock.
3. Do not attempt to open door or place hands into washer to remove or add clothes during operation. This can cause serious injury.

MACHINE SHOULD NOT BE USED BY CHILDREN

ATTENTION

1. Ne pas ouvrir le hublot avant la fin du cycle de lavage, l'extinction du témoin de fonctionnement et l'immobilisation du tambour.
2. Ne pas forcer l'ouverture au moyen de l'interrupteur de sécurité de la porte ou de son verrouillage.
3. Ne pas tenter d'ouvrir le hublot ni d'introduire la main dans la machine pour en ôter ou y ajouter du linge pendant le fonctionnement, sous peine d'encourir des blessures graves.

INTERDIRE TOUTE UTILISATION DE LA MACHINE PAR DES ENFANTS

LOCATED AT THE REAR OF THE MACHINE:

INSTALLATION AND MAINTENANCE WARNINGS

1. **This machine MUST be securely bolted to an uncovered concrete floor, according to the installation instructions, to reduce the risk of fire and to prevent serious injury, or damage to the machine.**
2. **If installed on a floor of combustible material, the floor area below this machine must be covered by a metal sheet extending to the outer edges of the machine.**
3. **This machine MUST be connected to a dedicated electrical circuit to which no other lighting unit or general purpose receptacle is connected. Use copper conductor only.**
4. **This machine MUST be serviced and operated in compliance with manufacturer's instructions. CHECK DOOR LOCKS EVERY DAY FOR PROPER OPERATION TO PREVENT INJURY OR DAMAGE. IF THE DOOR LOCK FAILS TO OPERATE PROPERLY, PLACE THE MACHINE OUT OF ORDER UNTIL THE PROBLEM IS CORRECTED.**
5. **Disconnect power prior to servicing of machine.**
6. **To remove the top panel for service on those models on which it is secured by screws at the rear, first remove the screws. Be certain to reinstall them when remounting the top panel. To remove the top panel for service on those models on which it is secured by one or two keylocks, use the keys originally shipped in the drum package. Be certain to relock after remounting the top panel.**

MANUFACTURED BY WASCATOR
DISTRIBUTED BY WASCOMAT INWOOD, NEW YORK, USA

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LOCATED ON THE DOOR:

If you need to order more safety or warning signs, call Wascomat's parts department at 516-371-2000, or call your local dealer.

WARNING !

NEVER USE FORCE ON HANDLE. FOR SAFETY REASON THE DOOR IS LOCKED A WHILE AFTER THE DRUM HAS STOPPED ROTATING.

ATTENTION !

NE JAMAIS FORCER LA POIGNEE. POUR DES RAISONS DE SECURITE LA PORTE RESTE BLOQUEE UN MOMENT APRES L'ARRET DU TAMBOUR.

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Contents

The manufacturer reservs the right to make changes to design and material specifications.

Safetyinstructions

- **The machine is designed for water washing only.**
- **The machine must not be used by children.**
- **All installation operations are to be carried out by qualified personnel. Licensed personnel are necessary for all electric power wiring.**
- **The interlock of the door must be checked daily for proper operation and must not be bypased.**
- **Any water leaks must be repaired immediately.**
- **All service personnel must be fully familiar with the operating manual before attempting any repair or maintenance of the machine.**
- **The machine must not be sprayed with water, otherwise short circuiting may occur.**
- **Volatile or flammable liquids are not to be used.**

General

Fig. 1

Wascomat EMERALD SERIES washer/extractors have been developed to meet the needs of state-of-the-art professional laundromats. EMERALD models are unique because you can program different prices for the seven wash cycles, giving the customer a real choice and allowing you to maximize revenue by charging what each cycle is worth. In addition, you can charge a higher price if the customer selects the Extra Extract option. Using an external clock and wiring harness, these models may be programmed to lower prices by any percentage between any hours of any days, for the ultimate in pricing flexibility!

The seven cycles offer different water temperatures, wash times, extraction times, and normal or gentle drum rotation. EMERALD SERIES washers achieve maximum environmental efficiency because only the minimum amount of water is used for each cycle, which vary in duration.

When ordering spare parts or contacting Wascomat or your dealer for service, always give the machine serial number, model, voltage and other electrical characteristics appearing on the data plate at the top left of the rear panel of the machine. The serial number is also printed on a sticker inside the door.

KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE!

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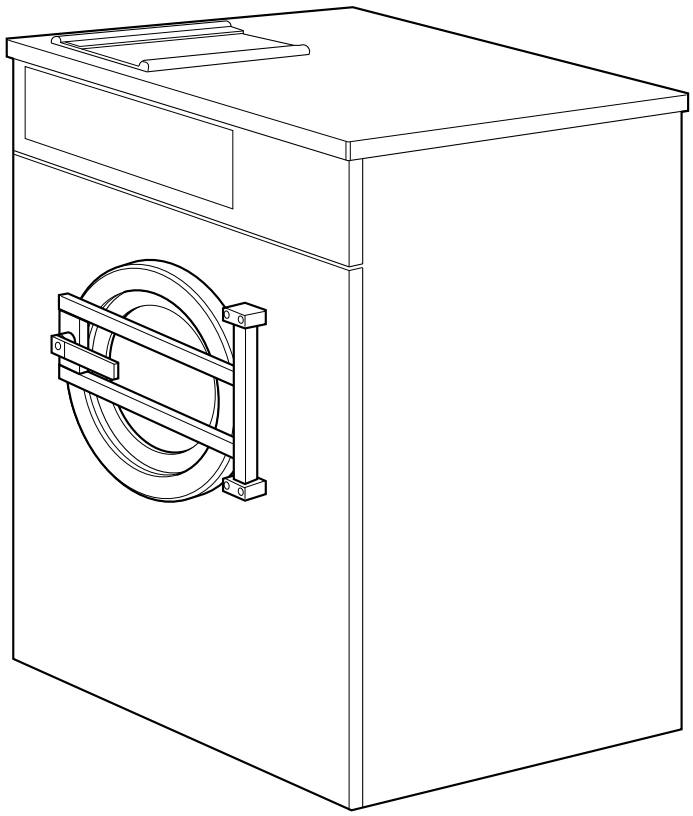

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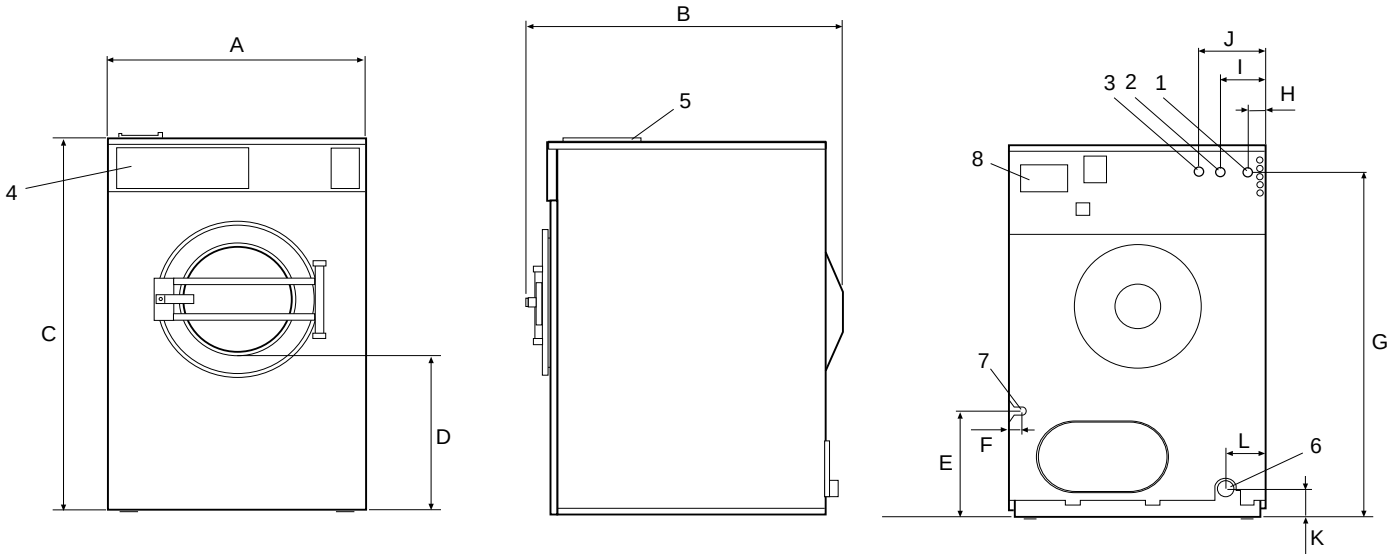
Technical data Wascomat W245 EMERALD

Dry load capacity	up to		75 lbs
Dimensions	Width	937 mm	36 7/8 in
	Depth (at the base)	980 mm	38 9/16 in
	Height	1415 mm	55 in
	Net weight	380 kg	837 lbs
Crated dimensions	Volume	1.74 m^3	61.5 cu.ft
	Weight	395 kg	870 lbs
Inner drum dimensions	Diameter	830 mm	32 11/16 in
	Depth	590 mm	23 1/4 in
	Volume	325 litre	11.3 cu.ft
Speed of rotation	Wash	41 r.p.m.	
	Distribution	60 r.p.m.	
	Extraction	410 r.p.m.	
G-factor	During wash	0.8	
	During extraction	79	
Floor loading	Dyn force	4.25 ± 5.5 kN	1020 ± 1320 lbs
Motor speed	During wash	540 r.p.m.	
	During extraction	860 r.p.m.	
	During extraction	1740 r.p.m.	
Voltage requirements	208-240 V 3-Phase 60 Hz		
Rated output power	Motor, wash,	650 W 0.9 HP	
	Motor, extract.	1100 W 1.5 HP	
Overcurrent protection	Three-phase	15 A	

Water connections

Recommended water pressure	2 - 6 kp/cm^2	25 - 85 psi	
Hose connection, water	DN 20	3/4"	
Hose connection, drain	75 mm	3"	

Outline and dimensions



	mm
A	937
B	1125
C	1415
D	595
E	335
F	55
G	1310
H	82
I	187
J	307
K	105
L	135

W 245

1 Cold water inlet
2 Hot water inlet
3 Hot water inlet
4 Control panel
5 Soap box
6 Drain outlet
7 Steam connection (optical)
8 Electrical connection

Installation

Machine foundation

The machines are designed to be securely bolted to a concrete pad. A template showing the size of the pad and positioning of the bolts is delivered with each machine.

For installation on an existing concrete floor, the floor must be at least 8" thick and of good quality. If the floor does not meet these requirements, then a 6-8" high concrete pad should be made. A prefabricated steel base is available for mounting machines without pouring a pad.

Follow the instructions below when making a concrete foundation:

Fig. 2

1. Decide where to place the machine and consider maintenance requirements, i.e. determine a suitable distance from the rear of the pad to the wall, and the distance from the pad to the nearest side wall. The distance should be at least 16 and 12 inches, respectively. Leave 3/4" between washers.

Fig. 3

2. Break up the floor to a minimum depth of 3 inches, making sure that the sides of the hole slope away - the bottom of the hole should be 5 inches longer than the upper length.
3. Wet the hole well. Brush the bottom and sides with cement grout.
4. Prepare a casing and fill with 3.000 PSI concrete to form pad. Make sure the foundation is level.

Fig. 4

5. Use the template to position the bolts correctly. Bolts are to extend 1 1/2" above the concrete.

   NOTE: A prefabricated steel frame, designed to be placed in the concrete instead of the individual mounting bolts, is available.

	mm	inches
A	575	22 5/8
B	975	38 3/8
C	1040	40 15/16
D	135	5 5/16
E	800	31 1/2
G	985	38 25/32
H	985	38 25/32
I	1180	46 15/32
K	293	11 17/32

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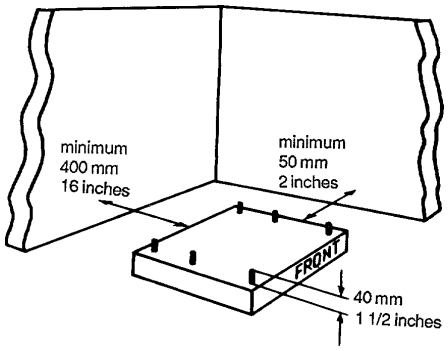

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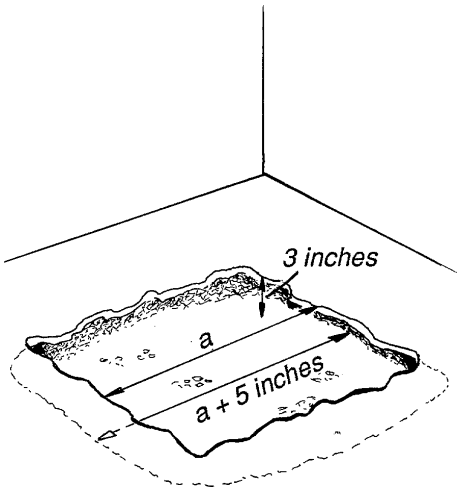

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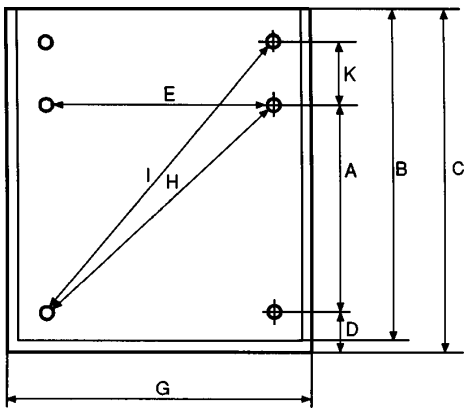

B = machine outline to edge of front panel
C, G = minimum foundation for one machine

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NOTE: If you form a lip on top of the concrete pad in front of the washers, be sure you leave enough room to remove the bolts which secure the bottom of the front panel and enough room to swing out and remove the panel!

Mechanical installation

Fig. 5
- Place wide steel shims on the concrete foundation over the bolts.
- Lift the machine and lower it in position. Never use the door or the door handle to lift or lower the machine.

Fig. 6
- Check that the machine is level front-to-rear and side-to-side and standing firmly on the six supporting points. Spacing washers must be mounted if one or more of these points is not resting against the concrete.

Fig. 7
- Place flat washers over the foundation bolts and secure the machine in position by tightening the self-locking nuts. See illustration below.
- Check and tighten the nuts every week for the first month.

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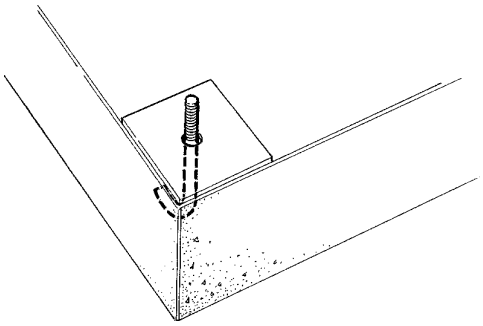

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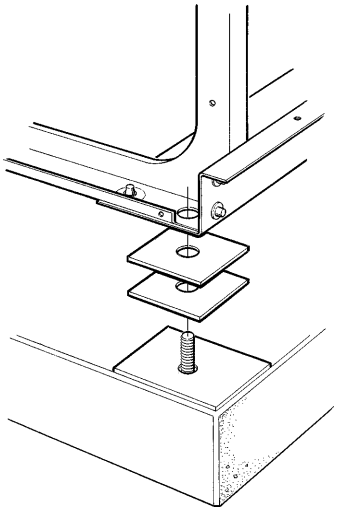

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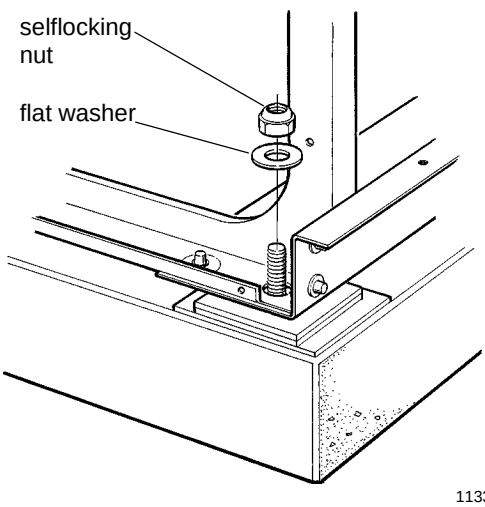

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Electrical Installation

All electrical installations are to be carried out by licensed personal.

Fig. 8 Although the machines are fitted with a thermal overload in the motor windings, a separate three-phase common-trip circuit breaker must be installed for all three-phase machines.

For proper circuit breaker protection, check the data plate at the rear of the machine. Also consult local electrical code for special requirements.

Fig. 9 Connect L1, L2, L3 and ground wires according to the markings of the terminal block. The cable is to hang in a loose loop, supported by the clip of the terminal block.

Make sure the machine is properly grounded electrically.

After installation do the following for 3-phase machines.

Check the incoming power for a high voltage leg. If present, connect that line to L2 on the terminal block.

Fig. 10 Start the machine and check that the drum rotates in the proper direction during extraction, i.e. counter-clockwise when seen from the front. If the drum rotates in the wrong direction intercharge line L1 and L3 at the power connection terminal.

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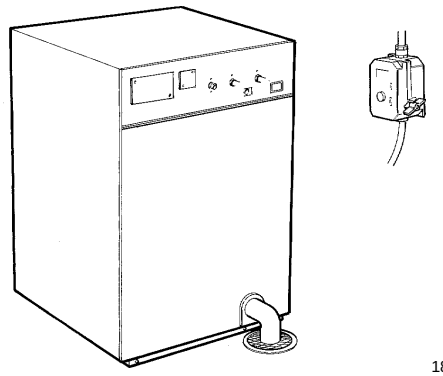

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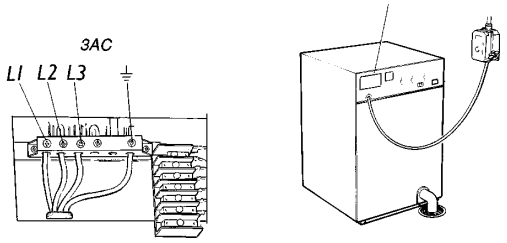

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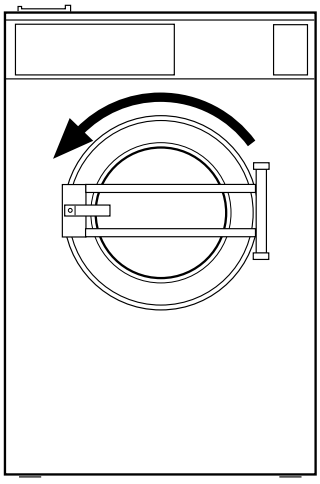

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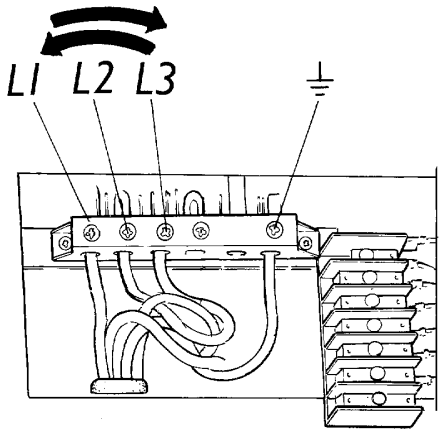

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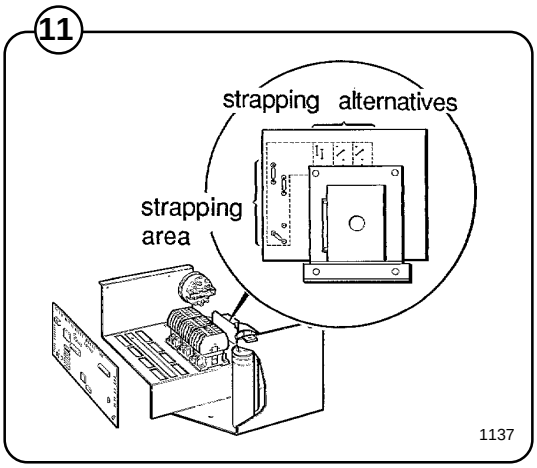
Fig. 11 The machine is equipped with a control circuit transformer, mounted on the control unit and connected for 220 volt operation. If your incoming voltage is below 210 volts move the wire connection to the 208 volt tab on the transformer. If it is above 230 volts move the wire to the 240 volt tab on the transformer.

Check the incoming power for a high voltage leg. If present, connect that line to L2 on the terminal block.



Water Connections:

> **NOTE**
>
> **All plumbing must conform to national and local plumbing codes.**

Fig. 12 Incoming water lines do not require non-return or back flow prevention valves, as the machine is already fitted with an approved siphon breaker. However, all incoming lines must be fitted with shut-off valves.

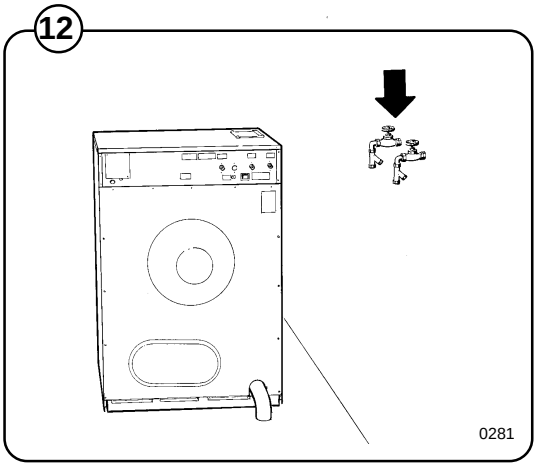
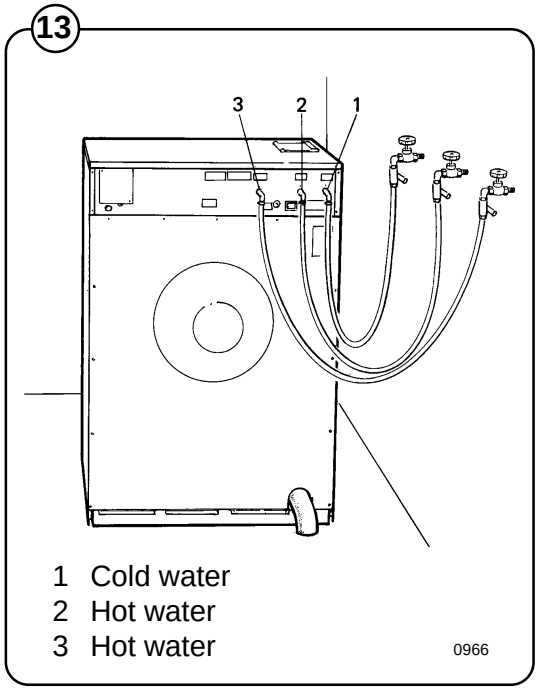


Fig. 13
- Water inlets are labelled for hot and cold water connection. The W245ES has two hot water and one cold water connections.
- Flush the water lines thoroughly before connecting hoses to the washers. Then check that all water valves are attached tightly and inlet screens not clogged. Use teflon pipe tape if necessary to ensure watertightness.
- Use 1/2" or 3/4" diameter reinforced rubber hosing not to exceed 6 feet in length. Let the hoses hang in a loop. Do not use rigid piping.

  Never force a hose onto the threads or you may cause cross-threading and leaks. If this occurs, place the threaded portion of the hose over the valve threads and push forward firmly, to catch the next thread. Then tighten.

  Depending how large your laundry is, your main incoming water line will generally be between 1-1/2" to 3" diameter to assure adequate water supply.



Drain connection

Fig. 14 Connect a 3" (75 mm) flexible hose to the drain outlet of the machine.

The drain hose must not have any sharp bends and must slope from the machine to assure proper drainage. The outlet must open freely to the main drains.

Do not reduce the size of the drain connection from the machine to the waste line.

Start-up and safety checklist

Before initial start-up of a Wascomat washer extractor, the following safety checks must be performed:

Fig. 15
- Make sure the machine is properly bolted to the floor.

Fig. 16
- Make sure that all electrical and plumbing connections have been made in accordance with applicable local codes.
- Use only flexible water fill and drain hoses of the proper length to avoid sags and kinks.
- Make sure the machine is properly grounded electrically.

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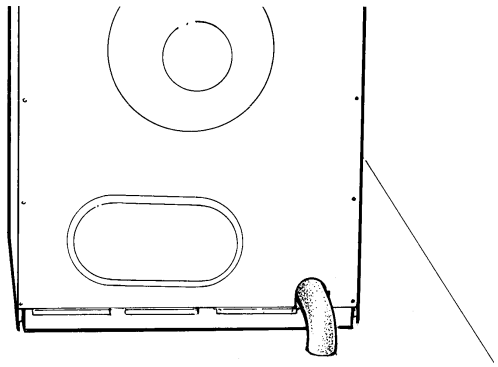

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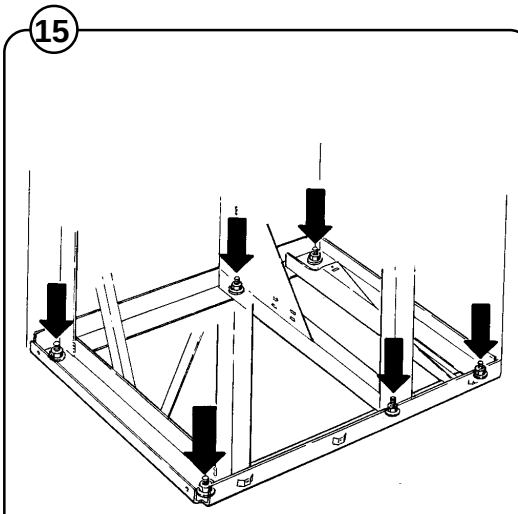

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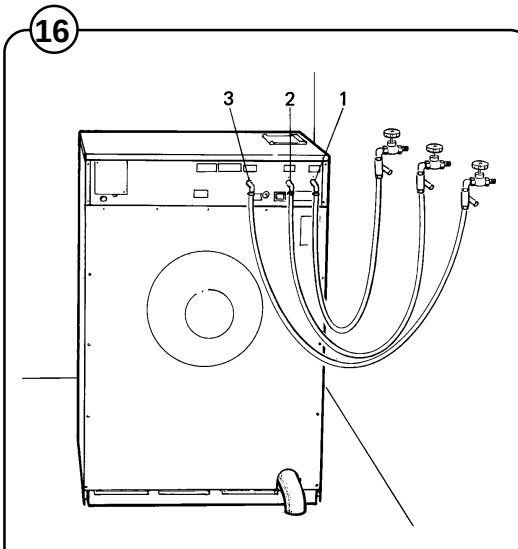

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Before the machine is operated, the door lock must be checked for proper operation as follows:

Fig. 17

- When washer door is open, the machine must not start. Verify this by attempting to start washer with door open.

Fig. 18

- When washer is in operation, the door is locked and cannot be opened. Verify this by attempting to open the door when the machine is operating. If necessary, consult this manual for proper operation of the door lock or call a qualified serviceman.

IMPORTANT:

Door lock must be checked <u>daily</u> in accordance with above procedure.

WARNING:

Before servicing Wascomat equipment, disconnect electrical power.

If the side panels of the washer move during extraction, remove the shipping security which connects the top rear of the cylinder to the upper section of the back panel. It is used to prevent shipping damage but has no function when the washer is installed in a laundry. In some rare installations this bracket may transmit vibrations to the side panels. If it does, remove the shipping security; otherwise, leave it in place.

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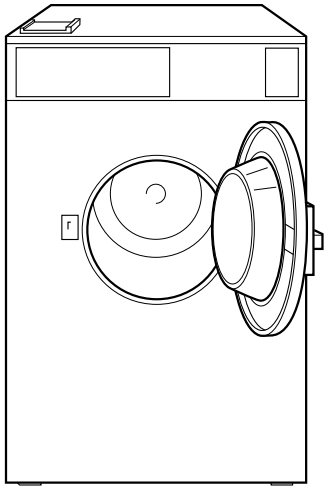

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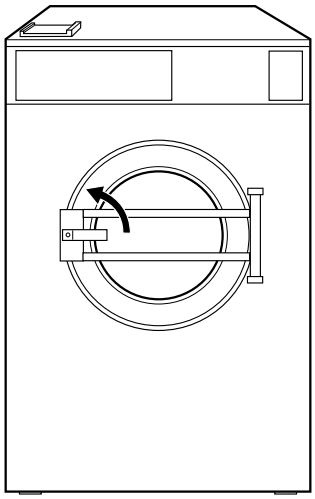

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Coin-operated machines

The prices of the various wash cycles must be programmed into the microprocessor. On EMERALD SERIES washers you can program different prices for the seven cycles!

You can also program the prices to drop by any percentage between any hours of any days, automatically!

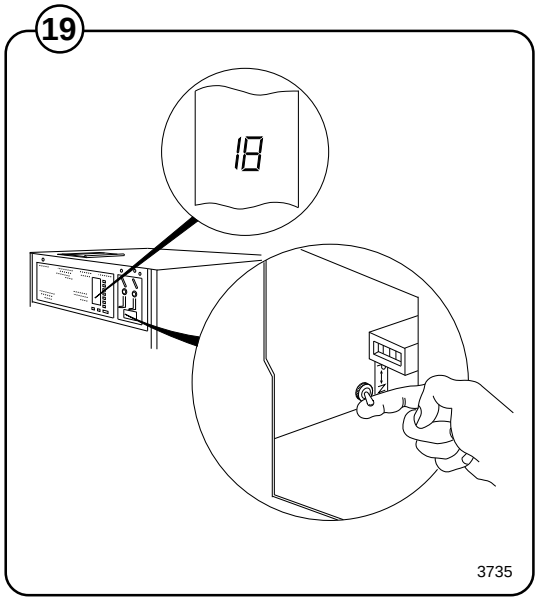
Price programming

- Remove the coin box.
- Press one wash cycle button so an arrow points to it.
- Toggle and hold the price programming switch located at the back of the coin box in the PP (price programming) position.

Fig. 19

Fig. 20

This transforms the various buttons into a numerical keypad. Numbers 1 - 7 are on the wash cycle buttons, the Extra Extract button is 8, and the Gentle Wash button is 9. The START button is 0.



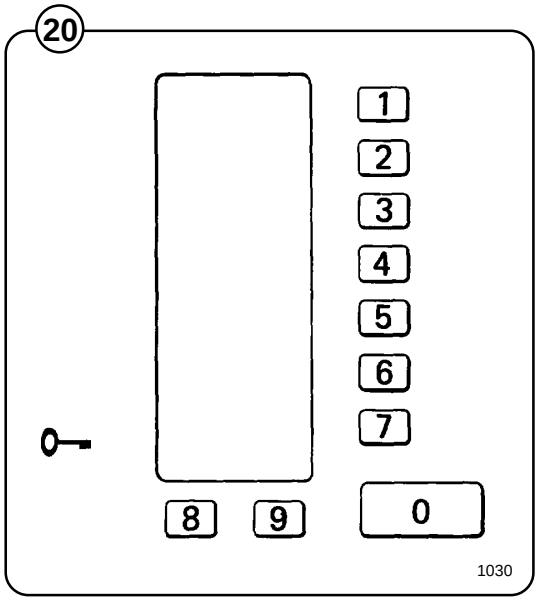
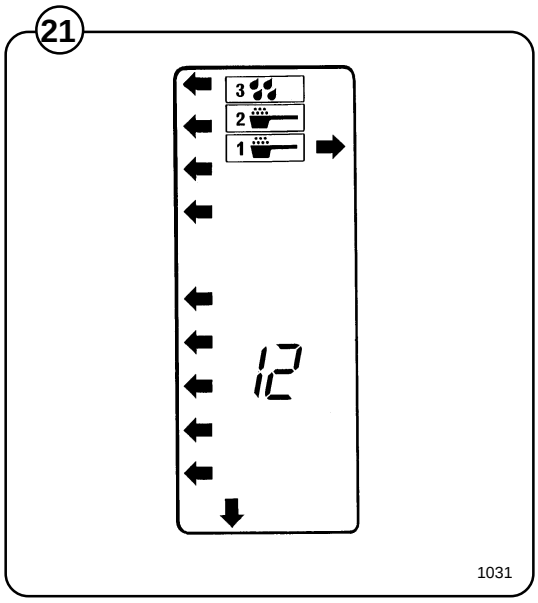


Fig. 21

- Program the price by using the keypad to enter the number of quarters needed to start the selected wash cycle. For example, press "1" and "2" to enter 12 quarters for a $3.00 vend price.
- Release the price programming switch. Price programming of one wash cycle is now complete. Repeat for the other six cycles, using any prices in quarters you want.

If you want to raise prices if Extra Extract is also selected, first program prices for each of the seven wash cycles. Then program a different price for each wash cycle plus Extra Extract. For example, program a price for the Hot cycle. Then press the Hot button *and* the Extra Extract button so arrows point to both. Now program a new price for the combination of Hot plus Extra Extract. Typically you would program a price for the combination that is one quarter higher, but that's totally up to you. If you later change pricing of a cycle don't forget to change pricing of the combination with Extra Extract.

Use of the Gentle Wash button cannot affect pricing.



Programming Tip:

Too many different prices may confuse customers. We suggest using three or four different prices for the seven wash cycles. Typically Heavy Soil will be the most expensive, Hot and Warm the second most expensive, Quick-Wash, Delicate, and Permanent Press the third most expensive, and Cold least of all. But as always, pricing is totally up to *you*. Wascomat EMERALD SERIES washers give you complete price flexibility so you can maximize revenue and beat the competition.

Wiring for automatic price reduction

Fig. 22 Emerald washers have a price reduction terminal block located next to the main power terminal block. Your installer must run a pair of wires from each washer terminal block to Wascomat's automatic price reduction relay box (Part No. 098887), which can control 16 washers. Each relay box can be expanded to handle up to 32 washers by adding snap-in contacts (Part No. 510192). The relay box is plugged into a programmable appliance timer clock (such as Radio Shack model 63-892) which you program with the days and hours you want automatic price reduction to be on or off. Refer to technical instruction No. 1040 for detailed installation instructions.

Programming automatic price reduction

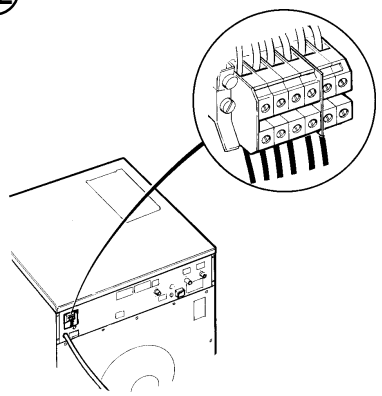
Price reduction is programmed into each *individual* washer as a percentage reduction of the normal prices. For example, if a cycle is normally eight quarters and you program a 25% price reduction, the reduced price will be 6 quarters. An external clock is programmed with the days and hours you want the price reduction to activate and deactivate. (This clock has nothing to do with the clock symbol on the Information Display, which counts down remaining wash time).

Fig. 23
- Press the Extra Extract button until *only* the arrow that points to it is lit.

Fig. 24
- Toggle and hold the price programming switch at the back of the money box compartment.

Fig. 25 This transforms the buttons into a numerical keypad. Numbers 1-7 are on the wash cycle buttons, the Extra Extract button is 8 and the Gentle Wash button is 9. The START button is 0.

22



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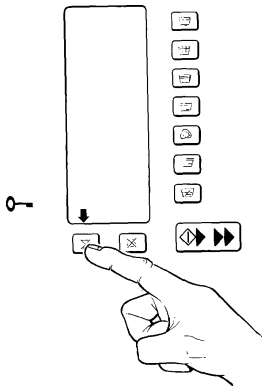

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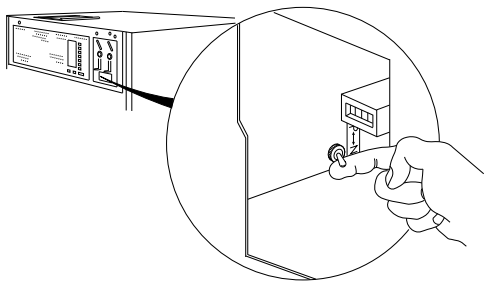

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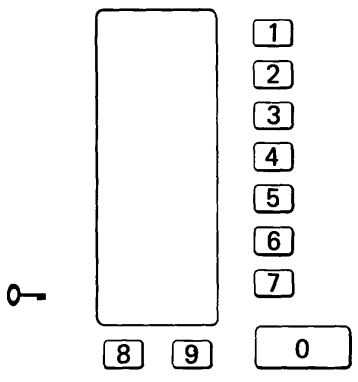

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- Enter the desired percentage reduction using two numbers (for example, enter 2 and 5 for 25% reduction). If you make a mistake just press the START button (0) to clear the data. Prices will round up to the nearest quarter when price reduction is active.
- Release the price programming switch. Programming is now complete. Check to see that your regular prices appear on the display after you select a cycle. If not, just toggle the programming switch once to reset the system.

Since price reductions are programmed into each individual washer you can program different percentage price reductions for different size washers, or you could connect your various size washers to separate clocks and program the clocks to reduce prices on different days or at different times. With Wascomat Emerald Series washers there is virtually no limit on your ability to create innovative price promotions to build your business, maximize profits, and eliminate any correlation between water consumption and revenue!

Coin counter

The microprocessor features a built-in coin counter which uses a four-digit number (0000 - 9999) to indicate how many coins have been fed into the meter. The coin counter can only be reset to zero with a special microchip from Wascomat, so if someone else does your connections, you can check the reciepts.

A coin count reading is made as follows:

- Press one of the cycle selection buttons repeatedly until the *only* arrow lit is the bottom left arrow (open door arrow).
- Toggle and hold the price programming switch.

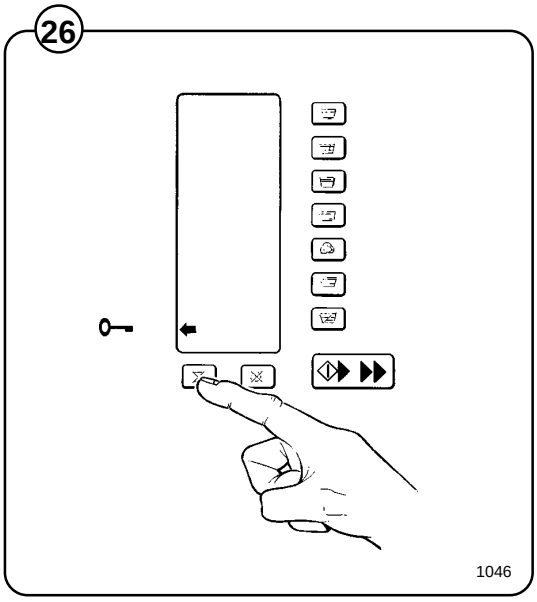
Fig. 26

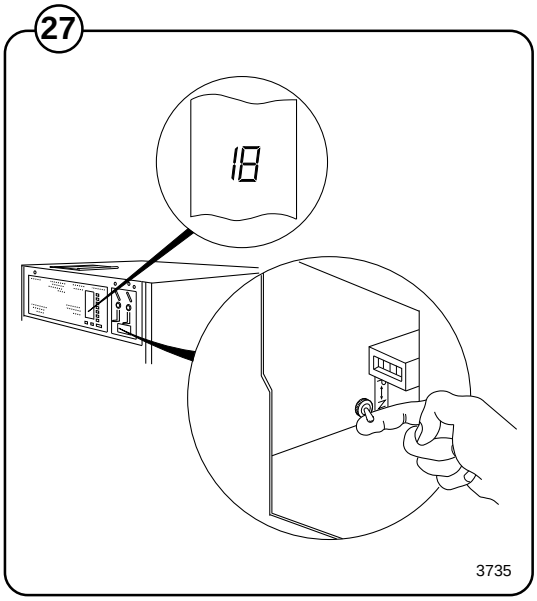
- The two lower digits (for example "18") of the four-digit coin count number (for example 6,518) will now appear in the Information Display. Release the programming switch.

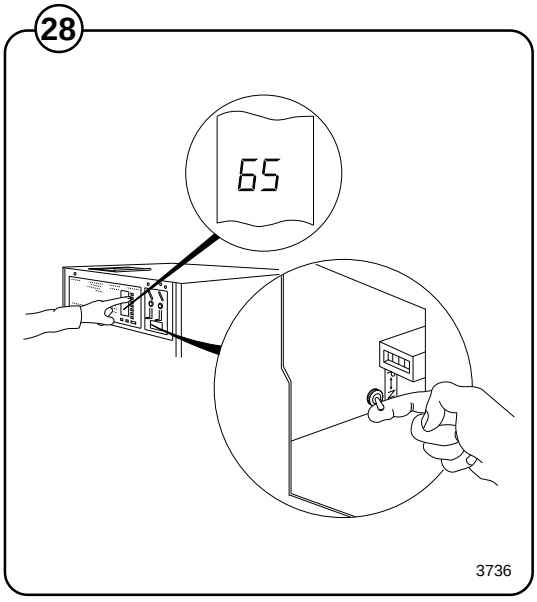
Fig. 27

- Toggle and hold the price programming switch while *also* pressing any one of the wash cycle buttons. The two higher digits (for example, "65") of the coin count number will now appear. A total of 6,518 quarters have been inserted into this washer. If your log book shows the count was 6,200 last time you collected, then 6,518 minus 6,200 equals 318 quarters, which should be in the money box!

Fig. 28







Function control check-out list

In the cylinder you will find the warranty registration card, a copy of the warranty policy, the bolt-hole template, wiring diagram, and other pertinent material. The warranty card must be completed and sent to Wascomat immediately or your warranty coverage will start from the day we shipped the washer from our warehouse. All other items should be placed in a safe place for future reference.

The machine should be cleaned when the installation is completed, and checked out as detailed below without loading the machine with clothes:

1. Check the incoming power for proper voltage, phase and cycles.
2. Open water taps to the machine.
3. Turn on electric power.
4. Check the door lock as detailed in this manual.

Fig. 29

5. Select the Warm cycle and then press the START button.
6. Run through a complete Warm cycle, checking for proper water temperature, drain operation and extract direction. To rapid advance the timer, press and hold down the START button until the indicator arrows reach the desired part of the cycle.

Fig. 30

Fig. 31

7. Now select and run the Cold cycle. There is no hot water in the Cold cycle so if hot water enters the hoses are improperly connected. Reverse the hot and cold water hoses.

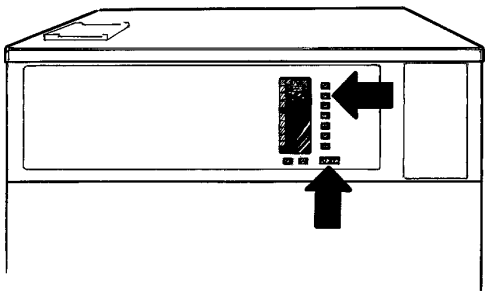
Fig. 32

8. The drum must extract in a counter-clockwise direction as seen from the front! If it does not, reverse incoming electric lines L1 and L3.

NOTE:

All machines are factory tested prior to shipment. Occasionally, some residual water may be found when the machine is installed.

29



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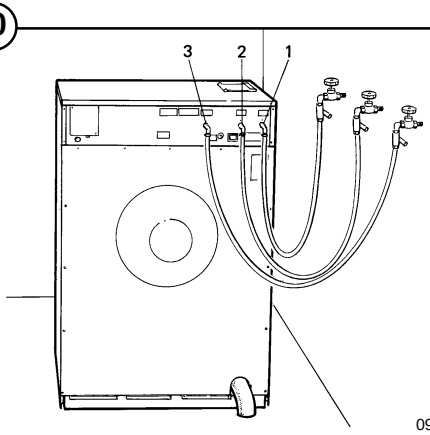

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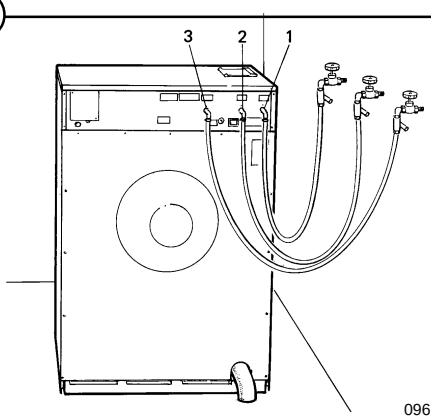

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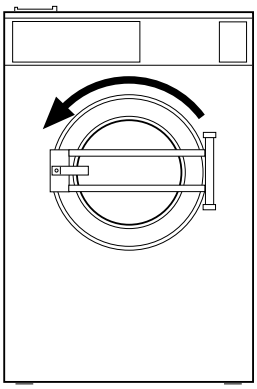


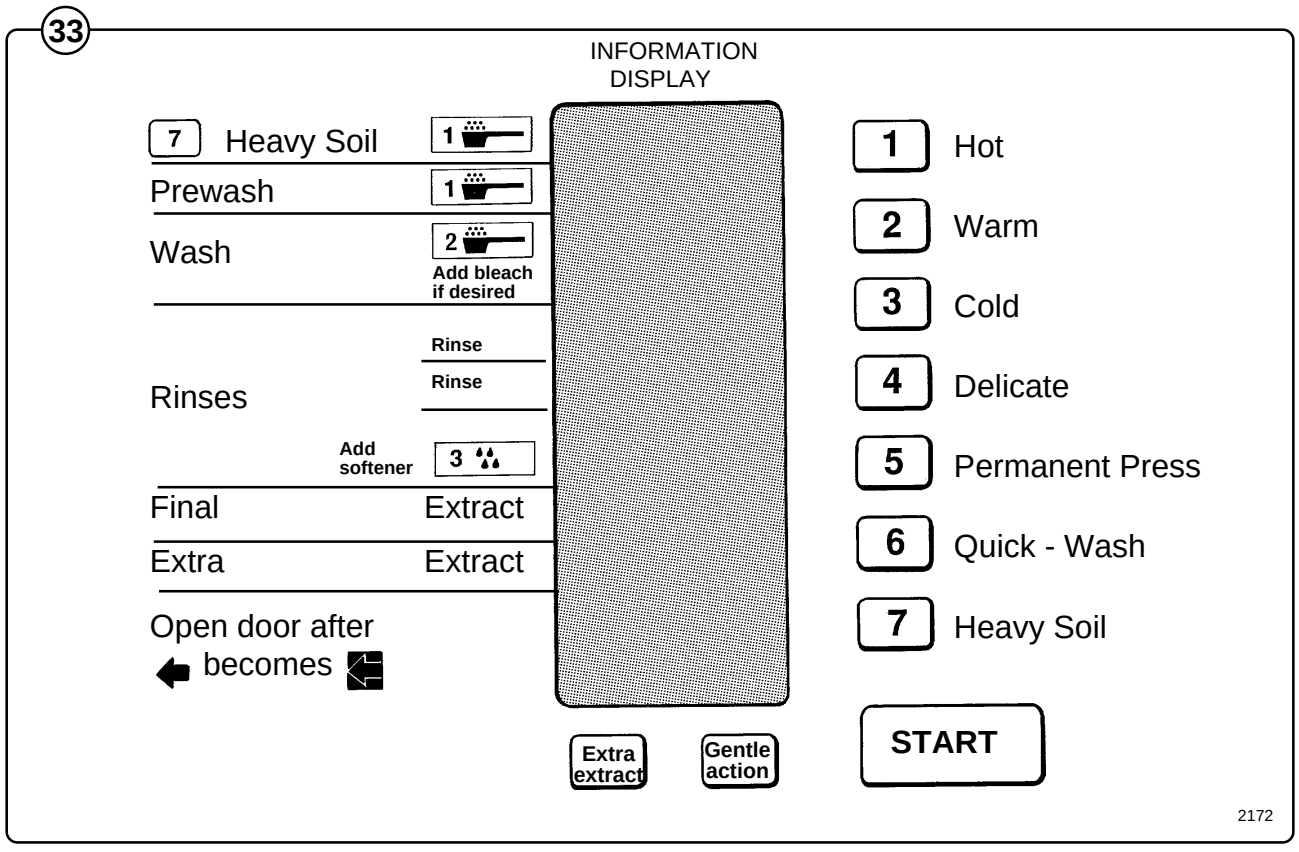
3265

Safety rules

- **All installation operations are to be carried out by qualified personnel. Licensed personnel are necessary for all electric power wiring.**
- **This machine is designed for water washing only.**
- **This machine must not be used by children.**
- **This machine must not be sprayed with water, otherwise short circuiting may occur.**
- **Fabric softener with volatile or inflammable fluids are not to be used in the machine.**
- **The interlock of the door must be checked daily for proper operation and must not be bypassed.**
- **All service personnel must be fully familiar with the operating manual before attempting any repair or maintenance of the machine.**
- **Any leakage in the system, due to faulty gaskets etc, must be repaired immediately.**

Fig. 33 The keypad consists of seven wash program buttons, two option buttons and a start button. An Information Display with illuminated symbols shows the selected wash cycle, cycle options, steps in the wash cycle which have been completed (indicated by squares around arrows), steps which remain (indicated by arrows), remaining wash time, and the number of quarters required to start the washer.

If a fault occurs then error numbers on the Information Display will refer you to the fault code list under Fault Finding in this manual.



Operating Instructions

Preparations

Sort the wash according to the choices shown on the control panel. Check washing tips on garment labels.

Make sure all pockets are empty and zips closed.

Load the washer and lock the door.

Washing

Fig. 34

- Push one wash cycle button.

  An arrow to the right of the control panel will light up to show selection. Left arrows will light to show the steps in the program.

Fig. 35

- Select Extra Extract and/or Gentle Wash if desired. Arrows will point to them.

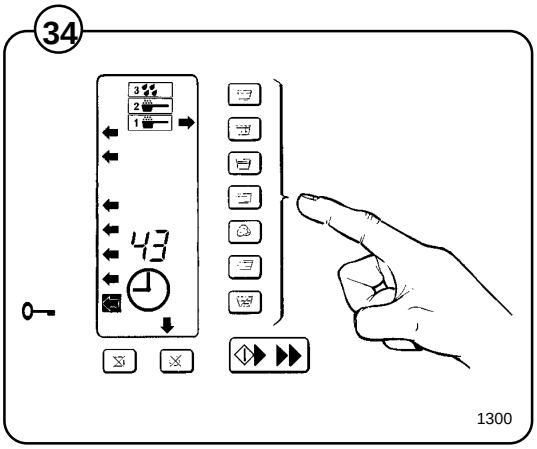
Fig. 36

- Three symbols in the Information Display show in which compartments to put detergent and softener.
  - Prewash detergent in compartment 1.
  - Mainwash detergent (and later bleach) in compartment 2.
  - Final rinse softener in compartment 3.

Fig. 37

- You do not need more than 3/4 cup detergent.

34



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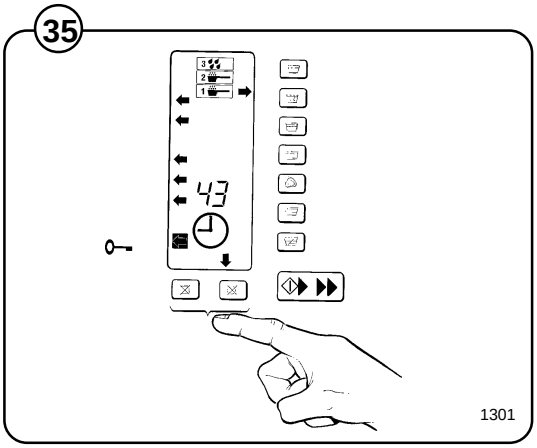

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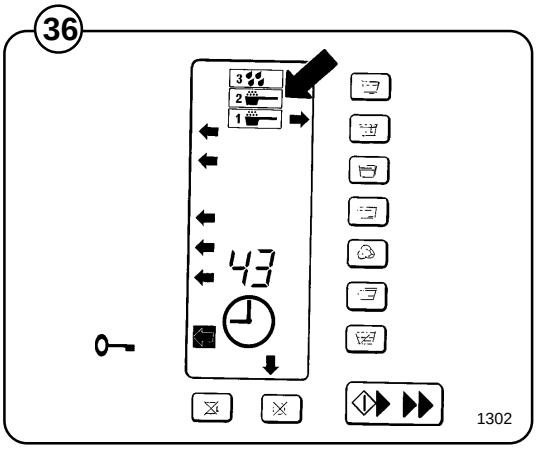

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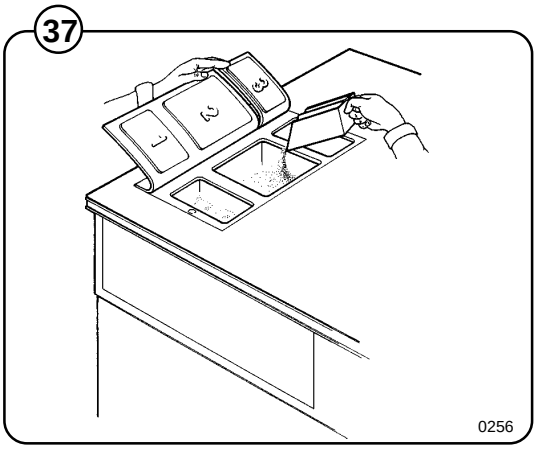
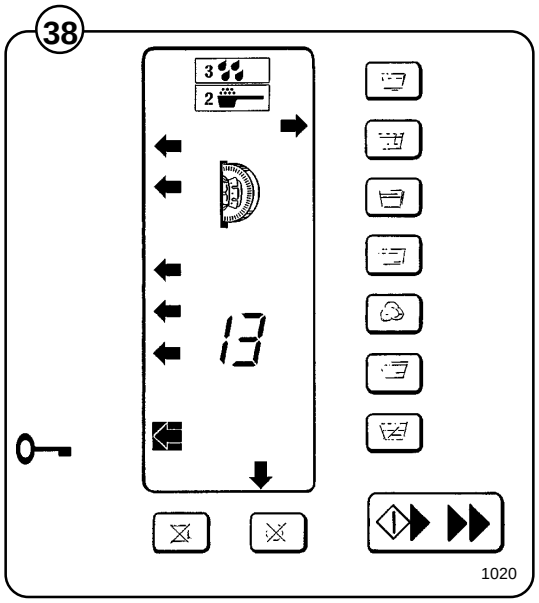
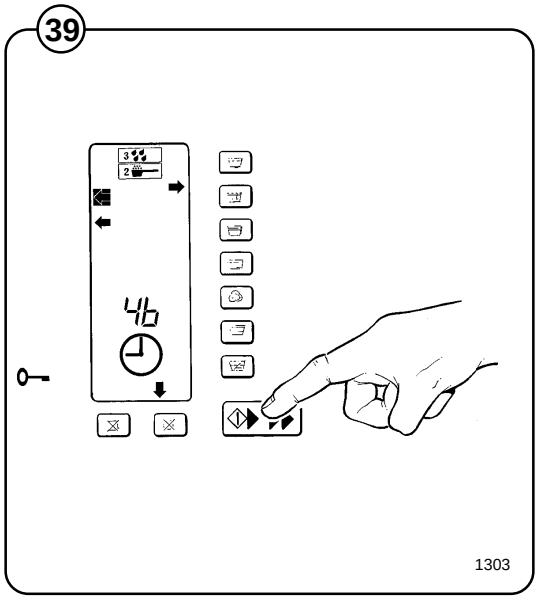


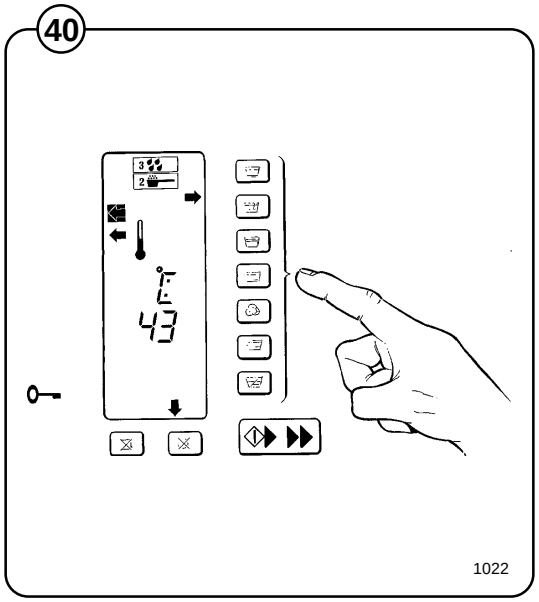
Fig. 38 Insert required number of quarters as shown on the display, which counts down quarters as they are inserted. Press START button when the display shows 00.

Fig. 39 A clock symbol will now appear and remaining wash time in minutes counts down. (The time for each cycle will not be displayed until the cycle has been run once completely from beginning to end, so the microprocessor knows how long it should take). The microprocessor retains in memory how long it took to run each cycle the last five times and displays the average time. Since water pressure may fluctuate affecting fill times, the displayed average cycle time is not always exact and may vary from machine to machine. If you find cycle times taking longer and longer, use that information as a warning that your water inlet screens may be clogged, extending fill times, or some other problem may exist.

Fig. 40 Figure 31 illustrates a temperature display function only available on washers with built-in heating, which are not used in North America.





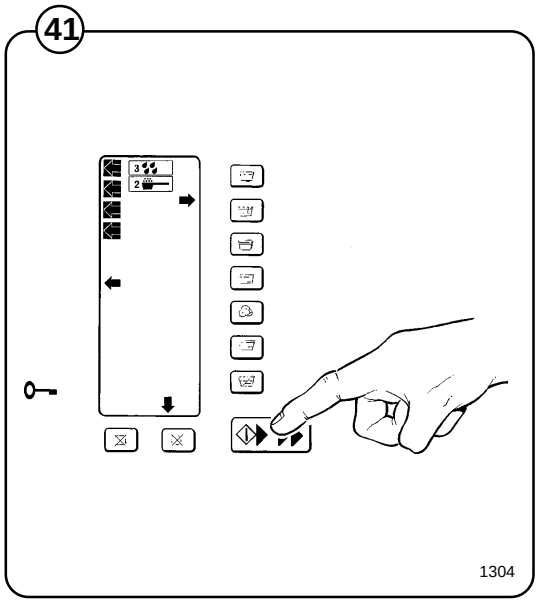


Rapid Advance

Within 5 minutes after starting (only while the colon : is flashing), steps of the wash cycle can be skipped by using Rapid Advance.

Fig. 41

- Press and hold down the START button until the arrows rapid advance. Stop pressing where you want the cycle to continue.
- If during the first five minutes of a cycle a customer realizes they put a wrong item of clothing in the washer (for example a brightly colored shirt mixed up with white sheets), you can rapid advance through the entire cycle, open the door and remove the item, then lock the door and press START again to continue the cycle from where you began rapid advance. No money is lost and no extra time is gained. The remaining time will not be displayed.

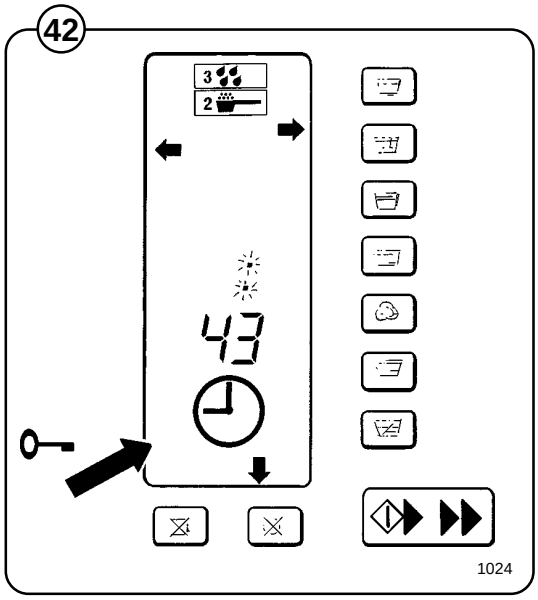


Changing Wash Programs While Washing

Fig. 42

If within 5 minutes after starting a cycle (only while the colon : is flashing) a customer realizes the wrong cycle has been selected, they can push the START button once briefly to put the washer on pause. They may then press a different wash cycle button and press START again to continue from the same step in the new cycle.

If the customer selects a different cycle or Extra Extract option that costs more money, the washer will not start again unless additional coins are inserted as shown on the Information Display. There is no way for a customer to pay for a less expensive program and switch to a more expensive program without paying for it, or to gain additional free wash time.



Note: Rapid Advance is only possible during the first five minutes of a cycle, while the colon : is flashing. However, if the START button is pressed after five minutes has elapsed it will put the wash cycle on pause, which means washing stops, the clock stops counting down remaining wash time, and an arrow flashes on the Information Display at which ever step the wash cycle was in when pause began. Press START again to resume washing. Be alert to any accidental pauses, which are unlikely but possible.

Wash Cycles

Fig. In the figure below is an overview of the seven wash cycles.

43 On the following pages you will find a more detailed description of the cycles.

43

	HOT		WARM		COLD		PERM PRESS	
	Time (Min.)	Temp.	Time (Min.)	Temp.	Time (Min.)	Temp.	Time (Min.)	Temp.
Prewash	3	Warm	3	Warm	3	Cold	3	Warm
Detergent 1								
Drain	0.8		0.8		0.8		0.8	
Mainwash	6	Hot	6	Warm	6	Cold	6	Warm
Detergent 2								
Drain	0.8		0.8		0.8		0.8	
Extraction	0.5		0.5		0.5		0.5	
Rinse 1	1	Warm	1	Cold	1	Cold	1	Cold
Drain	0.8		0.8		0.8		0.8	
Extraction	0.5		0.5		0.5		0.5	
Rinse 2	1	Cold	1	Cold	1	Cold	1	Cold
Drain	0.8		0.8		0.8		0.8	
Extraction	0.5		0.5		0.5		0.5	
Rinse 3	2	Cold	2	Cold	2	Cold	2	Cold
Detergent 3								
Drain	1		1		1		1	
Extraction	4		4		4		1	
Shake-out	0.5		0.5		0.5		0.5	
Total time (water fill time not included)	23		23		23		20	

1202

Wash Cycles

43

	DELICATE		QUICK-WASH		HEAVY SOIL	
	Time (Min.)	Temp.	Time (Min.)	Temp.	Time (Min.)	Temp.
Prewash					2	Cold
Drain					0.8	
Prewash					3	Warm
Detergent 1						
Drain					0.8	
Mainwash	4	Warm	5	Warm	8	Hot
Detergent 2						
Drain	0.8		0.8		0.8	
Extraction	0.5		0.5		0.5	
Rinse 1	1	Cold	1	Cold	1	Warm
Drain	0.8		0.8		0.8	
Extraction					0.5	
Rinse 2	1	Cold	1	Cold	1	Cold
Drain	0.8		0.8		0.8	
Extraction					0.5	
Rinse 3	2	Cold	2	Cold	2	Cold
Detergent 3						
Drain	1		1		1	
Extraction	1		3		4	
Shake-out	0.5		0.5		0.5	
Total time (water fill time not included)	13.3		16.3		27.6	

1202

Hot

Fig. 44

After the machine has started and the door automatically locked, the drain valve will close and the hot and cold water valves will open to fill the machine with mixed hot and cold water to the level determined by the level control. At the same time detergent from compartment 1 is mixed with the incoming water.

When this level is reached, both water valves will close. During filling and then through the wash program the drum has a reversing rotation.

At the end of the prewash, the drain valve will open, whereafter hot water will fill to the level determined by the level control. At the same time detergent from compartment 2 is mixed with the incoming hot water.

The water level controlled machine will now wash the fabrics for 6 minutes. The machine is then emptied.

Hot and cold water are filled to the medium level for the first rinse which lasts one minute, followed by spin extraction for 30 seconds. After the extraction comes the second rinse in cold water, ending with extraction, whereafter the third rinse is started. Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed in cold water for two minutes followed by a extraction of four minutes duration. Finally there is a shake out for half a minute.

44

	HOT	
	Time (Min.)	Temp.
Prewash	3	Warm
Detergent 1		
Drain	0.8	
Mainwash	6	Hot
Detergent 2		
Drain	0.8	
Extraction	0.5	
Rinse 1	1	Warm
Drain	0.8	
Extraction	0.5	
Rinse 2	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 3	2	Cold
Detergent 3		
Drain	1	
Extraction	4	
Shake-out	0.5	
Total time (water fill time not included)	23	

1203

Warm

Fig. 45

On starting the machine, the door will automatically be locked, and the pre-wash carried out as previously described, whereafter the main wash is started.

As the main wash is started, the drain valve closes, detergent is admitted and mixed hot and cold water is filled to the level determined by the level control.

On reaching this level, the water valves are closed.

The water level controlled machine will now wash the fabrics for six minutes. The machine is then emptied.

Cold water is filled for the first rinse which lasts one minute, followed by extraction for 30 seconds.

After this extraction comes the second rinse in cold water ending with extraction, whereafter the third rinse is started. Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed with cold water for two minutes followed by a extraction of four minutes duration. Finally there is a shake out for half a minute.

45

	WARM	
	Time (Min.)	Temp.
Prewash	3	Warm
Detergent 1		
Drain	0.8	
Mainwash	6	Warm
Detergent 2		
Drain	0.8	
Extraction	0.5	
Rinse 1	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 2	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 3	2	Cold
Detergent 3		
Drain	1	
Extraction	4	
Shake-out	0.5	
Total time (water fill time not included)	23	

1204

Cold

Fig. 46

On starting the machine, the door will automatically be locked, the drain valve closed, the cold water valve opened and the pre-wash carried out as previously described, whereafter the main wash is started.

As the main wash is started, the drain valve closes, detergent is admitted and cold water is filled to the level determined by the level control.

On reaching this level, cold water is closed.

The water level controlled machine will now wash the fabrics for six minutes. The machine is then emptied.

Cold water is filled for the first rinse which lasts one minute, followed by extraction for 30 seconds.

After this extraction comes the second rinse in cold water concluded with extraction, whereafter the third rinse is started.

Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed with cold water for two minutes followed by a extraction of four minutes duration. Finally there is a shake out for half a minute.

46

	COLD	
	Time (Min.)	Temp.
Prewash	3	Cold
Detergent 1		
Drain	0.8	
Mainwash	6	Cold
Detergent 2		
Drain	0.8	
Extraction	0.5	
Rinse 1	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 2	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 3	2	Cold
Detergent 3		
Drain	1	
Extraction	4	
Shake-out	0.5	
Total time (water fill time not included)	23	

1205

Permanent Press

Fig. 47

On starting the machine, the door will automatically be locked, the drain valve closed, the hot and cold water valves opened and the pre-wash will be carried out as previously described, whereafter the main wash is started.

As the main wash is started, the drain valve closes, detergent is admitted and mixed hot and cold water is filled to the level determined by the level control.

On reaching this level, the water valves are closed and the wash motor starts its reversing rotation.

The water level controlled machine will now wash the fabrics for six minutes. The machine is then emptied.

Cold water is filled for the first rinse which lasts one minute, followed by extraction for 30 seconds.

Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed with cold water for two minutes followed by a extraction of one minute duration. Finally there is a shake out for half a minute.

47

	PERM PRESS	
	Time (Min.)	Temp.
Prewash	3	Warm
Detergent 1		
Drain	0.8	
Mainwash	6	Warm
Detergent 2		
Drain	0.8	
Extraction	0.5	
Rinse 1	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 2	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 3	2	Cold
Detergent 3		
Drain	1	
Extraction	1	
Shake-out	0.5	
Total time (water fill time not included)	20	

1206

Delicate

Fig. 48 On starting the machine, the door will automatically be locked.

As the main wash is started, the drain valve closes, detergent is admitted and mixed hot and cold water is filled to the level determined by the level control.

On reaching this level, the water valves are closed.

The water level controlled machine will now wash the fabrics for four minutes. The machine is then emptied.

Cold water is filled for the first rinse which lasts one minute.

Than comes the second rinse in cold water whereafter the third rinse is started. Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed with cold water for two minutes followed by a extraction of one minute duration. Finally there is a shake out for half a minute.

During washing and rinsing gentle action is used, which is 3 seconds drum rotation and 12 seconds pause, then reverse direction and repeat. The GENTLE WASH option button does not affect the Delicate cycle.

48

	DELICATE	
	Time (Min.)	Temp.
Prewash		
Drain		
Prewash		
Detergent 1		
Drain		
Mainwash	4	Warm
Detergent 2		
Drain	0.8	
Extraction	0.5	
Rinse 1	1	Cold
Drain	0.8	
Extraction		
Rinse 2	1	Cold
Drain	0.8	
Extraction		
Rinse 3	2	Cold
Detergent 3		
Drain	1	
Extraction	1	
Shake-out	0.5	
Total time (water fill time not included)	13.3	

Quick-Wash

Fig. 49

On starting the machine, the door will automatically be locked, the drain valve closed.

As the main wash is started, the drain valve closes, detergent is admitted and warm water is filled to the level determined by the level control.

On reaching this level, hot water is closed.

The water level controlled machine will now wash the fabrics for five minutes. The machine is then emptied.

Cold water is filled for the first rinse which lasts one minute.

Then comes the second rinse in cold water, whereafter the third rinse is started.

Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed with cold water for two minutes followed by a extraction of three minutes duration. Finally there is a shake out for half a minute.

49

	QUICK-WASH	
	Time (Min.)	Temp.
Prewash Drain		
Prewash Detergent 1 Drain		
Mainwash Detergent 2 Drain Extraction	5 0.8 0.5	Warm
Rinse 1 Drain Extraction	1 0.8	Cold
Rinse 2 Drain Extraction	1 0.8	Cold
Rinse 3 Detergent 3 Drain Extraction	2 1 3	Cold
Shake-out	0.5	
Total time (water fill time not included)	16.3	

Heavy Soil

Fig. 50

On starting the machine, the door will automatically be locked, the drain valve closed, the hot and cold water valves opened and the two pre-washes will be carried out as previously described, whereafter the main wash is started.

As the main wash is started, the drain valve closes, detergent is admitted and hot is filled to the level determined by the level control.

On reaching this level, the water valve is closed and the wash motor starts its reversing rotation.

The water level controlled machine will now wash the fabrics for eight minutes. The machine is then emptied.

Hot and cold water are filled for the first rinse which lasts one minute, followed by extraction for 30 seconds.

Fabric softener is automatically admitted during the third rinse. The fabrics are rinsed with cold water for two minutes followed by a extraction of four minutes duration. Finally there is a shake out for half a minute.

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	HEAVY SOIL	
	Time (Min.)	Temp.
Prewash	2	Cold
Drain	0.8	
Prewash	3	Warm
Detergent 1		
Drain	0.8	
Mainwash	8	Hot
Detergent 2		
Drain	0.8	
Extraction	0.5	
Rinse 1	1	Warm
Drain	0.8	
Extraction	0.5	
Rinse 2	1	Cold
Drain	0.8	
Extraction	0.5	
Rinse 3	2	Cold
Detergent 3		
Drain	1	
Extraction	4	
Shake-out	0.5	
Total time (water fill time not included)	27.6	

OPTION BUTTONS:

EXTRA EXTRACT -- Selecting this option adds 4 minutes to the final extraction of any cycle. For example, the HOT cycle plus EXTRA EXTRACT gives the customer a total of 8 minutes extraction. You can easily program the washer to charge more money (usually one more quarter) if this option is selected! The effect of extra extraction depends on the type of laundry washed, load size, etc.

GENTLE WASH -- The normal wash action of a Wascomat washer is 12 seconds rotation, 3 seconds pause, reverse direction and repeat. Selecting the GENTLE WASH option converts the selected wash cycle to gentle action, which is 3 seconds drum rotation and 12 seconds pause, reverse direction and repeat. The DELICATE cycle always uses gentle action so it is not affected by this option. There is no extra charge to the customer for this option, so it is simply up to them to choose their preference. You may want to advertise and promote this option since market research indicates there are people who believe certain clothing items are too delicate to wash in a commercial washer. Now you have the answer!

General

The door and the electronic timer with display and program-selection buttons are fitted at the front of the machine.

All control and indicating components, i.e. relays, level control, etc are assembled under the top cover, easily accessible from the top of the machine for simplified servicing.

Main units

Fig. (51)

1 Keypad.

2 Wash cycle buttons.

3 Electronic microprocessor with display .

4 Door - with automatic locking device which remains locked throughout the different wash processes.

5 Inner cylinder - of stainless steel supported at the rear by two ballraces.

6 Outer drum - of stainless steel (18/8) securely attached to the frame.

7 Wash and extraction motor - for reversing wash action and high speed spin action.

8 Hot and cold water valves - program and level controlled solenoid valves for filling with water, and for flushdown of automatic detergent dispenser.

9 Drain valve - the timer controlled valve for draining the machine of water.

10 Siphon breaker - to prevent water in the machine from re-entering the water supply system.

11 Relays - for wash and extraction.

Main units

Fig. 51

- Start button – to start the machine.
- Program selector – push buttons for choice of different wash programs.
- Arrow indicators – for visual information regarding the different program items.
- Door – with automatic locking device which remains locked throughout the different wash processes.
- Inner cylinder – of stainless steel supported at the rear by two ballraces.
- Outer drum – of stainless steel (18/8) securely attached to the frame.
- Wash- and extract motor – for reversing wash action, distribution and high speed spin action.
- Hot and cold valves – program and level controlled solenoid valves for filling with water, and for flushdown of automatic detergent dispenser.

51

1	Cold water	6	Relays
2	Hot water	7	Push buttons for program selection
3	Water level switch	8	Display
4	Delay unit	9	Wash/extract motor(s)
5	Transformer	10	Drain valve

Panels

The machines are equipped with a top panel made of stainless steel. The front panel is available in different colours or in stainless steel. The coloured panels are made of phosphatized steel plate. For servicing purposes, the panels can easily be removed.

Back gable and bearing

Fig. 52 The back gable and the bearing trunnion housing are constructed of a webbed heavy casting for extra rigidity. The bearings are protected against imfiltration of water by three neoprene seals. An intermediate safety outlet provides an escape for any possible condensation.

The seals are mounted on a stainless steel sleeve bushing that is mounted on the drive shaft to prevent wear of the seals and shaft. The main bearing is fitted machinetight into the bearing trunnion housing. A nut is tightened on the shaft to prevent the cylinder from moving in and out.

The extension of the bearing trunnion housing supports the rear bearing holding the shaft. A grease seal is mounted to prevent escape of grease. The bearings are permanently lubricated and need no maintenance. Wascomat's design transfers the weight of the loaded wash cylinder to the largest possible surface area away from the bearings, for longest machine life.

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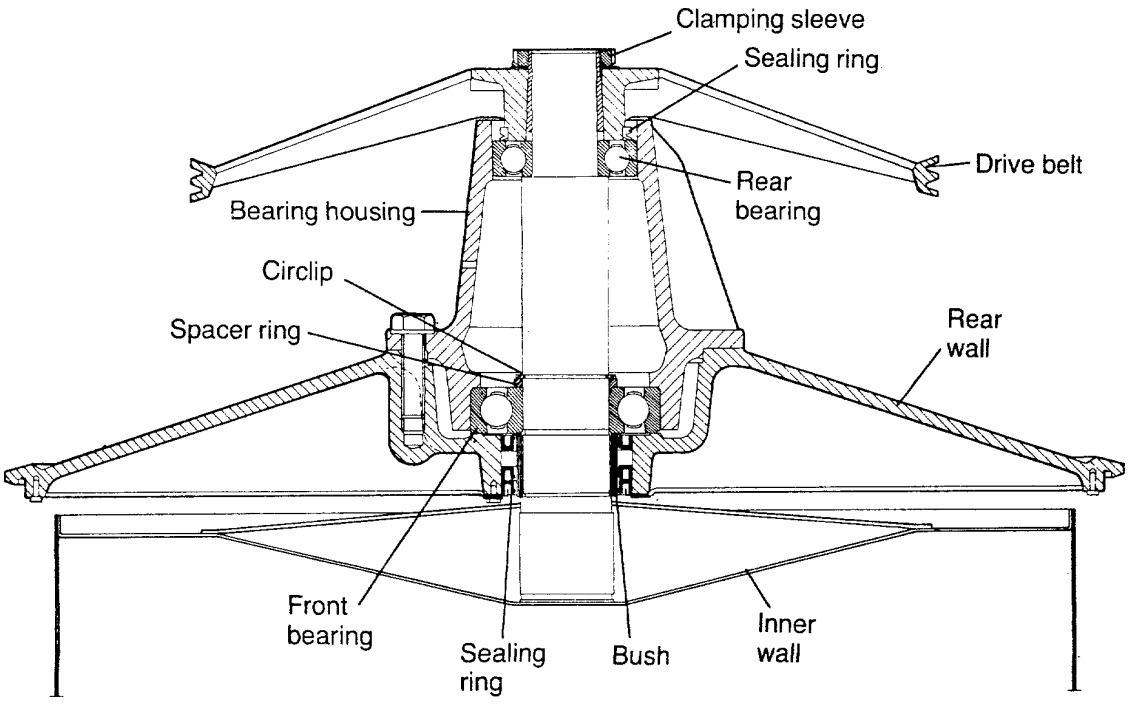

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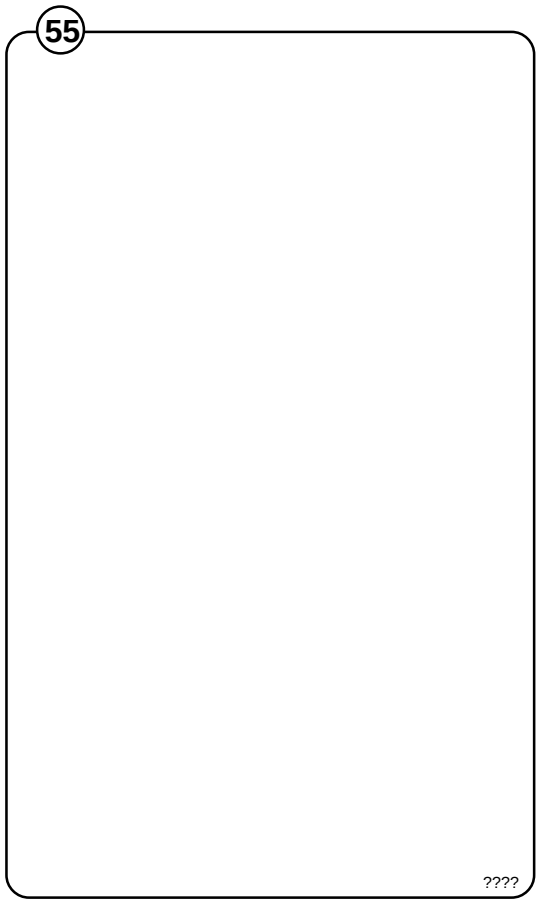
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Control unit

Fig. 56

Figures within parenthesis refer to the exploded view.

Components such as relays (1) level control (2), transformer (3) and delay unit (4) are located at the top of the machine, easily accessible for service after removing the top panel.

The control unit is mounted with four screws. Electrical connections to the machine are made by quick-disconnect plugs.

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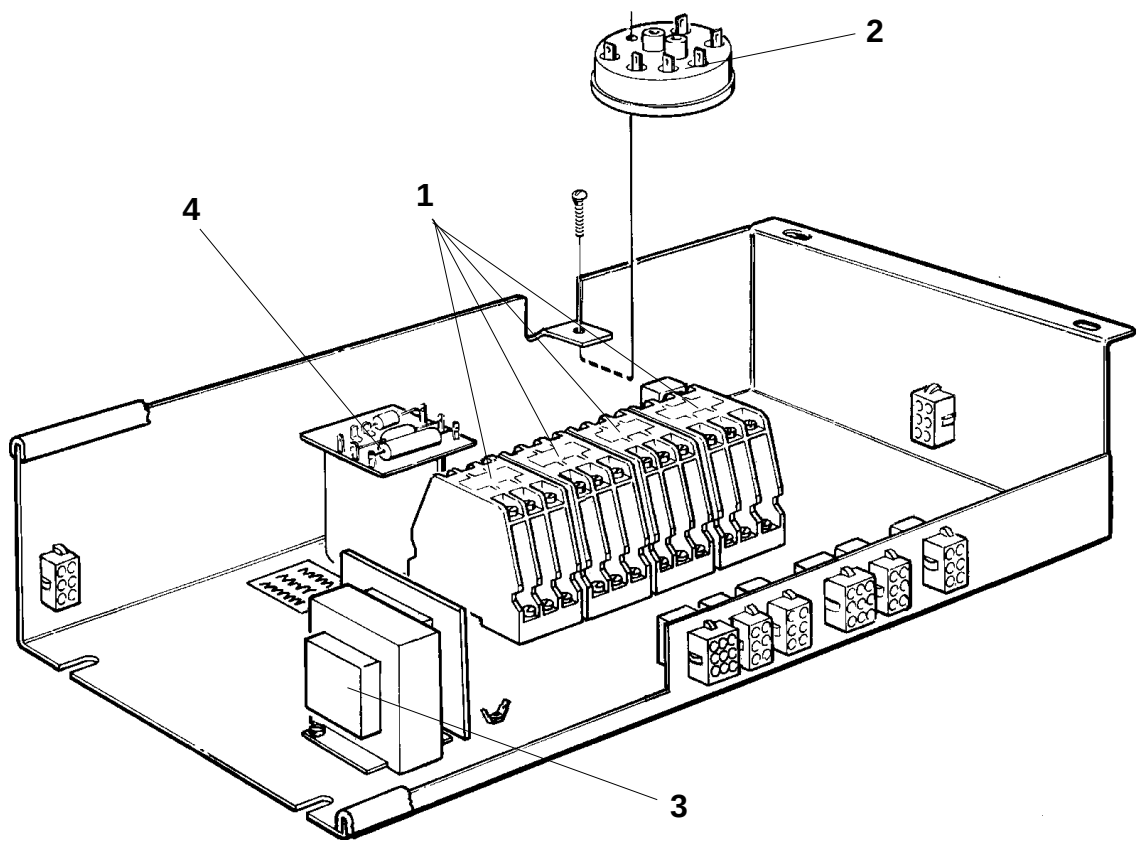

Relays

Fig. (57) The Wascomat Emerald model employ four relays. The relays control:

- the reversing wash of the wash motor (1)
- the distribution (2)
- the extraction motor (3)

Construction

Fig. (58) The body of the relay holding the stationary contacts is made of current-resistant plastic. A solenoid and a contact bank hold the moving contacts. The contacts are spring-loaded to assure the correct contact pressure.

The relay is constructed for continous operation, whether mounted horizontally or vertically.

Screw-type terminals provide perfect connections even when one or two wires have different diameters.

Operation

When the solenoid is energized, the two halves of the magnet core are drawn together, pulling down the moving contacts, thus making or breaking the circuit. When the current cuts out, springs force the contact bank into its original position, thus closing or opening the circuits.

Trouble shooting

If the relay fails to operate despite power to the coil, turn off the power and check the solenoid by measuring the resistance across the terminals (1).

If the relay hums when power is applied, this indicates either a break in the insulator holding the moving contacts at the axle where it holds the top half of core (3) or a rusty core (4), which can be cleaned.

Make sure that the moving contact assembly moves freely. Always replace burnt or pitted contacts (2) ... do not reuse contacts.

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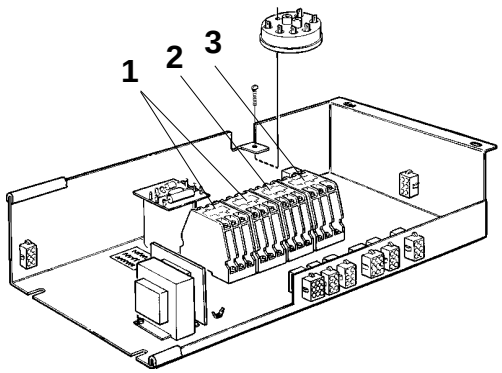

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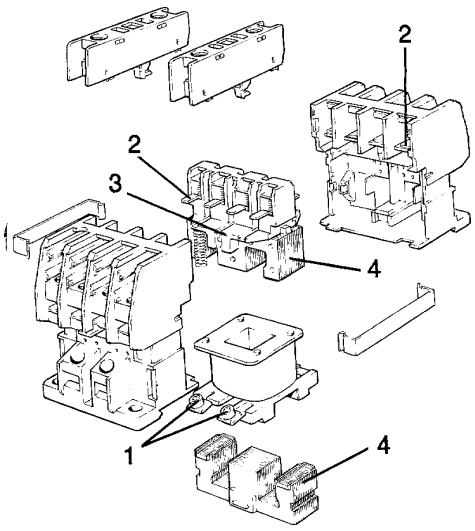

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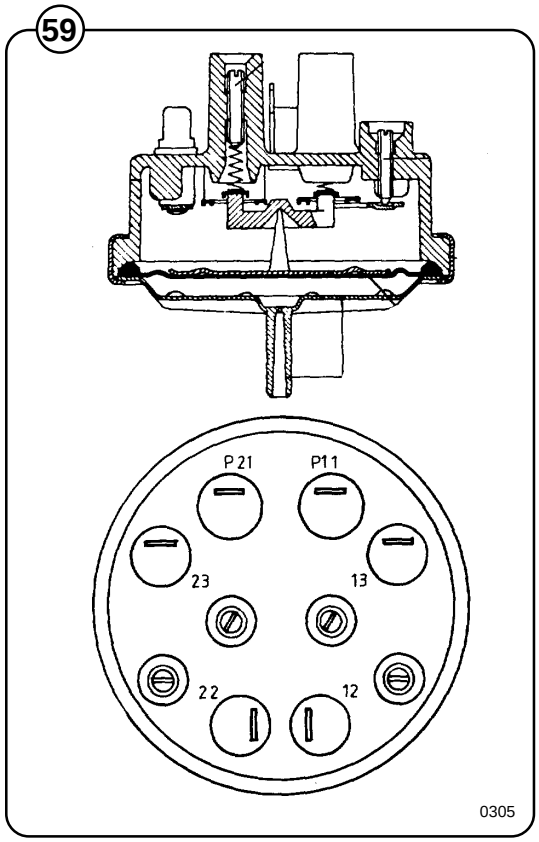
Water level controls

Fig. (59) One double-level pressure switch is used to control the correct water levels during various cycles of the washing program.



Adjustment

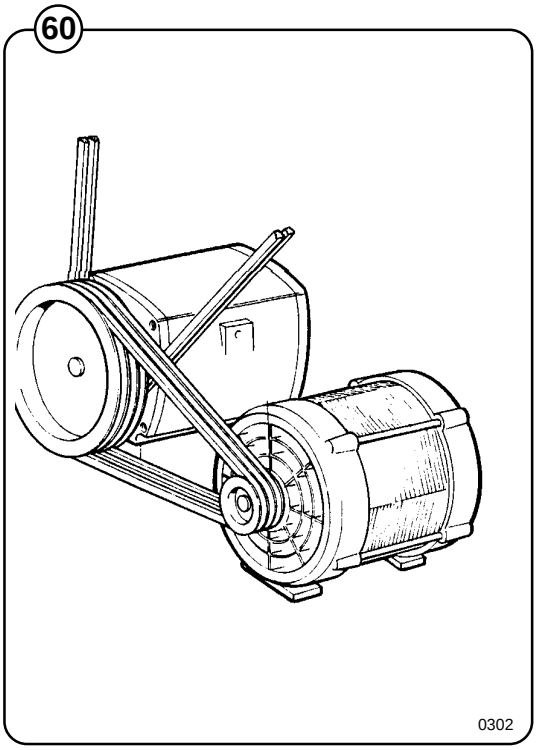
All pressure switches are factory-calibrated to meet specific requirements. The trip level for any one pressure switch can be changed only within narrow limits because each trip range requires a different set of springs.

Water level

As a guide for checking the level control for proper functioning, the low level should be at the bottom of the door glass; and the high level approximately three inches above it.

Drive motor description

Fig. (60) The three-speed operation of the wash cylinder is achieved by two motors. One 2-speed motor for wash speed (12-pole drive) and distribution speed (8-pole drive) and one single speed motor for extraction speed (4-pole drive). The motors are mounted on a motor bracket, the extract motor fixed the bracket, the wash and distribution motor in slots which allow adjusting the distance between the two motors for proper belt tension by adjusting screws. For silent operation the motor bracket is mounted to the base of the machine by rubber bushings. Correct tension to the main belt, between the cylinder and the extract motor, is obtained by the weight of the motors and the motor bracket and by the spring loaded set screws.



Construction of three-phase motors

The motor consists of stator, rotor and end-shields with ball-bearings. The stator and the rotor consists of plates, insulated from each other and welded together. The stator is provided with slots in which the 2-pole and 18-pole windings are wound. The windings are impregnated with a temperature-resistant sound-insulating resin varnish according to class B. The end-shields are die-cast. The ball bearings are permanently lubricated.

Function of motors

When the stator winding is charged, a magnetic field will occur, which in turn will rotate the motor at a fixed RPM depending upon the number of poles in the winding. The 12-pole winding gives the wash speed and the 8-pole winding in the same motor gives the distribution speed. The separate 4-pole motor gives the extraction speed. When operating with load, the speed deviates slightly from the synchronous (no-load) speed. This difference is called the slip and usually expressed as a percentage of the synchronous speed. The motors will work satisfactory at nominal voltage +10%-15%.

Motor connections

Fig. (61) The diagram in fig. 62 illustrates motor connections to the connector plug:

Wash/distribution motor:

1, 2 and 3: wash speed (12-pole winding).

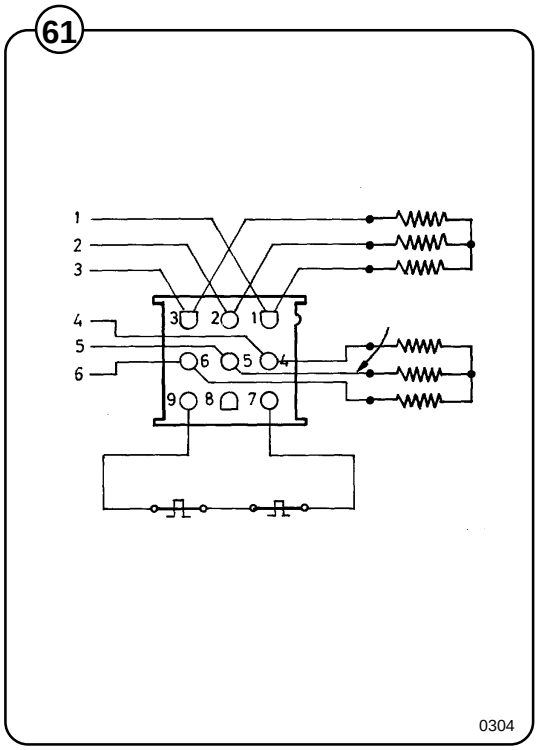
4,5 and 6: distribution speed (8-pole winding).

7 and 9: motor overload protector.

Extract motor:

1, 2 and 3: extract speed (4-pole winding).

7 and 9: motor overload protector.



Motor overload protector

The motor is equipped with two self-resetting, thermal overload protectors, situated one in the each winding of the stator. The protectors are connected in series and will trip at a temperature of 120°C (248°F) (3-phase) or 130°C (266°F) (single-phase). If the event the protectors fail but the motor remains otherwise undamaged, an overload protector may be mounted in the control unit of the machine. Before making such installation check to ascertain that the windings are not damaged. A burned out motor can be rewound.

Before connecting a separate overload protector consult the local code.

Single-phase machines are also equipped with a manually set overload protector mounted on the extract relay in the control unit. This overload protector protects the motor during the start-up of the extraction.

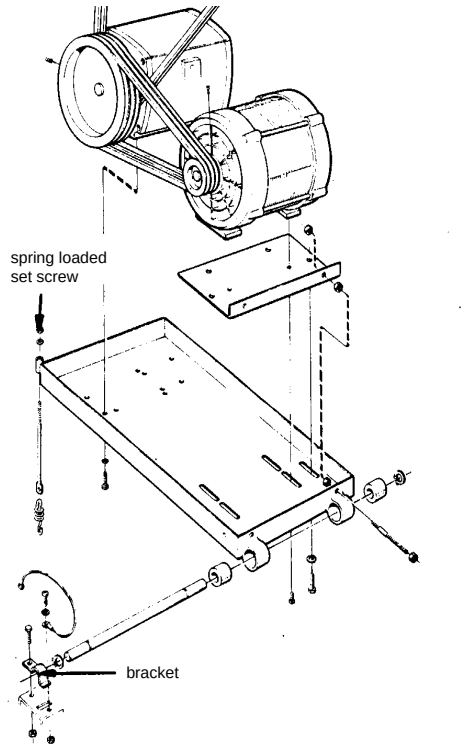
How to remove motors

Fig. (62) Loosen the spring loads set screw. Lift the motor unit and detach the V-belts. Dismount the bracket holding the motor hinge shaft. Lift out the motor bracket with motors mounted. Loosen the mounting screws of the wash/distribution motor and the set screws. Lift off the V-belts. Now remove the mounting screws for each motor and the guide pins for the wash/distribution motor.

How to mount motors

Place the motors on the table or bench with the mounting holes upwards. Mount the guide pins on the wash/distribution motor. Then mount the mounting bracket to the extract motor. Position the other motor and fasting the mounting screws. Mount the V-belts. Tighten the belts. Mount the bracket with motors in the machine in the opposite way as outlined above in ''How to remove motors''.

62



Inlet valve, detergent

Construction

Fig. 63 The valve has a single-inlet with either one, two or three outlets, each with its own solenoid coil. The body is made of heat-resistant polyamid plastic and the solenoids encased in water-tight plastic.

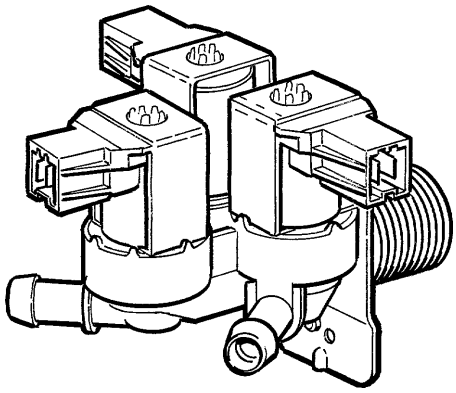
A filter screen on the inlet side prevents dirt from entering the valve. Flow restrictors can be placed at either the inlet or any of the outlets.

Operation

Fig. 64 When the solenoid is energized, the spring-loaded plunger is drawn up and the pilot valve in the center of the diaphragm open. Because of the difference in diameter between the pilot valve opening and the ventilating hole in the diaphragm, the pressure above the diaphragm drops to a point where the admission pressure below the diaphragm can lift the diaphragm, thus opening the valve.

When the current to the solenoid is cut off, the plunger spring will press the plunger against the pilot opening of the diaphragm. The pressure above the diaphragm then rises to correspond to the water inlet pressure and the pressure of the spring will close the valve.

63



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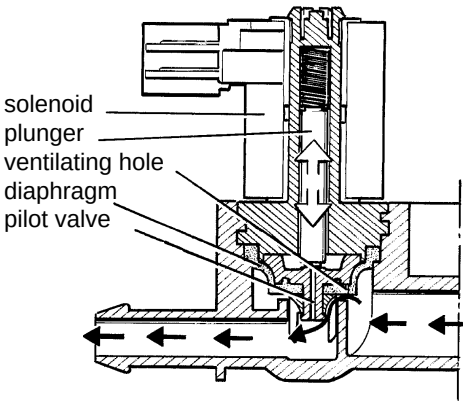

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Maintenance instructions

Lime scale can block the hole in the valve diaphragm and interfere with the function of the valve.

Fig. (65) It is therefore advisable to disassemble and clean the valve at certain regular intervals. The frequency depends on operating conditions and the level of contamination in the water.

Trouble shooting

If the valve does not open

- Check that power is supplied to the coil.
- Check the coil with an instrument to determine whether there is a break or a short circuit.
- Disassemble the valve (see below) and check the openings in the valve diaphragm.
- Check the inlet strainer and clean as required.
- Undo the coil and clean the surfaces of the magnetic core.

If the valve does not close

- Check that the coil is not live. The valve is normally closed when the magnet is not energised.
- Check the return spring.
- Check the diaphragm (pilot pressure opening).

Disassembling the valve

Fig. (66)
- Pull the coil straight upwards. Use a screwdriver if necessary to carefully undo the coil.

Fig. (67)
- Use the tool supplied with the machine (attached to one of the hoses when the machine is delivered) to open the valve housing. Slide the tool over the protruding plastic sleeve to that the pegs on the tool engage the corresponding sockets in the valve housing.
- Use a wrench or a pair of pliers and unscrew the upper part of the valve housing.

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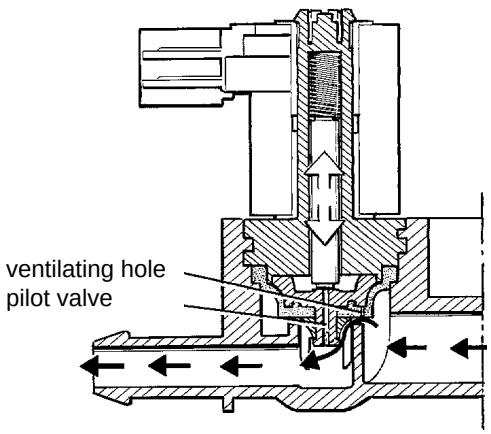

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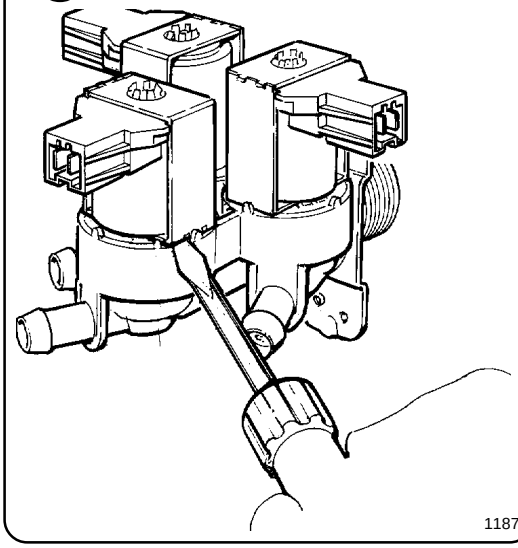

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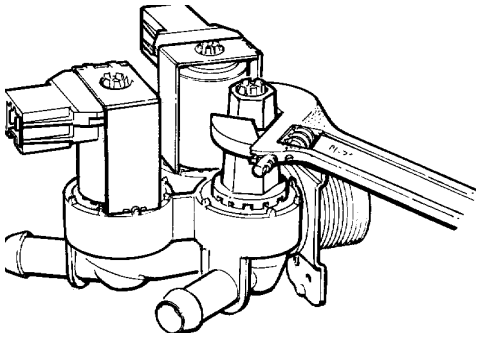

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Inlet valve for W245

Fig. 68 The water inlets have brass bodies with larger cross section of the outlet in order to achieve a shorter filling time for the machine.

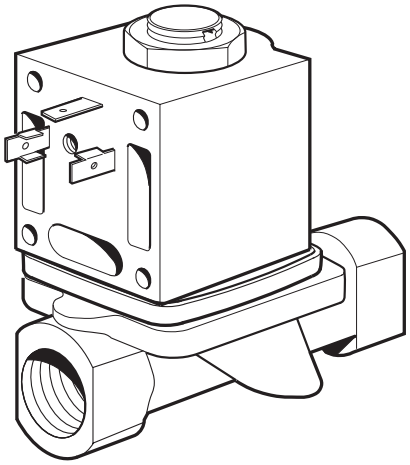
Construction

Fig. 69 The valve housing is made of pressed brass. The spring-loaded plunger is made of stainless steel and located at its lower end.

Operation

The valve is automatically operated by means of a rubber diaphragm and a pilot valve in exactly the same way as the supply injector valve.
NOTE: To strip, clean, re-assemble and troubleshoot the inlet valve, follow the instructions outlined for the supply injector valve.

68



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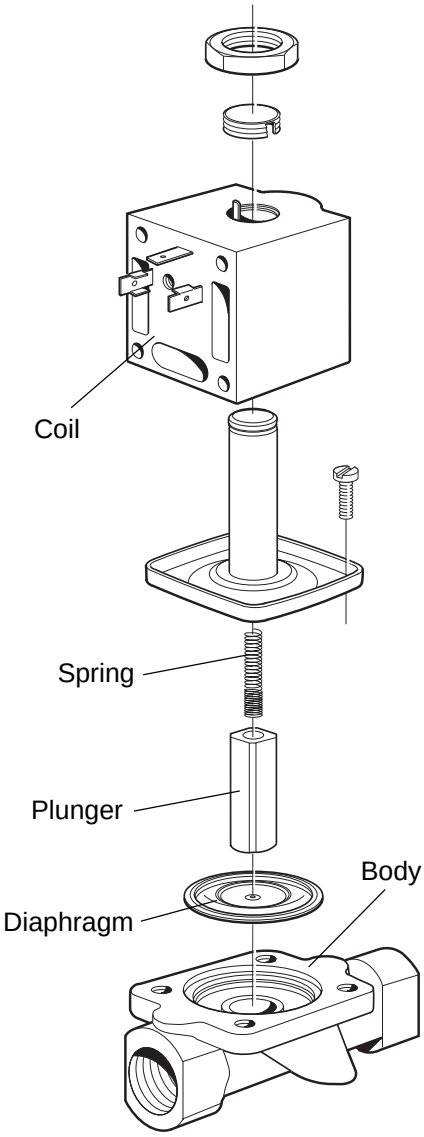

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Soap supply box

Fig. 70 The three-compartment soap supply box is located at the top of the machine. Viewed from the front, the compartments marked with figures 1, 2 and 3 are used as follows:

Compartment 1

This compartment is used for adding detergent at the beginning of the Prewash cycle. Powders may be loaded immediately; for liquids, wait until the display shows an arrow and the compartment flushes with water.

Compartment 2

This compartment is used for adding detergent at the beginning of the Wash cycle. If bleach is used, it is added to this compartment when the display arrow appears.

The insert is used to help prevent oversudsing.

Compartment 3

This compartment is used for liquid fabric softener, which is siphoned into the drum at the start of the third rinse. Liquid softener may be added at the beginning of the cycle or during the final rinse when the arrow appears.

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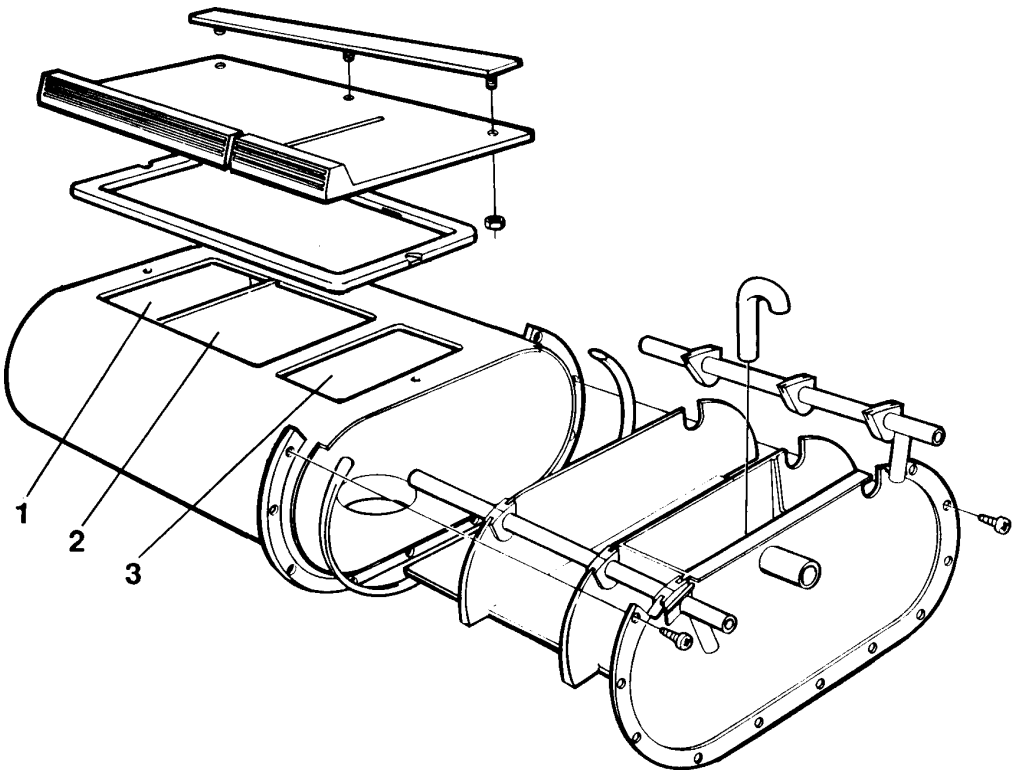

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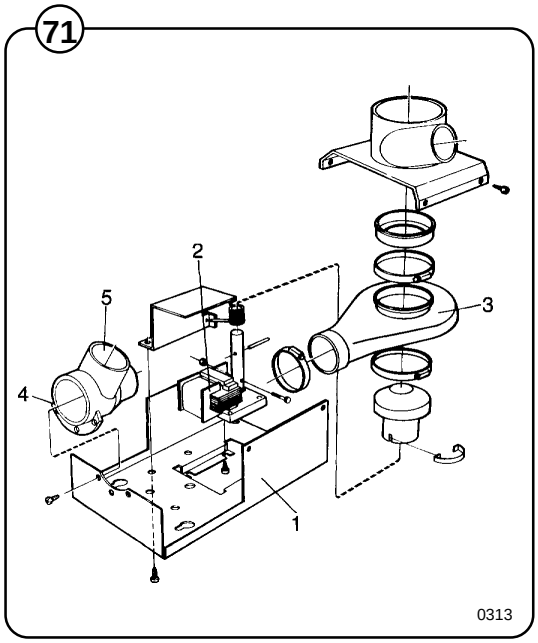
Drain valve



Description

Fig. 71 The drain valve consists of a bracket (1), on which are mounted the motor and gear (2) and diaphragm (3). The rubber diaphragm is resistant to a water temperature up to 100°C (212°F). The installation of a lint trap is not necessary. The machine is equipped with an overflow, which bypasses the drain valve. The drain can be cleaned by removing the drain connection (4) outside of the machine or by removing the rubber diaphragm (3). The motor and gear assembly is covered by a plate and provided with quick-disconnect electrical connections. The stator coil is constructed for continuous operation.

Operation

The drain valve is normally open, i.e. the motor does not close the valve until it receives current via a contact of the timer. As soon as the current is cut, the shaft turns and opens the diaphragm of the valve. This also permits the machine to drain, in the event of power failure. The overflow hose (5) leads excess water or suds directly to the waste line, in the event of failure in the inlet valves or level control.

Trouble-shooting

If the valve does not open or close properly:

1. Check that the shaft is moving freely.
2. Check that the diaphragm is not obstructed.
3. Check the coil for continuity.

Clean out

Periodic cleaning of the valve is recommended, depending upon how often the machines are used, as well as the type of wash handled most frequently.

Maintenance

Preventive maintenance has been reduced to a minimum by the careful design of reliable components and material.

However, the following measures should be taken at regular intervals and in proportion to the hours of service.

IMPORTANT!
Make certain that all electrical power to the machine is shut off before removing top or rear panels.

Daily

- Check the door lock and interlock before starting operations.
- The soap supply box should be cleaned at the end of each working day as follows:
  - Use a spatula to scrape loose any detergent which may have stuck on the inside of the dispenser.
  - Flush th loosened detergent with warm water.
  - Wipe dry and leave lid open.

Fig. 72

- Check that the drain valve does not leak and that it opens properly.
- Check that the door does not leak. Clean residual detergent and foreign matter from the door gasket.
- Wipe the outside of the machine.
- When the machine is not in use, leave door slightly open to allow moisture to evaporate.

Weekly

Fig. 73

- Remove hose from drain connection and clean inside drain valve.

Every three months

- Remove the cover plates of the machine and check that the V-belt of the wash motor is undamaged and correctly tensioned.
- Check that all tubing, piping and connections are free from leaks.
- Wipe and clean the inside of the machine, making sure that the control components are protected from moisture and dirt during the cleaning operation.

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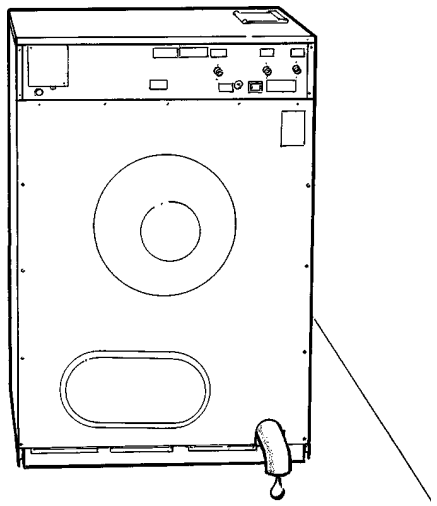

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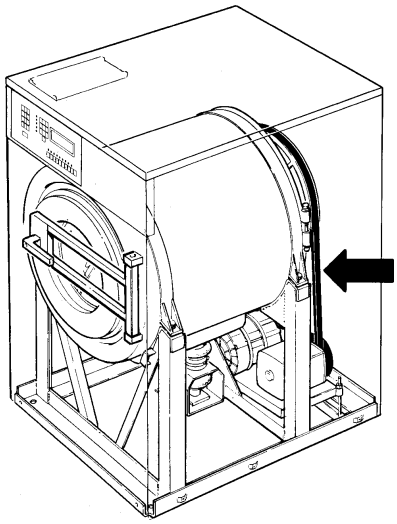

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If the machine does not start

Fig. 74

A Check the circuit breaker in the power feed line to the machine.

B Check the door safety switches.

C Check the glass cartridge fuse.

D Check electrical auxiliary contact on extract relay.

E Check for fault indication on display (see under the heading "Service information").

If water does not drain

Fig. 75

A Check the drain valve and drain solenoid for proper operation.

B Disconnect the drain hose connected to the drain line. If a full flow of water comes out, the problem is in the main waste line. If water flow is slow, the problem is the accumulation of foreign materials between the drain valve and shell outlet of machine. Clean the valve body of any foreign objects found.

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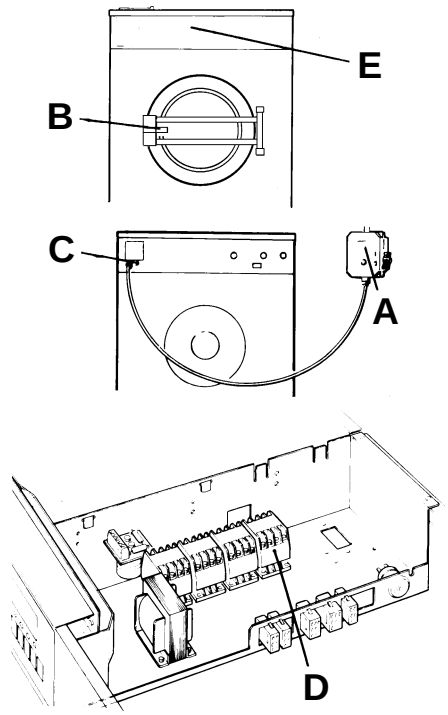

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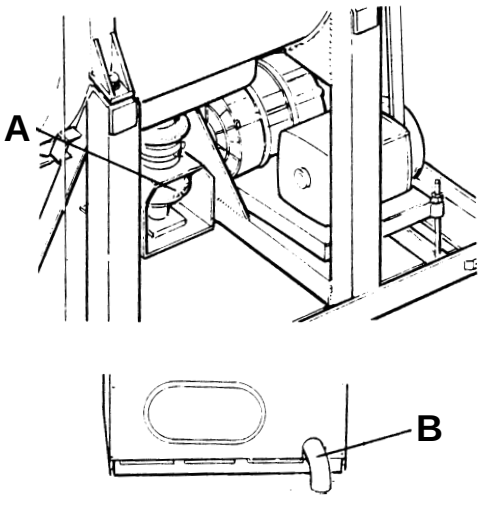

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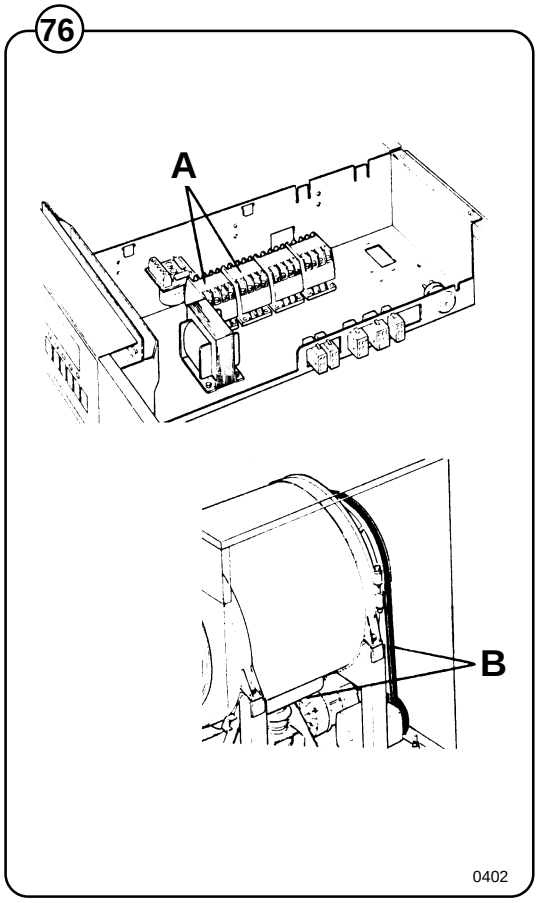
If the motor does not operate at wash speed

Fig. 76

A Check wash relays.

B Check motors and V-belts.



If the machine runs slowly on wash speed or there is a slapping or thumping noise.

Fig. 77 A Replace V-belts

If a metallic noise can be heard at rear of machine

Fig. 78 A Tighten the pulley on motor shaft.

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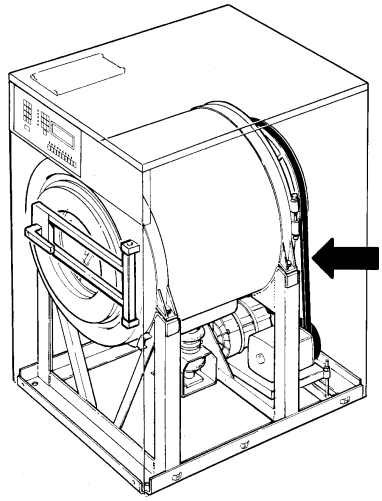

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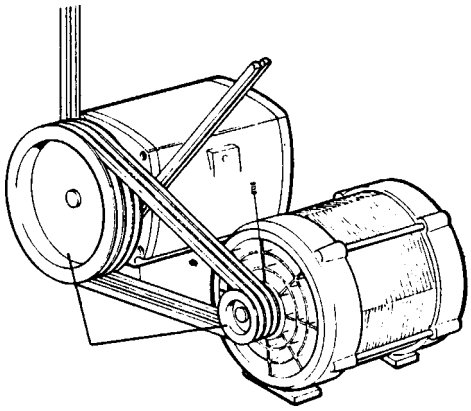

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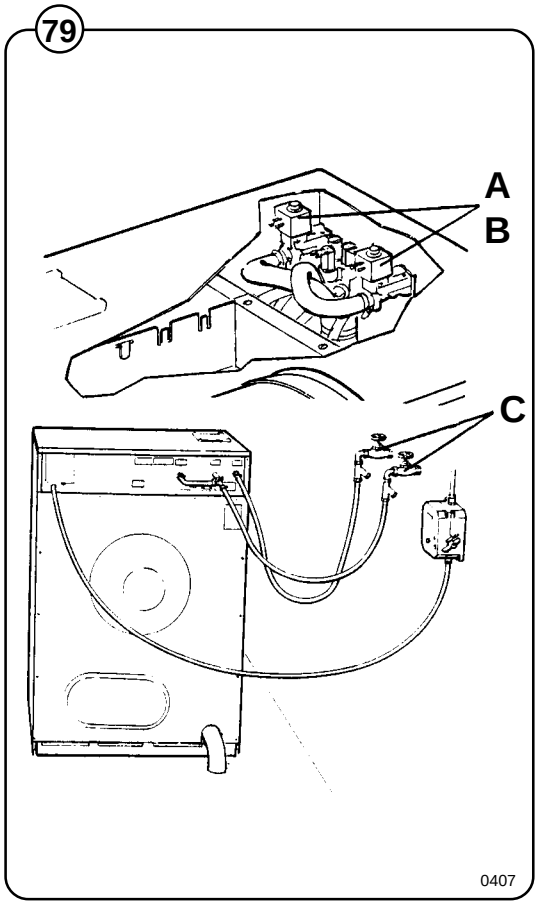
If water does not enter the machine.

Fig. 79

A Check the valve coils on the inlet valves.

B Check wires leading to the valve coils.

C Be sure manual shut-off valves are in open position.



If water continues to fill without stopping.

Fig. 80

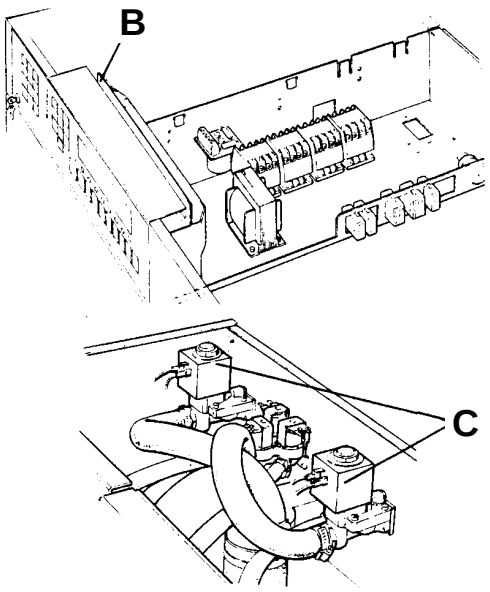
A Check inlet valves for dirt underneath the valve diaphragm. To localize, shut off power. If water continues to flow, inlet valves have foreign material in them and should be thoroughly cleaned.

If water continues to flow without filling machine.

Fig. 81

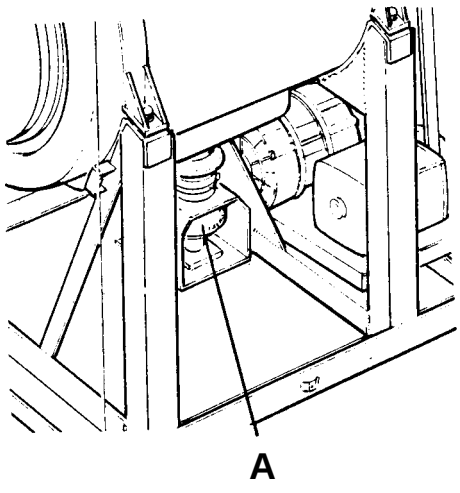
A Check seating of drain valve.

80



0408

81



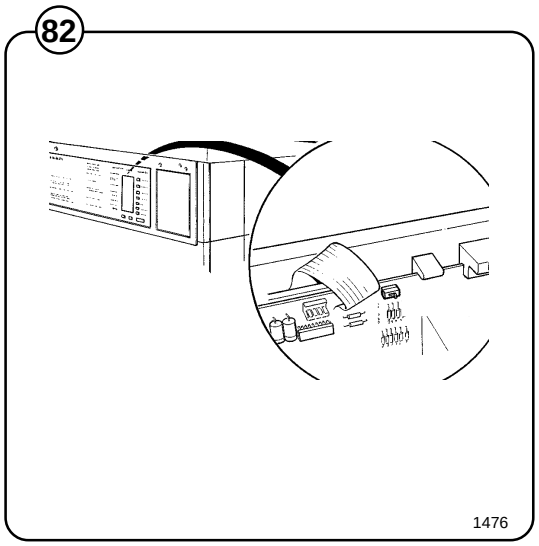
0409

If keypad buttons do not work

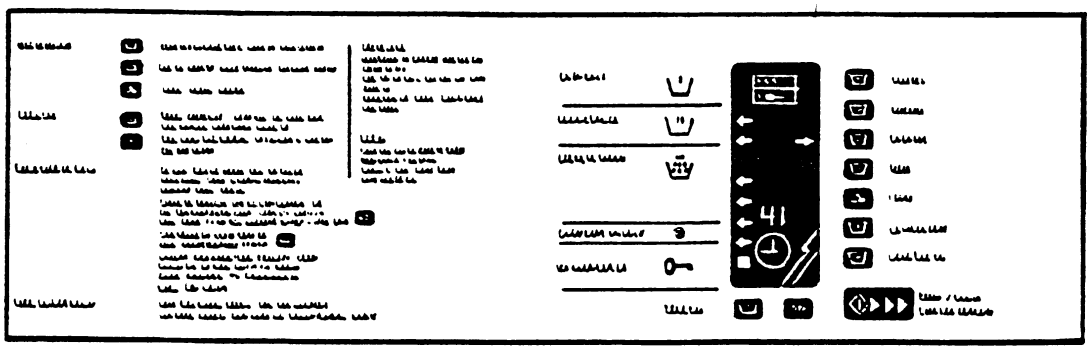
Fig. 82

A Check the ribbon connector for proper contact on the microprocessor board.

B Replace the keypad.



Fault-finding Circuit Board



Fault-Finding Program

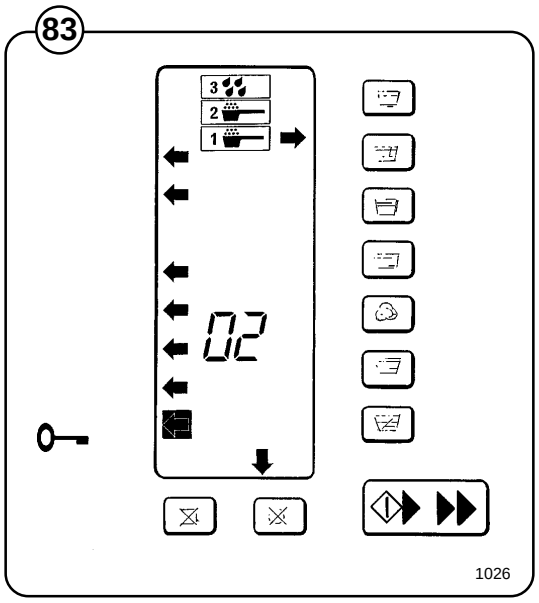
If there is a power failure the washer will remember the selected cycle for about 8-10 minutes. The cycle will restart automatically when power is restored.

Fig. 83

Certain faults are automatically detected and indicated by a number code shown in the Information Display.

For fault codes 01 and 02 restart may be attempted after the fault has been corrected. For all other faults power to the washer must be turned off and on again before the washer can be restarted.

If fault codes 03-09 appear, contact authorized service personnel.



Fault Code	Cause of fault
01	Water level too low. Open water taps. Check level control. Check drain valve for leak.
02	Door lock fault. Open and lock door again. Replace if necessary.
03	Break in or to temperature sensor.
04	Short-circuit in or to temperature sensor.
05	Water in drum at start of cycle. Clogged drain valve or drain line.
06	Software error. Try again or call Wascomat.
07	Not used.
08	Too much water in drum at start of and extraction. Clogged drain valve or drain line.
09	Not used.

Built-in service program

A service program has been built into the washer. This program should only be used by qualified service personnel.

Setting service switch

- Remove the washer top cover.

Fig. 84

- Move the service switch to the service program position. (The switch is located on top of the circuit board next to the ribbon connector).

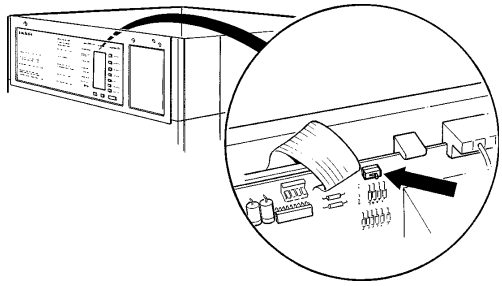
Fig. 85

This transforms the buttons into a numerical keypad. Numbers 1-7 are on the wash cycle buttons, the Extra Extract button is 8 and the Gentle Wash button is 9. The START button serves as an ON/OFF switch.

NOTE:

When in service program the number 0 does not exist. Numbers used are 11-19, 21-28 etc.

84



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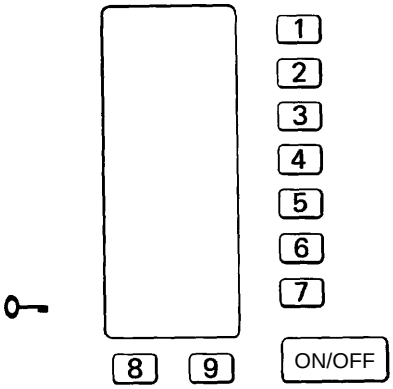


1037

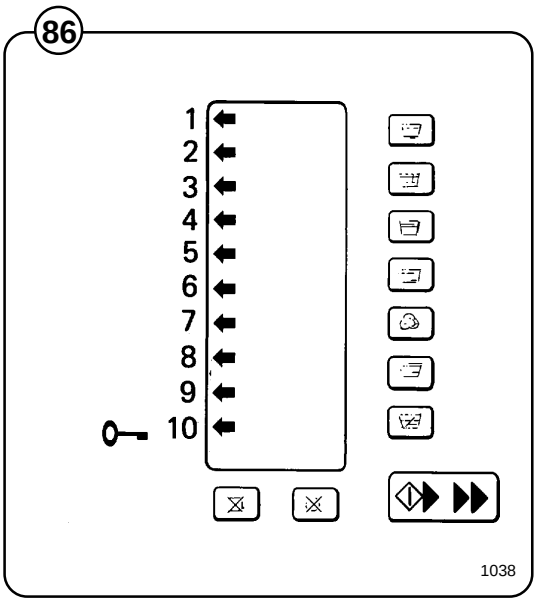
Function checks

Fig. (86) Arrows indicate certain inputs by lighting. For example, arrow number 5 is lit when the door closes. This shows that the door lock microswitch is operating correctly.

The table below shows the inputs displayed by the arrows.

Arrow	Function
1	Price programming switch
2	Coin meter input
3	Not used
4	Not used
5	Door lock switch
6	Price reduction
7	Not used
8	Free wash
9	Not used
10	ON/OFF (Use START button).

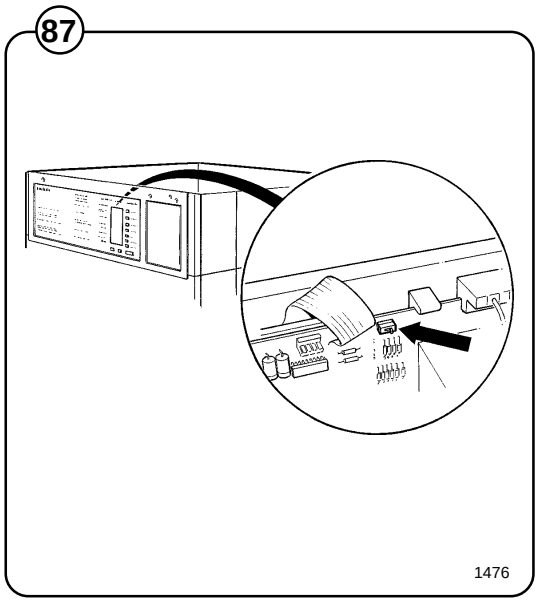
(Arrows not presently used are being reserved for future software enhancements).



It is also possible to directly activate certain functions by using the buttons on the keypad. The chosen function can then be turned on and off using the START button. Arrow 10 (see Fig. 38) simply shows if the function is on or off.

This table shows which functions can be activated, along with the number code for each.

Code	Function
11	Flush compartment 1
12	Flush compartment 2
13	Flush compartment 3
14	Not used
15	Not used
16	Hot water valve
17	Cold water valve (only W185ES) Flush compartment 1 (only W75ES, W105ES, W125ES)
18	Not used
19	Not used
21	Motor (clockwise)
22	Motor (counter-clockwise)
23	Not used
24	Extraction (counter-clockwise)
25	Not used
26	Drain valve
27	Door lock
28	Not used



Leaving service program

Fig. 87

- Return the service switch to its original position.
- Refit the machine’s top cover.