OPERATING & MAINTENANCE MANUAL
WASCOMAT
W244 EMERALD

471 1562-40/01
94.34

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:

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 toprevent 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 PRE VENT 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 !

DO NOT ATTEMPT TO OPEN DOOR
UNTIL PROGRAM HAS FINISHED AND
DRUM HAS STOPPED ROTATING.

471 7651-17

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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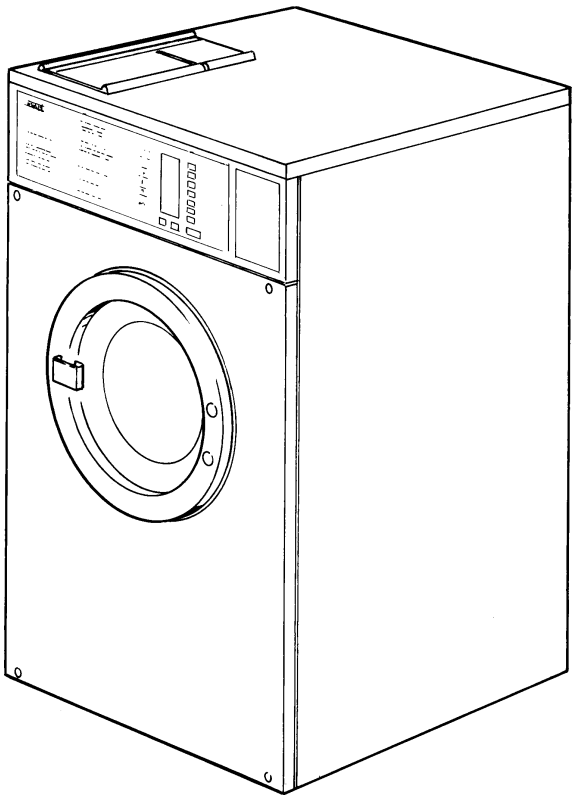

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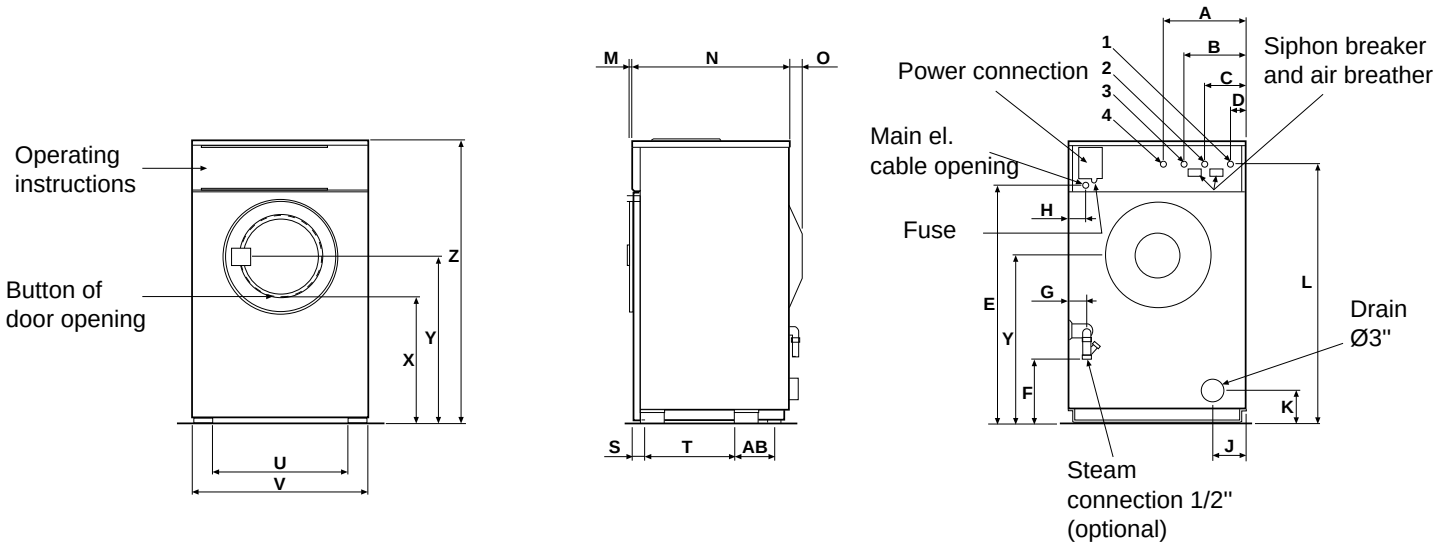
Technical data

Technical data Wascomat W244 Emerald

Dry load capacity	up to		75 lbs
Overall dimensions	Width	940 mm	37"
	Depth	1090 mm	42 15/16"
	Height	1420 mm	55 7/8"
	Net weight	358 kg	789 lbs
	Dyn force	4.25±5.5 kN	1020±1320 lbs. force
Crated dimensions	Volume	1.74 m^3	61.5 cu.ft.
	Weight	370 kg	815 lbs
Inner drum	Diameter	830 mm	32 11/16"
	Depth	590 mm	23 1/4"
	Volume	320 litre	11.3 cu.ft
Speed of rotation	Wash		41 rpm
	Distribution		60 rpm
	Extraction		410 rpm
G-factor	During wash		0.8
	During extraction		79
Motor speed	During wash		540 rpm
	During distribution		860 rpm
	During extraction		1740 rpm
Voltage requirements	Choice:		
	208-240 V 3-Phase 60 Hz		
Rated output power	Motor, wash		650 W
			0.9 HP
	Motor, extract.		1300 W
			1.8 HP
Overcurrent protection	Three-phase	15 A	
Water connections			
Recommended water pressure	2-6 kp/cm^2		25-85 psi
Hose connection, water	20 DN		3/4"
Hose connection, drain	75 mm		3"

Outline and dimensions



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1 Cold water
2 Hot water
3 Hot water

	W244	
	mm	inches
A	315	12 13/32
B	235	9 1/4
C	155	6 3/32
D	50	1 31/32
E	1235	48 5/8
F	250	9 7/8
G	120	4 3/4
H	55	2 1/8
J	135	5 5/16
K	105	4 1/8
L	1305	51 3/8
M	8	5/16
N	1010	39 3/4
O	60	2 3/8
S	95	3 3/4
T	575	22 5/8
U	800	31 1/2
V	960	37 3/4
X	595	23 7/16
Y	800	31 1/2
Z	1400	55 1/8
AB	293	11 17/32

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	1010	39 3/4
C	1060	41 3/4
D	150	6
E	800	31 1/2
F	940	36 29/32
G	985	38 13/16
H	985	38 13/16
I	1180	46 1/2
K	290	11 17/32

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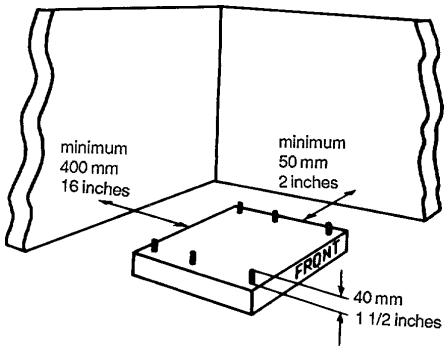

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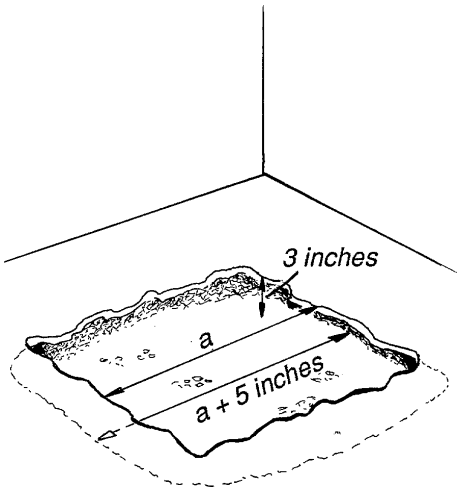

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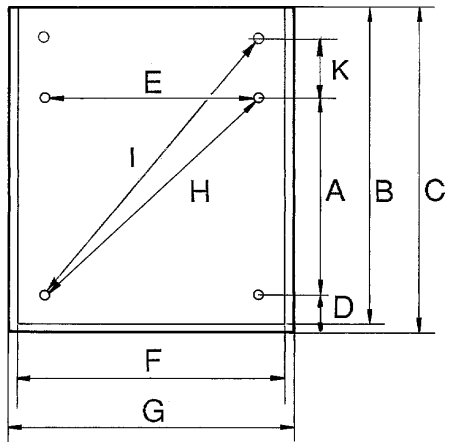

F = machine
G = foundation

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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 swingout 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.
- 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. 6

Fig. 7

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

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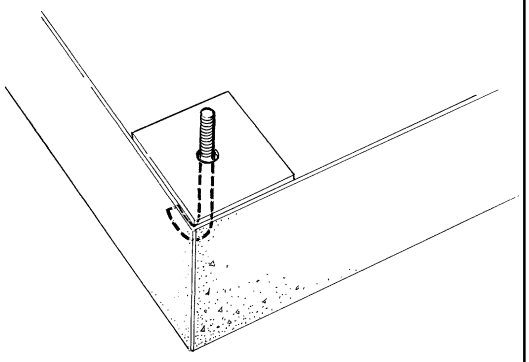

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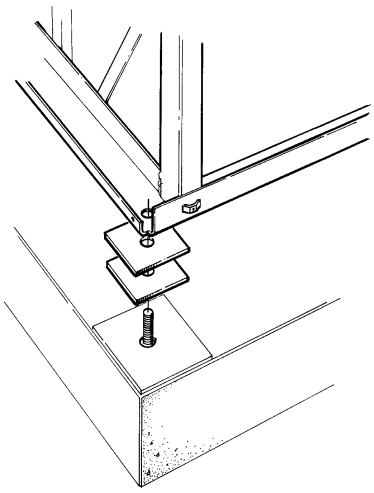

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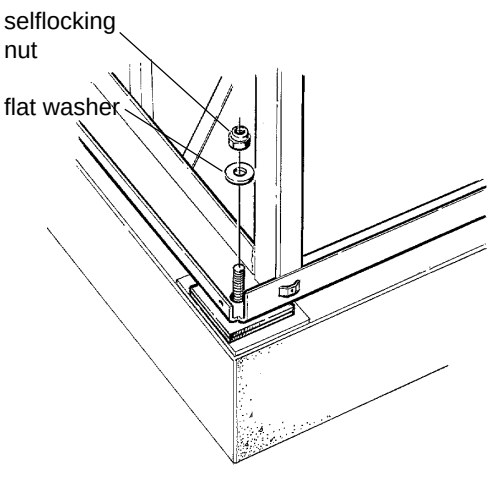

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Electrical Connections:

Fig. 8

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

For proper overcurrent 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.

After installation, do the following:

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.

Fig. 11

If the drum rotates in the wrong direction switch lines L1 and L3 at the power connection terminal.

Check that the transformer on the control unit is correctly tapped for the incoming voltage. The different voltage alternatives are printed on the transformer circuit board.

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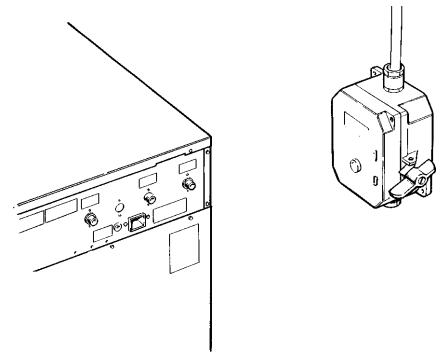

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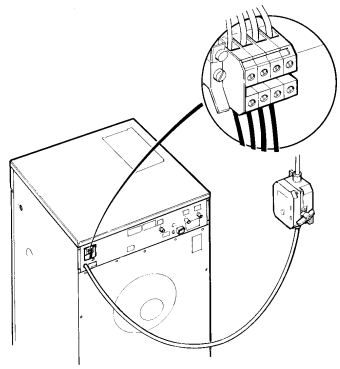

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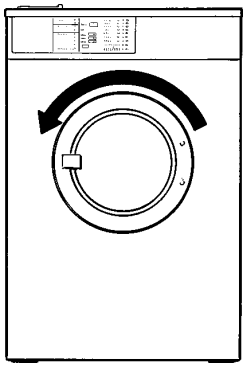

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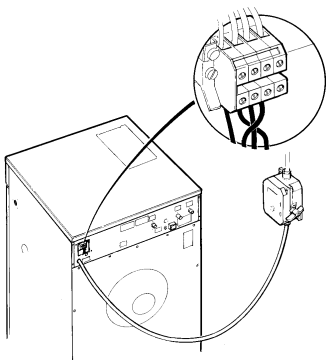

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Water Connections:

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 W244 has two hot water and one cold water connections.
- Flush the water lines thoroughly before hooking hoses up 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.

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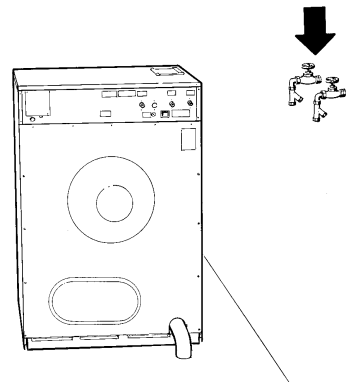

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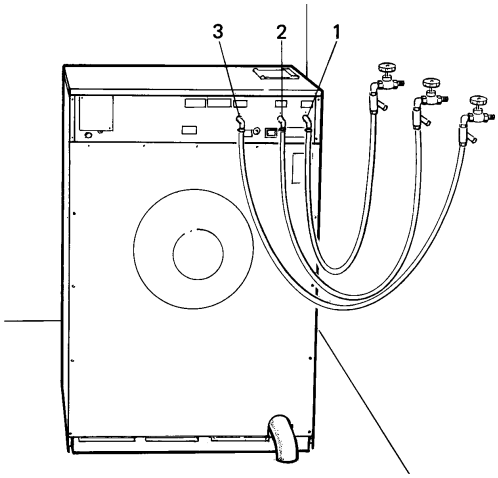


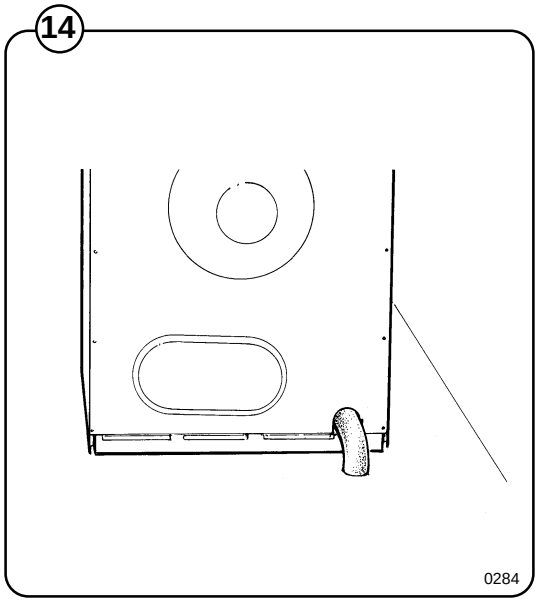
1 Cold water
2 Hot water
3 Hot water

0966

Drain Connections:

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

The drain hose may be connected to a 2" to 3" T- connection coming out of your main drain line, which is typically four inches diameter, or the washer may dump into a trough which slopes to a drain, or directly into a floor drain as shown in the illustration. Check local codes for required installation procedure.



Start-up and safety checklist

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

- Make sure the machine is properly bolted to the floor and level.
- 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.

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

Fig. 15

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

Fig. 16

- 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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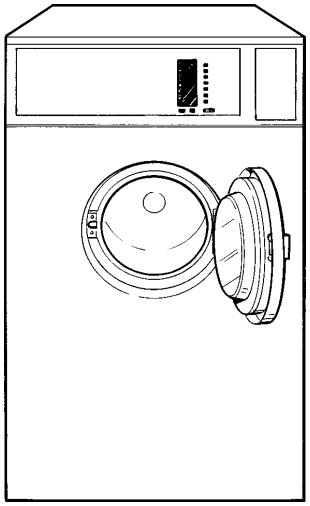

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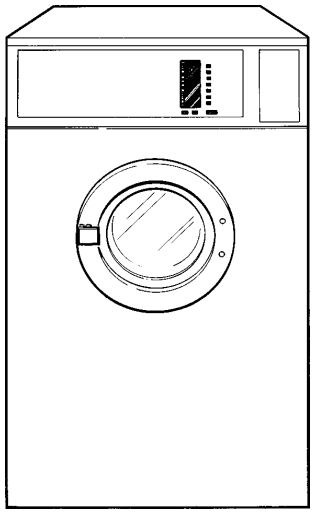

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Function control check-out list

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. 17

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. 18

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. 19

Fig. 20

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.

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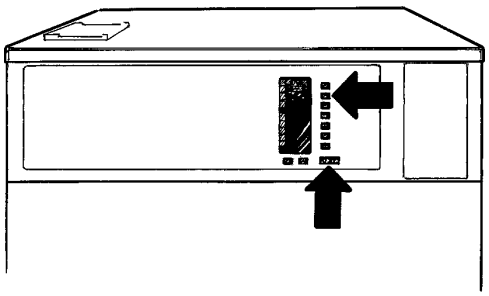

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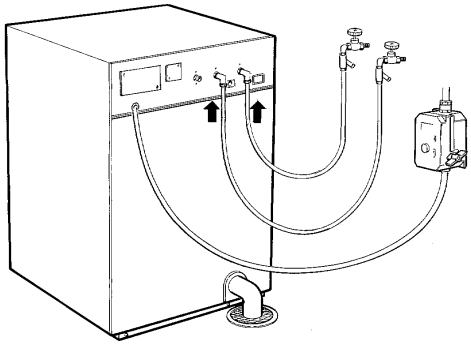

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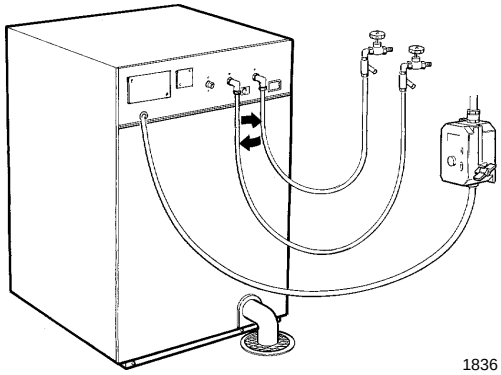

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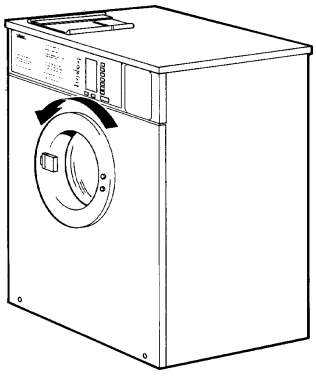

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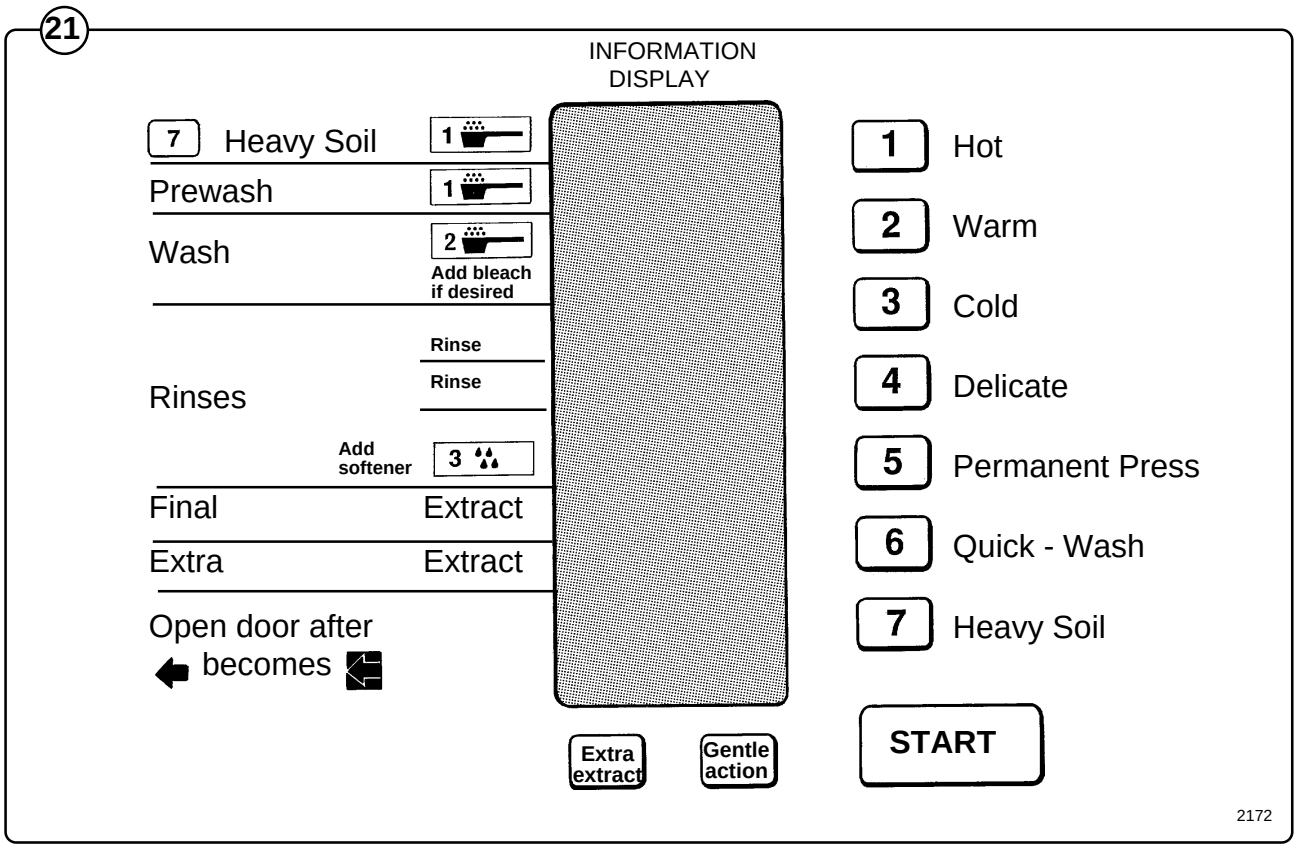
Fig. 21

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. 22

- 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. 23

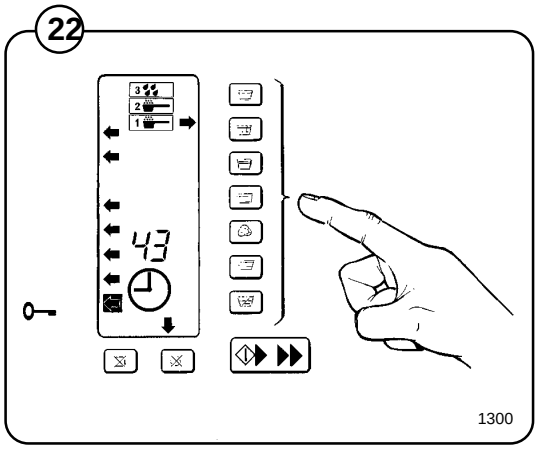
- Select Extra Extract and/or Gentle Wash if desired. Arrows will point to them.

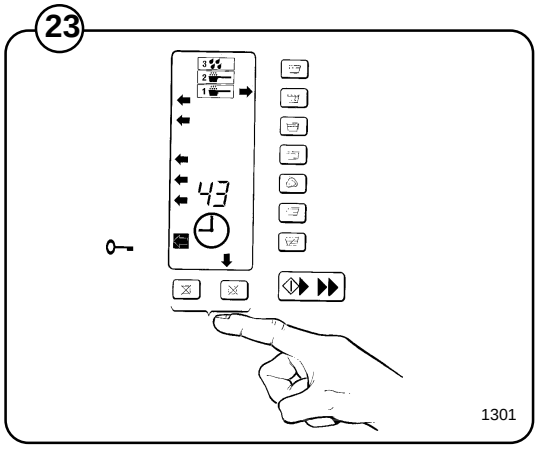
Fig. 24

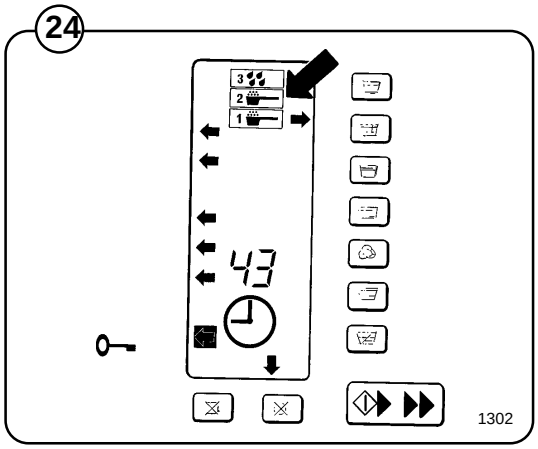
- Three symbols in the Information Display show in which compartments to put detergent and softener.
  - Prewash detergent in compartment 1.
  - Mainwash detergent (and later bleach) in compartment 2.
  - Final rinse softener in compartment 3.

Fig. 25

- You do not need more than 1/2 cup.







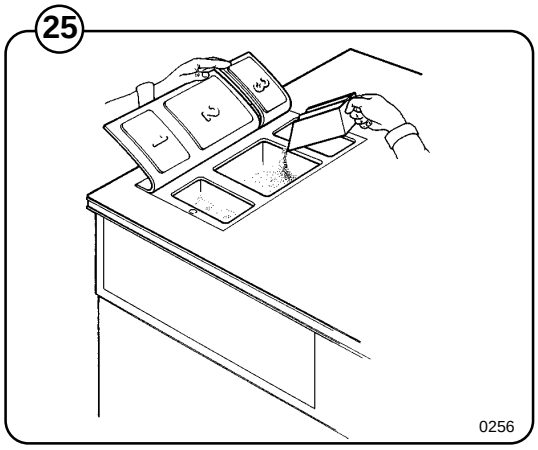
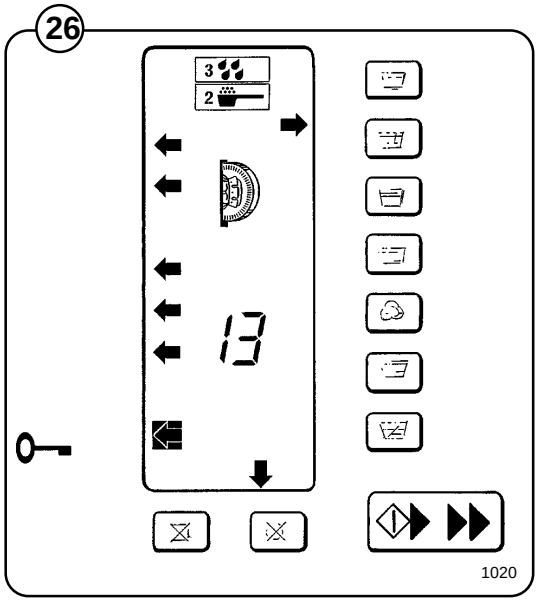
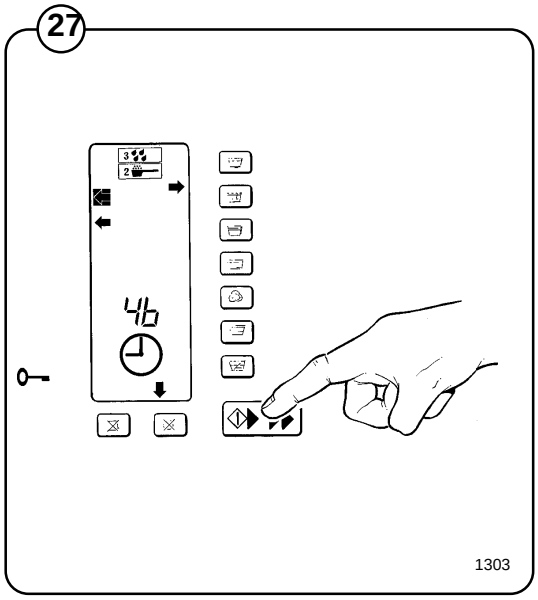


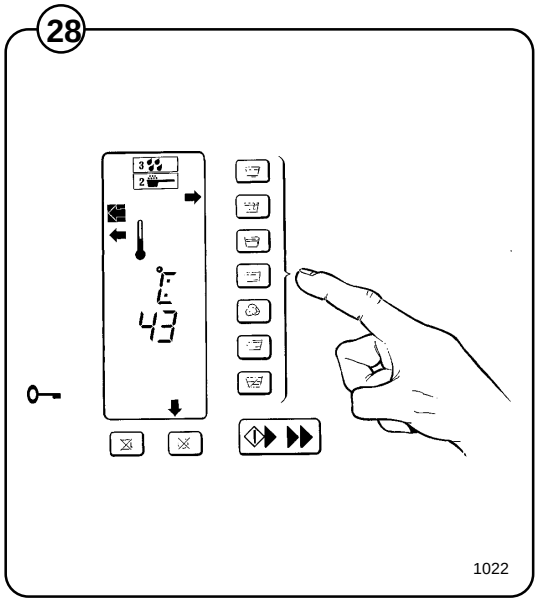
Fig. 26 Insert required number of quarters as shown on the display, which counts down quarters as they are inserted. Press START button when the display shows 00.

Fig. 27 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. 28 Figure 28 illustrates a temperature display function only available on washers with built-in heating, which are not used in North America.





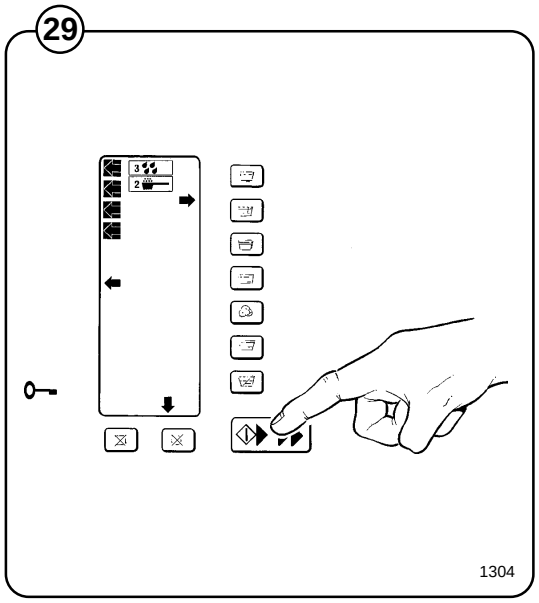


Rapid Advance

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

Fig. (29)

- 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.

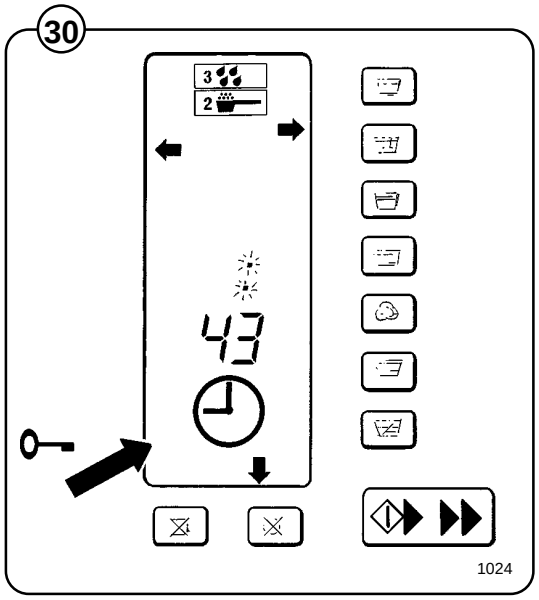


Changing Wash Programs While Washing

Fig. (30)

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.

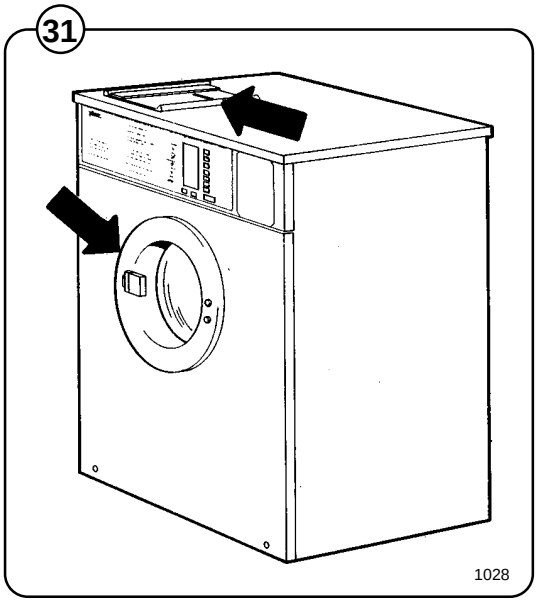
Maintenance

This machine has been carefully designed to minimize preventative maintenance. However, the following routine service operations should be performed at regular intervals (depending on how much the machine is used).

Daily

- Clean detergent residue from the door seal and check that the door does not leak.
- Clean the detergent compartments and wipe down the machine with a damp cloth.
- Check that the drain valve does not leak.
- Start the machine and check that the door is locked while the machine is operating.

Fig. 31



Every three months

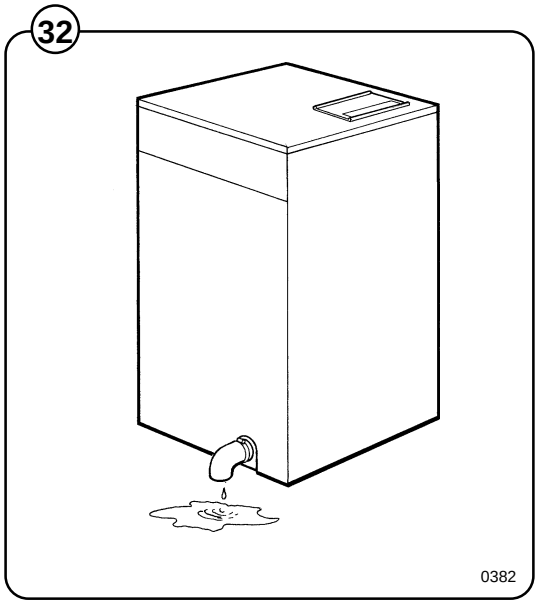
Fig. 32

- Check for leaks in valves, hoses and connections.
- Remove any lint from the machine's drainage system.

Troubleshooting

If the machine won't start, check that:

- the circuit breaker is on.
- the manual shut-off valves for water are open.
- a program has been selected.
- the door is properly locked.



Fault-finding Program

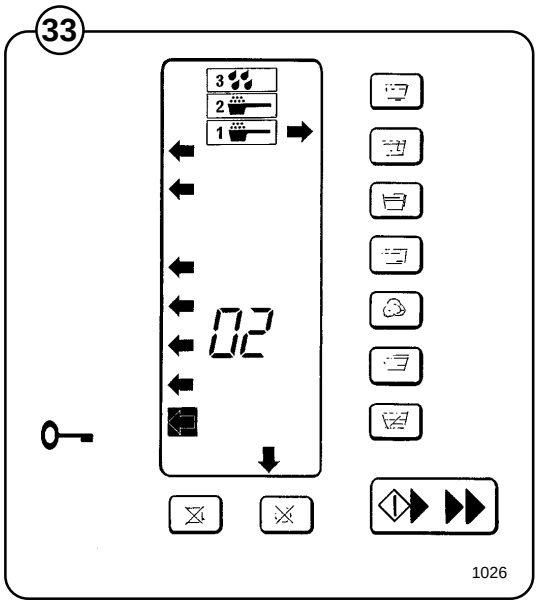
If there is a power failure the washer will remember the selected cycle for about 8 -10 minutes. The cycle will restart automatically when power is restored.

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

Fig. 33

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 an 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.
- 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. 34

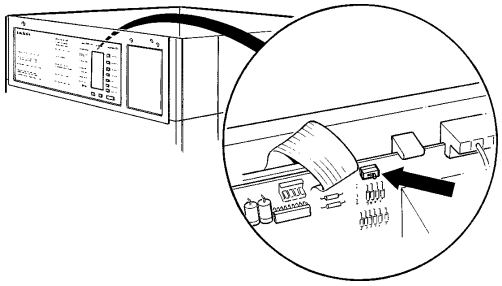
This transforms the buttons into a numerical keypad. Numbers 1-7 are on the wash cycle buttons, the Extra Extract button is 8 and the Gentle Wash button is 9. The START button serves as an ON/OFF switch.

Fig. 35

NOTE:

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

34



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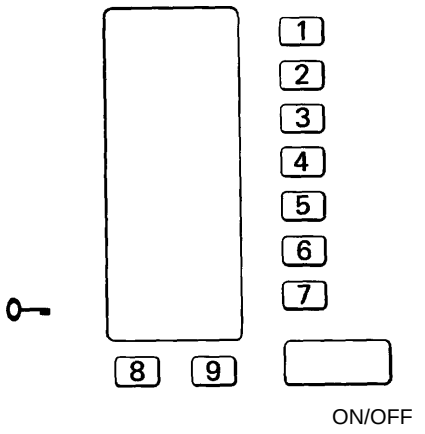


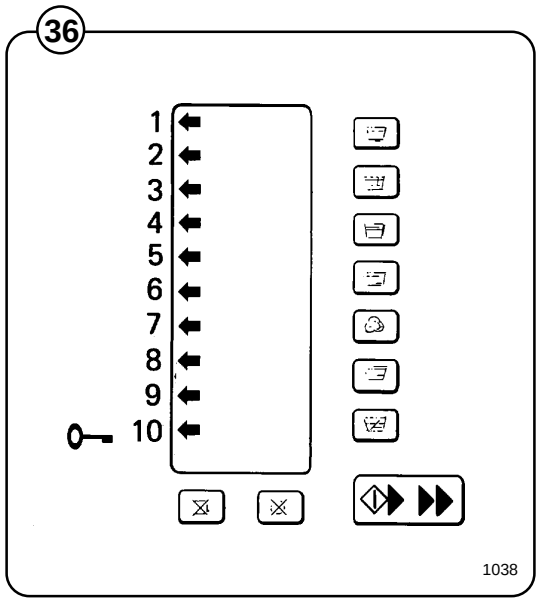
1037

Function checks

Fig. 36

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.



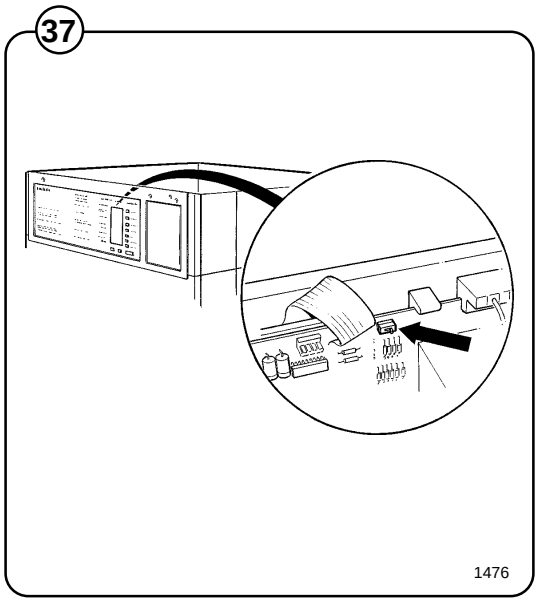
Arrow	Function
1	Price programming switch
2	Coin meter input
3	Not used
4	Not used
5	Door lock switch
6	Price reduction
7	Not used
8	Free wash
9	Not used
10	ON/OFF (Use START button).

(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. 39) 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 (only W185ES)
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. 37

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

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.

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. 38

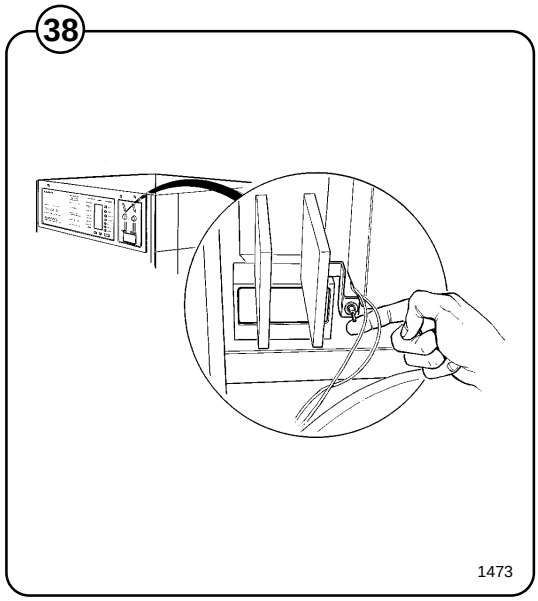


Fig. 39

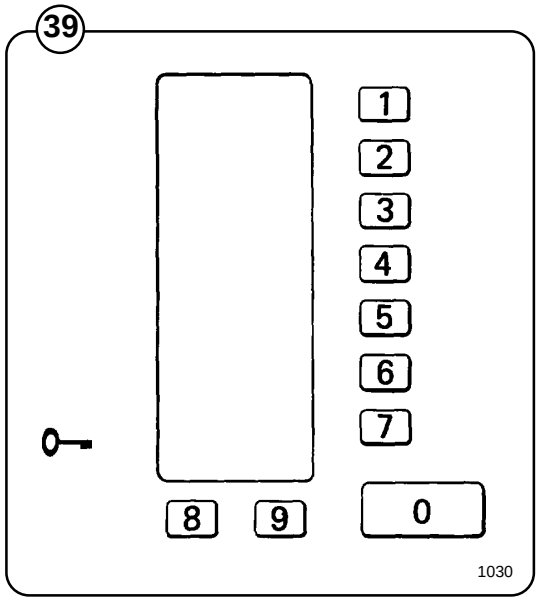
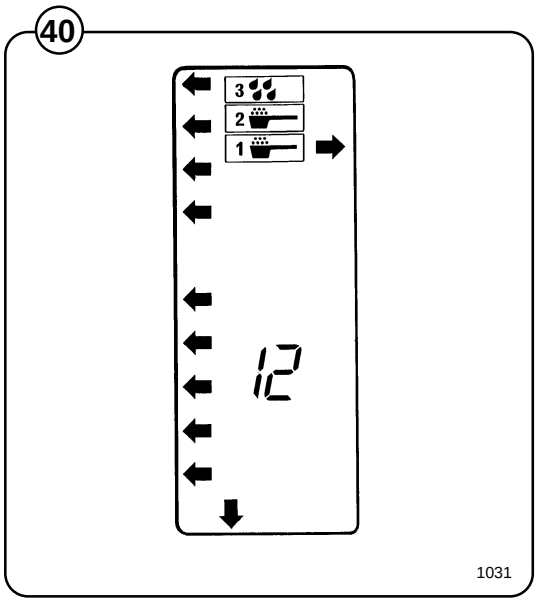


Fig. 40

- 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.



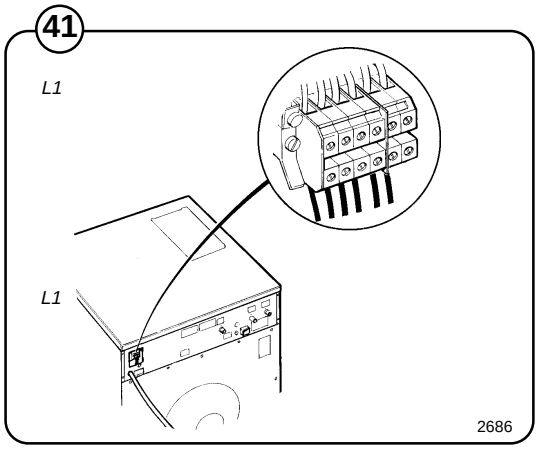
Programming Tip:

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. 41

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. 42

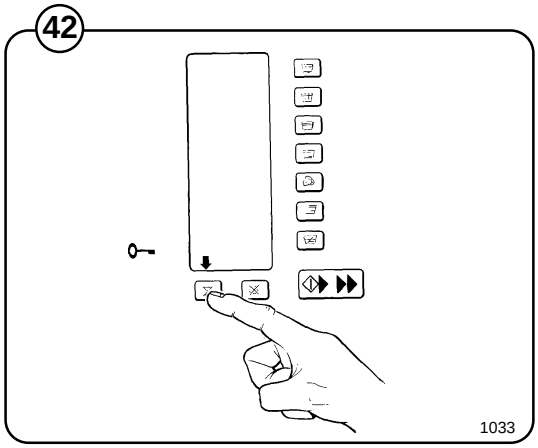
- Press the Extra Extract button until *only* the arrow that points to it is lit.

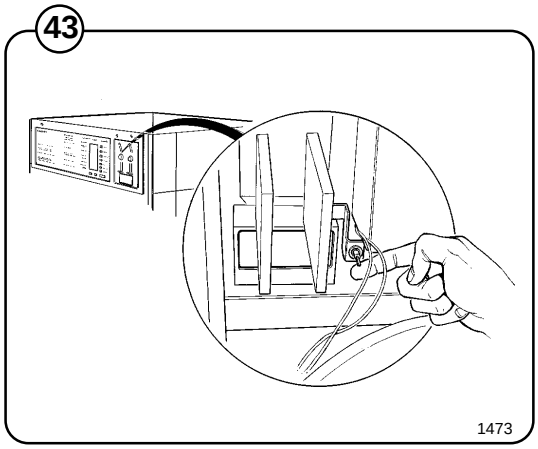
Fig. 43

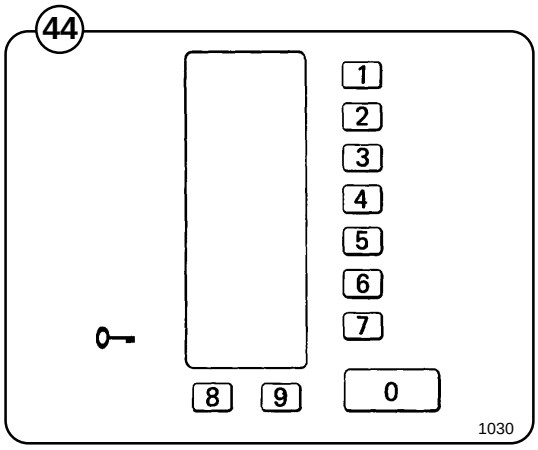
- Toggle and hold the price programming switch at the back of the money box compartment.

Fig. 44

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.







- 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 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:

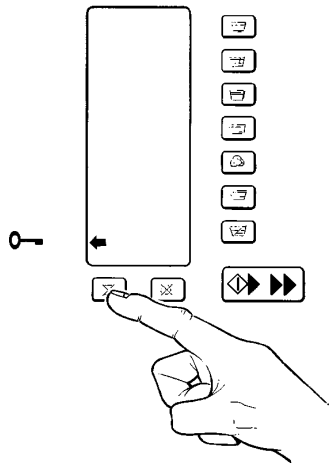
- Press one of the cycle selection buttons repeatedly until the *only* arrow lit is the bottom left arrow (open door arrow).
- Toggle and hold the price programming switch.
- The two lower digits (for example "18") of the four-digit coin count number (for example 6,518) will now appear in the Information Display. Release the programming switch.
- 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. 45

Fig. 46

Fig. 47

45



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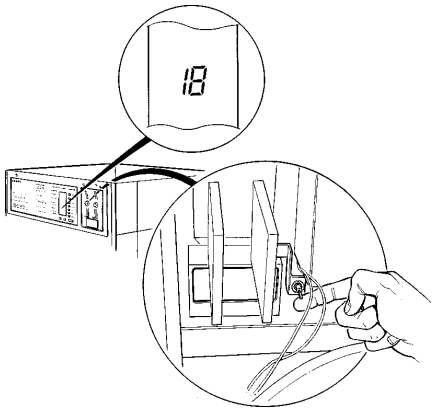

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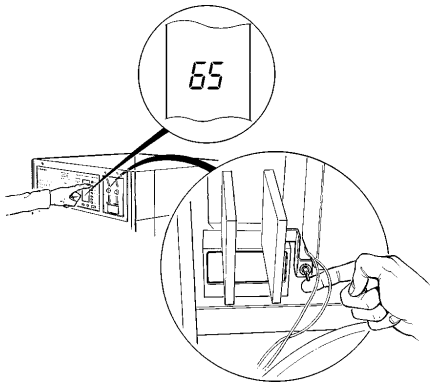

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Wash Cycles

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

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

48

	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

48

	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. 49

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.

49

	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. 50

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.

50

	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. 51

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.

51

	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. 52

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.

52

	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. 53

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.

53

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

Quick-Wash

Fig. 54

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.

54

	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. 55

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.

55

	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!

Mechanical and electrical design

The door, cycle indicator, start switches, program switches are fitted at the front of the machine.

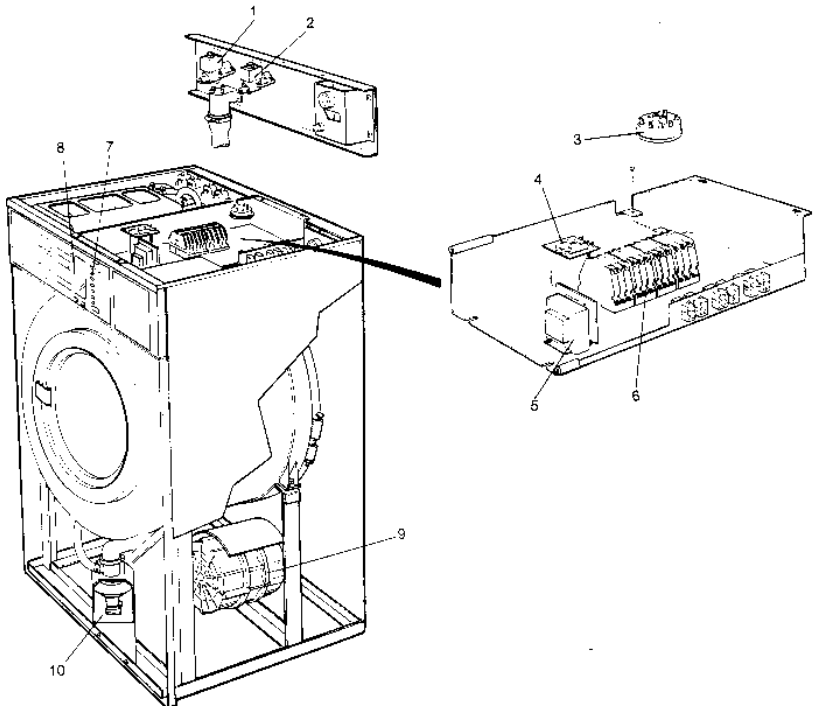
All control and indicating components, i.e. relays, level control, etc. are assembled under a locked cover, easily accessible from the top of the machine for simplified servicing.

Main units

Fig. 56

- 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 motor – for reversing wash action and high speed spin action. Has self tensioning V-belt drive and rubber suspension.
- Hot and cold valves – program and level controlled solenoid valves for filling with water, and for flushdown of automatic detergent dispenser.

56



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

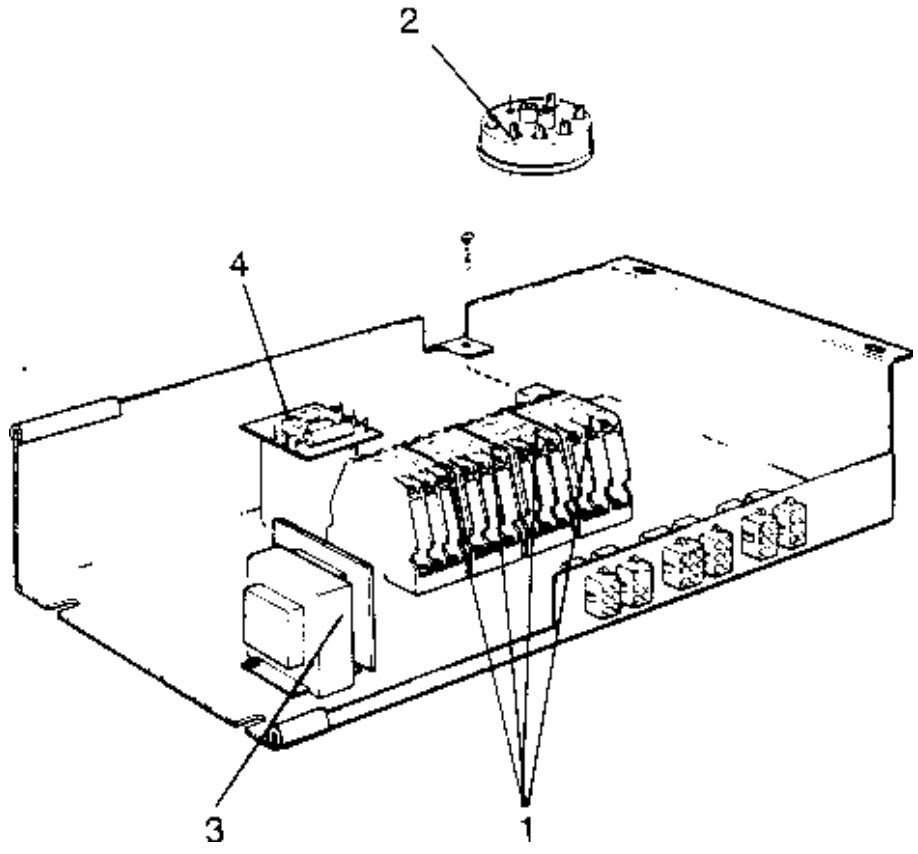
Control unit

Fig. Figures within parenthesis refer to the exploded view.

(57) 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.

(57)



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 with electrostatically applied baked enamel paint finish for rust and chip resistance. For servicing purposes, the panels can easily be removed.

Back gable and bearing

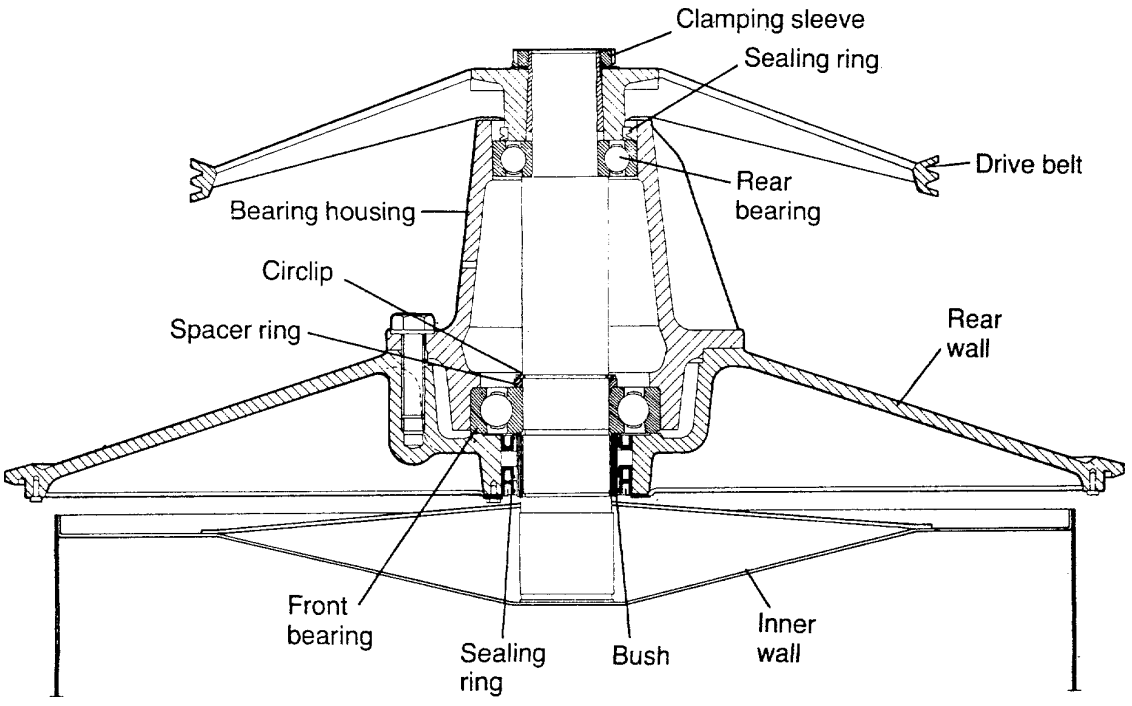
Fig. 58

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 chrome-plated, noncorrosive, specially hardened 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.

58



Door description

Fig. 59 The door is made of stainless steel and is equipped with a flat door gasket, which acts as a seal to prevent water leakage and also holds the heat-hardened door glass.

Door lock description

See exploded view. The door lock assembly is mounted on a die-cast bracket (1), which is mounted to the front of the outer drum.

The door lock consists of a DC-solenoid (2), door switches (4) and a catch (3). The door handle of the machine has a latch, which engages the lock and the door safety switch (5).

Door lock operation

Fig. 60 As the door is closed, the door switches are activated through notches in the door skirt.

When the machine starts, the delay circuit in the control panel becomes energized and the capacitor (d) is charged via the diode (a) and the resistor (b). The voltage will be about 120V DC*. When the machine is stopped the capacitor will keep the solenoid engaged for about 20 seconds ensuring hat the cylinder has stopped turning and is emptied of water.

* This voltage energized the door lock solenoid, causing the rod to be drawn forward, engage the door latch and in turn activate the door safety switch which then allows machine to start.

Trouble shooting the door lock and interlock

If the machine does not start:

Check that all three switches are activated when the door is locked. Adjustment can be made after the front panel of the machines has been removed.

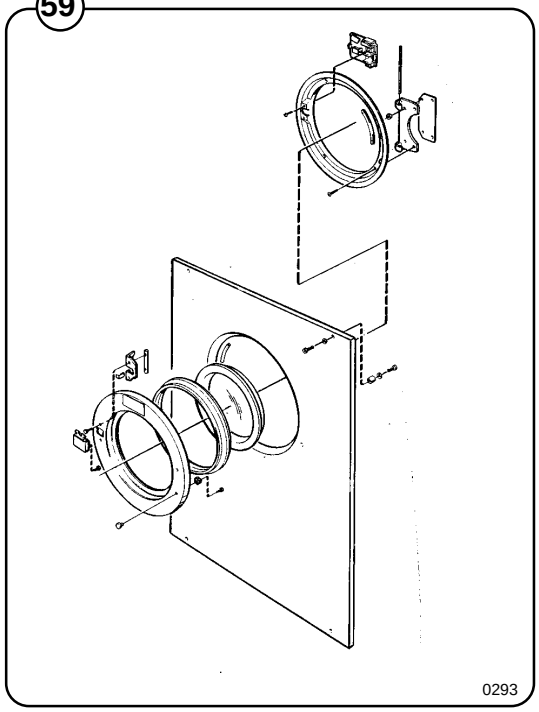
If the solenoid does not lock the door:

Check that the solenoid becomes energized (120V DC).

Check that the catch can easily move forward and backward.

Check that the catch has not become obstructed.

59



0293

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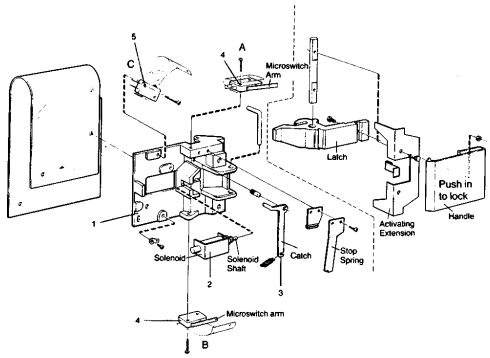

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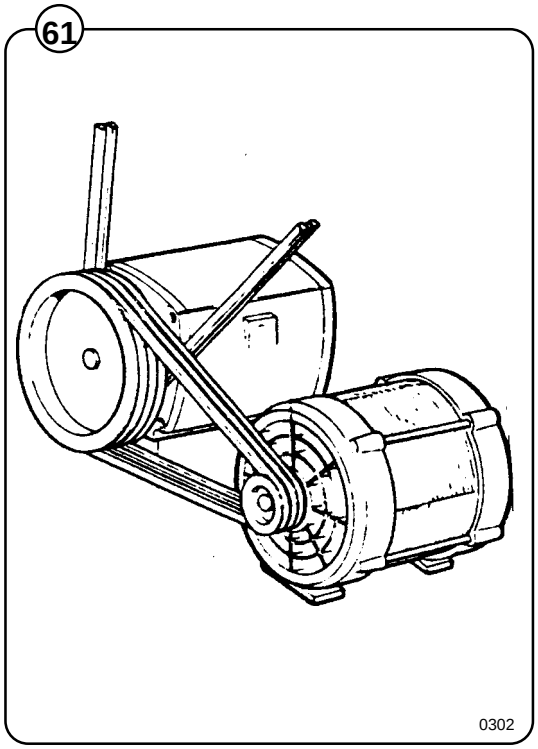
Drive motor description

Fig. (61) 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

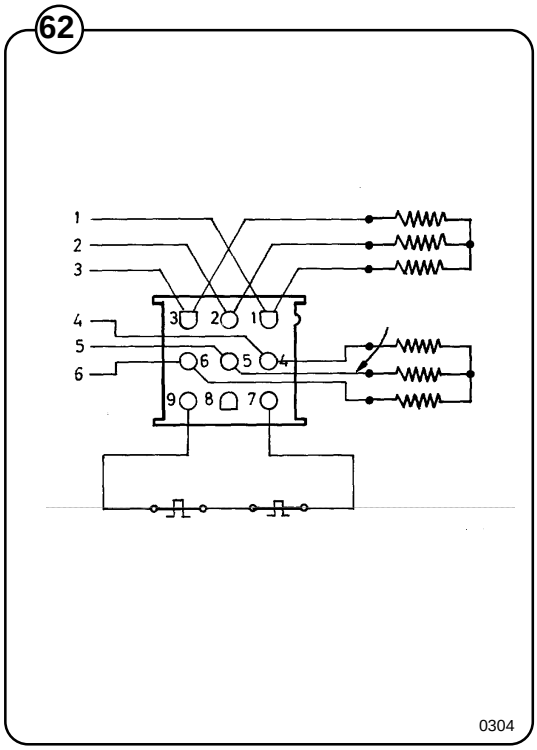
The motor consists of stator, rotor and end-shields with ball-bearings. The stator and the rotor consists of plates, insulated from each other and welded together. The stator is provided with slots in which the 2-pole and 18-pole windings are wound. The windings are impregnated with a temperature-resistant 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. 62 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 5: 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

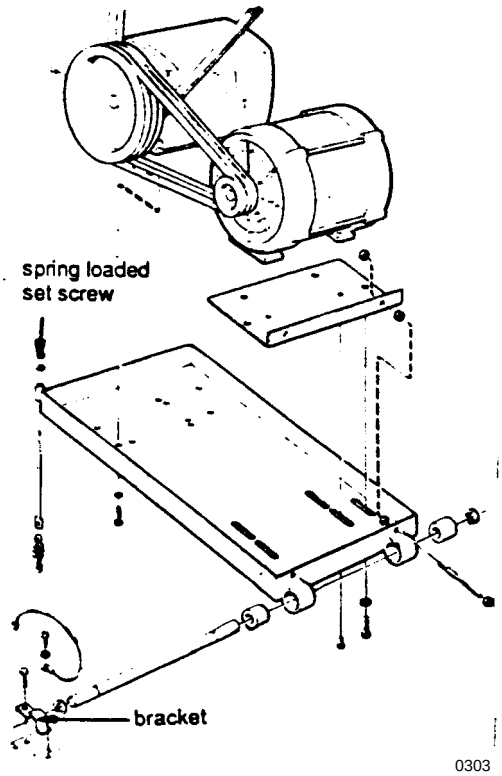
Fig. 63

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".

63



Water level controls

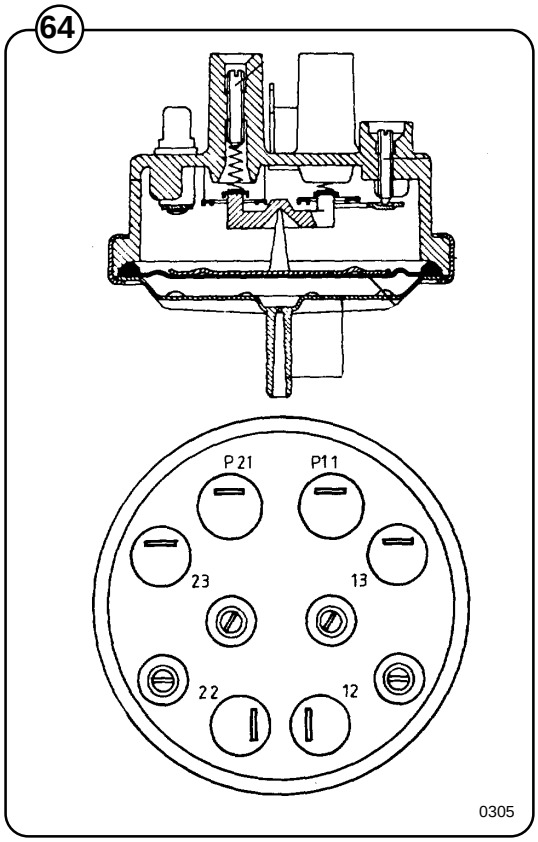
Fig. 64 One double-level pressure switch is used to control the correct water levels during various cycles of the washing program.

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.



Inlet valve, supply injection

Construction

Fig. (65) 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.

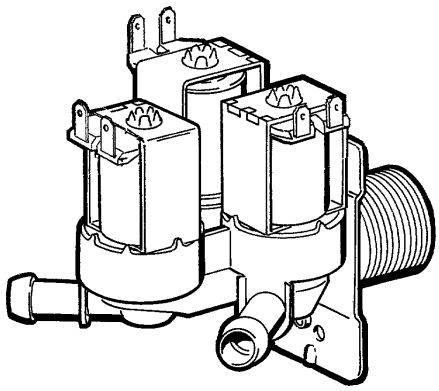
A filter screen on the inlet side prevents dirt from entering the valve. Flow restrictors can be placed at either the inlet or any of the outlets.

Operation

Fig. (66) 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.

65



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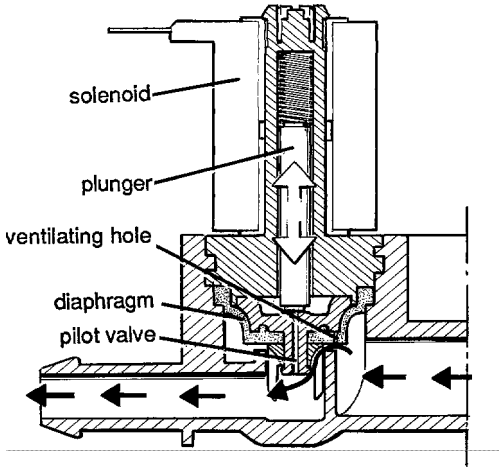

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Maintenance instructions

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

Fig. (67) 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

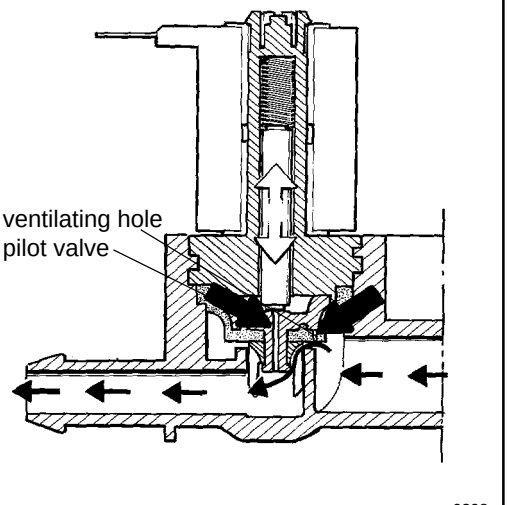
Fig. (68)

- Pull the coil straight upwards. Use a screwdriver if necessary to carefully undo the coil.

Fig. (69)

- 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.

67



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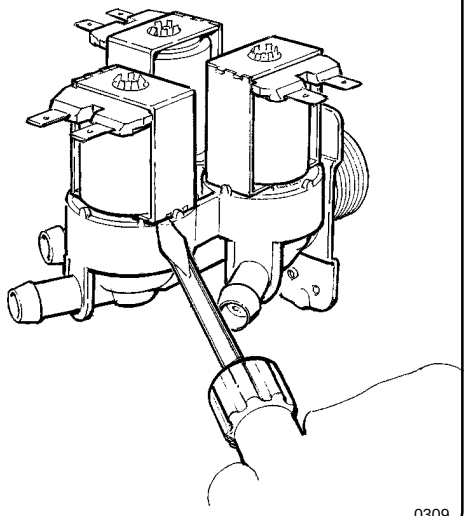
68



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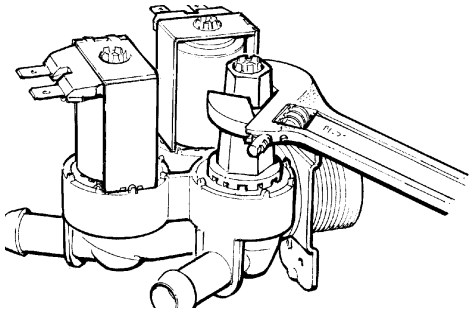


0310

Inlet valve

Fig. 70 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

The valve housing is made of pressed brass. The spring-loaded plunger is made of stainless steel and located at its lower end is a rubber gasket for the pilot valve.

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.

Clean out

At water temperatures of more than 60°C/140°F, the lime deposits are heavily increased. This can cause function problems due to blocking up the equalizing orifice of the valve.

Fig. 70 The fault can be eliminated by cleaning the equalizing orifice (marked A).

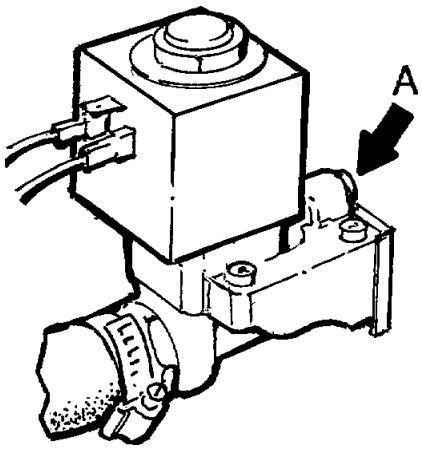
Fig. 71 If there are much deposits the orifice can be changed from 0.5 mm to 0.8 mm. The screwhead of the orifice is marked with 1 ring for the size of 0.5 mm and 2 rings for the size of 0.8 mm.

Clean the orifice as follows:

1. Shut off the main supply.
2. Unscrew the orifice.
3. Clean the hole in the orifice carefully with a pin or similar not thicker than 0.5 resp. 0.8 mm.
4. Mount the orifice, be careful with sealing and tighten.
5. Open the main supply.

Fig. 72

70



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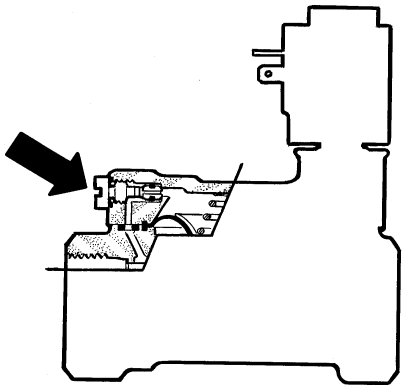

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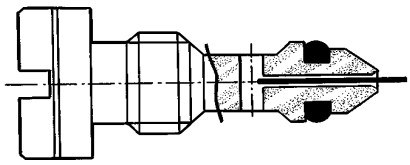

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Soap supply box

Fig. 73 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

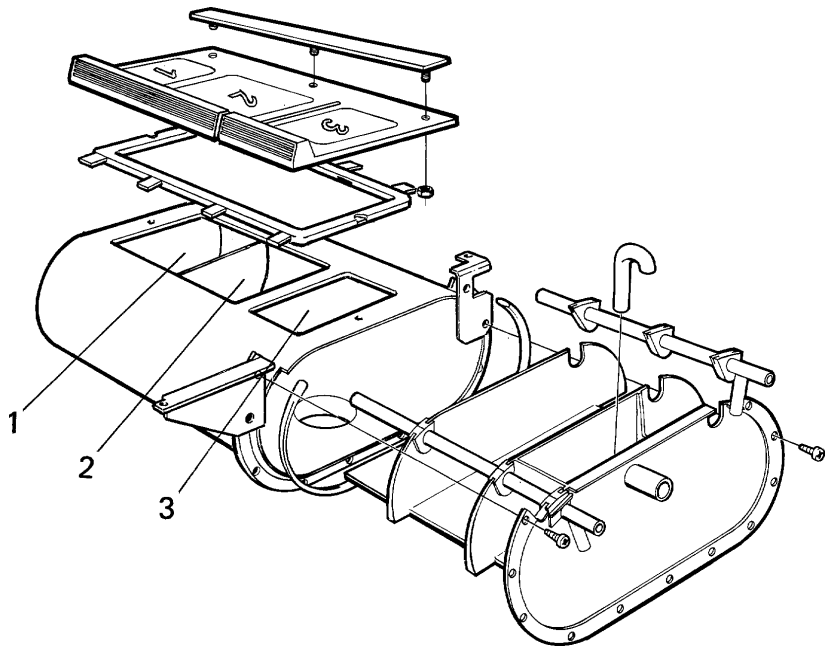
This compartment is used for adding detergent at the beginning of the Wash cycle. If bleach is used, it is added to this compartment when the display arrow appears.

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.

73



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