ASKO


# 2012 TECHNICAL REFERENCE MANUAL

- **WASHERS**
  - **03/04/05 MODELS**
  - **600 SERIES MODELS**
  - **WM60/70—6000 SERIES MODELS**
  - **WL6511/6532 XXL MODELS**
  - **WCAM1812 COMBINATION W/D**

# ASKO Appliances: Model # Conversions

| WASHERS | Market Model | Model #'s In Service Bench | Product # on Serial Tag | Article Numbers | Description |
|---|---|---|---|---|---|
| **WL6511/6532** | | | | | |
| | WL6532XXL (All Colors) | WL6532XXL | WI6532 | | XXL Washer |
| | WL6511XXL (All Colors) | WL6511XXL | WL6511 | | XXL Washer |
| **WM70 - 6000 Series** | | | | | |
| | W6324 | 6324 | WM70.1 | 107632400, 107632406 | Washer |
| | W6424 | 6424 | WM70.1 | 107642400, 107642406 | Washer |
| | W6884ECCO | 6884 | WM70.2 | 107688410 | Washer |
| | W6984FI | 6984 | WM70.3 | 107698436 | Washer |
| **WM60 - 6000 Series** | | | | | |
| | W6903FI | 6903FI | WM60.3 | 107690336 | Washer Fully Integrated |
| | W6903 | 6903 | WM60.3 | 107690310, 107690311 | Washer |
| | W6863 | 6863 | WM60.2 | 107686310, 107686311, 107686316 | Washer |
| **WM55/50/44/33/25 - 6000 Series** | | | | | |
| | W6761 | 6761 | WM55A | | Washer |
| | W6661 | 6661 | WM55A | | Washer |
| | W6641 | 6641 | WM55A | | Washer |
| | W6461 | 6461 | WM50 | | Washer |
| | W6441 | 6441 | WM50 | | Washer |
| | W6222 | 6222 | WM25.3 | | Washer |
| | W6221 | 6221 | WM44A | | Washer |
| | W6022 | 6022 | WM25.1 | | Washer |
| | W6021 | 6021 | WM33A | | Washer |
| **600 Series** | | | | | |
| | W660 | 660 | WM55 | | Washer |
| | W640 | 640 | WM55 | | Washer |
| | W620 | 620 | WM44 | | Washer |
| | W600 | 600 | WM33 | | Washer |
| **03/04/05 Models** | | | | | |
| | 20605 | 20605 | WM220 | | Washer |
| | 20005 | 20005 | WM200A | | Washer |
| | 20004 | 20004 | WM200 | | Washer |
| | 20003 | 20003 | 20003 | | Washer |
| | 13605 | 13605 | WM120 | | Washer |
| | 12505 | 12505 | WM100 | | Washer |
| | 12004 | 12004 | WM110 | | Washer |
| | 11505 | 11505 | WM140 | | Washer |
| | 10505 | 10505 | WM90 | | Washer |
| | 10504 | 10504 | WM90 | | Washer |
| | 9603 | 9603 | 9603 | | Washer |
| | 8005 | 8005 | WM80 | | Washer |
| **WCAM Combo** | WCAM1812 | WCAM1812 | FC177 | | Combination Washer/Dryer |

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# REFERENCE MANUAL

# WASHERS
# 03/04/05 MODELS

- DIAGNOSTICS
- TROUBLESHOOTING FLOWCHARTS
- WIRING DIAGRAMS
- COMPONENT VALUES
- TECHNICAL BULLETINS

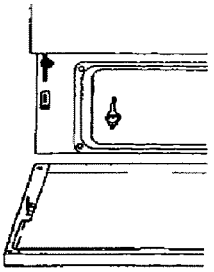
# If the machine doesn 't work

## The door will not open

1. Check that the main switch is turned on.
2. Is power available at the machine? Check plugs and fuses. The door cannot be opened if there is no power supply.
3. If the door cannot be opened in the normal manner, it can be opened as follows.

• Remove the lower front panel
• Unscrew the plastic ring and pull.
• Replace the ring and the front panel.

If the door still cannot be opened in the normal way afterwards, call a service engineer.



## The machine does not fill with water when started

1. Is the tap in the supply line open?
2. Is the strainer in the inlet connection blocked? Unscrew the hose and check. Remember to turn off the water supply first.

## The machine does not start when the Start button is pressed

1. Is the door properly closed? Press it shut firmly – don't slam it.
2. Is power available at the machine. Check plugs and fuses.

## The machine will not spin

(If the machine has failed to spin, this will be indicated by the spin speed display showing a flashing 0000)

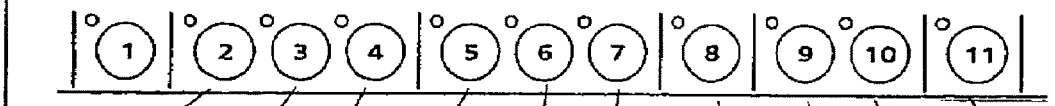
The machine incorporates an out-of-balance detector, which reduces spin speed or prevents spinning from starting if the drum load is badly unbalanced. Open the door, redistribute the washing and restart the machine after pressing (8) or (11)

## A lot of foam in the final rinse water, or water left in the machine after spinning and pumping out

1. Is anything blocking the outlet hose?
2. Is the pump blocked? Clean it as described on page 8.
3. Is the outlet hose kinked?

# Fault tracing program

The machine incorporates a self-diagnostic fault-tracing program, reached by pressing (1) 5 times within 15 seconds. The indicating lamps respond by flashing as shown below. Press the buttons to test the following functions:




*Inlet valve 1 Pre-wash and rinse*

You should hear water entering the machine

*Inlet valve 2 Main wash*

*Inlet valve 3 (only on machines connected to hot water supplies)*

*Inlet valve 4 Fabric conditioner*

*Door solenoid*

*Contactor You should hear it operate. For safety reasons, there must be water in the machine. The right-hand display must be showing 2 or 3.*

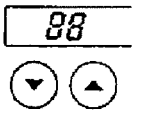
*Start outlet pump*

*Main wash motor, normal action*

*Main wash motor, gentle action*

*Spinning*

*Indicates out-of-balance in the machine (for internal use only)*




*Indicates water level in machine*
*2 - normal*
*3 - high level*
*4 - overfilled*

Leave the fault-tracing program by pressing (Start Stop) for three seconds.

# Other signals


F1 A fault in the water supply
F2 Too high water level
F3 A fault in pumping out
F4 Thermistor fault (temp. control)
F5 Fault in thermal cutout
F6 Motor fault

If you want to interrupt the indicating signal, turn off the main switch or choose a new program.


This flashing signal indicates that the door is open, even though a program is running. It also appears if you start a program while the door is open.

# Safety

The machine incorporates a door safety switch which prevents it from being started if the door is open. The door is also interlocked to prevent it from being opened when the machine is running or when it has stopped with water in.

# Child safety

To prevent a child from altering the programs by playing with the control buttons, buttons must be pressed for three seconds to affect the program when the machine is running. Only a brief press is necessary if no program has started.

**20003, 20004, 20005, & 20605**

**Fault Tracing**

Press the number 1 button five times within fifteen seconds
(1, 3, 5, 7, 9, & 11 will start flashing)

Press the number 2 button once to test Inlet valve 1 (pre-wash and rinse)
Press the number 3 button once to test Inlet valve 2 (main wash)
Press the number 4 button once to test Inlet valve 3 (only on machines connected to hot and cold water)
Press the number 5 button once to test Inlet valve 4 (final rinse / fabric softener)
Press the number 6 button once to test the Door solenoid
Press the number 7 button once to test the heat relay. **Note: machine must be at a water level 2 or 3 for this to work. You can identify the water level by the number above the clock on the control panel.**
Press the number 8 button once to test the drain pump
Press the number 9 button once to test the motor (normal action)
Press the number 10 button once to test the motor (gentle action)
Press the number 11 button once to test the motor (spin)

To leave the fault tracing program press and hold the Start/Stop button for 3 seconds

**Hot and Cold fill**

1. Turn power on to machine
2. Press button #s 2, 2, 1, 8, 10
3. If the machine is a 20003 press the ½ button once to program for a hot and cold fill.

**Or**

3. If the machine is a 20004, 20005, or 20605 press the No Spin button once for a cold fill only.

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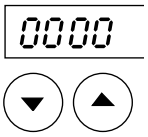
**The various water levels are indicated by:**


| | | |
|---|---|---|
| P1 | Return to normal level | Indicated by 1 |
| P2 | Normal level | Indicated by 2 |
| P3 | High level | Indicated by 3 |
| P4 | Overfilled | Indicated by 4 |

Stop the test program by pressing the Stop button for 3 seconds.

**Faults are indicated by:**


F1 Water supply (if the correct level has not been reached in five minutes).
F2 Overfilling (if the overfill level has lasted for more than 60 seconds).
F3 Fault in pumping out (if the water level above P1 after the outlet pump has run for 3 minutes).
F4 Thermistor fault.
F5 Heating pause fault )if the selected temperature has not been reached within 90 minutes).
F6 Motor fault.




Indicates that the machine has not spun i.e. to reduce serious out-of-balance.

## ELECTRICAL COMPONENTS

**1 Control unit**

Contains a microprocessor for operating the programs and controlling the powered devices, such as the motor and valves. Protected by a 6.3 A anti-surge fuse.

**2 Push button panel**

Carries the pushbuttons and indicating lamps. A microprocessor provides communication with the control unit.

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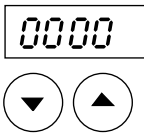
**The various water levels are indicated by:**

| | | |
|---|---|---|
| P1 | Return to normal level | Indicated by 1 |
| P2 | Normal wash level | Indicated by 2 |
| P3 | Normal rinse level | Indicated by 3 |
| P4 | High rinse & wash level | Indicated by 4 |
| P5 | Overfilled | Indicated by 5 |

Stop the test program by pressing the Stop button.

**Faults are indicated by:**


F1 Water supply (if the correct level has not been reached in five minutes).
F2 Overfilling (if the overfill level has lasted for more than 60 seconds).
F3 Fault in pumping out (if the water level above P1 after the outlet pump has run for 3 minutes).
F4 Thermistor fault.
F5 Heating pause fault )if the selected temperature has not been reached within 90 minutes).
F6 Motor fault.
F7 Door lock release fault.



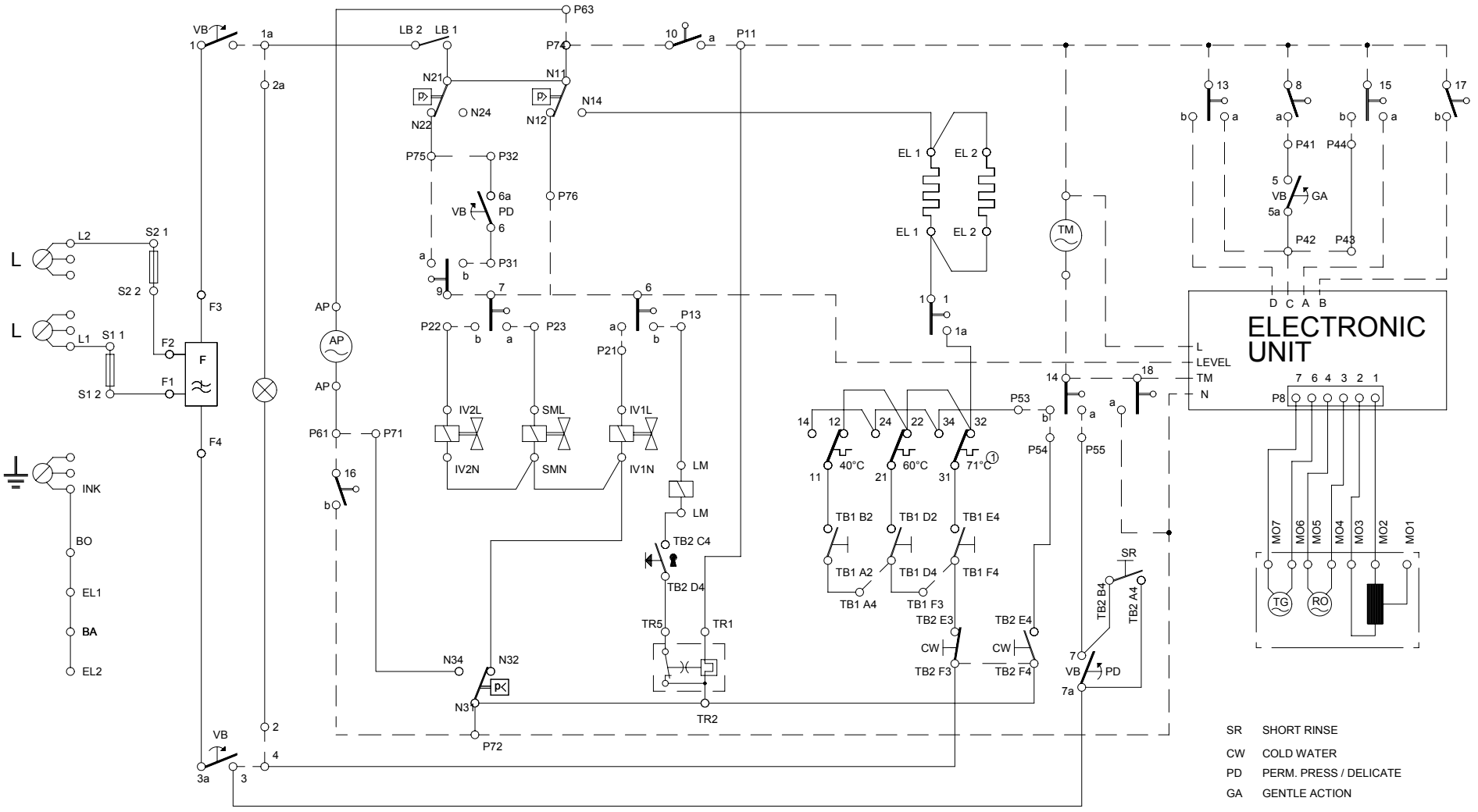

Indicates that the machine has not spun i.e. to reduce serious out-of-balance.

**Temperature block**

In the wool program, the temperature stop step has been maximized to 24 minutes. This means that if the temperature by mistake is set on, say 90°C, the temperature still will not be higher than good 40°C, (can vary a little depending on the temperature of incoming water, the size of the load etc.).
In Whites wash/Cotton programs and in the synthetic programs the time for the temperature stop is maximized to 80 min. This prevents among other things the water to cook by broken thermostat (if the capillary tube is broken) or that the machine goes on "for ever" by broken heater.

KOMPLETTSCHEMA Nr: 80 623 28-1

WM140




SR SHORT RINSE
CW COLD WATER
PD PERM. PRESS / DELICATE
GA GENTLE ACTION

— — INTERN FÖRBINDNING / INTERNAL CONNECTION
- ——— - ALTERNATIV KOPPLING / ALTERNATIVE WIRING

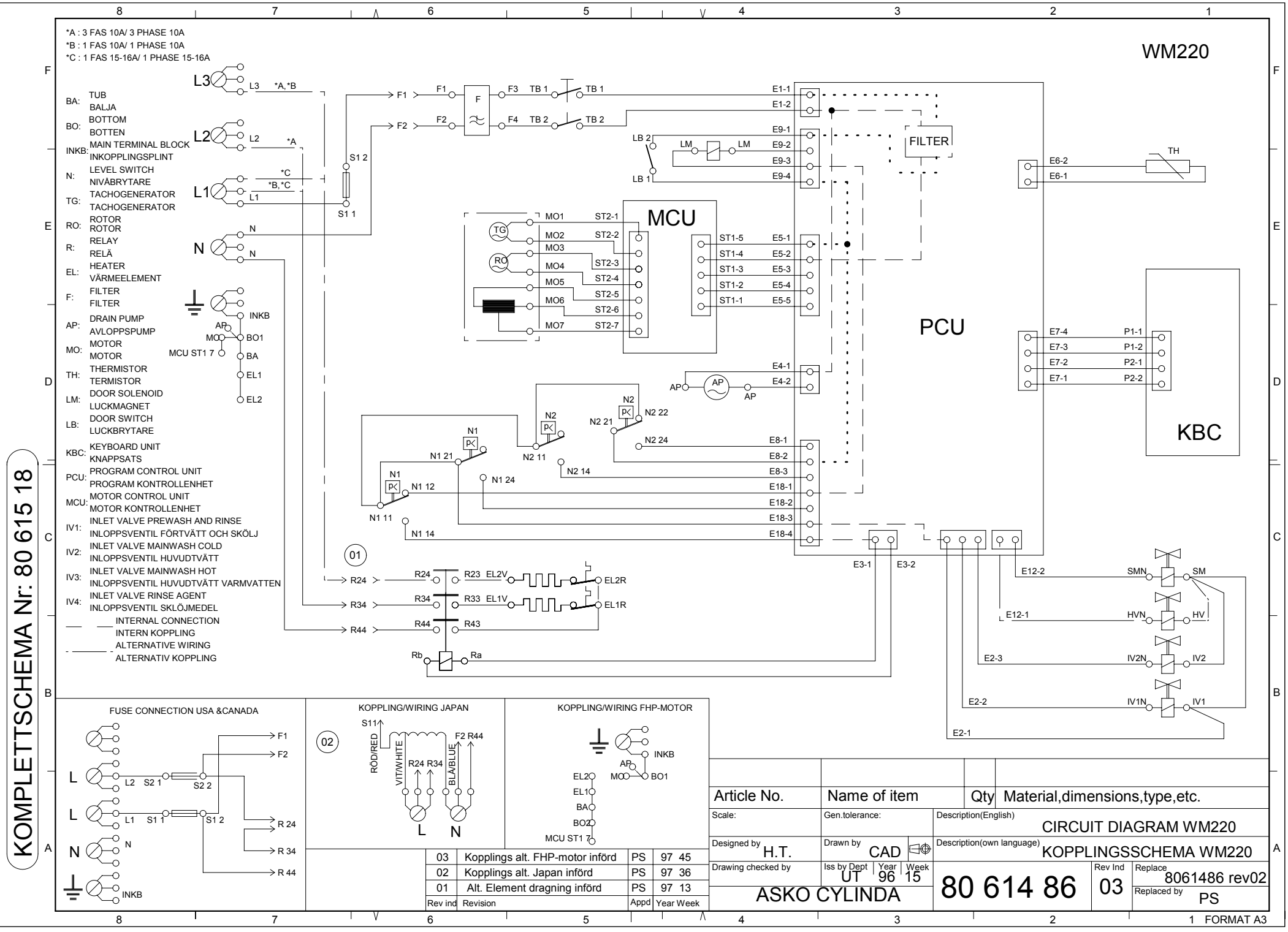
AP: DRAIN PUMP
TM: TIMER MOTOR
EL1: HEATER 1
EL2: HEATER 2
F: FILTER
IL: INDICATION LAMP
IV: INLET VALVE
SM: RINSE AGENT VALVE
LB: DOOR SWITCH

LM: DOOR SOLENOID
MO: MOTOR
N: LEVEL SWITCH
P TIMER CONTACT
R: RELAY
T: THERMOSTAT
TB: PUSH BUTTON SWITCH
VB: ROTARY SWITCH

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|
| 1 | 71°C var 80°C | H.T. | 96 39 |

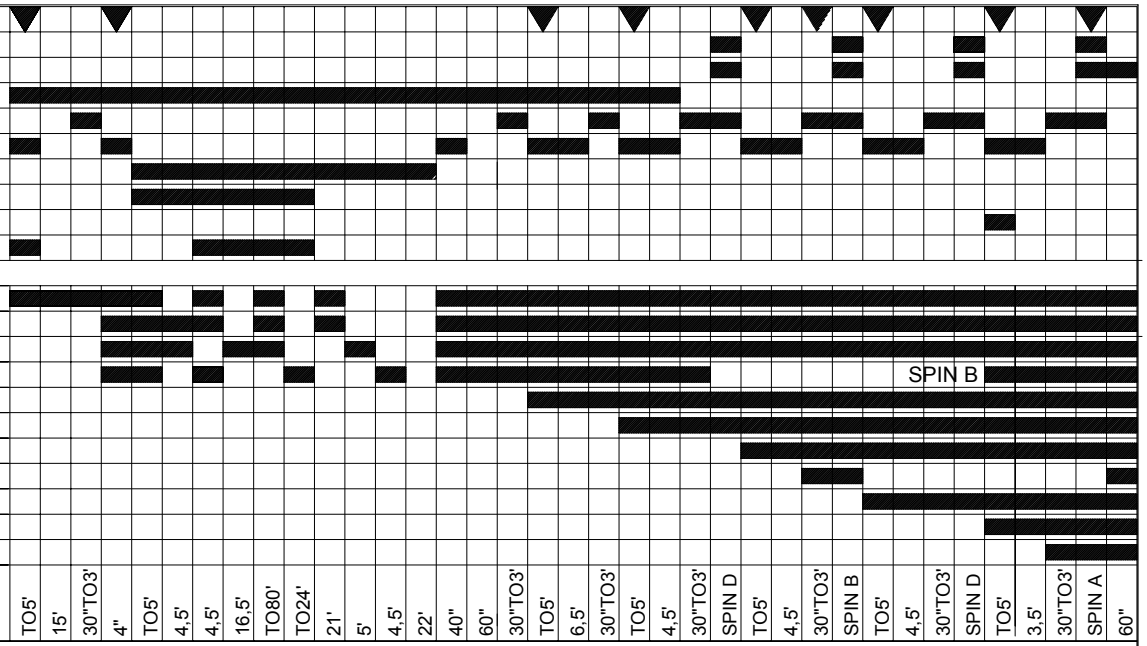
| Article No. | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | CIRCUIT DIAGRAM WM 140 |
| Designed by P-A W | Drawn by | Description(own language) | KOPPLINGSSCHEMA WM 140 |
| Drawing checked by | Iss by Dept / Year / Week: UT 96 23 | Rev Ind | Replace |
| ASKO CYLINDA | 80 620 63 | 01 | Replaced by |

1 FORMAT A3


*A : 3 FAS 10A/ 3 PHASE 10A
*B : 1 FAS 10A/ 1 PHASE 10A
*C : 1 FAS 15-16A/ 1 PHASE 15-16A
WM220
BA: TUB BALJA
BO: BOTTOM BOTTEN
INKB: MAIN TERMINAL BLOCK INKOPPLINGSPLINT
N: LEVEL SWITCH NIVÅBRYTARE
TG: TACHOGENERATOR TACHOGENERATOR
RO: ROTOR ROTOR
R: RELAY RELÄ
EL: HEATER VÄRMEELEMENT
F: FILTER FILTER
AP: DRAIN PUMP AVLOPPSPUMP
MO: MOTOR MOTOR
TH: THERMISTOR TERMISTOR
LM: DOOR SOLENOID LUCKMAGNET
LB: DOOR SWITCH LUCKBRYTARE
KBC: KEYBOARD UNIT KNAPPSATS
PCU: PROGRAM CONTROL UNIT PROGRAM KONTROLLENHET
MCU: MOTOR CONTROL UNIT MOTOR KONTROLLENHET
IV1: INLET VALVE PREWASH AND RINSE INLOPPSVENTIL FÖRTVÄTT OCH SKÖLJ
IV2: INLET VALVE MAINWASH COLD INLOPPSVENTIL HUVUDTVÄTT
IV3: INLET VALVE MAINWASH HOT INLOPPSVENTIL HUVUDTVÄTT VARMVATTEN
IV4: INLET VALVE RINSE AGENT INLOPPSVENTIL SKLÖJMEDEL
INTERNAL CONNECTION INTERN KOPPLING
ALTERNATIVE WIRING ALTERNATIV KOPPLING
L3
L2
L1
N
*A,*B
*A
*C
*B,*C
S1 2
S1 1
F1
F2
F
F3
F4
TB 1
TB 2
LB 2
LB 1
LM
FILTER
TH
E6-2
E6-1
MCU
MO1
MO2
MO3
MO4
MO5
MO6
MO7
ST2-1
ST2-2
ST2-3
ST2-4
ST2-5
ST2-6
ST2-7
TG
RO
ST1-5
ST1-4
ST1-3
ST1-2
ST1-1
E5-1
E5-2
E5-3
E5-4
E5-5
PCU
E9-1
E9-2
E9-3
E9-4
E1-1
E1-2
E4-1
E4-2
AP
E7-4
E7-3
E7-2
E7-1
P1-1
P1-2
P2-1
P2-2
KBC
INKB
AP
MO
BO1
MCU ST1 7
BA
EL1
EL2
N1
N1 21
N1 12
N1 24
N1 11
N1 14
N2
N2 11
N2 21
N2 22
N2 24
N2 14
E8-1
E8-2
E8-3
E18-1
E18-2
E18-3
E18-4
E3-1
E3-2
E12-2
E12-1
E2-3
E2-2
E2-1
SMN
SM
HVN
HV
IV2N
IV2
IV1N
IV1
01
R24
R34
R44
R23 EL2V
R33 EL1V
R43
EL2R
EL1R
Rb
Ra
FUSE CONNECTION USA &CANADA
L2 S2 1
S2 2
L1 S1 1
S1 2
R 24
R 34
R 44
KOPPLING/WIRING JAPAN
02
S11
RÖD/RED
VIT/WHITE
R24 R34
BLÅ/BLUE
F2 R44
KOPPLING/WIRING FHP-MOTOR
EL2
EL1
BA
BO2
MCU ST1 7
03 Kopplings alt. FHP-motor införd PS 97 45
02 Kopplings alt. Japan införd PS 97 36
01 Alt. Element dragning införd PS 97 13
Rev ind Revision Appd Year Week
Article No.
Name of item
Qty
Material,dimensions,type,etc.
Scale:
Gen.tolerance:
Description(English) CIRCUIT DIAGRAM WM220
Designed by H.T.
Drawn by CAD
Description(own language) KOPPLINGSSCHEMA WM220
Drawing checked by
Iss by Dept UT Year 96 Week 15
ASKO CYLINDA
80 614 86
Rev Ind 03
Replace 8061486 rev02
Replaced by PS
1 FORMAT A3
KOMPLETTSCHEMA Nr: 80 615 18

KOMPLETTSCHEMA Nr:80 615 18

| | | | |
|---|---|---|---|
| PROGRAMSTART | START POSITION | | |
| CENTRIFUGERING | SPINNING | | |
| MOTOR (DIREKT) | MOTOR (DIRECT) | | |
| MOTOR (NIVÅ) | MOTOR (LEVEL) | | |
| AVLOPPSPUMP | DRAINPUMP | | |
| INLOPPSVENTIL 1 | INLET VALVE 1 | | |
| INLOPPSVENTIL 2 | INLET VALVE 2 | | |
| INLOPPSVENTIL HV | INLET VALVE HV | | |
| INLOPPSVENTIL SM | INLET VALVE SM | | |
| ELEMENT | ELEMENT | | |
| PROGRAMMEN | THE PROGRAMS | KNAPP / SWITCH | |
| FÖRTVÄTT | PREWASH | 1 | |
| HUVUDTVÄTT | MAINWASH | 2 | |
| KORT HUVUDTVÄTT | SHORT MAINWASH | 3 | |
| YLLETVÄTT | WOOL PROGRAM | 4 | |
| 5 SKÖLJ | 5 RINSES | 5 | |
| 4 SKÖLJ | 4 RINSES | 6 | |
| 3 SKÖLJ | 3 RINSES | 7 | |
| KORT CENTR. | SHORT SPIN. | 8 | |
| 2 SKÖLJ | 2 RINSES | 9 | |
| 1 SKÖLJ | 1 RINSE | 10 | |
| LÅNG CENTR. | LONG SPIN. | 11 | |




STEGTIDER I MINUTER :
STEPTIMES IN MINUTES :

TO5' | 15' | 30"TO3' | 4" | TO5' | 4,5' | 4,5' | 16,5' | TO80' | TO24' | 21' | 5' | 4,5' | 22' | 40" | 60" | 30"TO3' | TO5' | 6,5' | 30"TO3' | TO5' | 4,5' | 30"TO3' | SPIN D | TO5' | 4,5' | 30"TO3' | SPIN B | TO5' | 4,5' | 30"TO3' | SPIN D | TO5' | 3,5' | 30"TO3' | SPIN A | 60"

TILLKOMMET STEG ADDED STEP

FÖRBIPROGRAMMERAT STEG BY PASSED STEP

| FUNKTION | FUNCTION | I PROGR. | IN PROGR. |
|---|---|---|---|
| H\GNIV.SKONG. | HIGH LEV.GENT.ACT | 1-3 | SPIN B |
| H\GNIV.SKONG. | HIGH LEV.GENT.ACT | 5-7,9,10 | SPIN B |
| HALVLAST | HALF LOAD | 1-2 | |
| HALVLAST | HALF LOAD | 3 | SPIN B |
| EKONOMI | ECONOMY | 1-3 | |
| KORT CENTR. | SHORT SPIN. | 1-7,9-11 | SPIN B |
| EJ CENTR. | NO SPIN | 1-7,9,10 | |
| EUROPA PROG. | EUROPE PROG. | | 4,5' |
| EJ EUROPA PROG. | NOT EUROPE PROG. | | |

1/2

E

| | | |
|---|---|---|
| SKONG.VÄRMEVÄNT. | MEDURS | CLOCKWISE |
| GENT.ACT.TEMPSTOP | MOTURS | ANTICLOCKWISE |
| SKONGÅNG | MEDURS | CLOCKWISE |
| GENTLE ACTION | MOTURS | ANTICLOCKWISE |
| NORMALGÅNG | MEDURS | CLOCKWISE |
| NORMAL ACTION | MOTURS | ANTICLOCKWISE |

3 SEK. / SEC.

120 SEK. / SEC.

VARM FÖRTVÄTT, ELEMENT I FÖRSTA STEGET, ENDAST I VISSA MASKINER
WARM PREWASH, ELEMENT IN 1ST STEP, ONLY IN SOME MACHINES

INLOPPSVENTIL 3 ENDAST I VARMVATTENANSLUTNA MASKINER OCH VALD TEMP. > 40 C
INLET VALVE 3 ONLY IN HOT WATER CONNECTED MACHINES AND SELECTED TEMP. > 40 C

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|

| Article No | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | TIMER DIAGRAM WM 220 |
| Designed by HT | Drawn by | Description(own language | TIMER DIAGRAM WM 220 |
| Drawing checked b | Iss by Dep UT / Year 96 / Week 32 | 80 614 84 | Rev Ind / Replace / Replaced by |

FORMAT A3

KOMPLETTSCHEMA NR: 80 615 04

KOPPLING/WIRING FHP-MOTOR

AP: AVLOPPSPUMP / DRAIN PUMP
E: STYRENHET / CONTROL UNIT
EL 1: ELEMENT, HÖG EFFEKT / HEATER, HIGH POWER
TB: TRYCKBRYTARE / PUSH BUTTON SWITCH
IV/SM: INLOPPSVENTILER / INLET VALVES
LB: LUCKBRYTARE / DOOR SWITCH
LM: LUCKMAGNET / DOOR SOLENOID
TR: TERMORELÄ / THERMAL RELAY
R: RELÄ / RELAY
RO: ROTOR / ROTOR
T: TERMOSTAT / THERMOSTAT
EL 2: ELEMENT, LÅG EFFEKT / ELEMENT, LOW POWER
F: FILTER / FILTER
ILA: INDIKERINGSLAMPA / INDICATION LAMP
MO: MOTOR / MOTOR
N: NIVÅBRYTARE / LEVEL SWITCH
P: PROGRAMVERK / TIMER

SPIN SPEED SELECTION
FIXED SPEEDS

PCU
SSP
EUROPA
SPINSPEED SELECTION

VARMVATTENANSLUTEN MASKIN
HOT WATER CONNECTED MACHINE
ALT 1: MIXED INLET
ALT 2: CHANGE OVER INLET

MCU

KOPP. AVLOPPSVENTIL
CONNECTION OUTLET VALVE

FUSE CONNECTION FOR USA & CANADA

1 FAS 16/10 A
1 PHASE 16/10 A

1 FAS 16A
1 PHASE 16A

1 FAS 10A
1 PHASE 10A

ALTERNATIV KOPPLING/ALTERNATIVE WIRING
INTERN FÖRBINDNING/INTERNAL CONNECTION
(TB1 XX) ALTERNATIV KONTAKT PUNKT/ALTERNATIVE CONNECTION POINT

| Rev ind | Revision | Appd | Year | Week |
|---|---|---|---|---|
| 06 | KOPPLINGSALT. FHP-MOTOR | P S | 97 | 45 |
| 05 | Alt.betckningar på TB3 tillkom | P S | 97 | 38 |
| 04 | Kopplings alt. 5h ändrades | P S | 97 | 22 |
| 03 | Koppling avloppsventil tillkom | H T | 96 | 39 |
| 02 | Fast 3-skölj tillkom | H T | 96 | 34 |
| 01 | Omv. funkt. varvtalsomk. Vølund | P-A | 96 | 25 |

| Article No. | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | CIRCUIT DIAGRAM WM120 |
| Designed by H. T. | Drawn by CAD | Descript.(own language) | KOPPL.SCHEMA WM120 |
| Drawing checked by | Iss by Dept UT / Year 95 / Week 45 | 80 613 96 | Rev Ind 06 / Replace / Replaced by |

1 FORMAT A3

| | | POSTION NR. | START POSITIONS | ACTION | LEVEL | STEP TIME | AGITATION | CONDITION FOR AGITATION | RAPID ADVANCE: INTENSIV | RAPID ADVANCE: NORMAL | RAPID ADVANCE: NO ECO | RAPID ADVANCE: NO SPIN | RAPID ADVANCE: 1/2 LOAD | RAPID ADVANCE: SSP + 1/2 LOAD | RAPID ADVANCE: NO EUROPA | RAPID ADVANCE: EUROPA | RAPID ADVANCE: NO FOAM | RAPID ADVANCE: FOAM | RED. SPIN OPT. | REMARKS | TIME OUT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STEP FUNCTION | | 1 | ▶ | FILL 1 HEAT | 1 | 16,5' | N | P> | | | | | | | | | | | | 90" |
| | | 2 | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | |
| | | 3 | ▶ | SET COTTON INTENSIV | | 4" | | | → | | | | | | | | | | | |
| | | 4 | | ↓ | | | | | | | | | | | | | | | | |
| | | 5a | ▶ | FILL 1 | 1 | 4" | | | | | | | | | | | | | | |
| | | 5b | | SET COTTON NORMAL | | | | | → | | | | | | | | | | | |
| | | 6 | | FILL 2 C + H | 1 | 4,5' | N | P> | | → | | | | | | | | | | |
| | | 7a | | IF RESET SET RAP. ADV. INTENSIVE HEAT | 1 | 16,5' | N | P> | | | | | | | | | | | | |
| | | 7b | | FILL 2 C + H | 1 | | N | P> | | → | | | | | | | | | | |
| | | 7c | | FILL 2 C + H HEAT | 1 | T | | | | | | | | | | | | | | |
| | | 8a | | IF RESET SET RAP. ADV. NORMAL | | | | | | | | | | | | | | | | |
| | | 8b | | FILL 2 C + H | 1 | 16,5' | N | P> | | → | | | | | | | | | | |
| | | 8c | | FILL 2 C + H | 1 | 6' | N | P> | | | | | | | | | | | | |
| | | 8d | | FILL 2 C + H | 1 | 22' | N | P> | | | → | | | | | | | | | |
| | | 9 | | FILL 1 | 3 | 36" | N | DIREKT | | → | | | | | | | | | | |
| | | 10 | | FILL 1 | 1 | 1' | N | P> | | | | | | | | | | | | |
| | | 11 | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | |
| | | 12 | | FILL 1 | 2 OR 3 | 6,5' | N | ② P> | | | | → | | | | | | | | 90" |
| | | 13 | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | |
| | | 14 | | FILL 1 | 2 OR 3 | 4,5' | N | ② P> | | | | | | | | | | | | 90" |
| | | 15a | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | → | | | | |
| | | 15b | | DRAIN | 1 | | SPIN D | | | | | | | | | | | | | |
| | | 16 | | FILL 1 | 2 OR 3 | 4,5' | N | ② P> | | | | | | | | | | | | 90" |
| | | 17a | | DRAIN | 1 | P< 60" | N | P> | | | | | | | | | | | | |
| | | 17b | | IF FOAM. SET RAP. ADV. FOAM | | | | | | | | | | | | | | | | |
| | | | | DELETE RAP. ADV. NO FOAM | | | | | | | | | | | | | | | | |
| | | 17c | | DRAIN | | | SPIN B | | | | | | | | | | | | | |
| | | 18 | | FILL 1 | 3 | 4,5' | N | ② P> | | | | | | → | | | | | | |
| | | 19 | | FILL 1 | 2 OR 3 | 4,5' | N | ② P> | | → | | | | | | | | | | |
| | | 20a | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | 90" |
| | | 20b | | DRAIN | | | SPIN D | | | | | | | | → | | | | | |
| | | 21 | ▶ | FILL 1, 4 | 2 OR 3 | 3,5' | N | ② P> | | | | | | | | | | | | |
| | | 22 | | ↓ | | | | | | | | | | | | | | | | |
| | | 23a | ▶ | DRAIN | 1 | P< 60" | N | SPIN A/C ① P< | | | | | | | | | | | × | 90" |
| | | 23b | | DRAIN | 1 | 2' | N | | | | | | | | | | | | | |
| | | 24 | | SPIN DOWN | | | | | | | | | | | | | | | | |
| | | 25 | | OFF | | | | | | | | | | | | | | | | |
| | | 26 | ▶ | SET SYNTH. INTENSIV | | 4" | | | | | | | | | | | | | | |
| | | 27 | | ↓ | | | | | | | | | | | | | | | | |
| | | 28a | ▶ | FILL 1 | 1 | 4" | | | | | | | | | | | | | | |
| | | 28b | | SET SYNTH. NORMAL | | | | | → | | | | | | | | | | | |
| | | 29 | | FILL C, H | 1 | 4,5' | N | P> | | → | | | | | | | | | | |
| | | 30a | | IF RESET: SET RAP. ADV. INTENSIVE HEAT | 1 | 16,5' | N | P> | | | | | | | | | | | | |
| | | 30b | | FILL 2 C + H | 1 | T | N | P> | | → | | | | | | | | | | |
| | | 30c | | FILL 2 C + H HEAT | 1 | 16,5' | N | P> | | | | | | | | | | | | |
| | | 31a | | FILL 2 C + H | 1 | 4,5' | N | P> | | → | | | | | | | | | | |
| | | 31b | | FILL 2 C + H | 1 | 36" | N | DIREKT | | | | | | | | | | | | |
| | | 32 | | FILL 1 | 3 | 1' | N | P> | | | | | | → | | | | | | |
| | | 33 | | FILL 1 | 1 | P< 30" | N | P> | | | | | | | | | | | | |
| | | 34 | | DRAIN | | | | | | | | | | | | | | | | |
| | | 35 | ▶ | FILL 1 | 2 OR 3 | 6,5' | N | ② P> | | | | | | → | | | | | | |
| | | 36 | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | |
| | | 37 | ▶ | FILL 1 | 2 OR 3 | 4,5' | N | ② P> | | → | | | | | | | | | | |
| | | 38 | | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | |
| | | 39 | ▶ | FILL1, 4 | 2 OR 3 | 3,5' | N | ② P> | | | | | | | | | | | | |
| | | 40a | | DRAIN | | P< 60" | N | P> | | | | → | | | | | | | | |
| | | 40b | | DRAIN | | | SPIN B | | | | | | | | | | | | × | |
| | | 41 | | SPIN DOWN | | 2' | N | | | | | | | | | | | | | |
| | | 42 | | OFF | | | | | | | | | | | | | | | | |
| | | 43 | ▶ | FILL 1 | | 4" | | | | | | | | | | | | | | |
| | | 44a | | FILL 2 HEAT | 3 | 4,5' | SG | ② P> | | → | | | | | | | | | | 24' |
| | | 44b | | FILL 2 HEAT | 3 | T | SG | ② P> | | | | | | | | | | | | |
| | | 45 | | FILL 2 | 3 | 4,5' | SG | ② P> | | → | | | | | | | | | | |
| | | 46 | | DRAIN | 1 | P< 30" | | | | | | | | | | | | | | 90" |
| | | 47 | | FILL 1 | 3 | 6,5' | G | ② P> | | | | | | | | | | | | |
| | | 48 | | DRAIN | 1 | P< 30" | | | | → | | | | | | | | | | 90" |
| | | 49 | | FILL 1 | 3 | 4,5' | G | ② P> | | | | | | | | | | | | |
| | | 50 | | DRAIN | 1 | P< 30" | | | | → | | | | | | | | | | 90" |
| | | 51 | | FILL1, 4 | 3 | 3,5' | G | ② P> | | | | | | | | | | | | |
| | | 52a | | DRAIN | 1 | P< 60" | | | | → | | | | | | | | | | 90" |
| | | 52b | | DRAIN | | | SPIN B | | | | | | | | | | | | × | |
| | | 53 | | SPIN DOWN | | 2' | G | | | | | | | | | | | | | |
| | | 54 | | OFF | | | | | | | | | | | | | | | | |
| | | 55 | ▶ | DRAIN | 1 | P< 30" | N | P> | | | | | | | | | | | | 90" |
| | | 56 | | OFF | | | | | | | | | | | | | | | | |

① PROFIL A: VERSION EUROPA, SWEDEN, FINLAND
PROFIL C: VERSION SSP + HALF LOAD

② START OF AGITATION AT LEVEL 1 OR 60 SEC. AFTER STEP ENTERING

STEPS 24, 41, AND 53: TIMER WILL NOT LEAVE STEP UNTIL MOTOR HAS STOPPED

ALL FILL STEPS: IF LEVEL NOT REACHED TIME OUT 5 MIN (OR STEP TIME IF SHORTER)

NORMAL ACTION: 12 SEC ON, 3 SEC OFF
GENTLE ACTION: 3 SEC ON, 27 SEC OFF
SUPER GENTLE ACTION: 3 SEC ON 57 SEC OFF

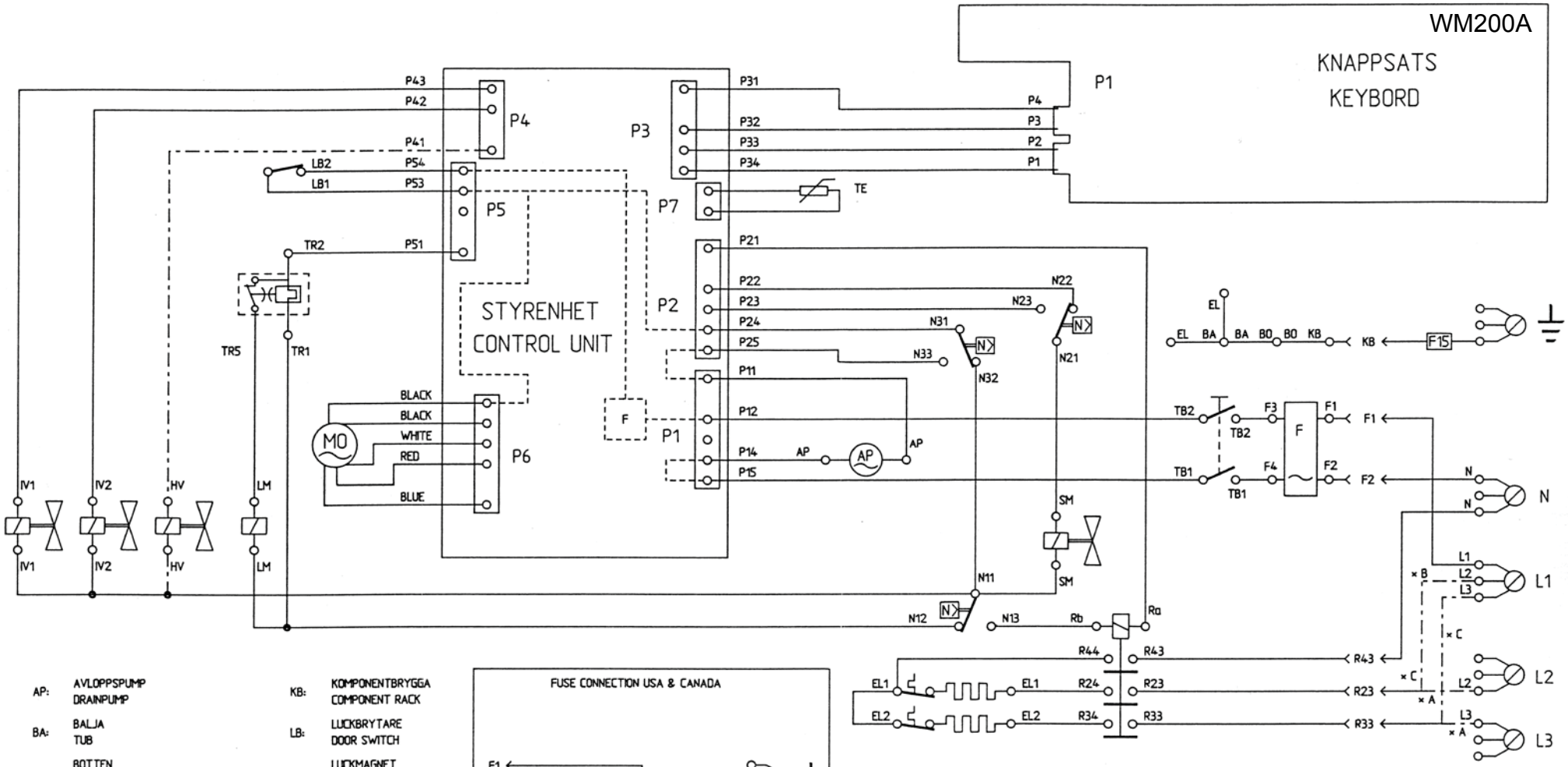
DELAYED TIME START: INTERNAL TIMER-SHAFT WILL STAY IN THE OFF POSITION FOR 5h AFTER PRESELECTING IS ACTIVATED

| Article No. | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | FUNCTION DIAGRAM WM120 |
| Designed by HT | Drawn by CAD | Description(own language) | FUNKTIONS DIAGRAM WM120 |
| Drawing checked by | Iss by Dept / Year / Week UT 96 02 | 80 613 95 | Rev Ind 01 |
| ASKO CYLINDA | | | Replace / Replaced by |

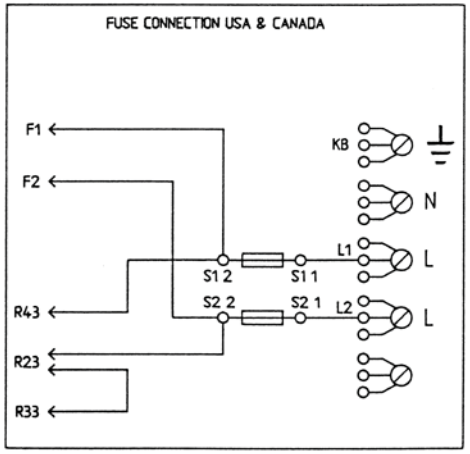
| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|
| 01 | RITNING JUSTERAD | P-A | 96 26 |

FORMAT A3

WM200A




| | | | |
|---|---|---|---|
| AP: | AVLOPPSPUMP<br>DRAINPUMP | KB: | KOMPONENTBRYGGA<br>COMPONENT RACK |
| BA: | BALJA<br>TUB | LB: | LUCKBRYTARE<br>DOOR SWITCH |
| BO: | BOTTEN<br>BOTTOM | LM: | LUCKMAGNET<br>DOOR SOLENOID |
| EL1: | VÄRMEELEMENT,HÖG EFFEKT<br>HEATING ELEMENT,HIGH POWER | MO: | MOTOR<br>MOTOR |
| EL2: | VÄRMEELEMENT,LÅG EFFEKT<br>HEATING ELEMENT,LOW POWER | N: | NIVÅBRYTARE<br>LEVEL SWITCH |
| F: | FILTER<br>FILTER | R: | RELÄ<br>RELAY |
| IV1: | INLOPPSVENTIL FÖRTVÄTT OCH SKÖLJ<br>INLET VALVE PREWASH AND RINSE | TB: | TRYCKBRYTARE<br>PUSH BOTTOM SWITCH |
| IV2: | INLOPPSVENTIL HUVUDTVÄTT<br>INLET VALVE MAINWASH | TE: | TERMISTOR<br>THERMISTOR |
| HV: | INLOPPSVENTIL VARMVATTEN<br>INLET VALVE HOT WATER | TR: | TERMORELÄ<br>THERMAL RELAY |
| SM: | INLOPPSVENTIL SKÖLJMEDEL<br>INLET VALVE RINSEAGENT | T1: | TERMOSTAT<br>THERMOSTAT |




ALTERNATIV KOPPLING
ALTERNATIVE WIRING

INTERN KOPPLING
INTERNAL WIRING

× A : 3 FAS 10A / 3 PHASE 10A

× B : 1 FAS 10A / 1 PHASE 10A

× C : 1 FAS 15-16A / 1 PHASE 15-16A

KOMPLETTSCHEMA NR. 80 607 09

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|

| Article No. | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | CIRCUIT DIAGRAM WM200A |
| Designed by P-A W | Drawn by CAD | Description(own language) | KOPPLINGSSCHEMA WM200A |
| Drawing checked by | Iss by Dept UT / Year 95 / Week 15 | 80 604 12 | Rev ind / Replace / Replaced by |

ASKO CYLINDA

# WM100A

ALTERNATIV KOPPLING/ALTERNATIVE WIRING
INTERN FÖRBINDNING/INTERNAL CONNECTION

| | | | | | |
|---|---|---|---|---|---|
| AP: | AVLOPPSPUMP<br>DRAIN PUMP | IV/SM: | INLOPPSVENTILER<br>INLET VALVES | R: | RELÄ<br>RELAY |
| E: | STYRENHET<br>CONTROL UNIT | LB: | LUCKBRYTARE<br>DOOR SWITCH | RO: | ROTOR<br>ROTOR |
| EL 1: | ELEMENT, HÖG EFFEKT<br>HEATER, HIGH POWER | LM: | LUCKMAGNET<br>DOOR SOLENOID | T: | TERMOSTAT<br>THERMOSTAT |
| EL 2: | ELEMENT, LÅG EFFEKT<br>ELEMENT, LOW POWER | MO: | MOTOR<br>MOTOR | TB: | TRYCKBRYTARE<br>PUSH BUTTON SWITCH |
| F: | FILTER<br>FILTER | N: | NIVÅBRYTARE<br>LEVEL SWITCH | TR: | TERMORELÄ<br>THERMAL RELAY |
| ILA: | INDIKERINGSLAMPA<br>INDICATION LAMP | P | PROGRAMVERK<br>TIMER | | |

VARMVATTENANSLUTEN MASKIN
HOT WATER CONNECTED MACHINE

ALT. 1: MIXED INLET

ALT 2: CHANGE OVER INLET

KOPPLING/WIRING JAPAN (03)

FUSE CONNECTION FOR USA & CANADA

1 FAS 16/10 A
1 PHASE 16/10 A

1 FAS 16A
1 PHASE 16A

1 FAS 10A
1 PHASE 10A

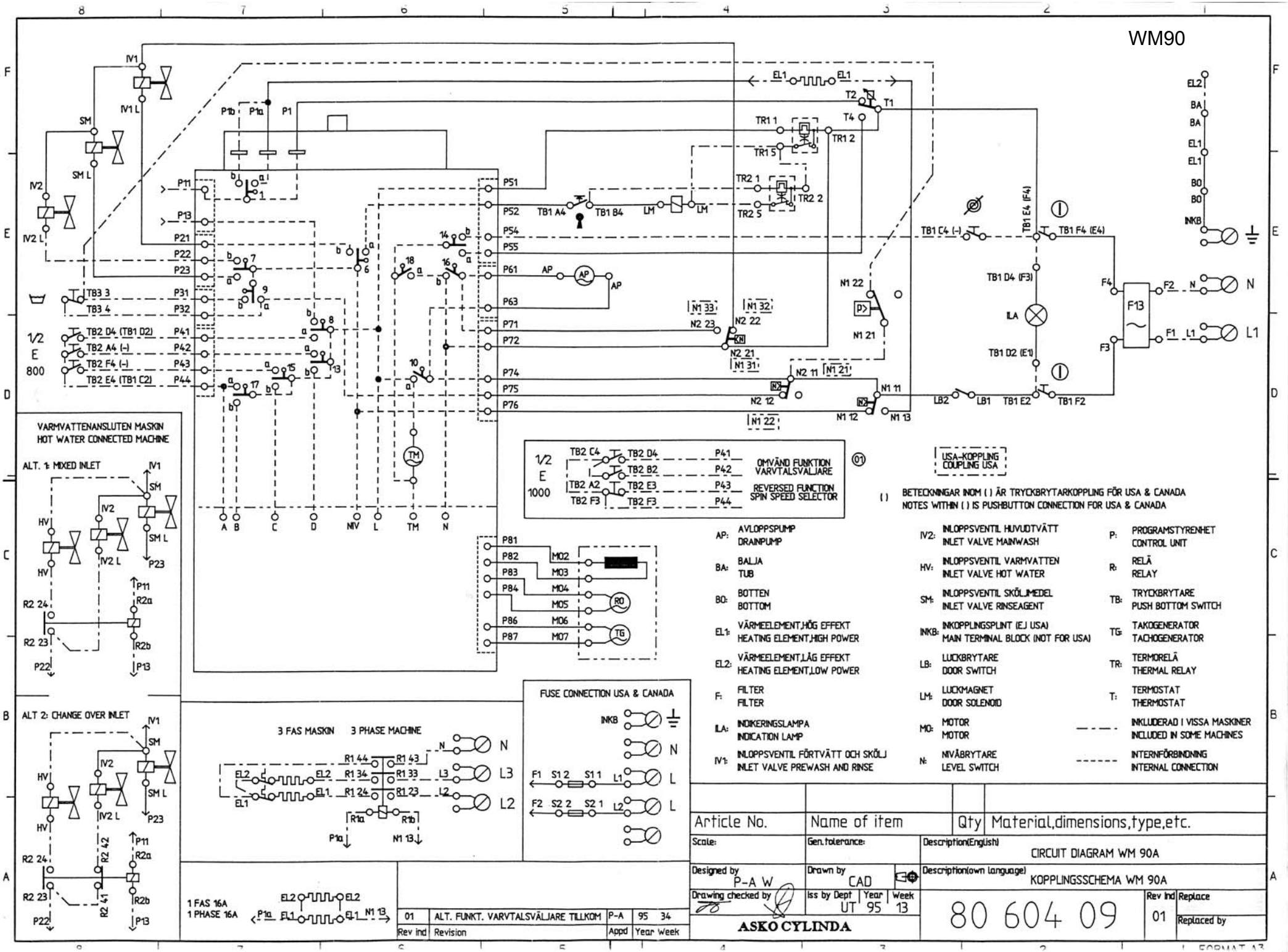
| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|
| 03 | KOPPLINGS ALT. JAPAN TILLKOM | PS | 97 36 |
| 02 | ALT. 1100 VARV CENTRIFUG TILLKOM | PS | 97 02 |
| 01 | INL. VENT. KOPPL. JUST., 5h -MÄRKE TILLK | P-A | 96 12 |

| Article No. | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | CIRCUIT DIAGRAM WM100A |
| Designed by H. T. | Drawn by CAD | Descript.(own language) | KOPPL.SCHEMA WM100A |
| Drawing checked by | Iss by Dept / Year / Week UT 95 13 | 80 604 10 | Rev Ind 03 / Replace / Replaced by |

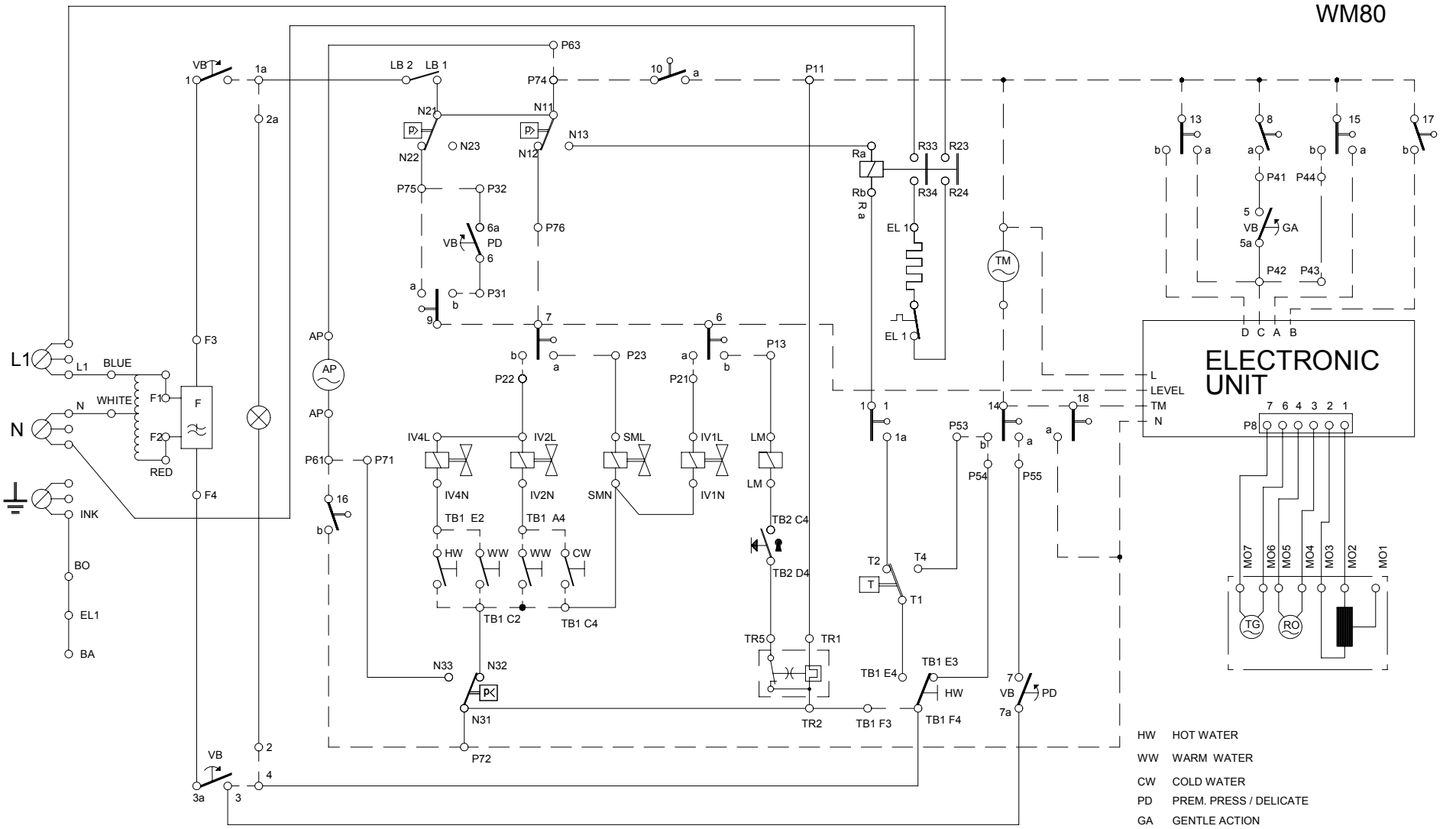
KOMPLETTSCHEMA Nr.: 80 606 89

FORMAT A3

WM90


VARMVATTENANSLUTEN MASKIN
HOT WATER CONNECTED MACHINE
ALT. 1: MIXED INLET
ALT 2: CHANGE OVER INLET
1/2 E 800
1/2 E 1000
TB2 C4 TB2 D4 P41 OMVÄND FUNKTION VARVTALSVÄLJARE
TB2 B2 P42
TB2 A2 TB2 E3 P43 REVERSED FUNCTION SPIN SPEED SELECTOR
TB2 F3 TB2 F3 P44
01
USA-KOPPLING COUPLING USA
3 FAS MASKIN 3 PHASE MACHINE
FUSE CONNECTION USA & CANADA
1 FAS 16A 1 PHASE 16A
() BETECKNINGAR INOM ( ) ÄR TRYCKBRYTARKOPPLING FÖR USA & CANADA
NOTES WITHIN ( ) IS PUSHBUTTON CONNECTION FOR USA & CANADA
AP: AVLOPPSPUMP DRAINPUMP
BA: BALJA TUB
BO: BOTTEN BOTTOM
EL1: VÄRMEELEMENT,HÖG EFFEKT HEATING ELEMENT,HIGH POWER
EL2: VÄRMEELEMENT,LÅG EFFEKT HEATING ELEMENT,LOW POWER
F: FILTER FILTER
ILA: INDIKERINGSLAMPA INDICATION LAMP
IV1: INLOPPSVENTIL FÖRTVÄTT OCH SKÖLJ INLET VALVE PREWASH AND RINSE
IV2: INLOPPSVENTIL HUVUDTVÄTT INLET VALVE MAINWASH
HV: INLOPPSVENTIL VARMVATTEN INLET VALVE HOT WATER
SM: INLOPPSVENTIL SKÖLJMEDEL INLET VALVE RINSEAGENT
INKB: INKOPPLINGSPLINT (EJ USA) MAIN TERMINAL BLOCK (NOT FOR USA)
LB: LUCKBRYTARE DOOR SWITCH
LM: LUCKMAGNET DOOR SOLENOID
MO: MOTOR MOTOR
N: NIVÅBRYTARE LEVEL SWITCH
P: PROGRAMSTYRENHET CONTROL UNIT
R: RELÄ RELAY
TB: TRYCKBRYTARE PUSH BOTTOM SWITCH
TG: TAKOGENERATOR TACHOGENERATOR
TR: TERMORELÄ THERMAL RELAY
T: TERMOSTAT THERMOSTAT
INKLUDERAD I VISSA MASKINER INCLUDED IN SOME MACHINES
INTERNFÖRBINDNING INTERNAL CONNECTION
Article No. | Name of item | Qty | Material,dimensions,type,etc.
Scale:
Gen.tolerance:
Description(English) CIRCUIT DIAGRAM WM 90A
Designed by P-A W
Drawn by CAD
Description(own language) KOPPLINGSSCHEMA WM 90A
Drawing checked by
Iss by Dept UT Year 95 Week 13
ASKO CYLINDA
80 604 09
Rev Ind 01
Replace
Replaced by
01 ALT. FUNKT. VARVTALSVÄLJARE TILLKOM P-A 95 34
Rev ind Revision Appd Year Week
FORMAT A3

WM80




HW HOT WATER
WW WARM WATER
CW COLD WATER
PD PREM. PRESS / DELICATE
GA GENTLE ACTION
—— —— INTERN FÖRBINDNING / INTERNAL CONNECTION
- ——— - ALTERNATIV KOPPLING / ALTERNATIVE WIRING

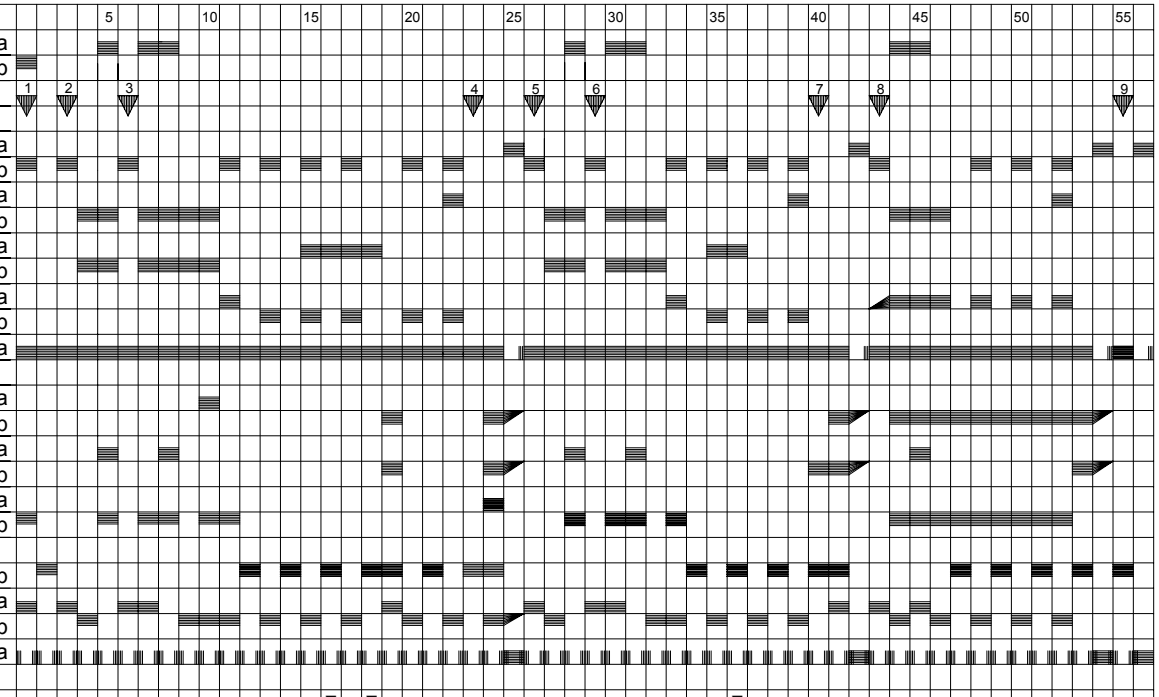
AP: DRAIN PUMP
TM: TIMER MOTOR
EL1: HEATER 1
EL2: HEATER 2
F: FILTER
IL: INDICATION LAMP
IV: INLET VALVE
SM: RINSE AGENT VALVE
LB: DOOR SWITCH
LM: DOOR SOLENOID
MO: MOTOR
N: LEVEL SWITCH
P TIMER CONTACT
R: RELAY
T: THERMOSTAT
TB: PUSH BUTTON SWITCH
VB: ROTARY SWITCH

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|

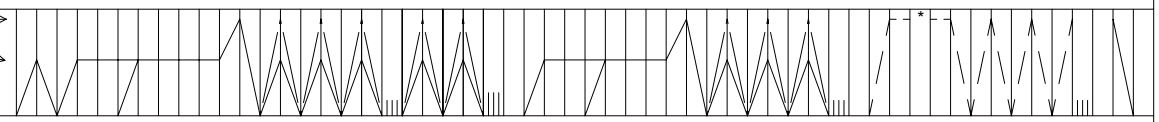
| Article No. | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | CIRCUIT DIAGRAM WM 80 |
| Designed by HT | Drawn by CAD | Description(own language) | KOPPLINGSSCHEMA WM 80 |
| Drawing checked by | Iss by Dept / Year / Week: UT / 95 / 18 | 80 596 15 | Rev Ind: 00 / Replace / Replaced by |

1 FORMAT A3

| | SKRITT | STEP | |
|---|---|---|---|
| 1 | ELEMENT | HEATER | a |
| | ELEMENT FÖRTVÄTT | HEATER PREWASH | b |
| 3 | PROGRAMSTART | START POSITION | |
| 6 | LUCKA | DOOR | a |
| | INLOPPSVENTIL 1 | INLET VALVE 1 | b |
| 7 | INLOPPSVENTIL 4 | INLET VALVE 4 | a |
| | INLOPPSVENTIL 2 | INLET VALVE 2 | b |
| 8 | KOD A (FÖRBIPROGR. 1/2) | CODE A (PROGR. ADV. 1/2) | a |
| | VARMVATTENRELÄ | HOT WATER RELAY | b |
| 9 | HÖGNIVÅ NEDKYLN. & YLLE | HIGH LEVEL COOL & WOOL | a |
| | HÖGNIVÅ SKÖLJ | HIGH RINSE LEVEL | b |
| 10 | TIMERMOTOR | TIMER MOTOR | a |
| 13 | KOD A (FÖRBIPROGR. EJ EKO) | CODE A (PROGR. ADV. NO ECO) | a |
| | KOD D | CODE D | b |
| 14 | SNABBMATN. TEMP.STOPP | RAPID ADV. THERMOSTOP | a |
| | SNABBMATN. EJ CENTR. | RAPID ADV. NO SPIN | b |
| 15 | KOD A (1000→800 rpm) | CODE A (1000→800 rpm) | a |
| | KOD C | CODE C | b |
| 16 | AVLOPPSPUMP | DRAINPUMP | b |
| 17 | KOD A | CODE A | a |
| | KOD B | CODE B | b |
| 18 | STEGKONTAKT | STEP CONTACT | a |

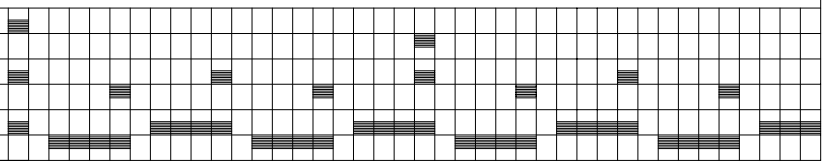



| STEGTID (MIN.) | STEP TIME (MIN.) |
|---|---|
| | 16.5 N1+0.5 0.1 4.5 T OR 80 0.1 16.5 T OR 80 4.5 25.5/1.5 1.5 N1+0.5 4.5 N1+0.5 4.50 N1+0.5/0.1 4.50 N1+0.5/0.1 3.5/0 4.5 N1+0.5 4.5 N1+0.5 9 STOP 0.1 4.5 T OR 80 0.1 16.5 T OR 80 4.5 1.5 N1+0.5 4.50 N1+0.5/0.1 4.5 N1+0.5 4.5 N1+0.5 4.5 N1+0.5 3.5 STOP 0.1 4.5 T OR 25.5 4.5 N1+0.5 4.5 N1+0.5 4.5 N1+0.5 4.5 N1+3.5 STOP N1+0.5 STOP |
| VREDVINKEL | KNOB ANGLE |
| | 10 16.5 23 29 35.5 42 47.5 53 59.5 66 71.5 78 84 90 95.5 101.5 107 113.5 119.5 126 132 137.5 144 150 157 167 172.5 179 185.5 191 196.5 203 208.5 215 221 227.5 233 239 244.5 251 257 264 274 279.5 287.5 292.5 299 304.5 311 316.5 323 328.5 334.5 341.5 351.5 360 |




NORMAL PROGRAM
SKONGÅNG
GENTLE ACTION
* SKONG. VÄRMEVÄNTAN
GENT.ACT.TEMP.STOP
HÖGNIVÅ / HIGH LEVEL
NORMALNIVÅ / NORMAL LEVEL
CENTRIFUGERING / SPINNING
HÖGNIVÅ SKÖLJ / HIGH RINSE LEVEL

| MOTORGÅNG<br>MOTOR ACTION | | | |
|---|---|---|---|
| 3 SEK. STEGTID<br>3 SEC. STEP TIME | SKONG.VÄRMEVÄNTAN | MEDURS | CLOCKWISE |
| | GENT.ACT.TEMP.STOP | MOTURS | ANTICLOCKWISE |
| | SKONGÅNG | MEDURS | CLOCKWISE |
| | GENTLE ACTION | MOTURS | ANTICLOCKWISE |
| | NORMALGÅNG | MEDURS | CLOCKWISE |
| | NORMAL ACTION | MOTURS | ANTICLOCKWISE |



N1+0.5 : UTPUMPNING TILL NORMALNIVÅS ÅTERGÅNGSNIVÅ+YTTERLIGARE 30 SEK. DOCK TOTALT MAX 2 MINUTER
DRAINAGE TO RETURN LEVEL OF NORMAL LEVEL+FURTHER 30 SEC. TOTALY MAX 2 MINUTES.

T OR 80 RESP. T OR 25.5 : TID FÖR UPPVÄRMNING TILL VALD TEMPERATUR, DOCK MAX 80 RESP. 25.5 MIN.
TIME FOR UPHEATING TO SELECTED TEMPERATURE. HOWEVER MAX 80 RESP. 25.5 MIN

VID 1/2-LAST F\RBIPROGRAMMERAS STEG 15-19. I STEG 16 OCH 18 ERH]LLS DOCK 6 SEK. AVL.PUMP OCH I STEG 15 OCH 17 CA 1 SEK. INL.VENTIL 1.
WHEN 1/2-LOAD WILL STEPS 15-19 BE PASSED. IN STEPS 16 AND 18 ARE 6 SEC. DRAIN PUMP EXECUTED AND IN STEPS 15 AND 17 1 SEC. INL.VALVE 1.

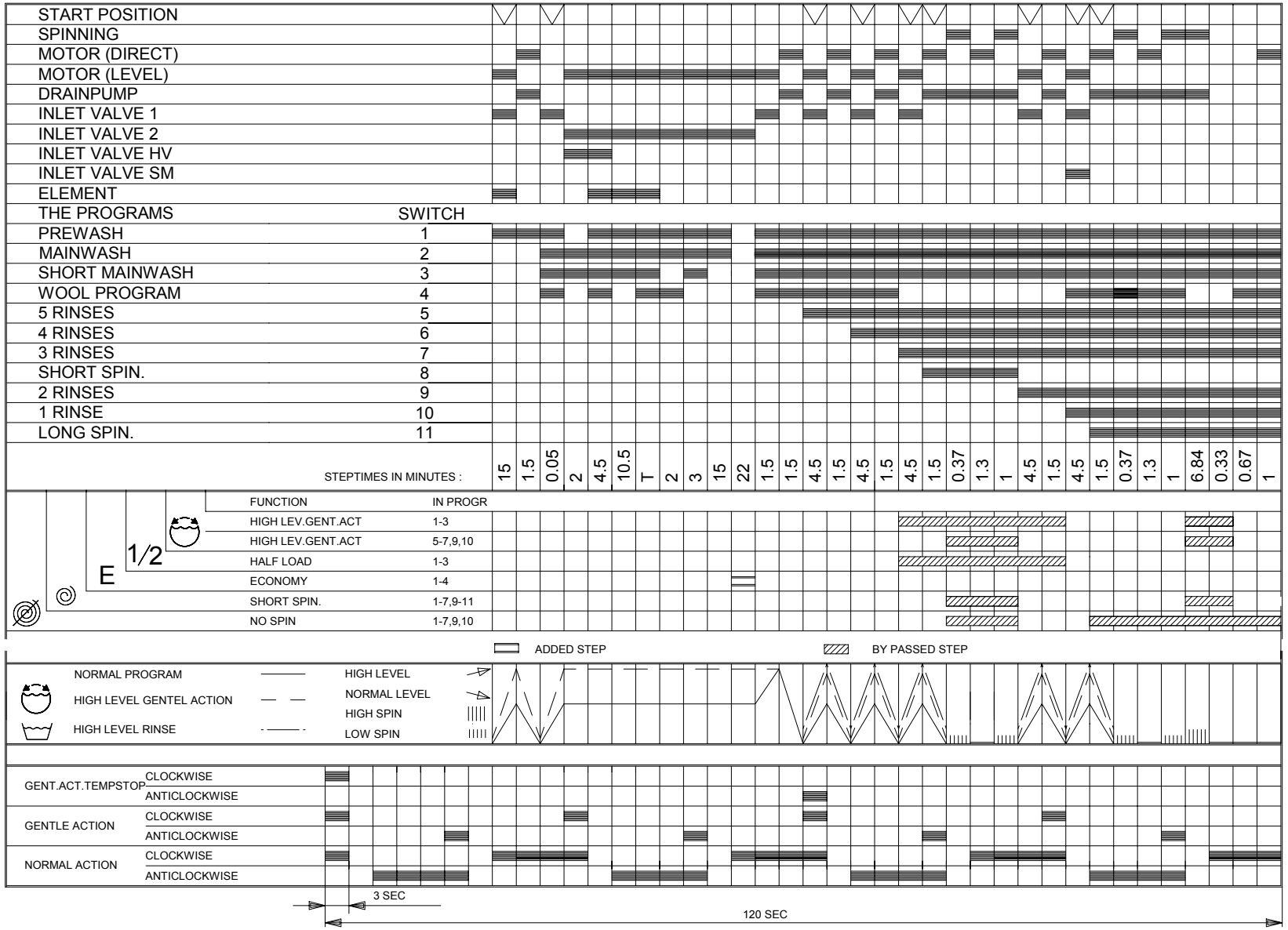
| Rev ind | Revision | UT/HT | Year Week |
|---|---|---|---|
| 1 | V-STOPP ÄNDRAD. | Appd | 94 07 |

| Article No | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | TIMER DIAGRAM WM90 |
| Designed by MATS LILJA | Drawn by CAD | Description(own language | TIMER DIAGRAM WM90 |
| Drawing checked b | Iss by Dep US Year 92 Week 23 | Rev Ind 1 | Replace / Replaced by |

ASKO CYLINDA

8056035-1

FORMAT A3




| Article No | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) TIMER DIAGRAM WM 200 | |
| Designed by MATS LILJA | Drawn by | Description(own language | |
| Drawing checked b | Iss by Dep KS / Year 90 / Week 43 | 8054284-2 | Rev Ind G / Replace / Replaced by |

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|

1 FORMAT A3

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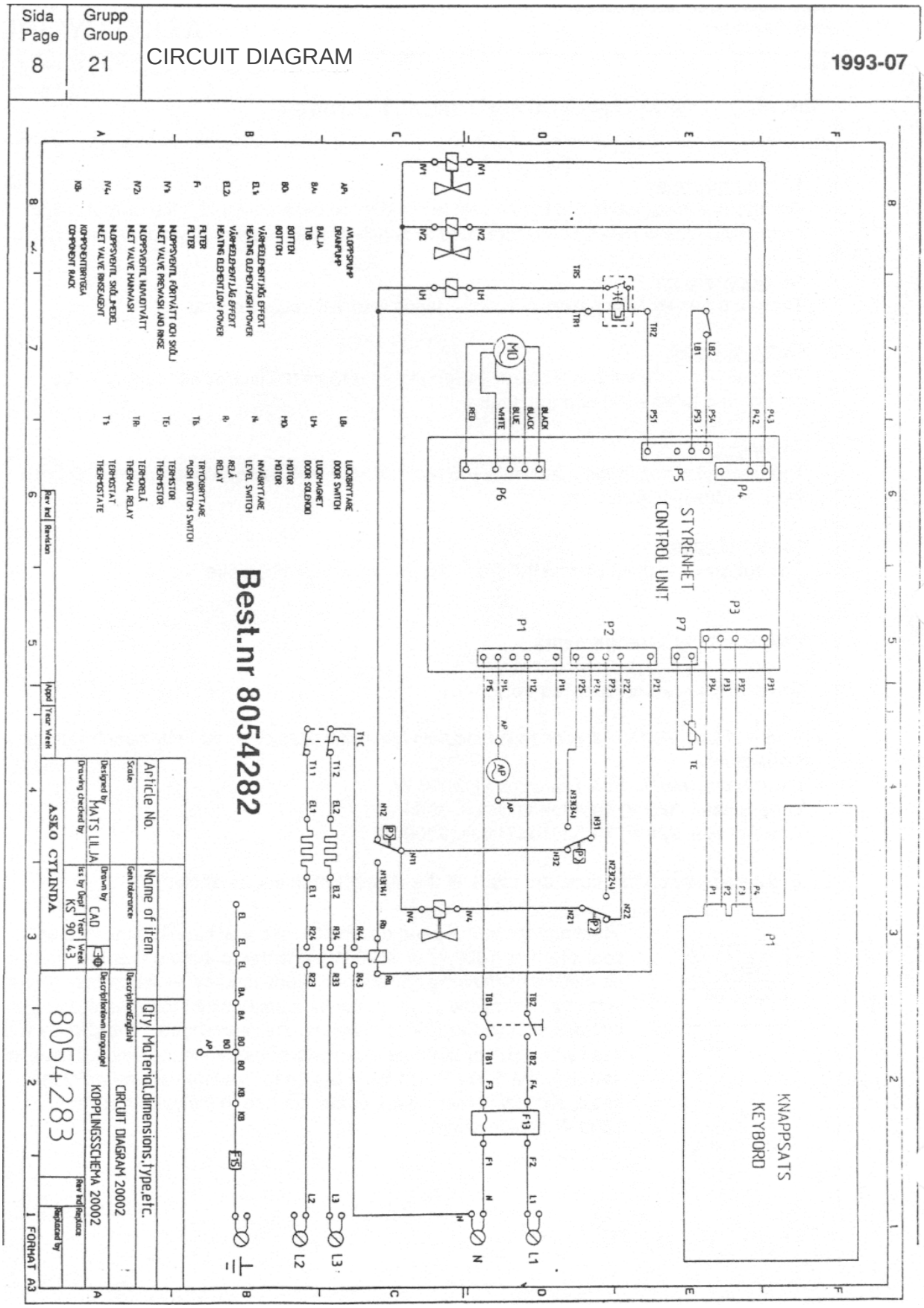

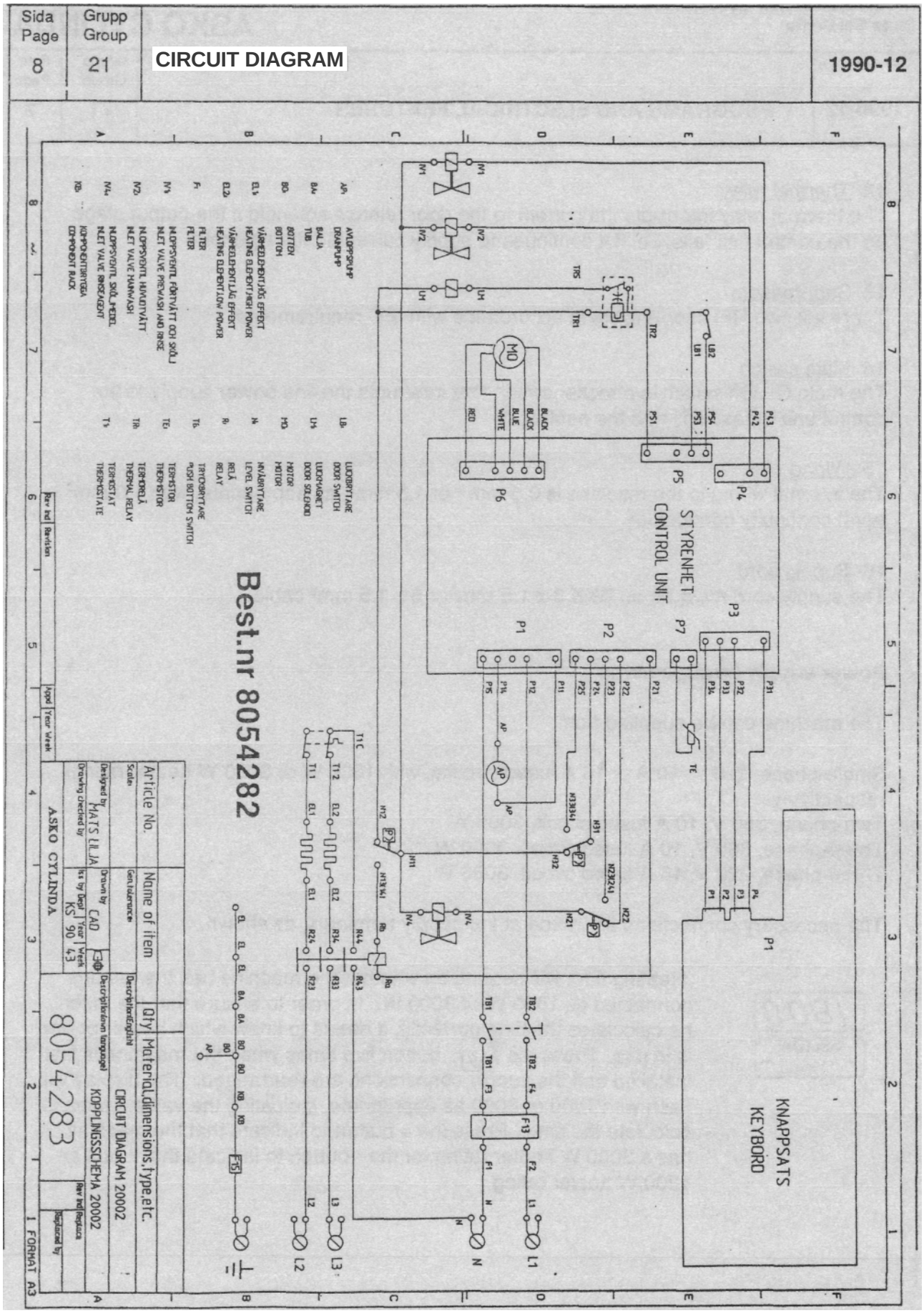
Sida
Page
8
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21
CIRCUIT DIAGRAM
1990-12
KNAPPSATS
KEYBORD
STYRENHET
CONTROL UNIT
Best.nr 8054282
ASKO CYLINDA
8054283
CIRCUIT DIAGRAM 20002
KOPPLINGSSCHEMA 20002
Name of item
Material,dimensions,type,etc.
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Article No.
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MATS LILJA
Drawn by
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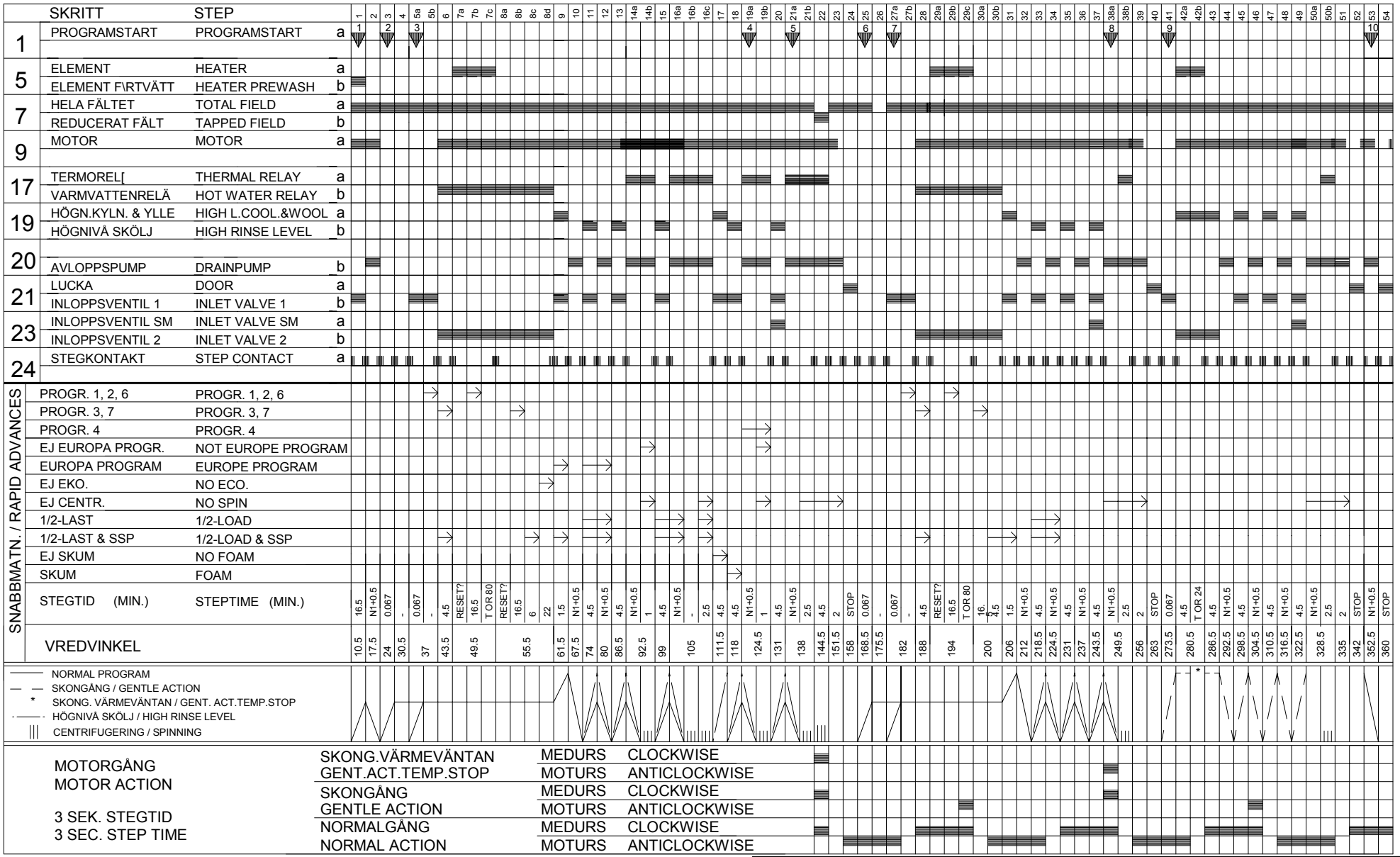
43
FORMAT A3




N1+0.5 : UTPUMPNING TILL NORMALNIVÅS ÅTERGÅNGSNIVÅ+YTTERLIGARE 30 SEK. DOCK TOTALT MAX 2 MINUTER
DRAINAGE TO RETURN LEVEL OF NORMAL LEVEL+FURTHER 30 SEC. TOTALY MAX 2 MINUTES.

T OR 80 RESP. T OR 24 : TID FÖR UPPVÄRMNING TILL VALD TEMPERATUR, DOCK MAX 80 RESP. 24 MIN.
TIME FOR UPHEATING TO SELECTED TEMPERATURE. HOWEVER MAX 80 RESP. 24 MIN

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|

| Article No | Name of item | Qty | Material,dimensions,type,etc. |
|---|---|---|---|
| Scale: | Gen.tolerance: | Description(English) | TIMER DIAGRAM WM100 |
| Designed by MATS LILJA | Drawn by CAD | Description(own language | TIMER DIAGRAM WM100 |
| Drawing checked by | Iss by Dep Year Week US 93 41 | 8058118 | Rev Ind 00 Replace / Replaced by |

ASKO


# REFERENCE MANUAL

# WASHERS
# 600 SERIES MODELS

- DIAGNOSTICS
- TROUBLESHOOTING FLOWCHARTS
- WIRING DIAGRAMS
- COMPONENT VALUES
- TECHNICAL BULLETINS

## Test Program W600 and W620

1. **Take the top of the washer off by removing the 3 screws on the back of the top.**
2. **Locate and insert a jumper wire into E10 on the timer board**
3. **Start the washer on program 3 (Normal wash)**
4. **EV2 and EV3(inlet valves for main wash hot and cold water) allow water into machine up to washing level.**
5. **Press the Super Rinse Button or the button that has the 7 on the symbol**
6. **Washer will heat up for 10 minutes or 10 degrees Celsius**
7. **Press the E button.**
8. **Washer will add water to the wool level. This is 4 cm up the door**
9. **Washer will now wash for 4 minutes. Motor test**
10. **Washer will wash for 16 minutes, or until the button is pressed in again.**
11. **Washer will go into long spin for removing all water from clothes.**

# MOTOR BRUSH # 8801195 USED ON MOTOR # 8063733

***Models W600/W620***

***Motor Brush***

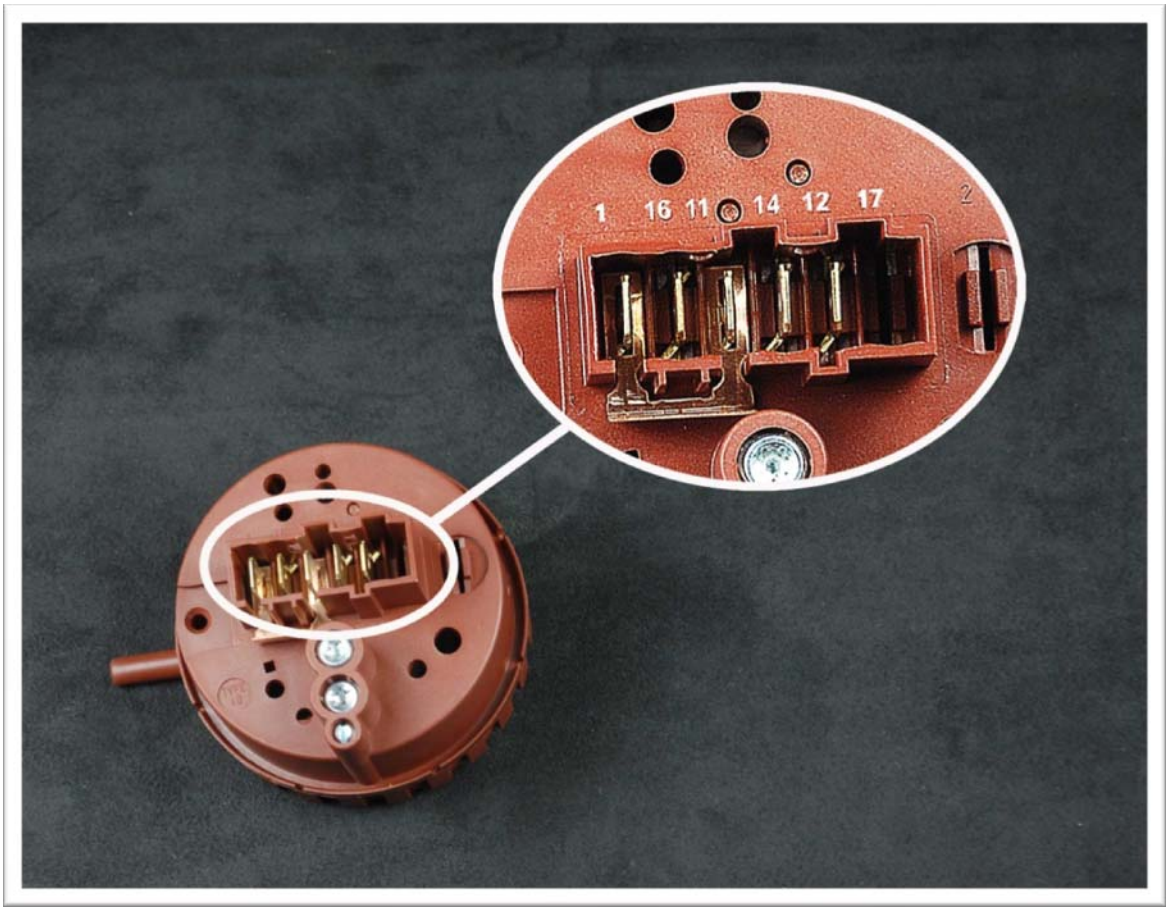
***When ordering Motor Brush be sure and order quantity 2**

# FUNCTIONS OF THE PRESSURE SWITCH W600/6000 Series

***Wires:***

N1 11 is the double wire on the pressure switch(this is also the common wire).

N1 12, N1 14 and N1 16 are all single wires connected to the pressure switch.




***Pressure Switch***

***Checking the Pressure Switch:***

When the machine is empty and the door is open you should have continuity across wires N1 11 and N1 12. Also these connections should be closed when you need to open the door.

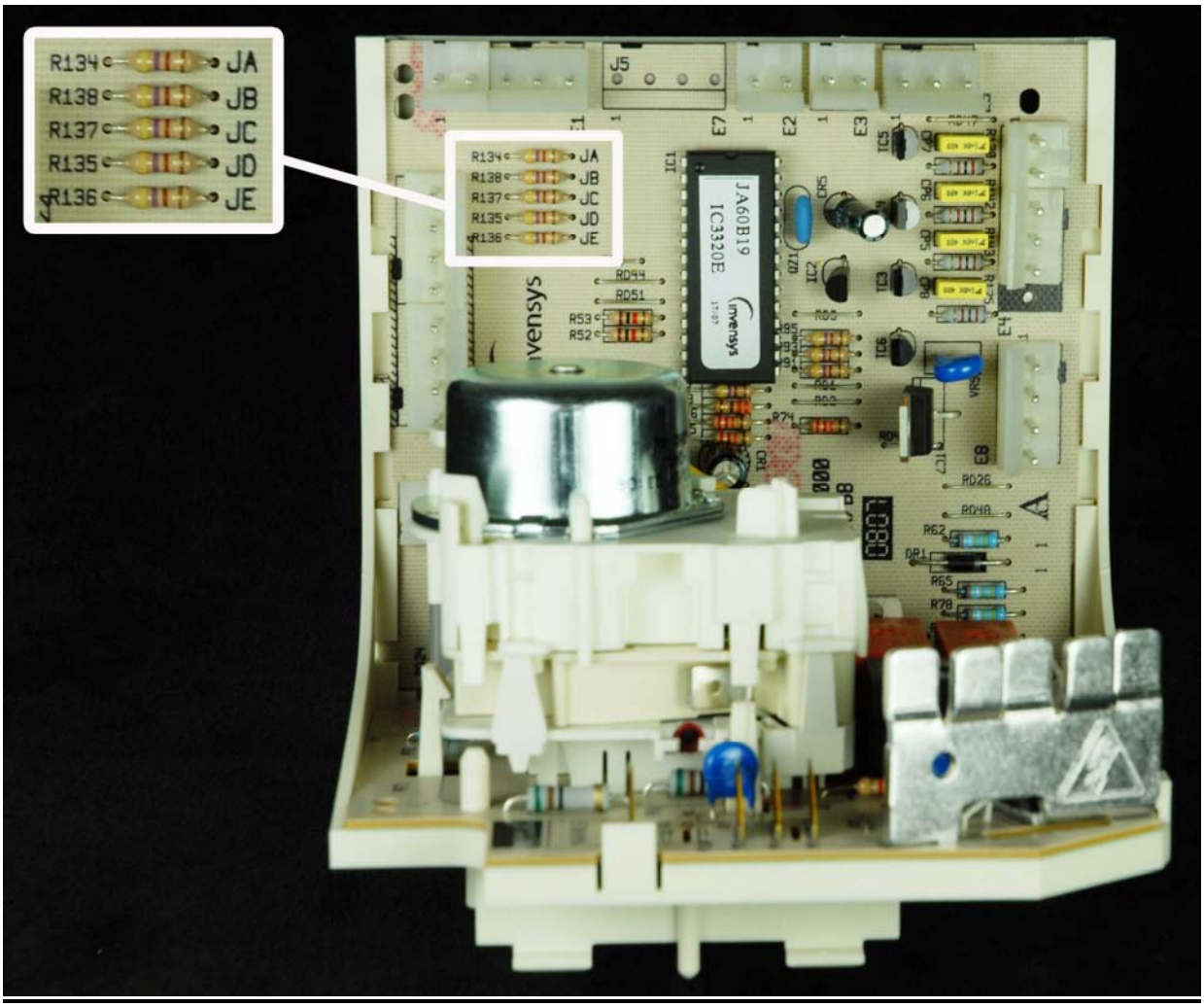
When the machine is at the normal water level you should have continuity across wires N1 11 and wire N1 14. This shows that there is air pressure which has closed the connection on the pressure switch. When the washer is in the Main Wash this is voltage that goes to the heater. The other connection will be coming off the timer board wire PF7. (The timer board will send the secondary leg to the heater about 10-15 minutes into the Main Wash, all other cycles use cold water). You

should have a closed connection across N1 11 and N1 14 if water is in the drum. You should have 208-240v across wire N1 14 and wire PF7 when the heater is on.

Connections N1 11 and N1 16 are used if the washer detects too much soap or too much water in the washer – an overfill fault. If these connections are closed and you do not have any water in the washer drum, remove the pressure hose and check to see if there is any soap or debris inside the hose which could cause it to be locked in this position.

Always inspect the Y connector that connects the hose from the pressure chamber to the pressure switch and pressure sensor. Make sure there are no cracks in the center of this plastic part.

## Diode cut sheet for WM33, W600 and WM44,W620




**If you are working on a WM33, W600 you should cut jumpers JD and JA only.**

**If you are working on a WM44, W620 you should cut only JA jumpers.**

# CHECKING THE E6 CONNECTION ON THE TIMER CONTROL BOARD (MOTOR) # 8063733 W600/W620

***Identifying the Wires from the Timer Control Board Directly to the Motor:***

E 6-1 wire goes to MO7 on the motor

E 6-2 wire goes to MO6 on the motor

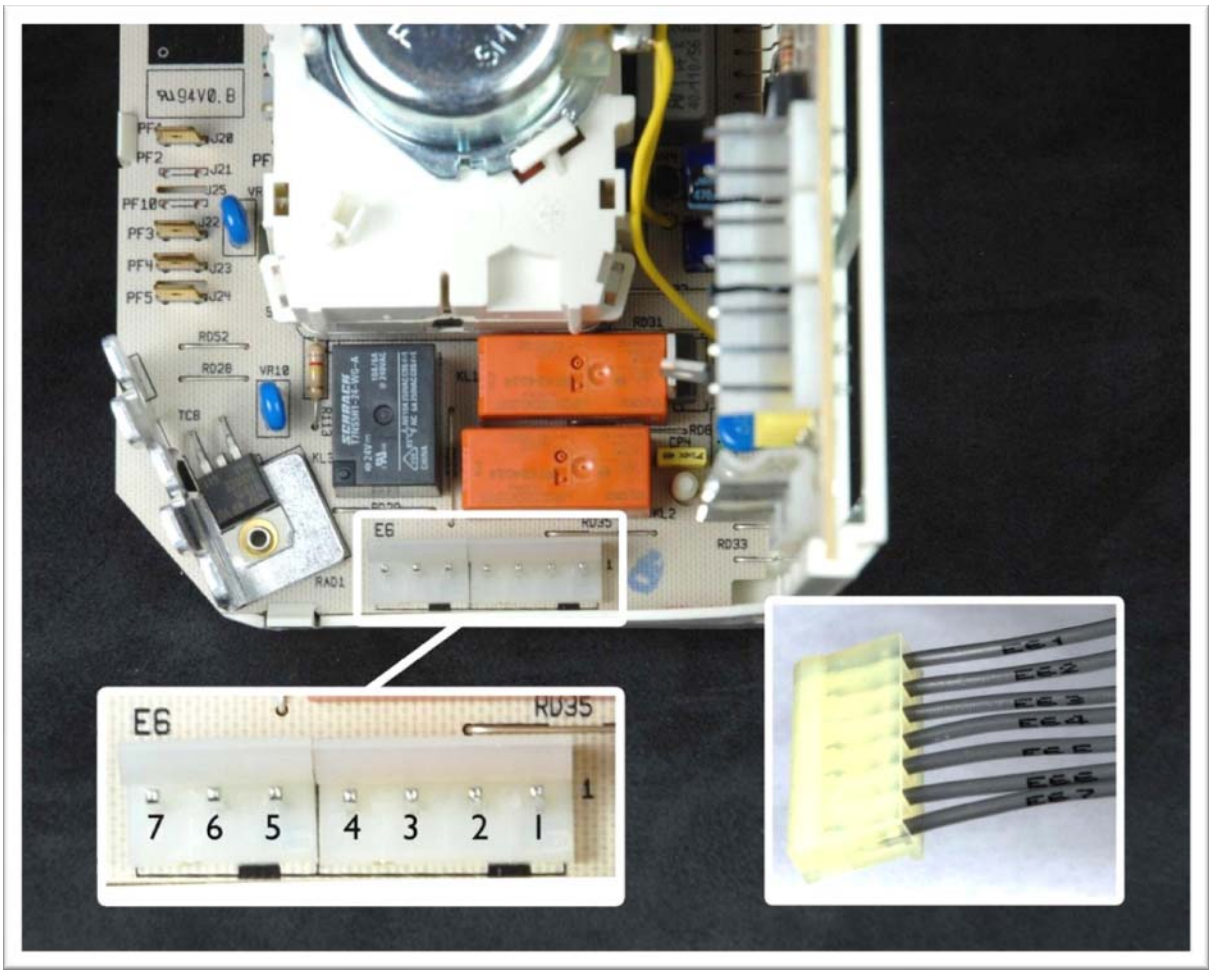
E 6-3 wire goes to MO5 on the motor

E 6-4 wire goes to MO4 on the motor

E 6-5 wire goes to MO3 on the motor

E 6-6 wire goes to MO2 on the motor

E 6-7 wire goes to MO1 on the motor




***Timer Control Board***

(Continued)

***Resistance or Ohm Reading:***

***WM55 W600 Series Motor 8063733***

| **Board E6 connection** | **Motor** |
|---|---|
| E6-1 to E6-2 =135 ohms | MO6 to MO7=135 ohms Tacho |
| E6-3 to E6-4 = 1.75 0hms | MO4 to MO5 =1.75 ohms Rotor |
| E6-5 to E6-6 = 1.05 ohms | MO3 to MO2=1.05 ohms Stator |
| E6-5 to E6-7 =.58 ohms | MO3 to MO1 =.58 ohms Stator |

You can always do the audible check with your meter and if there is any open connection your motor needs to be replaced.

**Keep in mind your meter may be +-8% on the readings.**

# CHECK RESISTANCE ON THE MOTOR PART # 8063733

The wires to the motor will be labeled MO1 through MO7. The MO1 wire is the wire that is closest to the bottom of the outer drum. The MO7 wire is closest to the base pan.

***Resistance or OHMReading on the Motor:***

MO1 to MO3 = .58 ohms Stator

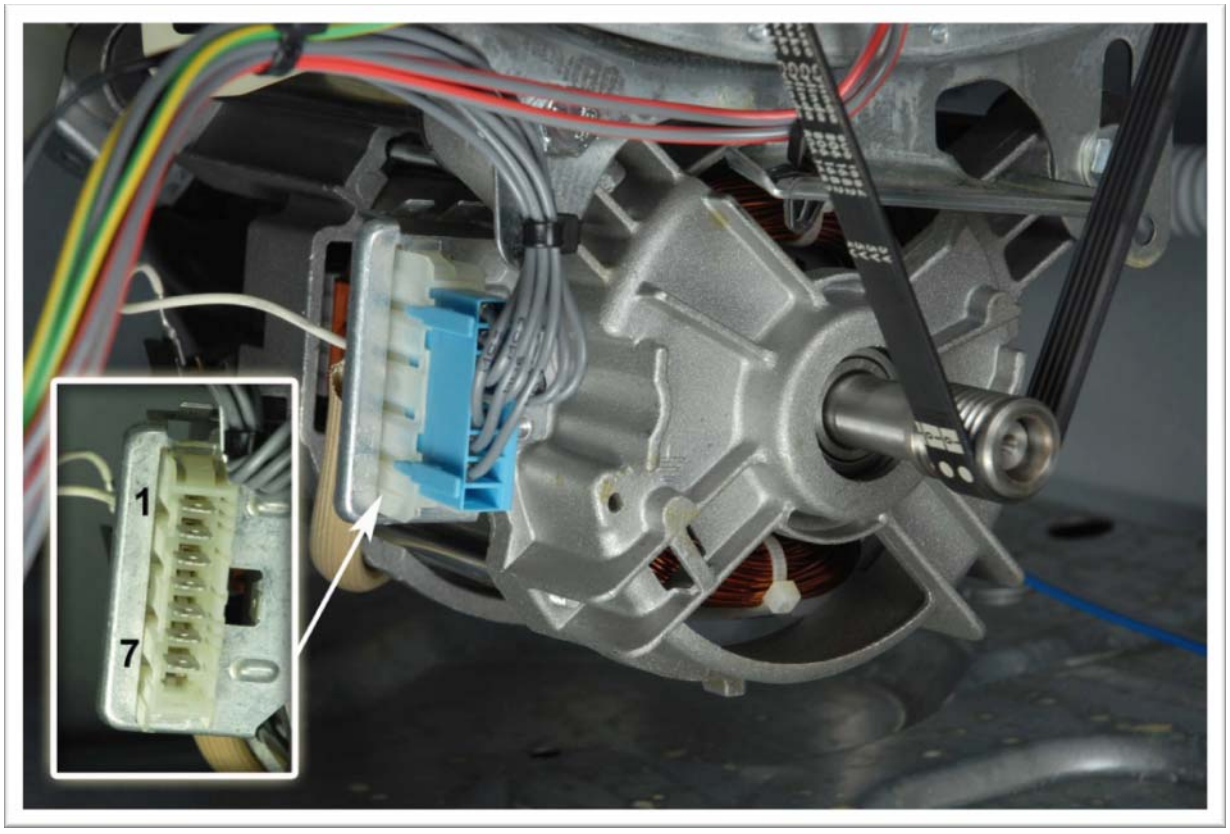
MO2 to MO3 = 1.05 ohms Stator

MO4 to MO5 = 1.75 ohms Rotor

MO6 to MO7 = 135 ohms Tacho

You can also do audible continuity checks on the motor. If these connections are open your motor is bad.

Please give = or – 8% on the ohm readings




***Motor Connectors***

# THE PROGRAM CONTROL KNOB ON THE W600/W620 HAS TWO FAULT INDICATORS:

If the control knob stops on one of these positions, the machine has detected a problem.

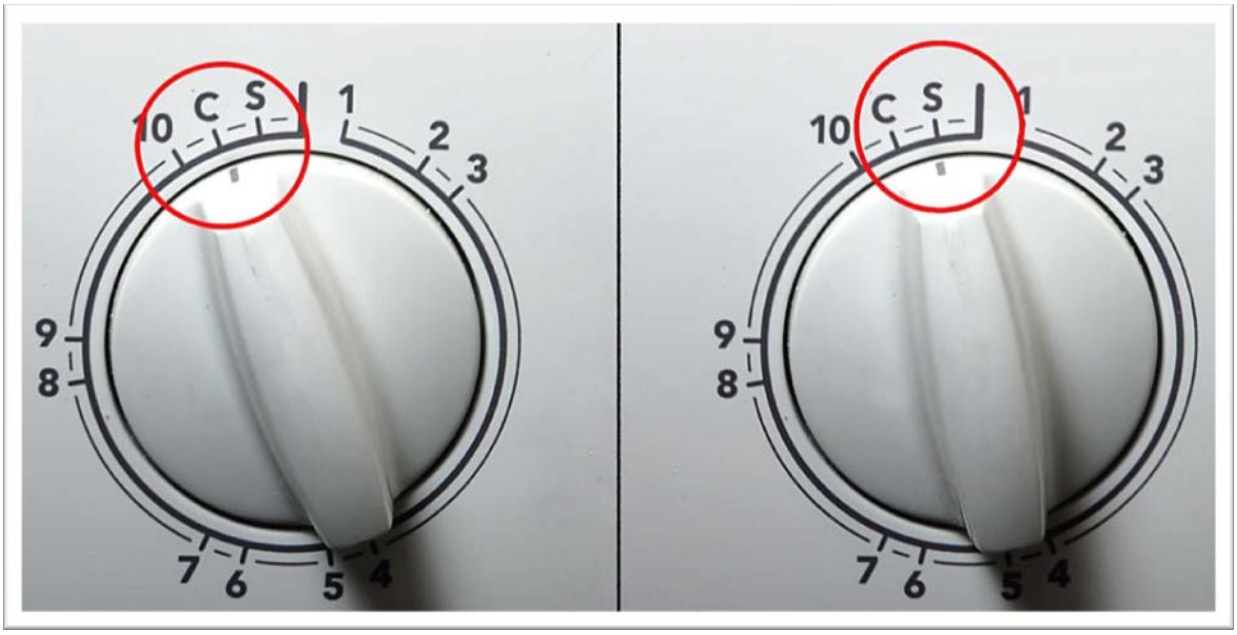



*fig. 1fig. 2*

## ***C Position***

If the control knob stops on the **C***(fig. 1)* this indicates a problem that can possibly be taken care of without calling a service company. Here are some possible problems:

**-Power interruption**

**-Water is not draining out - check the coin trap in the drain pump**

**-Water is not coming into machine - make sure the cold water is turned on**

**- The washer did not go through the spin cycle = unbalanced load**

## ***S Position***

If thecontrol knob stops on the **S***(fig. 2)* this indicates a machanical problem and you will need to call a service company. Refer to the service manual.

**W640 & W660**

**Fault Tracing**

Turn power off to the machine and then back on

Press the **P1** Button five times
The display will show "Fault Tracing"

**Note: These machines have 2 levels of testing. Should you need to go between level one and level 2 at any time just press the "Enter" button once.**

**Level One**

Press the **P2** button once to test the Inlet valve for pre-wash or rinse
Press the **P3** button once to test the Inlet valve for the main wash
**P4** button not used in level one
Press the **Menu** button once to test the Inlet valve for the final rinse/fabric softener
Press the < once to test the door solenoid
Press the > once to test the heating element, **Note: water level must be at least one inch above the bottom of the glass door for the heater to come on.**

**Level Two**

Press the **P2** button once to test the drain pump
Press the **P3** button once to test the motor (normal action)
Press the **P4** button once to test the Motor (gentle action)
Press the **Menu** button once to test the motor (spin)
< button not used in level two
> button not used in level one

To cancel fault tracing press and hold the **Start/Stop** button for three seconds.

**W640/W660 special programming features**

**Changing Displayed Language**

Turn power off then back on
Press the **Enter** button five times followed by the **P1** button five times.
Use the < button or the > button to scroll between the offered languages
Once on desired language, do not press any other button, and the selection will be saved.

**Changing temperature readout between Celsius and Fahrenheit**

Turn power off then back on
Press the **Enter** button five times followed by the **P2** button five times
Press the < button for C (Celsius), or the > button for F (Fahrenheit)
Once on the preferred read out, do not press any other button, and the selection will be saved.

**Protected start**

Turn power off then back on
Press the **Enter** button five times followed by the **P3** button five times.
Press the < button for 0 (no delayed start), or the > button for 3 (3 second delayed start)
Once on the preferred read out, do not press any other button, and the selection will be saved.

**Hot and Cold fill**

Turn power off then back on
Press the **Enter** button five times followed by the **P4** button five times.
Press the < button for C (cold fill), or the > button for H (hot fill)
**Note: U.S. and Canada machines do not offer a hot water inlet valve.**
**NO NOT USE H (hot fill)**
Once on the preferred read out, do not press any other button, and the selection will be saved.

## COMMON LAUNDRY PROBLEMS (CONTINUED)

| Problem | Possible Cause | Suggested Solution |
|---|---|---|
| Excessive wrinkling | Machine too full | Permanent press items should be washed in half-loads to prevent wrinkling. If possible, use a slower spin speed. |
| | Water too hot | Use lower wash temperature settings. |
| Rips, snags, excess wear | Sharp objects in pockets | Empty all pockets and turn inside out before laundering. |
| | Hooks, snaps, zippers, buckles | Fasten all hooks, snaps, and zippers before laundering to avoid snags. Remove sharp buckles. Turn knits inside out. |
| | Harsh chemicals | Before washing, rinse harsh chemicals (such as battery acid, hair care chemicals, cleaning solutions, etc.) from towels and other articles to avoid holes in fabrics. Do not allow these unrinsed items to contact other fabrics. |
| | Existing rips and tears | Mend all garments before laundering to prevent enlarging of rips. |
| | Permanent press items | These items may fray at edges from normal wear, not the washer. Wash only in half loads and don't wash in the same load with heavy items, such as towels or jeans. |

## FAULT CODES – W600/W620

The Program Control knobs on the W600/W620 have two fault codes: *C* and *S*. If the knob stops on one of these, the machine detected a problem.

### C Position

This indicates a problem that can probably be taken care of without calling a service technician. Here are some possible problems:

- Power interruption.
- Water not draining out.
- Water not filling machine.
- The machine didn't spin.

Refer to the "Troubleshooting" section on the next page for possible causes and solutions. If none of these work, call a service technician.

### S Position

If the knob stops on S, this indicates a mechanical problem and you will probably need to call a service technician.

## ERROR MESSAGES – W640/W660

Error messages will display in the LED window if faults occur while a program is in progress. The table below defines each possible error message.

To remove the message, turn the power off or change the program.

| ERROR MESSAGE | SOLUTION |
|---|---|
| ⚍ | When this symbol flashes at the lower right corner of the display it merely means the glass door isn't closed securely. Close the door and try again. |
| *0000* | If this message flashes at the top right of the LED window, the machine has failed to spin. This could be because the load is out of balance. Turn the power off then on again. Open the door and redistribute the washing. Run the Spin program again. |
| *Door lock fault* | Call a service technician. |
| *Foaming* | Run the Rinse program again.<br>Try using less detergent and softener.<br>Use low-sudsing detergents. (See page 5.) |
| *Overflow* | Call a service Technician |
| *Pressure sensor* | Call a service technician. |
| *Temperature stop* | Call a service technician. |
| *Thermistor* | Call a service technician. |
| *Wash motor* | Call a service technician. |
| *Water inlet* | Make sure the water tap is open. |
| *Water outlet* | Check the pin trap for possible blockage. Make sure the outlet hose isn't kinked. |

# Laundry Troubleshooting Flowcharts

## W600/W620 Flowcharts



## W640/W660 Flowcharts

# W600/W620 Flowchart

## C Code

This error could be caused by many different situations. The biggest aid in diagnosing this fault will be listening to the customer. If there is a C Code and there is actually something wrong with the machine, the customer will have experienced other problems. Complaints could vary from:

– Washes forever (in excess of 3 hours).
– Clothes never get wet.
– Door won't open.

Unless the customer has any of these problems, you won't find anything wrong with the unit. It would be best to refer the customer to the ASKO Advisory Center to try to resolve the problem: 800-898-1879.

If the customer's complaint is similar to the ones above, follow the flowchart for the particular problem the customer is having.

# W600/W620 Flowchart

## Machine Won't Drain; Door Won't Open; Drum Full of Water

**Step 1: Checking Coin Trap** – Pull out the coin trap to ensure there is no debris stuck inside the pump or drain hoses.

**Step 2: Checking Drain Pump**

Start a drain program, such as #10.

Measure voltage across the both "AP" wires on the drain pump.

- If you have 240 volts, but no drain pump, you need to replace the pump.
- If you do not have 240 volts, check the timer (Step 3).

**Step 3: Checking Timer**

Measure voltage across E-83 and E-84 on the timer.

- If you have 240 volts, ohm those wires down to the pump to check the wires for breakage.
- If you do not have 240 volts, measure for 240 volts at PF1 and PF4 on the timer.
  - If you have 240 volts, you have a bad timer.
  - If you do not have 240 volts, check the door switch (Step 4).

**Step 4: Checking Door Switch**

Measure voltage on the on/off switch at TB-16 and TB-12 with the switch in the on position.

- If you have 240 volts, check from those two wires back to the timer for breakage. As long as the door is closed, TB-12 on the on/off switch to PF4 on the timer should be a closed circuit. If it is open but the door is closed, you have a bad door switch.
- If you do not have 240 volts, check the on/off switch (Step 5).

**Step 5: Checking On/Off Switch**

Measure voltage TB-15 to TB-11 on the on/off switch.

- If you have 240 volts and the switch is on, you have a bad on/off switch.
- If you do not have 240 volts, check the RFI suppressor (Step 6).

**Step 6: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 7).

**Step 7: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
  - If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
    - If you do not have 240 volts, check the terminal block (Step 8).

**Step 8: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts at the receptacle.

# W600/W620 Flowchart

## Machine Won't Fill; C Code

**Step 1: If the unit is in a new construction,** or there has recently been some plumbing work, or the unit is brand new, make sure the water tap is open.

**Step 2: If no water will come in at all,** remove the fill hose and check inside the inlet valve to ensure the filter screen is clean.

**Step 3: Checking Fill Valve**

**If customer says it's during a pre-wash or rinse:**

Since a pre-wash and rinse use the same fill valve solenoid, start a #1 or #4 program and measure the voltage on the fill valve at IV1 to IV1N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the timer at E-41 to E-42.
  - If you have 240 volts, check those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a main wash:**

Start a #3 program and measure voltage on the fill valve at IV2 to IV2N.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the timer at E-41 to E-43.
  - If you have 240 volts, check those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a final rinse:**

Position the volt meter leads on the inlet valve and be prepared to measure voltage on the fill valve at IV4 to IV4N. Start a #4 program.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the timer at E-41 to E-45.
  - If you have 240 volts, check those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**Step 4: Checking Pressure Sensor**

Check the pressure sensor at E-91 and E-93 for 5 volts DC.
Next, check E-91 to E-92 for .5 volts DC with no water in the machine.

- If you do not have .5 volts DC, you have a bad pressure sensor.
- If you have .5 volts DC, check the timer (Step 5).

**Step 5: Checking Timer**

Measure voltage across PF1 and PF4 on the timer.

- If you have 240 volts, and the pressure sensor checks out fine, you have a bad timer.
- If you do not have 240 volts, check the door switch (Step 6).

**Step 6: Checking Door Switch**

Measure voltage on the on/off switch at TB-16 and TB-12 with the switch in the on position.

- If you have 240 volts, check from those two wires back to the timer for breakage. As long as the door is closed, TB-12 on the on/off switch to PF4 on the timer should be a closed circuit. If it is open but the door is closed, you have a bad door switch.
- If you do not have 240 volts, check the on/off switch (Step 7).

# W600/W620 Flowchart

## Machine Won't Fill; C Code *(continued)*

**Step 7: Checking On/Off Switch**

Measure voltage TB-15 to TB-11 on the on/off switch.

- If you have 240 volts and the switch is on, you have a bad on/off switch.
- If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
  - If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
    - If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts at the receptacle.

# W600/W620 Flowchart

## Machine Won't Heat the Water; Runs Too Long (3+ hours); C Code

**Step 1: Make sure the customer is running a heated program.** The Main Wash is the only program that heats the water.

**Step 2: Checking Thermistor**

Before you run any cycle, ohm the thermistor across E-31 and E 32 at room temperature and no water in the machine. This should be between 40 and 60 K ohms.

- If you have an open circuit, you have a bad thermistor.
- If you have 40-60 K ohms, check the timer (Step 3).

**Step 3: Checking Timer**

Pull the thermistor plug off the board and check for 5 volts DC across the E-31-E32 plug.

- If you do not have 5 volts DC, the timer is not sending proper voltaqe to the thermistor. The timer is bad, as long as it is getting proper incoming voltage. Let's make a few more checks to ensure there are no other problems. Check the element (Step 4).

**Step 4: Checking Element**

Start a #3 program at 205°. Wait about ten minutes, then check the voltage across both wires on the heating element.

- If you have 240 volts and the unit is still not heating, turn off the power to the unit, and ohm across the element.
  - You should get around 28 ohms +or - 10% . If the element is not within tolerance, or is an open circuit, you have a bad element.
  - If you do not have 240 volts, check the pressure switch (Step 5).

**Step 5: Checking Pressure Switch**

Turn the power back on, and measure voltage across PF7 on the timer to N114 on the pressure switch while running the #3 program.

- If you have 240 volts, check the wires back down to the element for breakage.
- If you do not have 240 volts, measure voltage across PF7 on the timer and N111 on the pressure switch.
  - If you have 240 volts and the machine is filled to the normal level to the bottom of the glass door, you have a bad pressure switch.
  - If you do not have 240 volts, check the incoming voltage tot he timer (Step 6).

**Step 6: Checking incoming voltage to the timer.**

Measure voltage across PF1 and PF4 on the timer.

- If you have 240 volts there, you have a bad timer.
- If you do not have 240 volts there, check the door switch (Step7).

**Step 7: Checking the Door Switch**

Measure voltage on the on/off switch across TB16 andTB12 with the switch in the on position.

- If you have 240 volts there, check those wires back to the door switch for breakage. As long as the door is closed, TB12 on the on/off switch to PF4 on the timer should be a closed circuit. It that circuit is open, but the door is closed, remove and inspect the door switch. If the switch assembly doesn't seem to be bound up, you have a bad door switch mechanism.
  - If you did not have 240 volts across TB16 and TB12 on the on/off switch, check the on/off switch (Step8).

# W600/W620 Flowchart

## Machine Won't Heat the Water; Runs Too Long (3+ hours); C Code (*continued*)

**Step 8: Checking On/Off Switch**

Measure voltage TB-15 to TB-11 on the on/off switch.

- If you have 240 volts and the switch is on, you have a bad on/off switch.
- If you do not have 240 volts, check the RFI suppressor (Step 7).

**Step 9: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 10: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 11: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts at the receptacle.

# W600/W620 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin

**Step 1: If the complaint is just that the machine wont spin,** always check the coin trap to make sure there is no debris inside that could keep the unit from draining.

**Step 2: Make sure the "No spin" option has not been selected.**

**Step 3: If the complaint is that the clothes are just too wet,** ask the customer what program they generally run. More than likely they are running a #7, which doesn't have a maximum RPM spin. At this point, recommend that if they choose to use the #7 program, they should run a #5 long spin afterwards.

**Step 4: Checking Motor**

- Ohm the motor for the readings found in the motor resistance section of this manual on page _____
  - If all of these readings check out, check the timer (Step 5).

**Step 5: Checking Timer**

Measure voltage across PF1 and PF4 on the timer.

- If you have 240 volts, you have a bad timer.
- If you do not have 240 volts, check the door switch (Step 6).

**Step 6: Checking Door Switch**

Measure voltage on the on/off switch across TB16 andTB12 with the switch in the on position.

- If you have 240 volts there, check those wires back to the door switch for breakage. As long as the door is closed, TB12 on the on/off switch to PF4 on the timer should be a closed circuit. It that circuit is open, but the door is closed, remove and inspect the door switch. If the switch assembly doesn't seem to be bound up, you have a bad door switch mechanism.
- If you did not have 240 volts across TB16 and TB12 on the on/off switch, check the on/off switch (Step7).

**Step 7: Checking On/Off Switch**

Measure voltage TB-15 to TB-11 on the on/off switch.

- If you have 240 volts and the switch is on, you have a bad on/off switch.
- If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 10).

# W600/W620 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin (*continued*)

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W600/W620 Flowchart

## Door Won't Open; C Code

**Step 1: For the door to open,** the timer must be in the twelve o'clock position and there should be no water in the machine. It is always a good idea to check the coin trap for debris that might be preventing the machine from draining properly.

**Step 2: Checking Door Open Button**

Measure DC voltage across E56 and E51 on the timer.

- You should have 5 volts DC without touching the button.
- You should have 0 volts DC when pressing the door open button in.
  - If you have 5 volts DC while pressing the button, you have a bad door open button. If you always have 0 volts DC whether you push the door open button or not, and the door is closed, check the wires from the door open button back to the timer for breakage. If the wires seem to be intact, check the door lock mechanism(Step 3)

**Step 3: Checking Door Lock Mechanism**

Measure the voltage across PF4 and PF5 on the timer while pushing the door open button.

- If you have 240 volts , and the door doesn't open, check the wires down to the door switch for breakage.
  - If the wires are intact, you have a bad door switch/door lock mechanism.
  - If you did not get 240 volts, check incoming voltage to the timer (Step 4).

**Step 4: Checking Incoming Voltage to the Timer**

Measure voltage across PF1 and PF4 on the timer.

- If you have 240 volts there, you have a bad timer.
- If you do not have 240 volts there, check the door switch (Step 5).

**Step 5: Checking the Door Switch**

Measure voltage on the on/off switch across TB16 andTB12 with the switch in the on position.

- If you have 240 volts there, check those wires back to the door switch for breakage. As long as the door is closed, TB12 on the on/off switch to PF4 on the timer should be a closed circuit. It that circuit is open, but the door is closed, remove and inspect the door switch. If the switch assembly doesn't seem to be bound up, you have a bad door switch mechanism.
  - If you did not have 240 volts across TB16 and TB12 on the on/off switch, check the on/off switch(Step 6).

**Step 6: Checking On/Off Switch**

Measure voltage TB-15 to TB-11 on the on/off switch.

- If you have 240 volts and the switch is on, you have a bad on/off switch.
- If you do not have 240 volts, check the RFI suppressor (Step 7).

# W600/W620 Flowchart

## Door Won't Open; C Code (*continued*)

**Step 7: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 7).

**Step 8: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.

  If you have 240 volts, you have bad fuses.

  If you do not have 240 volts, check the terminal block (Step 8).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or machine and check for 240 volts at the receptacle.

# W640/W660 Flowchart

## Machine Won't Drain; Door Won't Open; Drum Full of Water; Outlet Fault

**Step 1: Checking Coin Trap**

Pull out the coin trap to ensure there is no debris stuck inside the pump or drain hoses.

**Step 2: Checking Drain Pump**

Access fault tracing to turn on the drain pump. Turn the power to the unit off, and back on. Press P1 five times, Press "Enter" once, and P2 once.

Measure voltage across both wires labeled "AP" on the drain pump.

- If you have 240 volts, and the drain pump is clean and clear, but still not working, you have a bad pump.
- If you do not have 240 volts, measure voltage at the board at E21-E22.
  - If you have 240 volts, check the wires that go down to the pump for breakage.
  - If you do not have 240 volts, measure voltage across E7-1 and E7-2.
    - If you have 240 volts, you have a bad board.
    - If you do not have 240 volts, check the On/Off switch (Step 3).

**Step 3: Checking On/Off Switch and Door Switch**

Measure voltage on the on/off switch at TB-18 and TB-12 with the switch in the on position.

- If you have 240 volts, check continuity from the wires going from the on/off switch back to the board.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 4).

**Step 4: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 5).

**Step 5: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 6).

**Step 6: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W640/W660 Flowchart

## Machine Won't Fill, Just Sits There; Inlet Fault

**Step 1: If the unit is in a new construction,** or there has recently been some plumbing work, or the unit is brand new, make sure the water tap is open.

**Step 2: If no water will come in at all,** regardless of what program is selected, remove the fill hose and check inside the inlet valve to ensure the filter screen is clean.

**Step 3: Checking Fill Valve**

**If customer says it's during a pre-wash or rinse:**

Since a pre-wash and rinse use the same fill valve solenoid, start fault tracing. Turn the power off and back on, and press P1 five times and P2 once. Now, measure voltage on the fill valve at IV1 to IV1N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, then measure voltage on the upper board at E-41 to E-44.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a main wash:**

If the unit fills when the customer chooses a cold wash, but won't fill when you select a temperature over 115° F, the unit needs to be reprogrammed for a cold fill. To do this, turn the unit off and back on. Press Enter 5 times then press P4 five times. Now use the right or left arrow to toggle the readout until it shows "C". Now the unit is programmed for a cold fill.

If the unit was already programmed for a cold fill, start fault tracing for the main wash cold fill valve by turning the power off and back on. Press P1 five times and P3 once. Next, measure voltage on the fill valve at IV2 to IV2N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the upper board at E-45 to E-41.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a final rinse:**

Start a fault tracing program by turning the power off and back on. Press P1 five times and the "menu" button once. Next, measure voltage on the fill valve at IV4 to IV4N.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the upper board at E-41 to E-42.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**Step 4: Checking Pressure Sensor**

With no water in the machine, check the upper board across E91 and E92 for .5 volts DC. If you have 1 volt DC or more, when the unit is empty, you have a bad pressure sensor.

- If you did get .5 volts DC, check DC voltage across E91 and E93 on the upper board.
  - If you did not get 5 volts DC, you probably have a bad upper control board, but let's make some more checks to ensure there are no further problems. Check the upper board(Step 5).

# W640/W660 Flowchart

## Machine Won't Fill, Just Sits There; Inlet Fault *(continued)*

**Step 5: Checking UpperControl Board**

Measure incoming voltage to the upper control board at E71 and E72.

- If you have 240 volts, you have a bad upper board.
- If you do not have 240 volts, check the on/off switch (Step 6).

**Step 6: Checking On/Off Switch**

Measure voltage on the on/off switch at TB-18 and TB-12.

- If you have 240 volts, check those wires back to the upper board for breakage.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 7).

**Step 7: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 8: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W640/W660 Flowchart

## Machine Runs Too Long (3+ hours); Temp stop fault; Thermistor fault

**Step 1: Make sure the customer is running a heated program.** The Main Wash is the only cycle that heats the water.

**Step 2: Checking Thermistor**

Before you run any cycle, unplug and ohm the thermistor located at E31 and E 32 on the upper board at room temperature. This should be between 40 and 60 K ohms. Also check to ensure the thermistor is still fastened to the bottom side of the tank .

- If you have an open circuit, or your readings are outside the prescribed tolerance, you have a bad thermistor.
- If you have 40-60 K ohms, check for 5 volts DC across the E31-E32 terminals on theupper board
  - If you do not have 5 volts DC, the upper board is not supplying the proper DC voltage to the thermistor. This upper board is likely bad, but lets take a few more readings to ensure there are no other problems. Check the element(Step 3).
  - If you have 5 volts DC, check the heating element (Step 3).

**Step 3: Checking Heating Element**

Start a normal program. This should be a P1 program unless the customer has changed the pre-programmed cycles. If the display does not read “normal”, Press and hold P1 and “enter” at the same time. This will reset P1 back to factory settings. Wait about ten minutes then check the voltage at the heating element.

- If you have 240 volts, and the unit is still not heating, ohm across the element.
  - You should have 28 ohms +or - 10% tolerance.
  - If you have an open circuit, or the resistance is out of tolerance, the element is bad.
    - If you do not have 240 volts across the two terminals on the element, check the pressure switch (Step 5).

**Step 4: Checking Pressure Switch**

Measure voltage across E10-1 on t he upper board and N114 on the pressure switch.

- If you have 240 volts, check the wires back down to the element for breakage.
- If you did not have 240 volts, measure voltage across E10-1 on the upper board and N111 on the pressure switch.
  - If you have 240 volts, and the machine is filled to the normal level, you have a bad pressure switch.
  - If you do not have 240 volts, check the boardcontrol board (Step 6).

**Step 5: Checking Control Board**

Measure voltage at E7-1 and E7-2 on the upper control board.

- If you have 240 volts, you have a bad upper control board.
- If you do not have 240 volts, check the on/off switch (Step 7).

# W640/W660 Flowchart

## Machine Runs Too Long (3+ hours); Temp stop fault; Thermistor fault *(cont'd)*

**Step 6: Checking On/Off Switch**

Measure voltage across the on/off switch at TB-18 and TB-12 withthe switch in t he on position

- If you have 240 volts, check the wires going from the on/off switch back to the board.
- If you do not have 240 volts, check across TB15-TB11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 7: Checking RFI Suppressor**

Measure voltage across F4 and F3 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 8: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W640/W660 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin; Motor fault

**Step 1: If the complaint is just that the machine wont spin,** check the coin trap to make sure there is no debris inside that could keep the unit from draining.

**Step 2: Make sure the "No spin" option has not been selected.**

**Step 3: If the complaint is that the clothes are just too wet,** ask the consumer which program they generally run. More than likely they are running a P3. Check to see what spin speed is selected. If it displays 800 rpm, reprogram the board for either a 1400 or 1600 rpm spin. If you find that this is the case, enter the options menu and turn the short spin option off. This will make this option a permanent change, thus maximizing the spin results.

**Step 4: Checking Motor**

Ohm the motor for the readings found in the motor resistance section of this manual on page _____

*NOTE:* These readings must be taken by the motor.

- If any of these contacts are open, you have a bad motor.
- If all of these readings check out, check the motor control board (Step 5).

**Step 5: Checking Motor Control Board**

Measure voltage at ST15 and ST14 on the motor control board located in the basepan of the unit.

- If you have 240 volts, you have a bad motor control board.
- If you do not have 240 volts, check the upper control board (Step 6).

**Step 6: Checking Upper Control Board**

Measure voltage across E6-1 and E6-2 on the upper control board in the top of the machine.

- If you have 240 volts, check the wires back down to the motor control unit for breakage.
- If you do not have 240 volts, measure voltage on the upper board at E7-1 and E7-2.
  - If you have 240 volts, you have a bad upper control board.
  - If you do not have 240 volts, check the on/off switch (Step 7).

**Step 7: Checking On/Off Switch**

Measure voltage on the on/off switch at TB-18 and TB-12 with the switch in the on position.

- If you have 240 volts, check continuity from the wires going from the on/off switch back to the upper control board for breakage.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

# W640/W660 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin; Motor fault (*continued*)

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W640/W660 Flowchart

## The door won't open

**Step 1: Make sure all the water has drained from the unit by accessing fault tracing. To do this, turn the power off and back on. Press P1 five times, "enter" once and P2 once.**

**Step 2: Check the coin trap for debris that might be preventing the machine from draining properly.**

**Step 3: Check the upper control board.**

Position you test leads on the upper board across E8-2 and E8-3 and be prepared to measure voltage to the door solenoid using fault tracing. Turn the power off and back on. Press P1 five times and the left arrow button once.

You should have 240 volts while the door was opening.

└ If you did have 240 volts, but the door did not open, remove and inspect the door lock mechanism. If the mechanism doesn't seem to be bound, you have a bad door lock mechanism.

└ If you did not get 240 volts, check the pressure switch (Step 4).

**Step 4: Checking the Pressure Switch**

Measure voltage across N112 on the pressure switch to E7-2 on the upper control board.

└ If you did not get 240 volts, measure voltage across N111 on the pressure switch to E7-2 on the upper control board.

├ If you have 240 volts, and the machine is empty, you have a bad pressure switch.

└ If you did not get 240 volts, check the pressure sensor (Step 5).

**Step 5: Checking the Pressure Sensor**

Measure DC voltage across E9-1 and E9-2 on the upper control board with no water in the unit. You should have .5 volts DC.

├ If you have more than .5 or .6 volts DC while the unit is totally empty, you have a bad pressure sensor.

└ If you did have .5 volts DC, measure DC voltage across E9-1 and E9-3 on the upper control board.

└ If you do not have 5 volts DC, you will likely have a bad upper control board. To be safe, let's make a few more checks to ensure there are no other problems. Check incoming voltage to the upper control board (Step 6).

**Step 6: Checking incoming voltage to the upper control board**

Measure voltage at E7-1 and E7-2 on the upper control board.

├ If you have 240 volts, you have a bad upper control board.

└ If you do not have 240 volts, check the on/off switch (Step 7).

**Step 7: Checking the ON/OFF Switch**

Measure voltage across TB18 and TB12 on the on/off swtich with the switch in the on position.

├ If you have 240 volts, check those wires back to the upper control board for breakage.

└ If youdid not have 240 volts, measure voltage across TB15 and TB 11 on the on/off switch withthe switch in the on position.

├ If you have 240 volts, and the switch is in the on position, you have a bad on/off switch.

└ If you do not have 240 volts, check the RFI supressor(Step 8).

# W640/W660 Flowchart

## The door won't open *(continued)*

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W640/W660 Flowchart

## LED Display won't light up; Display hard to read; Missing words; Can't program unit

**Before you run a service call, have the customer turn the unit off for about ten minutes. Turn the unit back on and see if it will accept a program. If the machine now seems to program properly, theelectronics just needed to be "reset". If the machine is left on for long periods of time, turning the power off and back on acts as a "reboot" to the electronics. The machine should be turned off occasionally to maintain normal operation. If this "reboot" did not work, check the keyboard(Step 1).**

**Step 1: Checking Keyboard**

**If the display just won't light up, or the words are distorted**, turn the power on and check for 13 volts DC across the upper control board across E11 to E12.

- If you have 13 volts DC, you have a bad keyboard.
- If you do not have 13 volts DC voltage, check the control board (Step 2).

**Step 2: Checking Control Board**

Measure voltage at E7-1 and E7-2 on the upper control board for 240 volts .

- If you have 240 volts, you have a bad control board.
- If you do not have 240 volts, check the on/off switch (Step 3).

**Step 3: Checking On/Off Switch**

Measure across the on/off switch at TB18-TB12 with the switch in the on position.

- If you have 240 volts, check the wires going from the on/off switch back to the board.
- If you do not have 240 volts, then check across TB15-TB11 on the on/off switch.
  - If you have 240 volts, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 4).

**Step 4: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 5).

**Step 5: Checking Fuses**

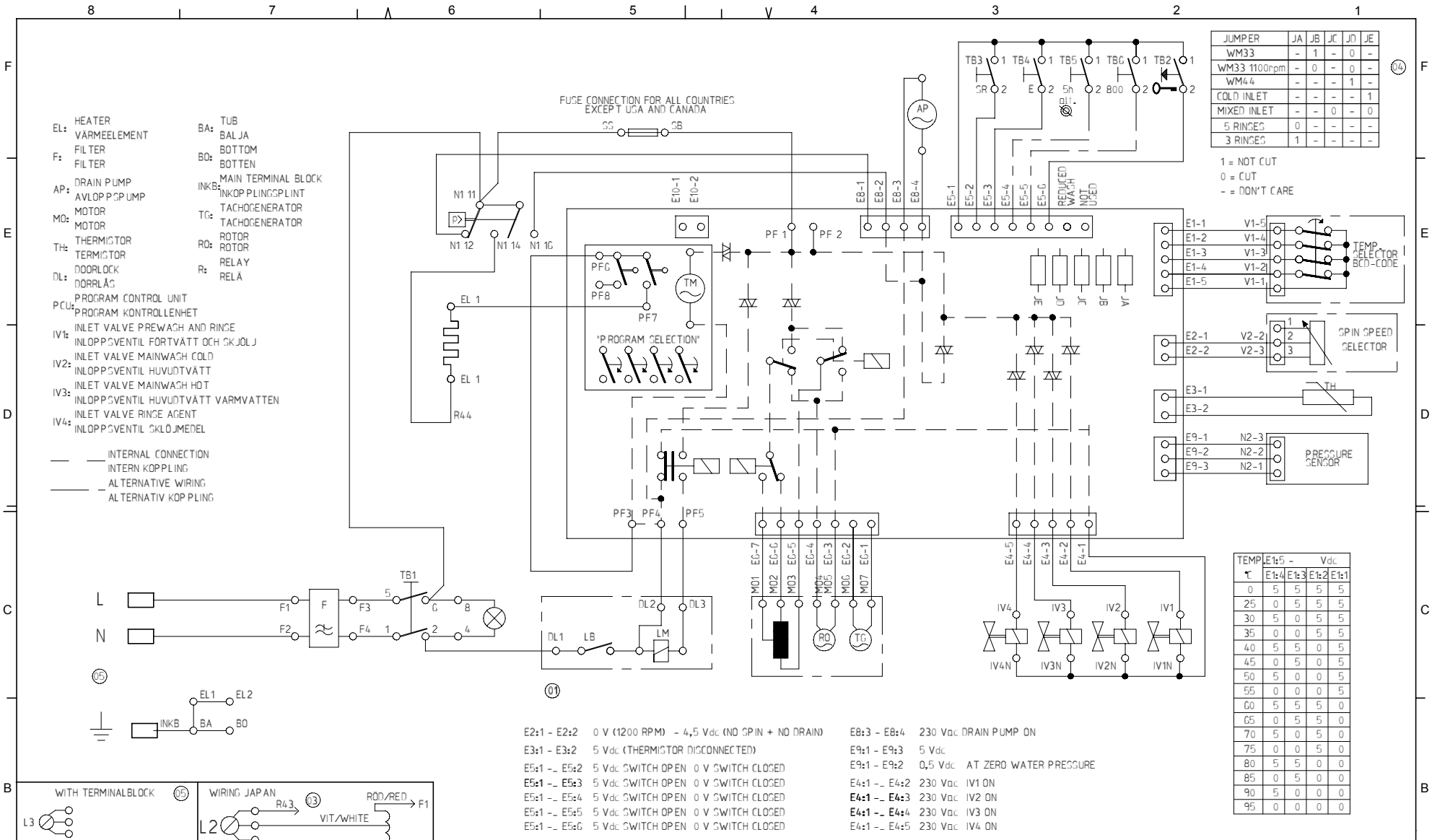
Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 6).

**Step 6: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.




| JUMPER | JA | JB | JC | JD | JE |
|---|---|---|---|---|---|
| WM33 | - | 1 | - | 0 | - |
| WM33 1100rpm | - | 0 | - | 0 | - |
| WM44 | - | - | - | 1 | - |
| COLD INLET | - | - | - | - | 1 |
| MIXED INLET | - | - | 0 | - | 0 |
| 5 RINGES | 0 | - | - | - | - |
| 3 RINGES | 1 | - | - | - | - |

1 = NOT CUT
0 = CUT
- = DON'T CARE

| TEMP °C | E1:5 - E1:4 | E1:3 | E1:2 | E1:1 Vdc |
|---|---|---|---|---|
| 0 | 5 | 5 | 5 | 5 |
| 25 | 0 | 5 | 5 | 5 |
| 30 | 5 | 0 | 5 | 5 |
| 35 | 0 | 0 | 5 | 5 |
| 40 | 5 | 5 | 0 | 5 |
| 45 | 0 | 5 | 0 | 5 |
| 50 | 5 | 0 | 0 | 5 |
| 55 | 0 | 0 | 0 | 5 |
| 60 | 5 | 5 | 5 | 0 |
| 65 | 0 | 5 | 5 | 0 |
| 70 | 5 | 0 | 5 | 0 |
| 75 | 0 | 0 | 5 | 0 |
| 80 | 5 | 5 | 0 | 0 |
| 85 | 0 | 5 | 0 | 0 |
| 90 | 5 | 0 | 0 | 0 |
| 95 | 0 | 0 | 0 | 0 |

E2:1 - E2:2 0 V (1200 RPM) - 4,5 Vdc (NO SPIN + NO DRAIN)
E3:1 - E3:2 5 Vdc (THERMISTOR DISCONNECTED)
E5:1 -_ E5:2 5 Vdc SWITCH OPEN 0 V SWITCH CLOSED
E5:1 -_ E5:3 5 Vdc SWITCH OPEN 0 V SWITCH CLOSED
E5:1 -_ E5:4 5 Vdc SWITCH OPEN 0 V SWITCH CLOSED
E5:1 -_ E5:5 5 Vdc SWITCH OPEN 0 V SWITCH CLOSED
E5:1 -_ E5:6 5 Vdc SWITCH OPEN 0 V SWITCH CLOSED
E8:3 - E8:4 230 Vac DRAIN PUMP ON
E9:1 - E9:3 5 Vdc
E9:1 - E9:2 0,5 Vdc AT ZERO WATER PRESSURE
E4:1 -_ E4:2 230 Vac IV1 ON
E4:1 -_ E4:3 230 Vac IV2 ON
E4:1 -_ E4:4 230 Vac IV3 ON
E4:1 -_ E4:5 230 Vac IV4 ON

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|
| 05 | Drawing modified | SS | 00 41 |
| 04 | WM33 1100rpm added | PS | 00 05 |
| 03 | F43 changed to R43 | PS | 99 41 |
| 02 | Wiring Japan added | PS | 99 26 |
| 01 | Doorlock number changed | PS | 99 20 |

| Pos. | Qty | Part No. | Name of item | Material |
|---|---|---|---|---|

Material | Dens.Kg/dm3 | Dimensions, Type, etc.

Scale 1:1 | Gen.tolerance | Description(ENG) CIRCUIT DIAGRAM WM 33/44

Designed by HT | Gen.tol.Angle | Description(SE) KOPPLINGSSCHEMA WM 33/44

Released by | Iss by Dept UT | Year 98 | Week 07

ASKO CYLINDA

80 617 51 | Rev Ind 05 | Replace 8061751 rev.04 | Project

1FORMAT A3

KOMPLETTSCHEMA 80 617 12

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BA: TUB / BALJA
BO: BOTTOM / BOTTEN
INKB: MAIN TERMINAL BLOCK / INKOPPLINGSPLINT
TG: TACHOGENERATOR / TACHOGENERATOR
RO: ROTOR / ROTOR
R: RELAY / RELÄ
EL: HEATER / VÄRMEELEMENT
AP: DRAIN PUMP / AVLOPPSPUMP
TH: THERMISTOR / TERMISTOR
LM: DOOR SOLENOID / LUCKMAGNET
OF: OVERFLOW PROTECTION SWITCH / ÖVERSVÄMNINGSBRYTARE

IV1: INLET VALVE PREWASH AND RINSE / INLOPPSVENTIL FÖRTVÄTT OCH SKÖLJ
IV2: INLET VALVE MAINWASH COLD / INLOPPSVENTIL HUVUDTVÄTT
IV3: INLET VALVE MAINWASH HOT / INLOPPSVENTIL HUVUDTVÄTT VARMVATTEN
IV4: INLET VALVE RINSE AGENT / INLOPPSVENTIL SKÖLJMEDEL
PCU: PROGRAM CONTROL UNIT / PROGRAM KONTROLLENHET
LB: DOOR SWITCH / LUCKBRYTARE
MF: MOTOR BRACKET / MOTOR VAGGA
MO: MOTOR / MOTOR
F: FILTER / FILTER

INTERNAL CONNECTION / INTERN KOPPLING
ALTERNATIVE WIRING / ALTERNATIV KOPPLING

| JUMPER | SETTING | ON/CLOSED | OFF/CUT |
|---|---|---|---|
| J1 | SPIN SPEED | SEE TABLE | SEE TABLE |
| J2 | SPIN SPEED | SEE TABLE | SEE TABLE |
| J3 | SKIP RINSE | ENABLED | DISABLED |
| J4 | FOAMING DETECTION | ENABLED | DISABLED |
| J5 | T.B.D. | --- | --- |

| JUMPER | | MAX. SPIN SPEED/RPM | |
|---|---|---|---|
| J1 | J2 | WM66 | WM55 |
| 1 | 1 | 1600 | 1400 |
| 0 | 1 | 1500 | 1500 |
| 1 | 0 | 1400 | 1600 |
| 0 | 0 | 1400 | 1400 |

1 CONNECTION IS CLOSED
0 CONNECTION IS CUT

| TESTPROGRAM PRESS 5× SWITCH P1 (S1) | FUNCTION LEVEL TOGGLE WITH ENTER (S8) | |
|---|---|---|
| SWITCH | 1 | 2 |
| P2 (S2) | V1 | DRAIN |
| P3 (S3) | V2 | MOTOR N |
| P4 (S4) | V3 | MOTOR G |
| MENU (S5) | V4 | MOTOR SPIN TYPE A |
| < (S6) | DOOR | TEST RPS |
| > (S7) | HEATER | --- |

| SPECIAL SELECTIONS | | | | |
|---|---|---|---|---|
| PRESS 5×ENTER (S8) + 5×PX (SX) | SELECTION | < S6 | > S7 | ENTER S8 |
| P1 (S1) | LANGUAGE | - | + | --- |
| P2 (S2) | CELSIUS/FAHRENHEIT | C | F | --- |
| P3 (S3) | DELAYED START | 0 SEC | 3 SEC | --- |
| P4 (S4) | INLET VALVES | COLD | HOT | MIXED |

POWER ON DOOR CLOSED
E1:1-E1:2 13 Vdc
E1:3 DATA IN
E1:4 CLOCK
E1:5 DATA OUT
E2:1-E2:2 230 Vac DRAIN PUMP ON
E3:1-E3:2 5 Vdc (THERMISTOR DISCONNECTED)

E4:1-E4:2 230 Vac IV4 ON
E4:1-E4:3 230 Vac IV3 ON
E4:1-E4:4 230 Vac IV1 ON
E4:1-E4:5 230 Vac IV2 ON
E5:1-E5:2 230 Vac
E6:1-E6:2 230 Vac
E6:4 DATA SERIELL

E6:3-E6:5 5 Vdc
E7:1-E7:2 230 Vac
E8:1-E8:4 0 V DOOR OPEN
E8:1-E8:4 230 Vac DOOR CLOSED
E8:2-E8:3 230 Vac DOOR SOLENOID ON 10 mS
E9:1-E9:3 5 Vdc
E9:1-E9:2 0,5 Vdc AT ZERO WATER PRESSURE

E10:1-E10:3 230 Vac HEATER OFF 0 V HEATER ON
E10:5-E10:3 230 Vac HEATER OFF 0 V HEATER ON
THE ABOVE REQUIRE THE LEVEL SWITCH IN POSITION N1 14
E11:1-E11:2 5 Vdc (OVERFILL 0 Vdc)
E12:1-E12:3 15 Vdc
E12:2 DATA SERIELL

FUSE CONNECTION FOR USA & CANADA
WITH TERMINALBLOCK
WIRING JAPAN

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|
| 05 | Heater cable changed | SS | 00 48 |
| 04 | Drawing modified | SS | 00 41 |
| 03 | F43 changed to R43 | PS | 99 41 |
| 02 | Wiring Japan added | PS | 99 22 |
| 01 | Doorlock numbers changed | PS | 99 20 |

| Pos. | Qty | Part No. | Name of item | Material |
|---|---|---|---|---|

Material | Dens.Kg/dm3 | Dimensions, Type, etc.

Scale 1:1 | Gen.tolerance | Description(ENG) CIRCUIT DIAGRAM WM55/66
Designed by HT | Gen.tol.Angle | Description(SE) KOPPLINGSSCHEMA WM55/66
Released by | Iss by Dept UT | Year 98 | Week 07

ASKO CYLINDA

80 617 53 | Rev Ind 05 | Replace 8061753 rev:04 | Project

1FORMAT A3

KOMPLETTSCHEMA 80 616 88

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ASKO

# REFERENCE MANUAL

# WASHERS
# 6000 SERIES MODELS

- DIAGNOSTICS
- TROUBLESHOOTING FLOWCHARTS
- WIRING DIAGRAMS
- COMPONENT VALUES
- TECHNICAL BULLETINS

**W6641 & W6661**

**Fault Tracing**

Turn power off to the machine and then back on

Press the **Menu** Button five times
The display will show "Fault Tracing"

**Note: These machines have 2 levels of testing. Should you need to go between level one and level 2 at any time just press the "Enter" button once.**

**Level One**

Press the **P2** button once to test the Inlet valve for pre-wash or rinse
Press the **P3** button once to test the Inlet valve for the main wash
**P4** button not used in level one
Press the **Menu** button once to test the Inlet valve for the final rinse/fabric softener
Press the < once to test the door solenoid
Press the > once to test the heating element, **Note: water level must be at least one inch above the bottom of the glass door for the heater to come on.**

**Level Two**

Press the **P2** button once to test the drain pump
Press the **P3** button once to test the motor (normal action)
Press the **P4** button once to test the Motor (gentle action)
Press the **Menu** button once to test the motor (spin)
< button not used in level two
> button not used in level one

To cancel fault tracing press and hold the **Start/Stop** button for three seconds.

## W6641/W6661 special programming features

### Changing Displayed Language

Turn power off then back on
Press the **Enter** button five times followed by the **P1** button five times.
Use the < button or the > button to scroll between the offered languages
Once on desired language, do not press any other button, and the selection will be saved.

### Changing temperature readout between Celsius and Fahrenheit

Turn power off then back on
Press the **Enter** button five times followed by the **P2** button five times
Press the < button for C (Celsius), or the > button for F (Fahrenheit)
Once on the preferred read out, do not press any other button, and the selection will be saved.

### Protected start

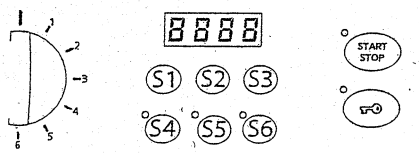
Turn power off then back on
Press the **Enter** button five times followed by the **P3** button five times.
Press the < button for 0 (no delayed start), or the > button for 3 (3 second delayed start)
Once on the preferred read out, do not press any other button, and the selection will be saved.

### Hot and Cold fill

Turn power off then back on
Press the **Enter** button five times followed by the **P4** button five times.
Press the < button for C (cold fill), or the > button for H (hot fill)
**Note: U.S. and Canada machines do not offer a hot water inlet valve.**
**NO NOT USE H (hot fill)**
Once on the preferred read out, do not press any other button, and the selection will be saved.

## *Test program* - W6441 / W6461

The machine control unit incorporates a built-in test program which can be used for faultfinding.
The machine can be provided with various silicon chips for different markets, which is why we have numbered the buttons as shown in the figure below:




Hold down (Start Stop) and at the same time press S5 5 times in 15 seconds to start level 1 of the test program (see below).
Press S6 once to reach level 2.
Press S6 again to return to level 1.
(Start Stop) ends the test program.

Select level 1

| | |
|---|---|
| S1 | Inlet valve 1 (pre-wash compartment) |
| S2 | Inlet valve 2 (main wash compartment) |
| S3 | Inlet valve 3 (hot water) |
| S4 | Inlet valve 4 (washing powder compartment) |
| S5 | Door pull magnet |

Select level 2

| | |
|---|---|
| S1 | Heating relay (clicking sound from relay on control unit). |
| S2 | Drain pump |
| S3 | Motor, normal running |
| S4 | Motor, economy running |
| S5 | Long spin |

cancelled after the main wash has started.

NOTE: The Wool and Hand/Delicate wash programs automatically have a higher water level.

### *Anti-Crease Button*

This option is designed to reduce wrinkling of garments that are not going to be taken out of the washer right away. When you select Anti-crease, the drum will rotate once every minute at the end of the program for two hours or until you press the Door Open button.

The indicator light will stay lit when this option is on. To cancel this option, hold down the button until the indicator light goes off. This option cannot be cancelled after you have started the program.

## *CHANGING TEMPERATURE READOUT FROM CELSIUS TO FAHRENHEIT*

You can change the temperature readout on the LED from Celsius to Fahrenheit and vice versa. To do this, follow the steps below:

1. Turn the machine off then on again. (00 should show on the display.)
2. Press the Start button five times in succession then press the Temperature button five times. (This must be done within 15 seconds.) The LED will display a C or F, whichever is the current selection.
3. Within three seconds, press the Temperature button again to change the readout.

## *PROGRAMMING CHILD-SAFE START/STOP*

You can program the washer not to start unless the Start button is held down for three seconds. This is to prevent children from inadvertently starting the machine. To program this function, follow the steps below:

1. Turn the machine off then on again. (00 should show on the display.)
2. Press the Start button five times in succession then press the Spin Speed button five times. (This must be done within 15 seconds.)
3. Within three seconds, press the Spin Speed button again to select Child-safe start. The LED will display “3” to indicate the Child-safe function is active. (If the child-safe start has already been activated, “0” will display after you press the Spin Speed button.)

## *W6441 ERROR MESSAGES*

Error messages will display on the LED if faults occur while a program is in progress. The table below defines each possible error message.

To remove the message, turn the power off or change the program.

| MESSAGE | ERROR |
|---|---|
| -=- | When this symbol flashes on the LED it merely means the glass door isn’t closed securely. Close the door and try again. |
| *0000* | If this message flashes on the LED, the machine has failed to spin. This could be because the load is out of balance. Turn the power off then on again. Open the door and redistribute the washing. Run the Spin program again. |
| *FI* | This indicates an overflow has occurred. Call a service technician. |
| *F2* | This indicates a problem with the motor. Call a service technician. |
| *F3* | This indicates a problem with the drain pump. Refer to the Troubleshooting chapter for possible solutions. |
| *F4* | This indicates a problem with the water inlet. Refer to the Troubleshooting chapter for possible solutions. |
| *F5* | This indicates a problem with the thermistor. Call a service technician. |
| *F6* | This indicates a temperature stop fault. Call a service technician. |
| *F8* | This indicates a door opening fault. Call a service technician. |

## W6761 ERROR MESSAGES

Error messages will display in the LCD window if faults occur while a program is in progress. The table below defines each possible error message.

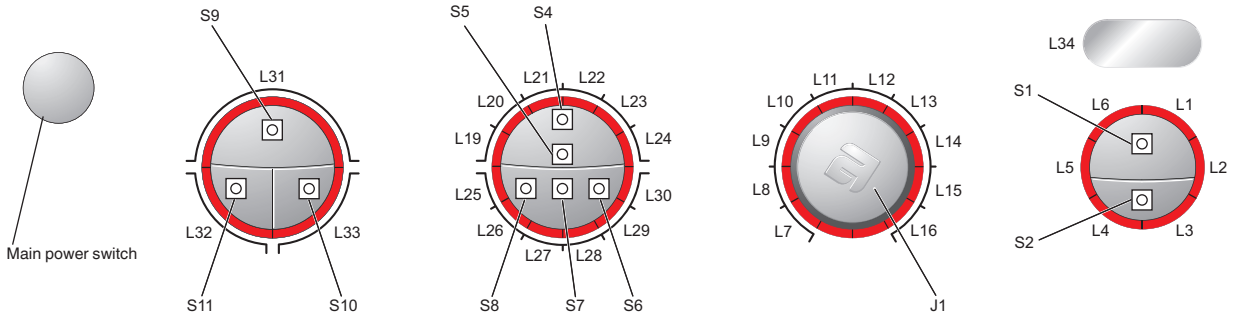
To remove the message, turn the power off or change the program.

| ERROR MESSAGE | SOLUTION |
|---|---|
| ⌯ | When this symbol flashes at the lower right corner of the display it merely means the glass door isn't closed securely. Close the door and try again. |
| *0000* | If this message flashes at the top right of the LCD window, the machine has failed to spin. This could be because the load is out of balance. Turn the power off then on again. Open the door and redistribute the washing. Run the Spin program again. |
| *Door lock fault* | Call a service technician. |
| *Overflow* | Call a service technician |
| *Pressure sensor fault* | Call a service technician. |
| *Temperature stop fault* | Call a service technician. |
| *Thermistor fault* | Call a service technician. |
| *Wash motor fault* | Call a service technician. |
| *Water inlet fault* | Make sure the water tap is open. |
| *Water outlet fault* | Check the pin trap for possible blockage. Make sure the outlet hose isn't kinked. |

# *Test programme*

The entire test programme is run in a sequence as follows. You can cancel the test programme at any time during the programme by pressing the main power switch.

S = Push button
L = LED




## Total reset of programmes and starting test programme

To access the test programme, total reset of the programme must be carried out as follows:

1. Make sure that the main power switch if off.
2. Hold the start/stop button (S1) in and start the machine by pressing the main power switch.
3. Check that any of the LEDs around the programme knob (L7 – L16) light. This indicates that total reset has been carried out.

## Testing LEDs

4. Press button S4/S5 and keep it depressed for approximately 20 seconds.

**Note!** This must be done within 3 seconds after carrying out total reset.

- All LEDs on the panel light up.

## Testing inlet valves and water level (wash level)

5. Check that the door is closed.
6. Press the start/stop button (S1).
   - The entire display goes out except L6 (by the start/stop button), which starts to flash and continues to do so for the remainder of the test programme.
   - Valve 1 opens for 2 seconds.
   - Valve 2 opens for 2 seconds.
   - Valve 4 opens for 2 seconds.
   - Valve 2 opens until level P2 (wash level) is reached.
   - Valve 2 closes.

**Indication of faults:**

| Fault indication/symptom | Cause |
|---|---|
| LED L1 flashes, the test programme stops and ”End” is shown in the display (applies to machines with a display). | Level system/valve fault |

## Testing element, motor, thermistor, high level, for leakage, drain pump, spinning and door opening

7. Press the start/stop button (S1).
   - The element switches on.
   - The washing sequence starts.
   - The water is heated to 20°C.
   - The element switches off.
   - The washing cycle ends.
   - Valve 1 opens until level P6 (rinse level) is reached.
   - Valve 2 opens for 10 seconds.
   - Valve 4 opens for 10 seconds.
   - The washing sequence starts.
   - Leak test carried out for 20 minutes.
   - The drain pump runs until level P1 (empty machine) is reached.
   - The washing cycle ends.
   - Spinning at max rpm occurs for 1 minute.
   - The door opens.

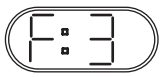
**Indication of faults:**

| Fault indication/symptom | Cause |
|---|---|
| LED L1 and L2 flash. | Warming up fault: The temperature rises to 20°C within one minute. |
| LED L2 flashes. | Warming up fault : The temperature has not increased by 20°C within 10 minutes. |
| LED L3 flashes, the test programme stops and ”End” is shown in the display (applies to machines with a display). | Fault at water intake (valve 1) |
| LED L4 and L5 flash, the test programme stops and ”End” is shown in the display (applies to machines with a display). | Fault during leak test (pressure drop) |
| LED L4 flashes, the test programme stops and ”End” is shown in the display (applies to machines with a display). | Fault during draining |
| LED L5 flash. | Fault during spin cycle |

The test programme then stops automatically and ”End” is shown in the display (applies to machines with a display).

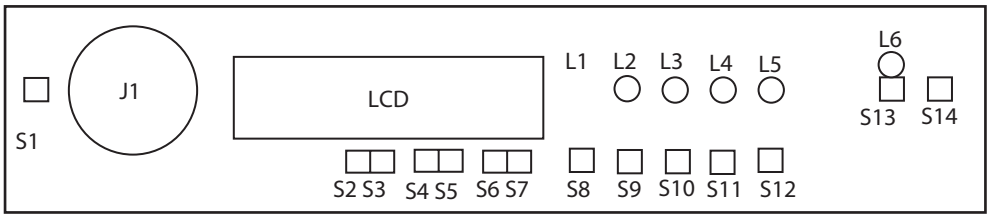
# *Fault indications*

The following faults are indicated by a **flashing** red light in the start/stop/door opening button LEDs and as a trouble code on the display (not on all machine versions).

| Fault indication | | Cause | Action |
|---|---|---|---|
| **Display** | **LEDs (flashing)** | | |
|  |  | Over filling. Too much water in the machine | **Service action:**<br>1. Check the machine's level system and inlet valve. |
| |  | Open the door | **Customer information:**<br>1. Close the door and start a programme.<br>**Service action:**<br>1. Check the door lock. |
|  |  | Drainage fault | **Customer information:**<br>1. Check that no objects are stuck in the drainage hose outlet.<br>2. Check that the drain pump is not blocked by foreign objects.<br>3. Check that there are no kinks in the drainage hose.<br>**Service action:**<br>1. If the pump only runs for a short while (approximately 20 seconds), this indicates a fault in the level system. Check the level sensor and hoses.<br>2. Check wiring and voltage to the pump. If necessary, replace the pump and/or control<br>3. After implementing corrective action, run the Drain programme or press the Key button (door open) to empty the machine. |
|  |  | Fault with water supply | **Customer information:**<br>1. Check that the tap on the water pipe is open.<br>**Service action:**<br>1. Check that the filter in the machine's water intake is not blocked.<br>2. Check the inlet valve. If necessary, replace the valve.<br>3. Check voltage to the inlet valve. If there is no voltage, this could be due to a fault in the level system, wiring or control unit. |
|  |  | Door opening fault | **Service action:**<br>1. Check for faults on the door lock or wiring to the door lock.<br>2. Check the function of the level sensor.<br>3. Check the control unit. |

After carrying out corrective actions as above, reset the fault indications by switching off the machine using the main power switch.

# Service menu WM60.2

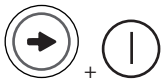


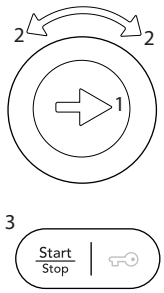

| | |
|---|---|
| ⏻ | Switch off, and then on main power. |
| S6 | • Pressing S6 when power on followed by 3 pushes on S6 within 5 sec enters the service menu. |
| NOTE! | Make all selections. Pressing S13 stores all selections made in service menu and leaves service mode. |
| Turn J1 | Tracking data reed out<br>SP: (software programming date: year week<br>CM: (control unit manufacturing date: year week<br>SV1: (Software version)<br>SV2: (Software version)<br>NC: Number of cycles<br>Press S14 next step is accessed. |
| | Failure reed out<br>Rotating J1 will display 2nd and 3rd last deviating fault, ex "Thermistor fault (2); 30" , "Over flow (3); 20"<br>Failure record is cleared by total reset<br>Pressing S14 next step is accessed. |
| | Diagnostics<br>Separate test of auxiliary components.<br>Rotating J1 each component will be turned on (with a 1 sec delay) and inputs detected in sequence:<br>"Testing" (no component),<br>"Testing valve 1" (inlet valve 1 on),<br>"Testing valve 2" (inlet valve 2 on),<br>"Testing valve SM" (inlet valve 1 and 2 on),<br>"Testing heater" (heater on until max 60°C),<br>"Testing motor" (normal action),<br>"Testing drain" (drain pump on),<br>"Testing spin" (spin sequence, drain pump on),<br>"Testing door".<br>Pressing S14 components will be off and next step is accessed. |
| | Rinse setting<br>Turn J1 counter clockwise "3 rinses" default or clockwise " 5 rinses"<br>Pressing S14 next step is accessed. |
| | Temperature °C/°F<br>Turn J1 counter clockwise "°C" default or clockwise" °F"<br>Pressing S14 next step is accessed. |
| | Spin speed<br>Turn J1 counter clockwise 1500 rpm, 1600 rpm, 1700 rpm, 1800 rpm, default or clockwise 1800 rpm, 1700 rpm ..." "<br>Pressing S14 next step is accessed or S13 to store or leave service mode. |
| | Total reset<br>By pressing S14 when power on the software total resets (return to default values of all settings). Service menu settings and parameters only re-programmable in in-line programming excluded (shall not reset). |
| | |

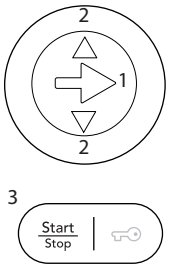
# Fault indications WM60.2

| Error messages | | |
|---|---|---|
| | Cause | Action |
| Close t he door | The door was not closed. | Close the door |
| Over flo w fault | • Too much water in the machine<br>• The drain pump is on, without any water in the machine. | • Check the machine's level system, inlet valve and drain pump. Make sure that there is no leaks.<br>• The overflow protection at the bottom of the machine is activated (not all models). Make sure that there is no leaks (water on the machines base) |
| Outlet fault | • The drain pump has been activated more than 3 minutes. There is still water in the machine.<br>• The wash cycle is interrupted and the program is cleared | Customer information:<br>1. Check that no objects are stuck in the drainage hose outlet.<br>2. Check that the drain pump is not blocked by foreign objects.<br>3. Check that there are no kinks in the drainage hose.<br>Service action:<br>1. If the pump only runs for a short while (approximately 20 seconds), this indicates a fault in the level system. Check the level sensor and hoses.<br>2. Check wiring and voltage to the pump. If necessary, replace the pump and/or control<br>3. After implementing corrective action, run the Drain program or press the Key button (door open) to empty the machine. |
| Water inlet fault | • If the correct water level is not reached within 5 minutes, the wash cycle is interrupted. | Customer information:<br>1. Check that the tap on the water pipe is open.<br>Service action:<br>1. Check that the filter in the machine's water intake is not blocked.<br>2. Check the inlet valve. If necessary, replace the valve.<br>3. Check voltage to the inlet valve. If there is no voltage, this could be due to a fault in the level system, wiring or control unit. |
| Motor fault | Indicated if the tacho generator is overloaded or control signal is missing (from the tacho generator or MCU). | Check signal from the MCU and cables between motor and MCU. |

# Service menu WM60.3

| This is how to enter the service menu | |
|---|---|
|  | If the machine is on: First switch the power off and then on via the main power switch. |
|  | Press the program selector (S1) at the same time as the Main power switch. |
|  | Press the program selector button 3 times within 5 seconds. You are now in the service menu (shown in LCD 2. See instructions below for navigating the service menu. |

| Program selector | |
|---|---|
|  | 1. Press the program selector button to scroll between the various service menus.<br><br>2. Turn the program selector button to make a selection between the menus (e.g. set a certain water inlet). Confirm the selection and go to the next menu by pressing the program selector button (1).<br><br>3. Press the Start/Stop button to confirm the settings and exit the service menu. |

| Program selector button for integrated machines | |
|---|---|
|  | 1. Press the program selector button to scroll between the various options.<br><br>2. Press the small arrows to make a selection between the options (e.g. set a certain water inlet). Confirm the selection and go to the next option by pressing the program selector button (1).<br><br>3. Press the Start/Stop button to confirm the settings and exit the service menu. |

# Service menu WM60.3

The options below are displayed in the order they occur in LCD 2. All display text language versions are displayed.

| Press/ turn | LCD 2 | Comments/instructions |
|---|---|---|
|  | DataSerialNo, Data Ser Num, DataSerialNo, DataSerialNo, Serienummer, Serienummer, Dataversio Nro, N° de série, Seriennummer, Num. di serie, N° de serie, Серийный номер, Serienummer | Date for programming the software (Year_Week) |
| | CU date code, CU Date Code, CU date code, CU datum kod, CU dato kode, Styrekort prod dato, CU pvm koodi, Code date CU, CU Datumscode, Codice data CU, Código fecha CU, Код даты БУ, CU datacode | Control unit's date of manufacture (Year_Week) |
| | Software, Software, Software, Mjukvara, Software, Software ver., Ohjelmisto, Logiciel, Software, Software, Software, Версия прог., Software | Software version number. |
| | No. of cycles, Number of Cycles, No. of cycles, Antal cykler , Antal cyklusser, Antall bruk, Syklien lkm, Nb. de cycles, Anzahl der Zyklen, Numero cicli, N° de ciclos, Кол-во циклов, Aantal cycli | Number of cycles/programs run |
|  | Press  to exit the service menu. | |
|  | "Error_Number of cycles" | Last three errors and number of cycles is shown. Total reset deletes the error indications from the system. Delete the error indications by pressing the DOOR OPENING BUTTON and the MAIN POWER SWITCH at the same time. |
| | "Error_Number of cycles" | |
| | "Error_Number of cycles" | |
|  | Press  to exit the service menu. | |
|  | Testing | |
| | Test valve 1, Testing Valve 1, Test valve 1, Ventiltest 1, Tester ventil 1, Test av vannventil 1, Mg venttiilitesti 1, Essai vanne 1, Ventil testen 1, Test valvola 1, Test válvula 1, Тест клапана 1, Test inlaatventiel 1 | Inlet valve 1 is open. Pressure sensor value is shown in LCD 2. |
| | Test valve 2, Testing Valve 2, Test valve 2, Ventiltest 2, Tester ventil 2, Test av vannventil 2, Mg venttiilitesti 2, Essai vanne 2, Ventil testen 2, Test valvola 2, Test válvula 2, Тест клапана 2, Test inlaatventiel 2 | Inlet valve 2 is open. Pressure sensor value is shown in LCD 2. |
| | Test valve SM, Testing Valve SM, Test valve SM, Ventiltest SM, Tester ventil SM, Test av vannventil SM, Mg venttiilitesti SM, Essai vanne SM, Ventil testen SM, Test valvola SM, Test válvula SM, Тест клапана SM, Test inlaatventiel SM | Inlet valve 1 and 2 is open. Pressure sensor value is shown in LCD 2. |
| | Test heater, Testing Heater, Test heater, Elementtest, Tester varmelegeme, Test av element, Vastustesti, Essai résistance, Heizung testen, Test elem. riscald., Test elemento calef, Тест ТЭНа, Test verw.element | Heater is on until max 60 °C. Thermistor value is shown in LCD 2. |

| | | |
|---|---|---|
|  | Test motor, Testing Motor, Test motor, Motortest, Tester motor, Test av motor, Moottoritesti, Essai moteur, Motor testen, Test motore, Test motor, Тест мотора, Test motor | The motor is running at normal action (49 rpm) |
| | Test drain, Testing Drain, Test drain, Tömningstest, Tester udpumpning, Test av tømming, Tyhjennyspumpputesti, Essai vidange, Abfluss testen, Test scarico, Test drenaje, Тест насоса, Test afvoerpomp | Drain pump is on. Pressure sensor value is shown in LCD 2. |
| | Test spin, Testing Spin, Test spin, Centifugeringstest, Tester centrifugering, Test av sentrifugering, Linkoustesti, Essai essorage, Schleudern testen, Test centrifuga, Test centrifugado, Тест отжима, Test centrifugeren | A Spin sequence is performed, the drain pump is running. Unbalance value is shown in LCD 2. |
| | Test door, Testing Door, Test door, Dörrtest, Tester luge, Test av dørlås, Luukun lukon testi, Essai porte, Luke testen, Test sportello, Test puerta, Тест замка дверцы, Test deurslot | Door lock is activated, the door is then opened. |
|  | Press  to exit the service menu. | |
|  | 0 | Adjust water inlet volume. Default value is 0". |
| | -15% | |
| | -10% | |
| | -5% | |
| | +5% | |
| | +10% | |
| | +15% | |
|  | Press  to exit the service menu. | |
|  | 0 | Adjust LCD contrast LCD. Contrast "0" (default) |
| | +3 | |
| | +2 | |
| | +1 | |
| | -1 | |
| | -2 | |
| | -3 | |
|  | Press  to exit the service menu. | |
|  | Rinses3, Rinses3, Rinses3, Sköljning3, Skylninger3, Skylling3, Huuhtelut3, Rinçage3, Spült3, Risciacqui3, Enjuagues3, Полоскание3, Spoelen3 | Adjusting the default setting for rinsing (default = 5 rinses). Setting can be made in heavy (Program 2), White (3) colour (Program 4) |
| | Rinses5, Rinses5, Rinses5, Sköljning5, Skylninger5, Skylling5, Huuhtelut5, Rinçage5, Spült5, Risciacqui5, Enjuagues5, Полоскание5, Spoelen5 | |
|  | Press  to exit the service menu. | |

| | | |
|---|---|---|
|  | Reheat Off, Reheat Off, Reheat Off, Återvärmning Av, Genopvarmning Fra, Oppvarming Av, Uudelleenlämmitys Poissa, Réchauffage Off, Erneut heizen Aus, Riscaldamento Off, Recalentamiento apagado, Нагрев Выкл, Opnieuw verwarmen Uit | Deactivate the function. |
|  | Reheat On, Reheat On, Reheat On, Återvärmning på, Genopvarmning Til, Oppvarming På, Uudelleenlämmitys Päällä, Réchauffage On, Erneut heizen An, Riscaldamento On, Recalentamiento encendido, Нагрев Вкл., Opnieuw verwarmen Aan | Activate the function |
|  | Press  to exit the service menu. | |
|  | 1500 rpm | Setting maximum speed. Maximum rpm is either 1800 or 2000 rpm depending on model. |
| | 1600 rpm | |
| | 1700 rpm | |
|  | 1800 rpm | |
| | 1900 rpm | |
| | 2000 rpm | |
|  | Press  to exit the service menu. | |
|  | Reset | Reset displayed by LCD.<br>For resetting the machine to the customer start menu proceed as follows.<br>1. Enter the service menu. (Se page 13 in the service manual.)<br>2. Press the program selector button repeatedly* until "RESET" is displayed on LCD 2.<br>3. Push the Start/Stop button, "1 LANGUAGE" is displayed On LCD 2.<br>4. Switch the power Off with the main switch.<br>* (8 times for WM and 5 times for TD)<br><br>The next time the power switches On, the machine is in the customer start menu. Pressing S2 a reset is performed and the following actions are performed:<br>1. Language settings are accessed (LCD1 off), language confirmed by S2.<br>2. Clock setting is accessed (LCD1 off), setting confirmed by S2.<br>3. Set time menu is accessed (LCD1 off), time confirmed by S2.<br>4. Text "Transport protection" is displayed in LCD1 (LCD2 and 3 off), by pressing any key or rotating J1 the program menu is accessed.<br><br>Pressing S1 service menu step 1 is accessed.<br><br>If the machine is turned off before step 4 is completed the machine shall restart at step 1. When all steps are completed the machine shall return to program selection mode. |
| | Press  to exit the service menu. | |

# Fault indications WM60.3

The below faults are indicated in plaintext in LCD 1. The table shows the indication in all languages and language variations.

| LCD 1 | Cause | Action |
|---|---|---|
| Over flow fault, Overflow Fault, Over flow fault, Överfyllnad, Overløbsfejl, Overflom, Ylitulviminen, Trop plein, Überfüllt, Troppo pieno, Desborde, Перелив воды, Te veel water | Too much water in the machine | Service action:<br>Check the machine's level system, inlet valve and drain pump. Make sure that there is no leaks. |
| | The drain pump is on, without any water in the machine. | Service action:<br>The overflow protection at the bottom of the machine is activated (not all models). Make sure that there is no leaks (water on the machines base) |
| Water outlet fault, Water Outlet Fault, Water outlet fault, Uttömningsfel, Udpumpningsfejl, Vannutløp, Vedenpoistovika, Défaut , Wasserablauffehler, Uscita acqua, Fallo, Слив воды, Waterafvoer fout | 1. The drain pump has been activated more than 3 minutes. There is still water in the machine.<br>2. The wash cycle is interrupted and the program is cleared | Customer information:<br>1. Check that no objects are stuck in the drainage hose outlet.<br>2. Check that the drain pump is not blocked by foreign objects.<br>3. Check that there are no kinks in the drainage hose.<br>Service action:<br>1. If the pump only runs for a short while (approximately 20 seconds), this indicates a fault in the level system. Check the level sensor and hoses.<br>2. Check wiring and voltage to the pump. If necessary, replace the pump and/or control<br>3. After implementing corrective action, run the Drain program or press the Key button (door open) to empty the machine. |
| Water inlet fault, Water Inlet Fault, Water inlet fault, Vattenintagsfel, Vandindtagsfejl, Vanntilførsel, Vika vedenotossa, Défaut, Wasseraufn.-fehler, Entrata acqua , Fallo , Набор воды, Watertoevoer fout | If the correct water level is not reached within 5 minutes, the wash cycle is interrupted. | Customer information:<br>1. Check that the tap on the water pipe is open.<br>Service action:<br>1. Check that the filter in the machine's water intake is not blocked.<br>2. Check the inlet valve. If necessary, replace the valve.<br>3. Check voltage to the inlet valve. If there is no voltage, this could be due to a fault in the level system, wiring or control unit. |
| Security fault, Security Sys Fault, Security fault, Lucköppningsfel, Sikkerhedsfejl, Sikkerhetsfeil, Vika turvajärj., Erreur sécurité, Sicherh.-fehler, Err. sis.sicurezza, Fallo sistema seguridad, Ошибка сис. безоп., Deurslot fout | The door is open. | Customer information:<br>Check that the door is closed properly<br><br>Service action:<br>1. Check for faults on the door lock or wiring to the door lock.<br>2. Check the function of the level sensor.<br>3. Check the control unit. |
| Unbalance (language to be defined in next version) | Is indicated when wash load is not evenly applied in the cylinder. | Customer information:<br>Make sure that the load is evenly applied. |
| Thermistor fault, Thermistor Fault, Thermistor fault, Termistorfel, Termostat fejl, Termistor, Termistorivika, Défaut , Termistorfehler, Termistore , Fallo , Термистор, Temp. sensor fout<br><br>(Note: Is only shown in the Service menu) | 1. The circuit for the thermistor is open.<br>2. The thermistor is faulty<br>3. The measurment value for the thermistor is <300 Ω (>120 °C/248 °F ) | Service action:<br>Check the thermistors function. If needed, replace it. |

| LCD 1 | Cause | Action |
|---|---|---|
| Temperature fault, Temperature Fault , Temperature fault, Temperaturstoppfel, Temperatur fejl, Temperaturstopp, Ei lämmitä vettä, Défaut , Temp.-stoppfehler, Errore arresto , Fallo , Температура, Temperatuurstop<br><br>(Note: Is only shown in the Service menu) | The temperature is raised < 5 °C/41 °F within 10 minutes. The wash cycle continues to next step. | Service action:<br>Check the heater, cables, thermistor and level system. |
| Wash motor fault, Wash Motor Fault , Wash motor fault, Motorfel, Motor fejl, Motorfeil, Moottorivika, Défaut , Motorfehler, Motore lavaggio , Fallo , Мотор, Motorstoring | Indicated if the tacho generator is overloaded or control signal is missing (from the tacho generator or MCU). | Service action:<br>Check signal from the MCU and cables between motor and MCU. |
| Pressure fault, Pres Sensor Fault, Pressure fault, Trycksensorfel, Tryksensor fejl, Nivåfeil, Painesensorivika, Défaut , Drucksensorfehler, Pressostato , Fallo , Датчик уровня, Druksensor fout<br><br>(Note: Is only shown in the Service menu) | Indicated when water level is decreasing dropp to zero whitin 30 sec in the first rinse | Service action:<br>Check for leaks. |

After carrying out corrective actions as above, reset the fault indications by pressing the DOOR OPERING BUTTON at the same time as the main power switch.

# Laundry Troubleshooting Flowcharts

## W6021/W6221 Flowcharts



## W6441 Flowcharts



## W6641/W6661/W6761 Flowcharts

# W6021/W6221 Flowchart

## Machine Won't Drain; Door Won't Open; Drum Full of Water

**Step 1: Checking Coin Trap** – Pull out the coin trap to ensure there is no debris stuck inside the pump or drain hoses.

**Step 2: Checking Drain Pump**

Start a drain program, such as #11.

Measure voltage across the both "AP" wires on the drain pump.

- If you have 240 volts, but no drain pump, you need to replace the pump.
- If you do not have 240 volts, check the board (Step 3).

**Step 3: Checking Board**

Measure voltage across E-83 and E-84 on the board.

- If you have 240 volts, ohm those wires down to the pump to check the wires for breakage.
- If you do not have 240 volts, measure for 240 volts at E122 and E112on the board.
  - If you have 240 volts, you have a bad board.
  - If you do not have 240 volts, check the door switch (Step 4).

**Step 4: Checking Door Switch**

Measure resistance on the door switch across E121 and E111 with the door closed.

- If you have an open circuit, remove the door lock mechanism and replace if faulty.
- If you have a closed circuit, check the on/off switch (Step 5).

**Step 5: Checking On/Off Switch**

Measure voltage TB-16 to TB-12 on the on/off switch.

- If you have 240 volts and the switch is on, check the wires back to the board for breakage.
  - If you do not have 240 volts, measure voltage across the on/off switch at TB15 and TB11.
  - If you have 240 volts, and the switch in in the on position, you have a bad on/off switch.

    If you do not have 240 volts, check the RFI suppressor (Step 6).

**Step 6: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 7).

**Step 7: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
  - If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
    - If you do not have 240 volts, check the terminal block (Step 8).

**Step 8: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts at the receptacle.

# W6021/W6221 Flowchart

## Machine Won't Fill

**Step 1: If the unit is in a new construction,** or there has recently been some plumbing work, or the unit is brand new, make sure the water tap is open.

**Step 2: If no water will come in at all,** remove the fill hose and check inside the inlet valve to ensure the filter screen is clean.

**Step 3: Checking Fill Valve**

**If customer says it's during a pre-wash or rinse:**

Since a pre-wash and rinse use the same fill valve solenoid, start a #1 program and measure the voltage on the fill valve at IV1 to IV1N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the board at E-41 to E-42.
  - If you have 240 volts, check those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a main wash:**

Start a #3 program and measure voltage on the fill valve at IV2 to IV2N.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the board at E-41 to E-43.
  - If you have 240 volts, check those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a final rinse:**

Position the volt meter leads on the inlet valve and be prepared to measure voltage on the fill valve at IV4 to IV4N. Start a #4 program.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the board at E-41 to E-44.
  - If you have 240 volts, check those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**Step 4: Checking Pressure Sensor**

Check the pressure sensor at E-91 and E-93 for 5 volts DC.
Next, check E-91 to E-92 for .5 volts DC with no water in the machine.

- If you do not have .5 volts DC, you have a bad pressure sensor.
- If you have .5 volts DC, check the board (Step 5).

**Step 5: Checking Board**

Measure voltage across E122 and E112 on the board.

- If you have 240 volts, and the pressure sensor checks out fine, you have a bad board.
- If you do not have 240 volts, check the door switch (Step 6).

**Step 6: Checking Door Switch**

Measure resistance on the door switch across E121 and E111 with the door closed.

- If you have an open circuit, remove the door lock mechanism and replace if faulty.
- If you have a closed circuit, check the on/off switch (Step 7).

# W6021/W6221 Flowchart

## Machine Won't Fill (*continued)*

**Step 7: Checking On/Off Switch**

Measure voltage TB-16 to TB-12 on the on/off switch.

- If you have 240 volts and the switch is on, check the wires back to the board for breakage.
  - If you do not have 240 volts, measure voltage across the on/off switch at TB15 and TB11.
  - If you have 240 volts, and the switch in in the on position, you have a bad on/off switch.

If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.

If you have 240 volts, you have a bad RFI suppressor.

If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
  - If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.

If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts.

# W6021/W6221 Flowchart

## Machine Won't Heat the Water; Runs Too Long (3+ hours)

**Step 1: Make sure the customer is running a heated program.** The Main Wash is the only cycle that heats the water.

**Step 2: Checking Thermistor**

Before you run any cycle, ohm the thermistor across E-31 and E 32 at room temperature and no water in the machine. This should be between 40 and 60 K ohms.

- If you have an open circuit, the resistance is outside the range above tolerance, you have a bad thermistor.

If you have 40-60 K ohms, check the board (Step 3).

**Step 3: Checking the Board**

Pull the thermistor plug off the board and check for 5 volts DC across the E31-E32 plug.

- If you do not have 5 volts DC, theboard is not sending proper voltaqe to the thermistor. The board is bad, as long as it is getting proper incoming voltage. Let's make a few more checks to ensure there are no other problems. Check the element (Step 4).

**Step 4: Checking Element**

Start a #3 program at 205°. Wait about ten minutes, then check the voltage across both wires on the heating element.

- If you have 240 volts and the unit is still not heating, turn off the power to the unit, and ohm across the element.
  - You should get around 28 K ohms +or - 10% . If the element is not within tolerance, or is an open circuit, you have a bad element.
  - If you do not have 240 volts, check the pressure switch (Step 5).

**Step 5: Checking Pressure Switch**

Turn the power back on, and measure voltage across E123 on the board to N114 on the pressure switch while running the #3 program.

- If you have 240 volts, check the wires back down to the element for breakage.
- If you do not have 240 volts, measure voltage across E123 on the board and N111 on the pressure switch.
  - If you have 240 volts and the machine is filled to the normal level to the bottom of the glass door, you have a bad pressure switch.
  - If you do not have 240 volts, check the incoming voltage to the board (Step 6).

**Step 6: Checking incoming voltage to the board.**

Measure voltage across E122 and E112 on the board.

- If you have 240 volts there, you have a bad board.
- If you do not have 240 volts there, check the door switch (Step7).

**Step 7: Checking the Door Switch**

Measure resistance on the door switch across E121 and E111 with the door closed.

- If you have an open circuit, remove the door lock mechanism and replace if faulty.
- If you have a closed circuit, check the on/off switch (Step 8).

# W6021/W6221 Flowchart

## Machine Won't Heat the Water; Runs Too Long (3+ hours) *(continued)*

**Step 8: Checking On/Off Switch**

Measure voltage TB-16 to TB-12 on the on/off switch.

- If you have 240 volts and the switch is on, check the wires back to the board for breakage.
- If you do not have 240 volts, measure voltage across the on/off switch at TB15 and TB11.
- If you have 240 volts, and the switch in in the on position, you have a bad on/off switch.

If you do not have 240 volts, check the RFI suppressor (Step 9).

**Step 9: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step10).

**Step 10: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
- If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 11).

**Step 11: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts.

# W6021/W6221 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin

**Step 1: If the complaint is just that the machine wont spin,** always check the coin trap to make sure there is no debris inside that could keep the unit from draining.

**Step 2: Make sure the "No spin" option has not been selected.**

**Step 3: If the complaint is that the clothes are just too wet,** ask the customer what program they generally run. More than likely they are running a #6, which doesn't have a maximum RPM spin. At this point, recommend that if they choose to use the #5 program which uses the maximum spin.

**Step 4: Checking Motor**

- Ohm the motor for the readings found in the motor resistance section of this manual on page _____

  If the motor ohm readings are ok, check the board (Step 5).

**Step 5: Checking the Board**

Measure voltage across E122 and E112 on the board.

- If you have 240 volts, you have a bad board.
- If you do not have 240 volts, check the door switch (Step 6).

**Step 6: Checking Door Switch**

Measure resistance on the door switch across E121 and E111 with the door closed.

- If you have an open circuit, remove the door lock mechanism and replace if faulty.
- If you have a closed circuit, check the on/off switch (Step 7).

**Step 7: Checking On/Off Switch**

Measure voltage TB-16 to TB-12 on the on/off switch.

- If you have 240 volts and the switch is on, check the wires back to the board for breakage.
  - If you do not have 240 volts, measure voltage across the on/off switch at TB15 and TB11.
  - If you have 240 volts, and the switch in in the on position, you have a bad on/off switch.
    - If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
  - If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
    - If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts.

# W6021/W6221 Flowchart

## Door Won't Open

**Step 1: For the door to open,** theunit must be at the end of the program. The timer knob does not move. If the unit is running, turn the timer knob to a #10 Drain program and press the "Start" button. Let that drain program run to completion, and press the "door open" button. There can be no water in the machine. It is always a good idea to check the coin trap for debris that might be preventing the machine from draining properly.

**Step 2: Checking Door Open Button**

Measure DC voltage across E53 and E51 on the board.

- You should have 5 volts DC without touching the button.
- You should have 0 volts DC when pressing the door open button in.

If you have 5 volts DC while pressing the button, you have a bad door open button. If you always have 0 volts DC whether you push the door open button or not, and the door is closed, check the wires from the door open button back to the board for breakage. If the wires seem to be intact, check the door lock mechanism(Step 3)

**Step 3: Checking Door Lock Mechanism**

Measure the voltage across E121 and E112 on the board while pushing the door open button.

- If you have 240 volts , and the door doesn't open, check the wires down to the door switch for breakage.
  - If the wires are intact, measure resistance across the board at E121 and E111.
  - If this is an open circuit, and the door is closed, the door switch is stuck open. Remove the door switch/door lock mechanism and replace if faulty.
    - If the door switch is closed, and you had 240 volts across E121 and E112, you have a bad door switch/door lock mechanism.
- If you did not get 240 volts, check incoming voltage to the board (Step 4).

**Step 4: Checking Incoming Voltage to the Board**

Measure voltage across E122 and E112 on the board.

- If you have 240 volts there, you have a bad board.
- If you do not have 240 volts there, check the on/off switch (Step 5).

**Step 5: Checking On/Off Switch**

Measure voltage TB-16 to TB-12 on the on/off switch.

- If you have 240 volts and the switch is on, check the wires back to the board for breakage.
  - If you do not have 240 volts, measure voltage across the on/off switch at TB15 and TB11.
  - If you have 240 volts, and the switch in in the on position, you have a bad on/off switch.
    - If you do not have 240 volts, check the RFI suppressor (Step 6).

**Step 6: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 7).

# W6021/W6221 Flowchart

## Door Won't Open *(continued)*

**Step 7: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
- If you have 240 volts, you have bad fuses.
- If you do not have 240 volts, check the terminal block (Step 8).

**Step 8: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or the dryer and check for 240 volts.

# W6441 Flowchart

## Machine Won't Drain; Door Won't Open; Drum Full of Water; F3 Fault

**Step 1: Checking Coin Trap**

Pull out the coin trap to ensure there is no debris stuck inside the pump or drain hoses.

**Step 2: Checking Drain Pump**

Turn the timer knob to "Drain", and press the "Start button".

- Measure voltage across both wires labeled "AP" on the drain pump.
  - If you have 240 volts, and the drain pump is clean and clear, but still not working, you have a bad pump.
  - If you do not have 240 volts, measure voltage at the board at E21-E22.
    - If you have 240 volts, check the wires that go down to the pump for breakage.
    - If you do not have 240 volts, measure voltage across E7-1 and E7-2.
      - If you have 240 volts, you have a bad board.
      - If you do not have 240 volts, check the On/Off switch (Step 3).

**Step 3: Checking On/Off Switch and Door Switch**

Measure voltage on the on/off switch at TB-18 and TB-12 with the switch in the on position.

- If you have 240 volts, check continuity from the wires going from the on/off switch back to the board.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 4).

**Step 4: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 5).

**Step 5: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 6).

**Step 6: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6441 Flowchart

## Machine Won't Fill, Just Sits There; F4 Fault

**Step 1: If the unit is in a new construction,** or there has recently been some plumbing work, or the unit is brand new, make sure the water tap is open.

**Step 2: If no water will come in at all,** regardless of what program is selected, remove the fill hose and check inside the inlet valve to ensure the filter screen is clean.

**Step 3: Checking Fill Valve**

**If customer says it's during a pre-wash or rinse:**

Since a pre-wash and rinse use the same fill valve solenoid, Turn the knob to the 12 o'clock position. Turn the power off and back on again. Press and hold the "Start /Stop" button while pressing the "High Water Level" button five times. The display will show "5 5 5". Next, press the "Temperature" button once to turn the inlet valve on.

Now, measure voltage on the fill valve at IV1 to IV1N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, then measure voltage on the upper board at E-41 to E-44.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).
    - Hold the "Start/Stop" button for five seconds to cancel the fault tracing program.

**If customer says it's during a main wash:**

If the unit fills when the customer chooses a cold wash, but won't fill when you select a temperature over 115° F, the unit needs to be reprogrammed for a cold fill. To do this, turn the knob to the 12 o'clock position. Turn the unit off and back on agian. Next, Press the "Start/Stop" button five times, then press the "Delayed Start" button five times. Now Press the "Delayed Start" button to toggle the readout until it shows "C". Now the unit is programmed for a cold fill.

If the unit was already programmed for a cold fill, start fault tracing for the main wash cold fill valve by turning the timer knob to the 12 o'clock position. Next, turn the power off and back on. Press and hold the "Start/ Stop" while pressing the "High Water Level" button five times. The display will show " 5 5 5". Next, press the "Spin Speed" button once to turn the inlet valve on.

Next, measure voltage on the fill valve at IV2 to IV2N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the upper board at E-45 to E-41.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a final rinse:**

Start a fault tracing program by turning the timer knob to the 12 o'clock position. Next, turn the power off and back on. Press and hold the "Start/Stop" while pressing the"High Water Level" button five times. The display will show "5 5 5". Now, press the "Seven Rinse" button once.

Measure voltage on the fill valve at IV4 to IV4N.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the upper board at E-41 to E-42.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

# W6441 Flowchart

## Machine Won't Fill, Just Sits There; F4 Fault code *(continued)*

**Step 4: Checking Pressure Sensor**

With no water in the machine, check the upper board across E91 and E92 for .5 volts DC. If you have 1 volt DC or more, when the unit is empty, you have a bad pressure sensor.

- If you did get .5 volts DC, check DC voltage across E91 and E93 on the upper board.
  - If you did not get 5 volts DC, you probably have a bad upper control board, but let's make some more checks to ensure there are no further problems. Check the upper board(Step 5).

**Step 5: Checking UpperControl Board**

Measure incoming voltage to the upper control board at E71 and E72.

- If you have 240 volts, you have a bad upper board.
- If you do not have 240 volts, check the on/off switch (Step 6).

**Step 6: Checking On/Off Switch**

Measure voltage on the on/off switch at TB-18 and TB-12.

- If you have 240 volts, check those wires back to the upper board for breakage.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 7).

**Step 7: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 8: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6441 Flowchart

## Machine Runs Too Long (3+ hours); F6 Fault code

**Step 1: Make sure the customer is checking for heat during a heated program.** The Main Wash is the only cycle that heats the water rinses and pre-washes do not include a heat cycle..

**Step 2: Checking Thermistor**

Before you run any cycle, unplug and ohm the thermistor located at E31 and E 32 on the upper board at room temperature. This should be between 40 and 60 K ohms. Also check to ensure the thermistor is still fastened to the bottom side of the tank .

- If you have an open circuit, or your readings are outside the prescribed tolerance, you have a bad thermistor.
- If you have 40-60 K ohms, check for 5 volts DC across the E31-E32 terminals on theupper board
  - If you do not have 5 volts DC, the upper board is not supplying the proper DC voltage to the thermistor. This upper board is likely bad, but lets take a few more readings to ensure there are no other problems. Check the element(Step 3).
  - If you have 5 volts DC, check the heating element (Step 3).

**Step 3: Checking Heating Element**

Start a normal program. This should be a P1 program unless the customer has changed the pre-programmed cycles. If the display does not read “normal”, Press and hold P1 and “enter” at the same time. This will reset P1 back to factory settings. Wait about ten minutes then check the voltage at the heating element.

- If you have 240 volts, and the unit is still not heating, ohm across the element.
  - You should have 28 ohms +or - 10% tolerance.
  - If you have an open circuit, or the resistance is out of tolerance, the element is bad.
    - If you do not have 240 volts across the two terminals on the element, check the pressure switch (Step 5).

**Step 4: Checking Pressure Switch**

Measure voltage across E10-1 on t he upper board and N114 on the pressure switch.

- If you have 240 volts, check the wires back down to the element for breakage.
- If you did not have 240 volts, measure voltage across E10-1 on the upper board and N111 on the pressure switch.
  - If you have 240 volts, and the machine is filled to the normal level, you have a bad pressure switch.
  - If you do not have 240 volts, check the boardcontrol board (Step 6).

**Step 5: Checking Control Board**

Measure voltage at E7-1 and E7-2 on the upper control board.

- If you have 240 volts, you have a bad upper control board.
- If you do not have 240 volts, check the on/off switch (Step 7).

**Step 6: Checking On/Off Switch**

Measure voltage across the on/off switch at TB-18 and TB-12 withthe switch in t he on position

- If you have 240 volts, check the wires going from the on/off switch back to the board.
- If you do not have 240 volts, check across TB15-TB11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 7).

# W6441 Flowchart

## Machine Runs Too Long (3+ hours); F6 Fault code *(continued)*

**Step 7: Checking RFI Suppressor**

Measure voltage across F4 and F3 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 8: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6441 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin; F2 Fault code

**Step 1: If the complaint is just that the machine wont spin,** check the coin trap to make sure there is no debris inside that could keep the unit from draining.

**Step 2: Make sure the "No spin" option has not been selected. This will be indicated by "no d" in the display.**

**Step 3: If the complaint is that the clothes are just too wet,** ask the consumer which program they had run. Perma Press, Wool, and Hand/Delicate only have an 800 RPM short spin. Check to see what spin speed is selected. If the customer isn't using one of the programs with the short low RPM spin, see what spin speed the customer uses. If the customer is choosing 800 RPM, the clothes will be more wet than normal.

**Step 4: Checking Motor**

Ohm the motor for the readings found in the motor resistance section of this manual on page _____

*NOTE:* These readings must be taken by the motor.

└ If the motor ohm readings are ok, check the board (Step 5).

**Step 5: Checking Motor Control Board**

Measure voltage at ST15 and ST14 on the motor control board located in the basepan of the unit.

├ If you have 240 volts, you have a bad motor control board.

└ If you do not have 240 volts, check the upper control board (Step 6).

**Step 6: Checking Upper Control Board**

Measure voltage across E6-1 and E6-2 on the upper control board in the top of the machine.

├ If you have 240 volts, check the wires back down to the motor control unit for breakage.

└ If you do not have 240 volts, measure voltage on the upper board at E7-1 and E7-2.

If you have 240 volts, you have a bad upper control board.

If you do not have 240 volts, check the on/off switch (Step 7).

**Step 7: Checking On/Off Switch**

Measure voltage on the on/off switch at TB-18 and TB-12 with the switch in the on position.

├ If you have 240 volts, check continuity from the wires going from the on/off switch back to the upper control board for breakage.

└ If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.

├ If you have 240 volts and the switch is on, you have a bad on/off switch.

└ If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

├ If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.

└ If you do not have 240 volts, measure voltage across F1 and F2.

├ If you have 240 volts, you have a bad RFI suppressor.

└ If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

├ If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.

└ If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.

├ If you have 240 volts, you have bad fuses.

└ If you do not have 240 volts, check the terminal block (Step 10).

# W6441 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin; F2 Fault code *(continued)*

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6441 Flowchart

## The door won't open, F8 Fault code

**Step 1: Make sure all the water has drained from the unit by turning the timer knob to "drain" and press "Start/Stop".**

**Step 2: Check the coin trap for debris that might be preventing the machine from draining properly.**

**Step 3: Check the upper control board.**

Position you test leads on the upper board across E82 and E83 and be prepared to measure voltage to the door solenoid using fault tracing. Turn the timer knob tot he 12 o'clock position. Next, turn the power off and back on. Press and hold the "High Water Level" button five times. The display will show " 5 5 5". Position your test leads on the board across E82 and E83. Now, press the "High Water Level" button once and the door should open.

- You should have 240 volts while the door was opening.
  - If you did have 240 volts, but the door did not open, remove and inspect the door lock mechanism. If the mechanism doesn't seem to be bound, you have a bad door lock mechanism.
  - If you did not get 240 volts, check the pressure switch (Step 4).

**Step 4: Checking the Pressure Switch**

Measure voltage across N112 on the pressure switch to E7-2 on the upper control board.

- If you did not get 240 volts, measure voltage across N111 on the pressure switch to E7-2 on the upper control board.
  - If you have 240 volts, and the machine is empty, you have a bad pressure switch.
  - If you did not get 240 volts, check the pressure sensor (Step 5).

**Step 5: Checking the Pressure Sensor**

Measure DC voltage across E9-1 and E9-2 on the upper control board with no water in the unit. You should have .5 volts DC.

- If you have more than .5 or .6 volts DC while the unit is totally empty, you have a bad pressure sensor.
- If you did have .5 volts DC, measure DC voltage across E9-1 and E9-3 on the upper control board.
  - If you do not have 5 volts DC, you will likely have a bad upper control board. To be safe, let's make a few more checks to ensure there are no other problems. Check incoming voltage to the upper control board (Step 6).

**Step 6: Checking incoming voltage to the upper control board**

Measure voltage at E7-1 and E7-2 on the upper control board.

- If you have 240 volts, you have a bad upper control board.
- If you do not have 240 volts, check the on/off switch (Step 7).

**Step 7: Checking the ON/OFF Switch**

Measure voltage across TB18 and TB12 on the on/off swtich with the switch in the on position.

- If you have 240 volts, check those wires back to the upper control board for breakage.
- If youdid not have 240 volts, measure voltage across TB15 and TB 11 on the on/off switch withthe switch in the on position.
  - If you have 240 volts, and the switch is in the on position, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI supressor(Step 8).

# W6441 Flowchart

## The door won't open, F8 Fault code*(continued)*

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6641/W6661/6761 Flowchart

## Machine Won't Drain; Door Won't Open; Drum Full of Water; Outlet Fault

**Step 1: Checking Coin Trap**

Pull out the coin trap to ensure there is no debris stuck inside the pump or drain hoses.

**Step 2: Checking Drain Pump**

Access fault tracing to turn on the drain pump. Turn the power to the unit off, and back on. Press "menu" five times, Press "Enter" once, and P2 once.

- Measure voltage across both wires labeled "AP" on the drain pump.
  - If you have 240 volts, and the drain pump is clean and clear, but still not working, you have a bad pump.
  - If you do not have 240 volts, measure voltage at the board at E21-E22.
    - If you have 240 volts, check the wires that go down to the pump for breakage.
    - If you do not have 240 volts, measure voltage across E7-1 and E7-2.
      - If you have 240 volts, you have a bad board.
      - If you do not have 240 volts, check the On/Off switch (Step 3).

**Step 3: Checking On/Off Switch and Door Switch**

Measure voltage on the on/off switch at TB-18 and TB-12 with the switch in the on position.

- If you have 240 volts, check continuity from the wires going from the on/off switch back to the board.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 4).

**Step 4: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 5).

**Step 5: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 6).

**Step 6: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6641/W6661/6761 Flowchart

## Machine Won't Fill, Just Sits There; Inlet Fault

**Step 1: If the unit is in a new construction,** or there has recently been some plumbing work, or the unit is brand new, make sure the water tap is open.

**Step 2: If no water will come in at all,** regardless of what program is selected, remove the fill hose and check inside the inlet valve to ensure the filter screen is clean.

**Step 3: Checking Fill Valve**

**If customer says it's during a pre-wash or rinse:**

Since a pre-wash and rinse use the same fill valve solenoid, start fault tracing. Turn the power off and back on, and press "menu" five times and P2 once. Now, measure voltage on the fill valve at IV1 to IV1N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, then measure voltage on the upper board at E-41 to E-44.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a main wash:**

If the unit fills when the customer chooses a cold wash, but won't fill when you select a temperature over 115° F, the unit needs to be reprogrammed for a cold fill. To do this, turn the unit off and back on. Press Enter 5 times then press P4 five times. Now use the right or left arrow to toggle the readout until it shows "C". Now the unit is programmed for a cold fill.

If the unit was already programmed for a cold fill, start fault tracing for the main wash cold fill valve by turning the power off and back on. Press "menu" five times and P3 once. Next, measure voltage on the fill valve at IV2 to IV2N.

- If you have 240 volts, but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the upper board at E-45 to E-41.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**If customer says it's during a final rinse:**

Start a fault tracing program by turning the power off and back on. Press "menu" five times and the "menu" button once. Next, measure voltage on the fill valve at IV4 to IV4N.

- If you have 240 volts but the valve is not opening, you have a bad fill valve.
- If you do not have 240 volts, measure voltage on the upper board at E-41 to E-42.
  - If you have 240 volts, check across those wires back to the inlet valve for breakage.
  - If you don't have 240 volts, check the pressure sensor (Step 4).

**Step 4: Checking Pressure Sensor**

With no water in the machine, check the upper board across E91 and E92 for .5 volts DC. If you have 1 volt DC or more, when the unit is empty, you have a bad pressure sensor.

- If you did get .5 volts DC, check DC voltage across E91 and E93 on the upper board.
  - If you did not get 5 volts DC, you probably have a bad upper control board, but let's make some more checks to ensure there are no further problems. Check the upper board(Step 5).

# W6641/W6661/6761 Flowchart

## Machine Won't Fill, Just Sits There; Inlet Fault *(continued)*

**Step 5: Checking UpperControl Board**

Measure incoming voltage to the upper control board at E71 and E72.

- If you have 240 volts, you have a bad upper board.
- If you do not have 240 volts, check the on/off switch (Step 6).

**Step 6: Checking On/Off Switch**

Measure voltage on the on/off switch at TB-18 and TB-12.

- If you have 240 volts, check those wires back to the upper board for breakage.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 7).

**Step 7: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 8: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6641/W6661/6761 Flowchart

## Machine Runs Too Long (3+ hours); Temp stop fault; Thermistor fault

**Step 1: Make sure the customer is running a heated program.** The Main Wash is the only cycle that heats the water.

**Step 2: Checking Thermistor**

Before you run any cycle, unplug and ohm the thermistor located at E31 and E 32 on the upper board at room temperature. This should be between 40 and 60 K ohms. Also check to ensure the thermistor is still fastened to the bottom side of the tank .

- If you have an open circuit, or your readings are outside the prescribed tolerance, you have a bad thermistor.
- If you have 40-60 K ohms, check for 5 volts DC across the E31-E32 terminals on theupper board
  - If you do not have 5 volts DC, the upper board is not supplying the proper DC voltage to the thermistor. This upper board is likely bad, but lets take a few more readings to ensure there are no other problems. Check the element(Step 3).
  - If you have 5 volts DC, check the heating element (Step 3).

**Step 3: Checking Heating Element**

Start a normal program. This should be a P1 program unless the customer has changed the pre-programmed cycles. If the display does not read “normal”, Press and hold P1 and “enter” at the same time. This will reset P1 back to factory settings. Wait about ten minutes then check the voltage at the heating element.

- If you have 240 volts, and the unit is still not heating, ohm across the element.
  - You should have 28 ohms +or - 10% tolerance.
  - If you have an open circuit, or the resistance is out of tolerance, the element is bad.
- If you do not have 240 volts across the two terminals on the element, check the pressure switch (Step 4).

**Step 4: Checking Pressure Switch**

Measure voltage across E10-1 on t he upper board and N114 on the pressure switch.

- If you have 240 volts, check the wires back down to the element for breakage.
- If you did not have 240 volts, measure voltage across E10-1 on the upper board and N111 on the pressure switch.
  - If you have 240 volts, and the machine is filled to the normal level, you have a bad pressure switch.
  - If you do not have 240 volts, check the boardcontrol board (Step 5).

**Step 5: Checking Control Board**

Measure voltage at E7-1 and E7-2 on the upper control board.

- If you have 240 volts, you have a bad upper control board.
- If you do not have 240 volts, check the on/off switch (Step 6).

**Step 6: Checking On/Off Switch**

Measure voltage across the on/off switch at TB-18 and TB-12 withthe switch in t he on position

- If you have 240 volts, check the wires going from the on/off switch back to the board.
- If you do not have 240 volts, check across TB15-TB11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 7).

# W6641/W6661/6761 Flowchart

## Machine Runs Too Long (3+ hours); Temp stop fault; Thermistor fault *(continued)*

**Step 7: Checking RFI Suppressor**

Measure voltage across F4 and F3 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 8).

**Step 8: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 9).

**Step 9: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6641/W6661/6761 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin; Motor fault

**Step 1: If the complaint is just that the machine wont spin,** check the coin trap to make sure there is no debris inside that could keep the unit from draining.

**Step 2: Make sure the "No spin" option has not been selected.**

**Step 3: If the complaint is that the clothes are just too wet,** ask the consumer which program they generally run. More than likely they are running a P3. Check to see what spin speed is selected. If it displays 800 rpm, reprogram the board for either a 1400 or 1600 rpm spin. If you find that this is the case, enter the options menu and turn the short spin option off. This will make this option a permanent change, thus maximizing the spin results.

**Step 4: Checking Motor**

- Ohm the motor for the readings found in the motor resistance section of this manual on page _____

*NOTE:* These readings must be taken by the motor.

If the motor ohm readings are ok, check the board (Step 5).

**Step 5: Checking Motor Control Board**

Measure voltage at ST15 and ST14 on the motor control board located in the basepan of the unit.

- If you have 240 volts, you have a bad motor control board.
- If you do not have 240 volts, check the upper control board (Step 6).

**Step 6: Checking Upper Control Board**

Measure voltage across E6-1 and E6-2 on the upper control board in the top of the machine.

- If you have 240 volts, check the wires back down to the motor control unit for breakage.
- If you do not have 240 volts, measure voltage on the upper board at E7-1 and E7-2.
  - If you have 240 volts, you have a bad upper control board.
  - If you do not have 240 volts, check the on/off switch (Step 7).

**Step 7: Checking On/Off Switch**

Measure voltage on the on/off switch at TB-18 and TB-12 with the switch in the on position.

- If you have 240 volts, check continuity from the wires going from the on/off switch back to the upper control board for breakage.
- If you do not have 240 volts, check TB-15 to TB-11 on the on/off switch.
  - If you have 240 volts and the switch is on, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 8).

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 10).

# W6641/W6661/6761 Flowchart

## Machine Fills But It Won't Tumble; Machine Won't Spin; Motor fault *(continued)*

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6641/W6661/6761 Flowchart

## The door won't open

**Step 1: Make sure all the water has drained from the unit by accessing fault tracing. To do this, turn the power off and back on. Press "menu" five times, "enter" once and P2 once.**

**Step 2: Check the coin trap for debris that might be preventing the machine from draining properly.**

**Step 3: Check the upper control board.**

Position you test leads on the upper board across E82 and E83 and be prepared to measure voltage to the door solenoid using fault tracing. Turn the power off and back on. Press "menu" five times and the left arrow button once.

- You should have 240 volts while the door was opening.
  - If you did have 240 volts, but the door did not open, remove and inspect the door lock mechanism.
  - If the mechanism doesn't seem to be bound, you have a bad door lock mechanism.
- If you did not get 240 volts, check the pressure switch (Step 4).

**Step 4: Checking the Pressure Switch**

Measure voltage across N112 on the pressure switch to E7-2 on the upper control board.

- If you did not get 240 volts, measure voltage across N111 on the pressure switch to E7-2 on the upper control board.
  - If you have 240 volts, and the machine is empty, you have a bad pressure switch.
  - If you did not get 240 volts, check the pressure sensor (Step 5).

**Step 5: Checking the Pressure Sensor**

Measure DC voltage across E9-1 and E9-2 on the upper control board with no water in the unit. You should have .5 volts DC.

- If you have more than .5 or .6 volts DC while the unit is totally empty, you have a bad pressure sensor.
- If you did have .5 volts DC, measure DC voltage across E9-1 and E9-3 on the upper control board.
  - If you do not have 5 volts DC, you will likely have a bad upper control board. To be safe, let's make a few more checks to ensure there are no other problems. Check incoming voltage to the upper control board (Step 6).

**Step 6: Checking incoming voltage to the upper control board**

Measure voltage at E7-1 and E7-2 on the upper control board.

- If you have 240 volts, you have a bad upper control board.
- If you do not have 240 volts, check the on/off switch (Step 7).

**Step 7: Checking the ON/OFF Switch**

Measure voltage across TB18 and TB12 on the on/off swtich with the switch in the on position.

- If you have 240 volts, check those wires back to the upper control board for breakage.
- If youdid not have 240 volts, measure voltage across TB15 and TB 11 on the on/off switch withthe switch in the on position.
  - If you have 240 volts, and the switch is in the on position, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI supressor(Step 8).

# W6641/W6661/6761 Flowchart

## The door won't open *(continued)*

**Step 8: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 9).

**Step 9: Checking the Fuses**

Measure voltage across the fuses at S2B and S1B.

- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 10).

**Step 10: Checking Terminal Block**

Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

# W6641/W6661/6761 Flowchart

## LED Display won't light up; Display hard to read; Missing words; Can't program unit

**Before you run a service call, have the customer turn the unit off for about ten minutes. Turn the unit back on and see if it will accept a program. If the machine now seems to program properly, theelectronics just needed to be "reset". If the machine is left on for long periods of time, turning the power off and back on acts as a "reboot" to the electronics. The machine should be turned off occasionally to maintain normal operation. If this "reboot" did not work, check the keyboard(Step 1).**

**Step 1: Checking Keyboard**

**If the display just won't light up, or the words are distorted**, turn the power on and check for 13 volts DC across the upper control board across E11 to E12.

- If you have 13 volts DC, you have a bad keyboard.
- If you do not have 13 volts DC voltage, check the control board (Step 2).

**Step 2: Checking Control Board**

Measure voltage at E7-1 and E7-2 on the upper control board for 240 volts .

- If you have 240 volts, you have a bad control board.
- If you do not have 240 volts, check the on/off switch (Step 3).

**Step 3: Checking On/Off Switch**

Measure across the on/off switch at TB18-TB12 with the switch in the on position.

- If you have 240 volts, check the wires going from the on/off switch back to the board.
- If you do not have 240 volts, then check across TB15-TB11 on the on/off switch.
  - If you have 240 volts, you have a bad on/off switch.
  - If you do not have 240 volts, check the RFI suppressor (Step 4).

**Step 4: Checking RFI Suppressor**

Measure voltage across F3 and F4 on the RFI suppressor.

- If you have 240 volts, check the wires between the suppressor and on/off switch for breakage.
- If you do not have 240 volts, measure voltage across F1 and F2.
  - If you have 240 volts, you have a bad RFI suppressor.
  - If you do not have 240 volts, check the fuses (Step 5).

**Step 5: Checking Fuses**

Measure voltage across the fuses at S2B and S1B.

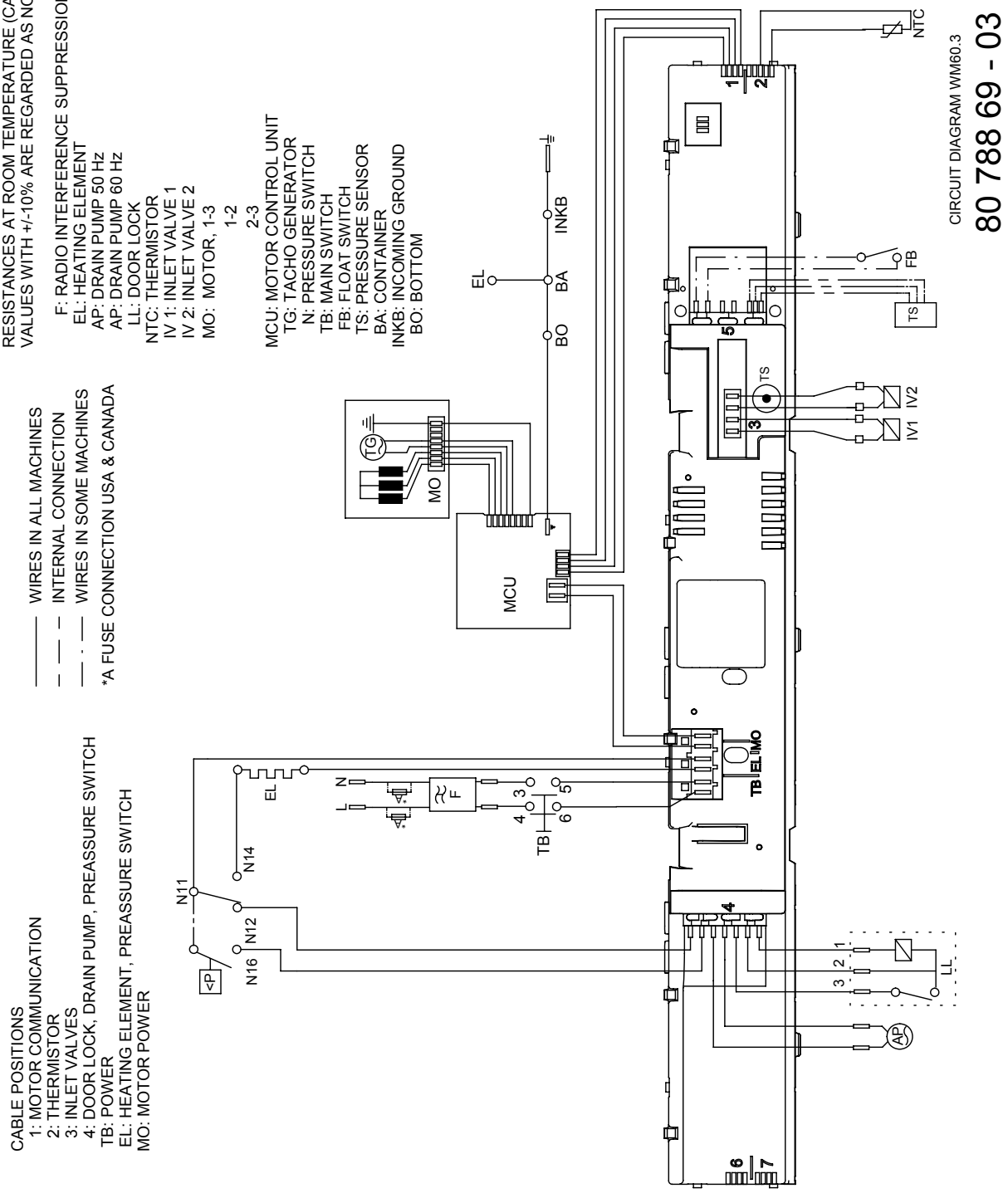
- If you have 240 volts, check the wires between the fuses and the RFI suppressor for breakage.
- If you do not have 240 volts, measure voltage across the fuses at S2S and S1S.
  - If you have 240 volts, you have bad fuses.
  - If you do not have 240 volts, check the terminal block (Step 6).

**Step 6: Checking Terminal Block**

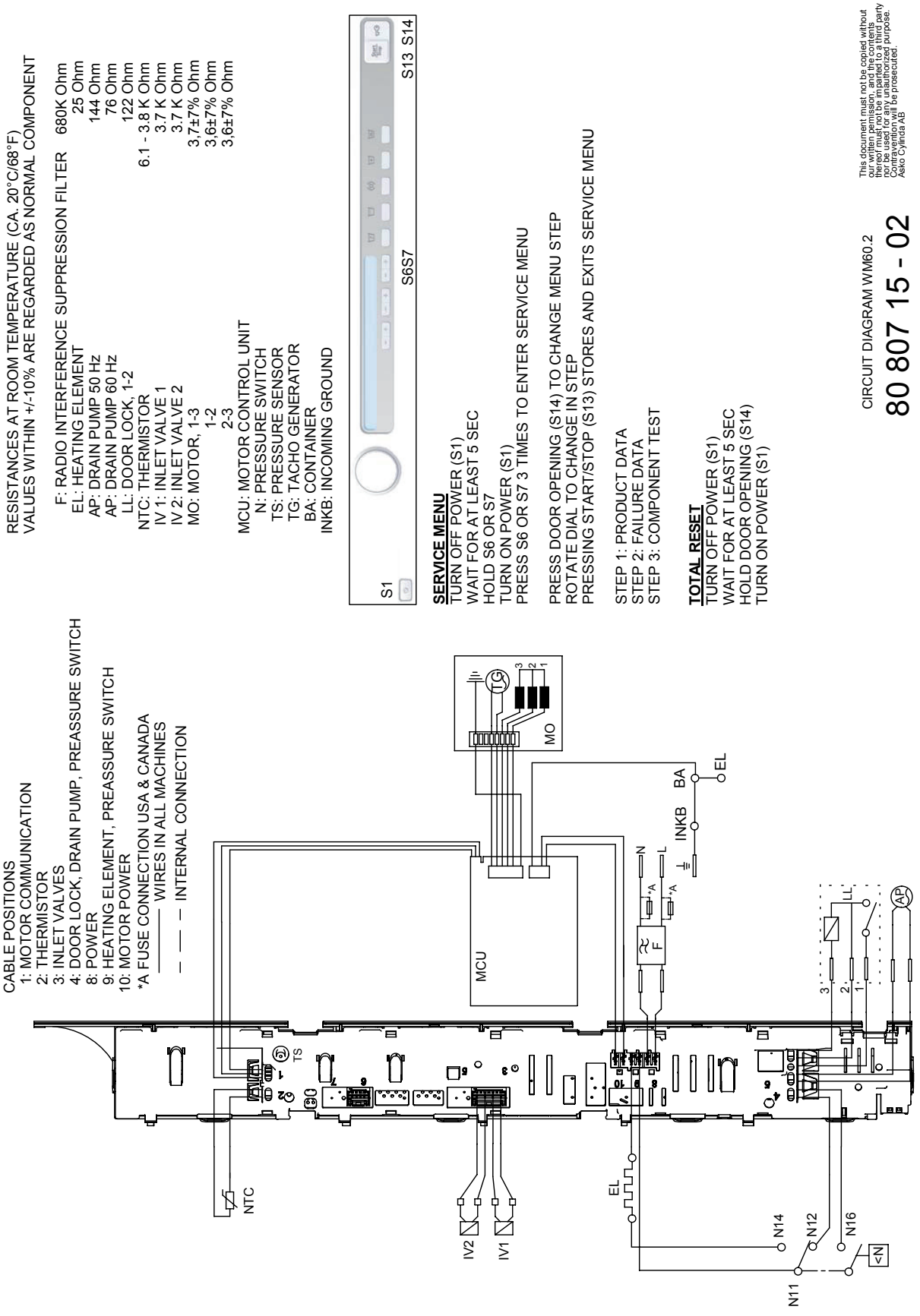
Measure voltage across L1 and L2 on the terminal block.

- If you have 240 volts, check the wires from the terminal block back to the fuses for breakage.
- If you do not have 240 volts, go back to where the unit plugs into the wall or dryer and check for 240 volts at the receptacle.

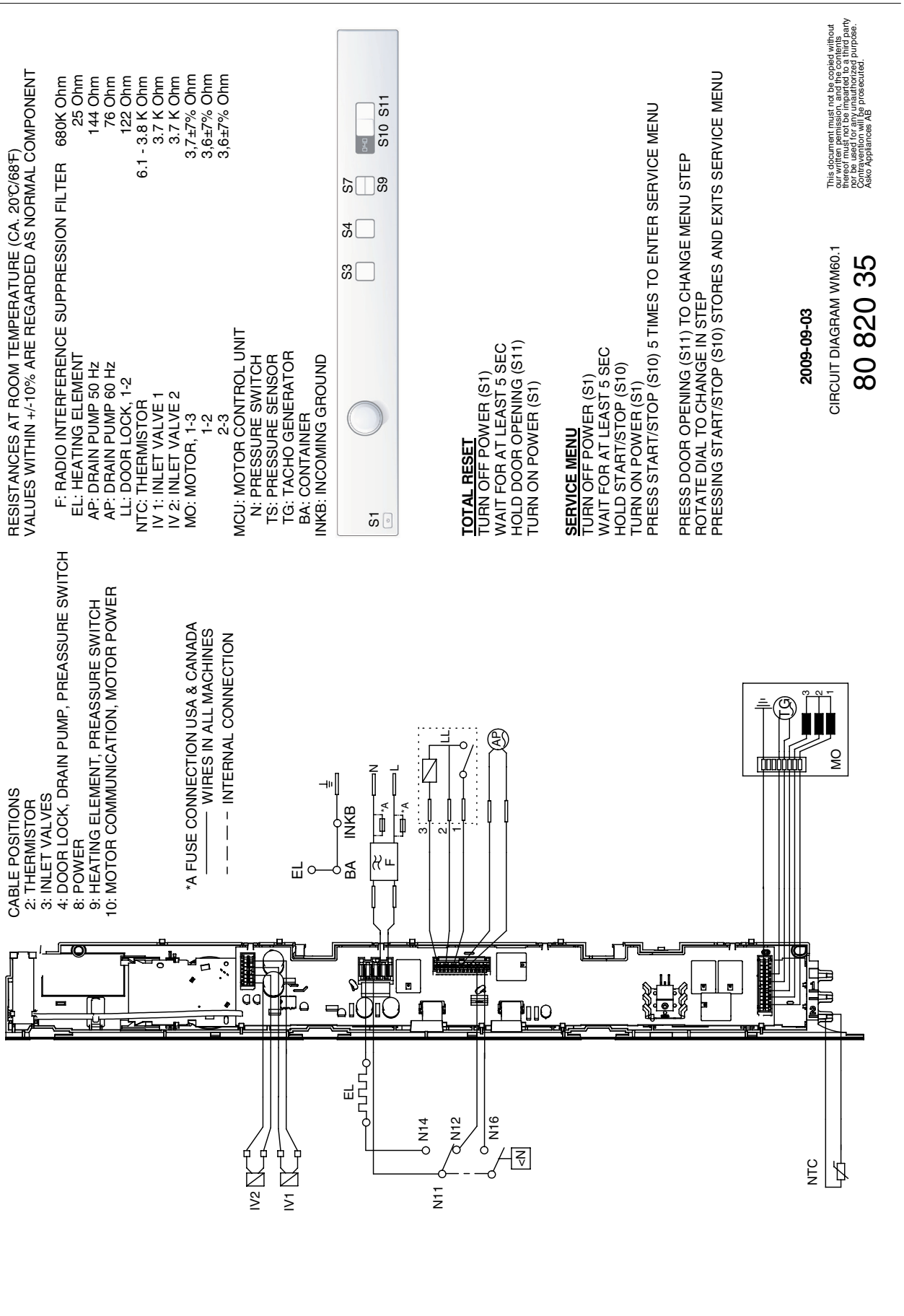
# Wiring diagram WM60.3

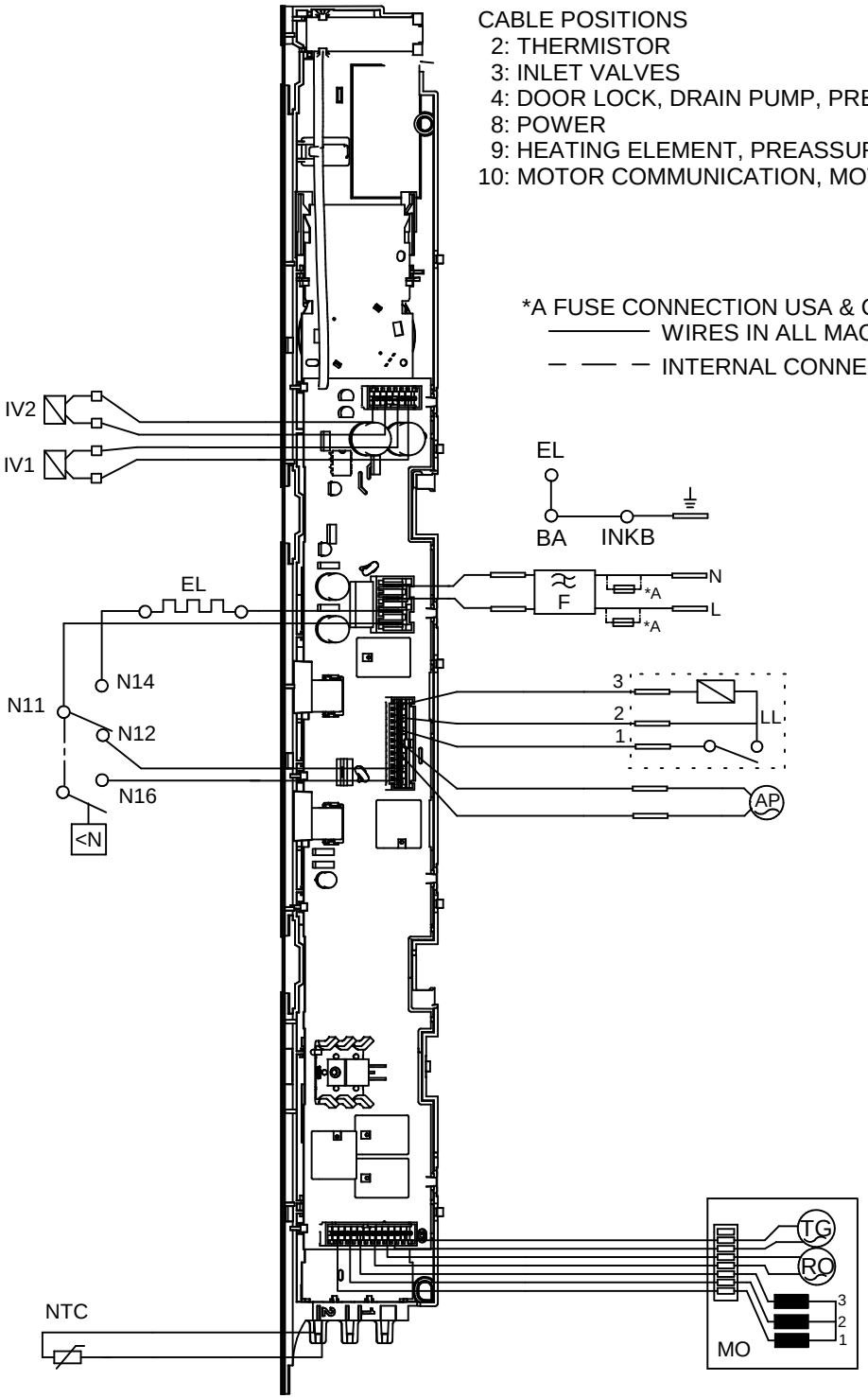


# Wiring diagram WM60.2



# Circuit diagram WM60.1






CABLE POSITIONS
2: THERMISTOR
3: INLET VALVES
4: DOOR LOCK, DRAIN PUMP, PREASSURE SWITCH
8: POWER
9: HEATING ELEMENT, PREASSURE SWITCH
10: MOTOR COMMUNICATION, MOTOR POWER

*A FUSE CONNECTION USA & CANADA
——— WIRES IN ALL MACHINES
– — – INTERNAL CONNECTION

RESISTANCES AT ROOM TEMPERATURE (CA. 20°C/68°F)
VALUES WITHIN +/-10% ARE REGARDED AS NORMAL COMPONENT

| | |
|---|---|
| F: RADIO INTERFERENCE SUPPRESSION FILTER | 680K Ohm |
| EL: HEATING ELEMENT | 25 Ohm |
| AP: DRAIN PUMP 50 Hz | 144 Ohm |
| AP: DRAIN PUMP 60 Hz | 76 Ohm |
| LL: DOOR LOCK, 1-2 | 122 Ohm |
| NTC: THERMISTOR | 6.1 - 3.8 K Ohm |
| IV 1: INLET VALVE 1 | 3.7 K Ohm |
| IV 2: INLET VALVE 2 | 3.7 K Ohm |
| MO: MOTOR, 1-3 | 3,7±7% Ohm |
| 1-2 | 3,6±7% Ohm |
| 2-3 | 3,6±7% Ohm |

MCU: MOTOR CONTROL UNIT
N: PRESSURE SWITCH
TS: PRESSURE SENSOR
TG: TACHO GENERATOR
BA: CONTAINER
INKB: INCOMING GROUND


**TOTAL RESET**
TURN OFF POWER (S1)
WAIT FOR AT LEAST 5 SEC
HOLD DOOR OPENING (S11)
TURN ON POWER (S1)

**SERVICE MENU**
TURN OFF POWER (S1)
WAIT FOR AT LEAST 5 SEC
HOLD START/STOP (S10)
TURN ON POWER (S1)
PRESS START/STOP (S10) 5 TIMES TO ENTER SERVICE MENU

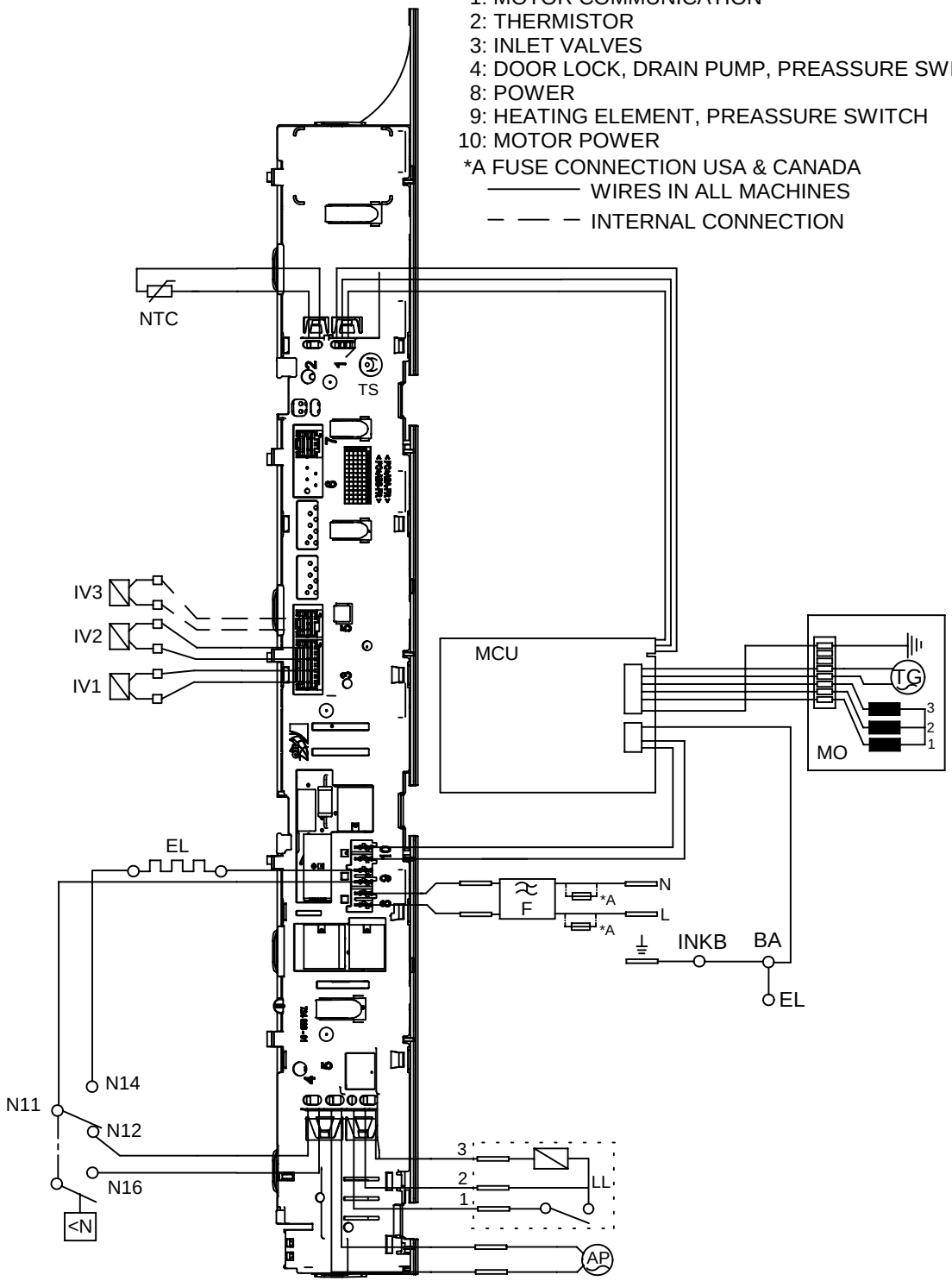
PRESS DOOR OPENING (S11) TO CHANGE MENU STEP
ROTATE DIAL TO CHANGE IN STEP
PRESSING START/STOP (S10) STORES AND EXITS SERVICE MENU

**2010-10-27**

CIRCUIT DIAGRAM WM70.1

80 886 21-02

CABLE POSITIONS
1: MOTOR COMMUNICATION
2: THERMISTOR
3: INLET VALVES
4: DOOR LOCK, DRAIN PUMP, PREASSURE SWITCH
8: POWER
9: HEATING ELEMENT, PREASSURE SWITCH
10: MOTOR POWER
*A FUSE CONNECTION USA & CANADA
——— WIRES IN ALL MACHINES
– — – INTERNAL CONNECTION




RESISTANCES AT ROOM TEMPERATURE (CA. 20°C/68°F)
VALUES WITHIN +/-10% ARE REGARDED AS NORMAL COMPONENT

| | |
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| NTC: THERMISTOR | 6.1 - 3.8 K Ohm |
| IV 1: INLET VALVE 1 | 3.7 K Ohm |
| IV 2: INLET VALVE 2 | 3.7 K Ohm |
| IV 3: INLET VALVE 3 | 3.5 K Ohm |
| MO: MOTOR, 1-3 | 4,3±7% Ohm |
| 1-2 | 4,3±7% Ohm |
| 2-3 | 4,3±7% Ohm |

MCU: MOTOR CONTROL UNIT
N: PRESSURE SWITCH
TS: PRESSURE SENSOR
TG: TACHO GENERATOR

BA: CONTAINER
INKB: INCOMING GROUND


**SERVICE MENU**
TURN OFF POWER (S1)
WAIT FOR AT LEAST 5 SEC
HOLD S6 OR S7
TURN ON POWER (S1)
PRESS S6 OR S7 3 TIMES TO ENTER SERVICE MENU

PRESS DOOR OPENING (S14) TO CHANGE MENU STEP
ROTATE DIAL TO CHANGE IN STEP
PRESSING START/STOP (S13) STORES AND EXITS SERVICE MENU

STEP 1: PRODUCT DATA
STEP 2: FAILURE DATA
STEP 3: COMPONENT TEST

**TOTAL RESET**
TURN OFF POWER (S1)
WAIT FOR AT LEAST 5 SEC
HOLD DOOR OPENING (S14)
TURN ON POWER (S1)

CIRCUIT DIAGRAM WM70.2

80 886 18 - 00

CABLE POSITIONS
1: MOTOR COMMUNICATION
2: THERMISTOR
3: INLET VALVES
4: DOOR LOCK, DRAIN PUMP, PREASSURE SWITCH
TB: POWER
EL: HEATING ELEMENT, PREASSURE SWITCH
MO: MOTOR POWER

——— WIRES IN ALL MACHINES
– — – INTERNAL CONNECTION
— · — WIRES IN SOME MACHINES

*A FUSE CONNECTION USA & CANADA

RESISTANCES AT ROOM TEMPERATURE (CA. 20°C/68°F)
VALUES WITH +/-10% ARE REGARDED AS NORMAL COMPONENT

| | |
|---|---|
| F: RADIO INTERFERENCE SUPPRESSION FILTER | 680K Ohm |
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| AP: DRAIN PUMP 60 Hz | 76 Ohm |
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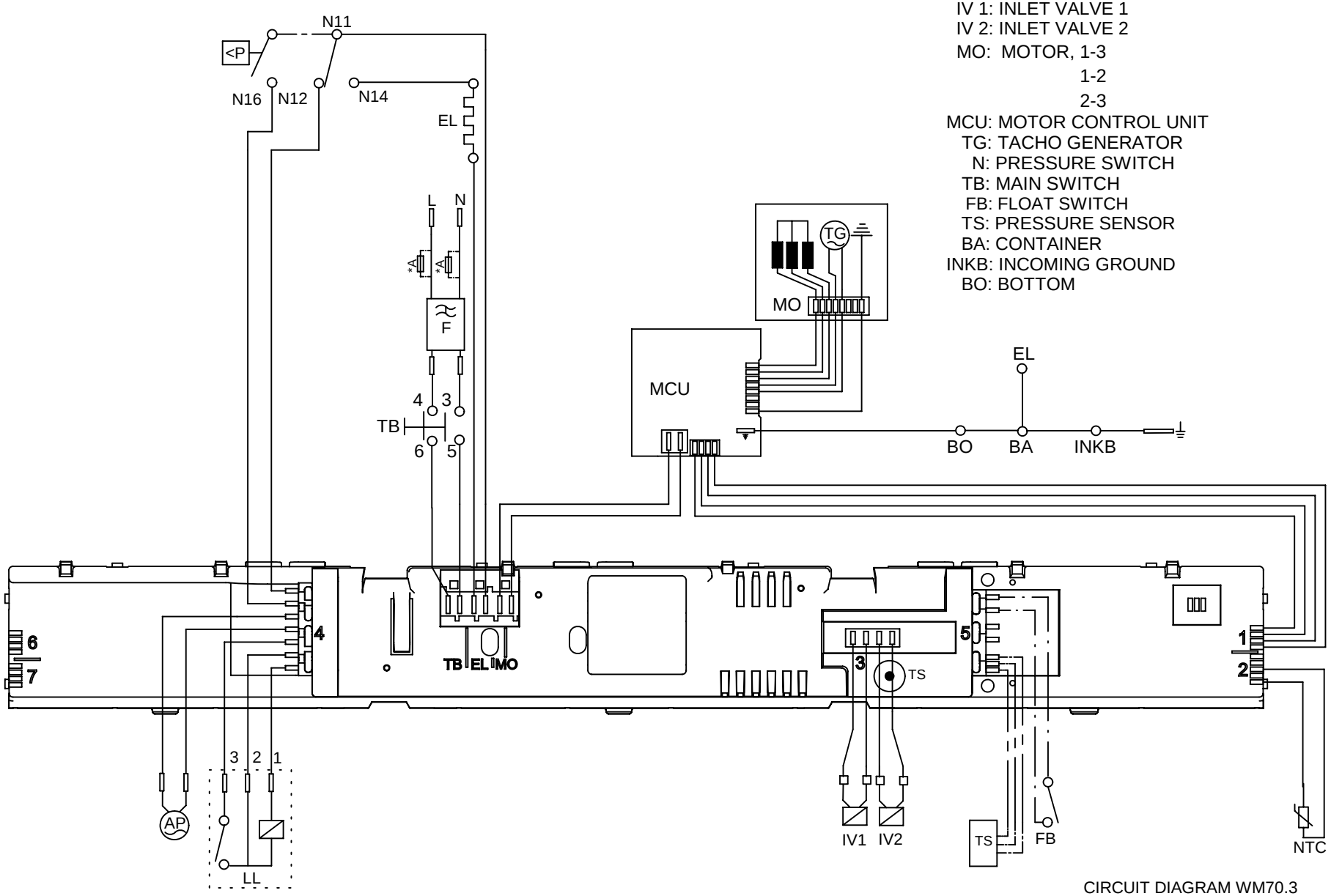
| NTC: THERMISTOR | 6.1 - 3.8 K Ohm |
| IV 1: INLET VALVE 1 | 3.7 K Ohm |
| IV 2: INLET VALVE 2 | 3.7 K Ohm |
| MO: MOTOR, 1-3 | 4,3±7% Ohm |
| 1-2 | 4,3±7% Ohm |
| 2-3 | 4,3±7% Ohm |

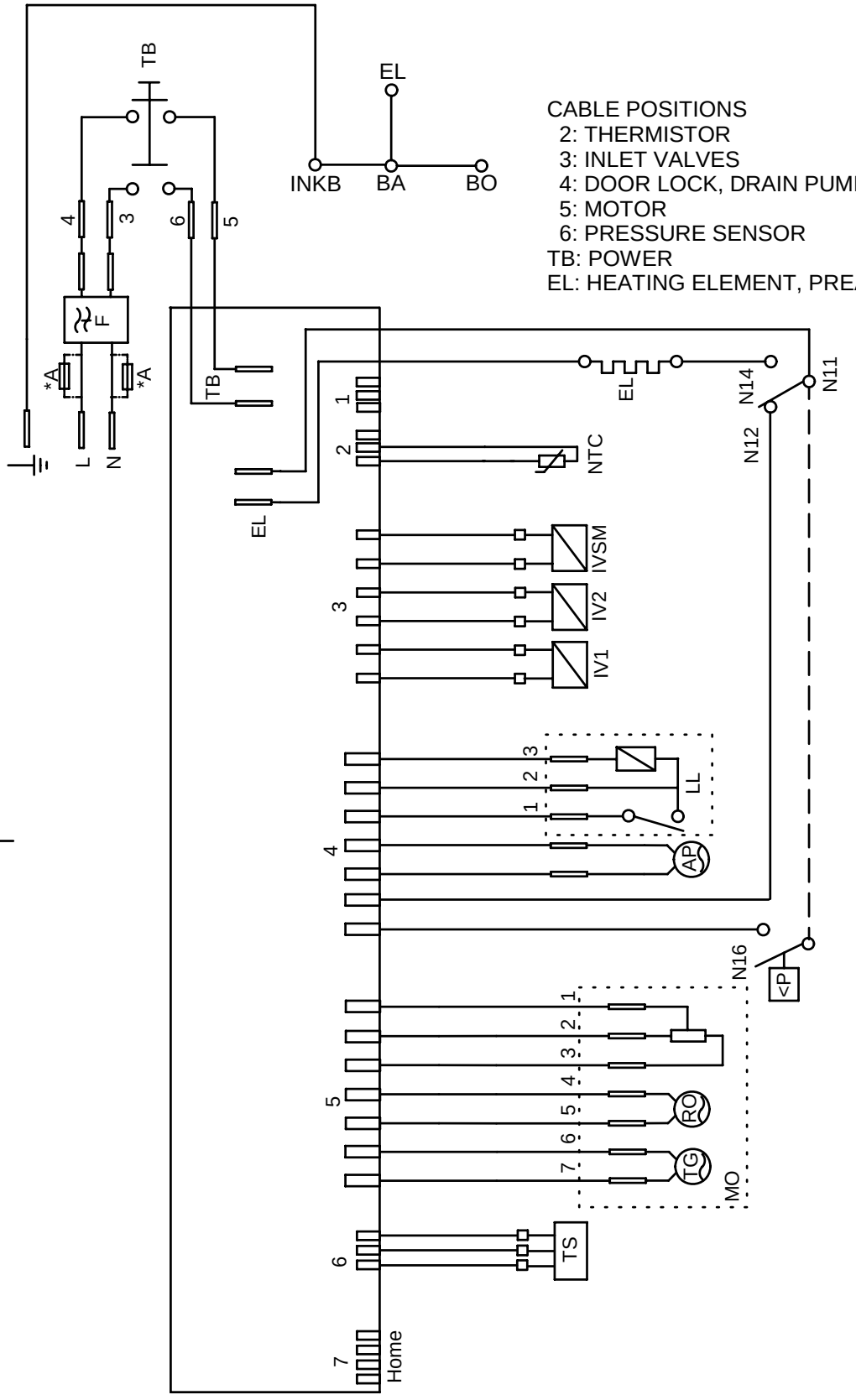
MCU: MOTOR CONTROL UNIT
TG: TACHO GENERATOR
N: PRESSURE SWITCH
TB: MAIN SWITCH
FB: FLOAT SWITCH
TS: PRESSURE SENSOR
BA: CONTAINER
INKB: INCOMING GROUND
BO: BOTTOM




CIRCUIT DIAGRAM WM70.3

80 886 17 - 00

| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|




CABLE POSITIONS
2: THERMISTOR
3: INLET VALVES
4: DOOR LOCK, DRAIN PUMP, PREASSURE SWITCH
5: MOTOR
6: PRESSURE SENSOR
TB: POWER
EL: HEATING ELEMENT, PREASSURE SWITCH

*A FUSE CONNECTION USA & CANADA
——— WIRES IN ALL MACHINES
– — – INTERNAL CONNECTION
—·— WIRES IN SOME MACHINES

AP: DRAIN PUMP
EL: HEATING ELEMENT
F: FILTER
IV: INLET VALVE
LL: DOOR LOCK

TB: MAIN SWITCH
TG: TACHO GENERATOR
RO: ROTOR
P: PRESSURE SWITCH
TS: PRESSURE SENSOR
NTC: THERMISTOR

S:\U\WMD25\1_Tryckunderlag\Kopplingsschema\8076100 Kopplingsschema WM25\8076100 Circuit diagram WM25-03.dft , pema , 2008-07-16 13:49:54



| Pos. | Qty | Part No. | Name of item | Material |
|---|---|---|---|---|

| | | |
|---|---|---|
| Material | Dens.Kg/dm3 | Dimensions, Type, etc. |
| Scale 1:1 | Gen.tolerance | Description(ENG) CIRCUIT DIAGRAM WM25 |
| Designed by Pema | Gen.tol.Angle | Description(SE) KOPPLINGSSCHEMA WM25 |
| Released by | Iss by Dept UT / Year 03 / Week 27 | 80 761 00 |
| ASKO CYLINDA | | Rev Ind 03 |
| | | Replace 80 761 00-02 |
| | | Project WM25 |

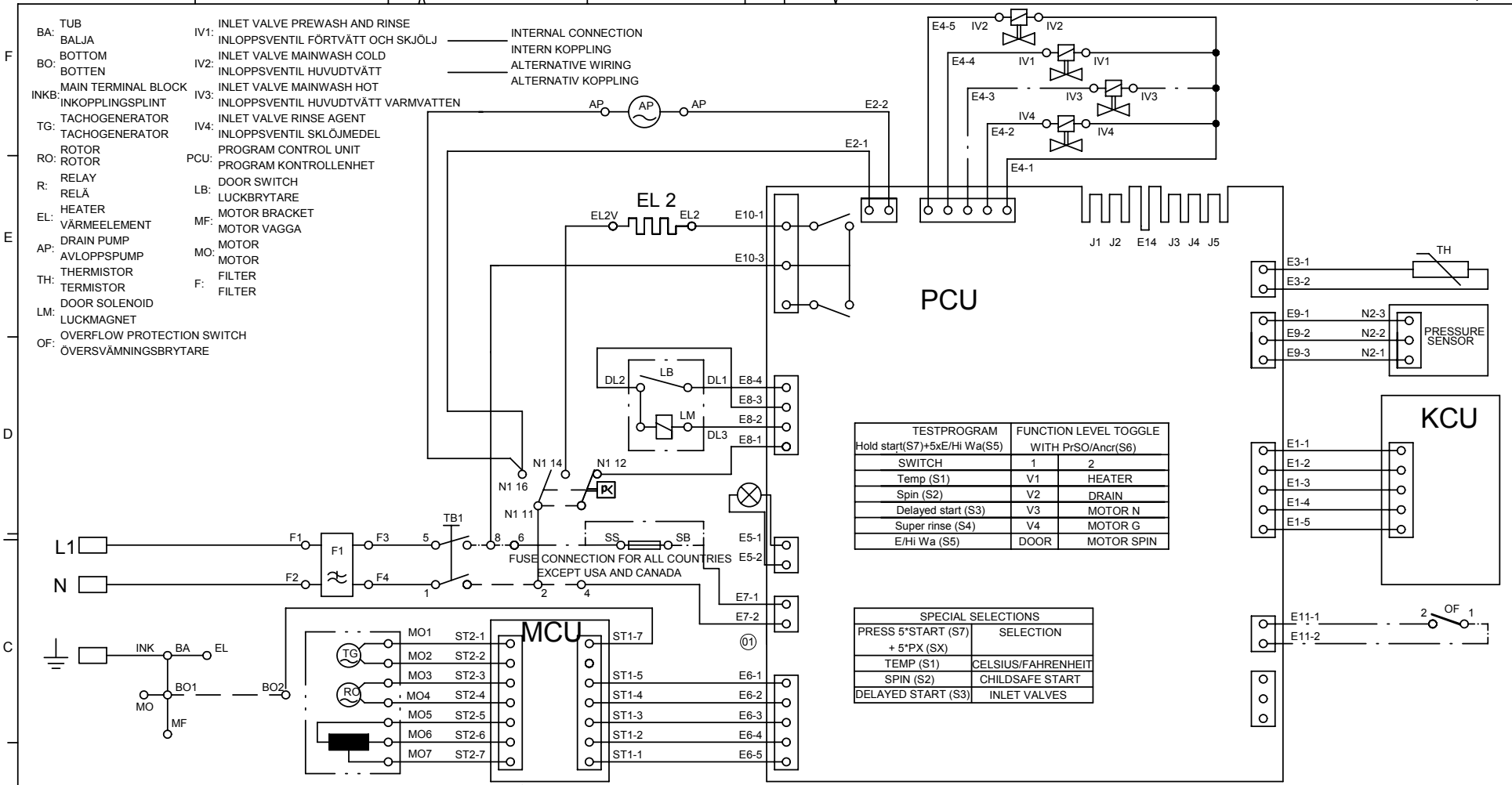
4 3 2 1 FORMAT A4

# KOMPLETTSCHEMA WM50: 80 643 93-02

S:\UWMD20\1_Tryckunderlag\Kopplingsschema\8064394 Kopplingsschema WM50\8064394 Kwm50-02.dft , pema , 2004-06-02 10:18:04

BA: TUB / BALJA
BO: BOTTOM / BOTTEN
INKB: MAIN TERMINAL BLOCK / INKOPPLINGSPLINT
TG: TACHOGENERATOR / TACHOGENERATOR
RO: ROTOR / ROTOR
R: RELAY / RELÄ
EL: HEATER / VÄRMEELEMENT
AP: DRAIN PUMP / AVLOPPSPUMP
TH: THERMISTOR / TERMISTOR
LM: DOOR SOLENOID / LUCKMAGNET
OF: OVERFLOW PROTECTION SWITCH / ÖVERSVÄMNINGSBRYTARE
IV1: INLET VALVE PREWASH AND RINSE / INLOPPSVENTIL FÖRTVÄTT OCH SKJÖLJ
IV2: INLET VALVE MAINWASH COLD / INLOPPSVENTIL HUVUDTVÄTT
IV3: INLET VALVE MAINWASH HOT / INLOPPSVENTIL HUVUDTVÄTT VARMVATTEN
IV4: INLET VALVE RINSE AGENT / INLOPPSVENTIL SKLÖJMEDEL
PCU: PROGRAM CONTROL UNIT / PROGRAM KONTROLLENHET
LB: DOOR SWITCH / LUCKBRYTARE
MF: MOTOR BRACKET / MOTOR VAGGA
MO: MOTOR / MOTOR
F: FILTER / FILTER

INTERNAL CONNECTION / INTERN KOPPLING
ALTERNATIVE WIRING / ALTERNATIV KOPPLING




| TESTPROGRAM Hold start(S7)+5xE/Hi Wa(S5) | FUNCTION LEVEL TOGGLE WITH PrSO/Ancr(S6) | |
|---|---|---|
| SWITCH | 1 | 2 |
| Temp (S1) | V1 | HEATER |
| Spin (S2) | V2 | DRAIN |
| Delayed start (S3) | V3 | MOTOR N |
| Super rinse (S4) | V4 | MOTOR G |
| E/Hi Wa (S5) | DOOR | MOTOR SPIN |

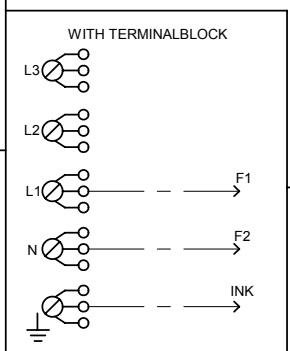
| SPECIAL SELECTIONS | |
|---|---|
| PRESS 5*START (S7) + 5*PX (SX) | SELECTION |
| TEMP (S1) | CELSIUS/FAHRENHEIT |
| SPIN (S2) | CHILDSAFE START |
| DELAYED START (S3) | INLET VALVES |

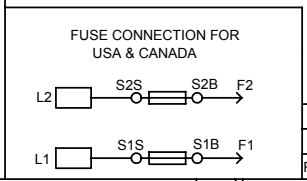
POWER ON DOOR CLOSED
E1:1-E1:2 13 Vdc
E1:3 DATA IN
E1:4 CLOCK
E1:5 DATA OUT
E2:1-E2:2 230 Vac DRAIN PUMP ON
E3:1-E3:2 5 Vdc(THERMISTOR DISCONNECTED)

E4:1-E4:2 230 Vac IV4 ON
E4:1-E4:3 230 Vac IV3 ON
E4:1-E4:4 230 Vac IV1 ON
E4:1-E4:5 230 Vac IV2 ON
E5:1-E5:2 230 Vac
E6:1-E6:2 230 Vac
E6:4 DATA SERIELL

E6:3-E6:5 5 Vdc
E7:1-E7:2 230 Vac
E8:1-E8:4 0 V DOOR OPEN
E8:1-E8:4 230 Vac DOOR CLOSED
E8:2-E8:3 230 Vac DOOR SOLENOID ON 10 mS
E9:1-E9:3 5 Vdc
E9:1-E9:2 0,5 Vdc AT ZERO WATER PRESSURE

E10:1-E10:3 230 Vac HEATER OFF 0 V HEATER ON
E10:5-E10:3 230 Vac HEATER OFF 0 V HEATER ON
THE ABOVE REQUIRE THE LEVEL SWITCH IN POSITION N1 14
E11:1-E11:2 5 Vdc (OVERFILL 0 Vdc)
E12:1-E12:3 15 Vdc
E12:2 DATA SERIELL




| Rev ind | Revision | Appd | Year Week |
|---|---|---|---|
| 02 | Drawing adjustments | PM | 04 23 |
| 01 | Changed E7-1 and E7-2 | PS | 01 44 |

| Pos. | Qty | Part No. | Name of item | Material |
|---|---|---|---|---|
| | | | | |

Material | Dens.Kg/dm3 | Dimensions, Type, etc.

Scale: 1:1 | Gen.tolerance | Description(ENG): CIRCUIT DIAGRAM WM50

Designed by: MS | Gen.tol.Angle | Description(SE): KOPPLINGSSCHEMA WM50

Released by | Iss by Dept: UT | Year: 01 | Week: 22

ASKO CYLINDA

80 643 94 | Rev Ind: 02 | Replace: 80 643 94-01 | Project



1FORMAT A3

KOMPLETTSCHEMA 80 643 67 - 03

S:\UWMD20\1_TryckunderlagKopplingsschema\8064368 Kopplingsschema WM 33A_44A\revised\8064368 Kopplingsschema 33A_44A-07.dft , masu , 2007-12-05 14:17:08

EL: HEATER / VÄRMEELEMENT
F: FILTER / FILTER
AP: DRAIN PUMP / AVLOPPSPUMP
MO: MOTOR / MOTOR
TH: THERMISTOR / TERMISTOR
DL: DOORLOCK / DÖRRLÅS
PCU: PROGRAM CONTROL UNIT / PROGRAM KONTROLLENHET
IV1: INLET VALVE PREWASH AND RINSE / INLOPPSVENTIL FÖRTVÄTT OCH SKÖLJ
IV2: INLET VALVE MAINWASH COLD / INLOPPSVENTIL HUVUDTVÄTT
IV4: INLET VALVE RINSE AGENT / INLOPPSVENTIL SKÖLJMEDEL

INTERNAL CONNECTION / INTERN KOPPLING
ALTERNATIVE WIRING / ALTERNATIV KOPPLING

BA: TUB / BALJA
BO: BOTTOM / BOTTEN
INKB: MAIN TERMINAL BLOCK / INKOPPLINGSPLINT
TG: TACHOGENERATOR / TACHOGENERATOR
RO: ROTOR / ROTOR
R: RELAY / RELÄ
N1: LEAVEL SWITCH / NIVÅVAKT
TB: PUSH BOTTON / TRYCKBRYTARE

| Options | J1 | J2 | J3 | J4 | J5 |
|---|---|---|---|---|---|
| 3 rinses | x | - | - | - | - |
| 5 rinses | o | - | - | - | - |
| WM 33 1000 rpm | - | o | x | o | - |
| WM 33 1100 rpm | - | x | x | o | - |
| WM 33 1200 rpm | - | o | o | o | - |
| WM 44 1200 rpm | - | x | x | x | - |
| WM 44 1300 rpm Not valid for US/CA | - | x | o | x | - |

04

x = NOT CUT
o = CUT
- = DON´T CARE

FUSE CONNECTION FOR ALL COUNTRIES EXCEPT USA AND CANADA

PCU

SPIN SPEED SELECTOR

PROGRAM SELECTOR BCD-CODE

TEMPERATURE SELECTOR

FUSE CONNECTION FOR USA & CANADA

Wiring Japan

03 02

| Rev ind | Revision | Appd | Year | Week |
|---|---|---|---|---|
| 07 | Number order on connectors changed | MSu | 07 | 49 |
| 06 | Drawing adjustments | PM | 04 | 23 |
| 05 | Changed DL1 and DL3 | PS | 03 | 03 |
| 04 | Added 1300rpm | PS | 02 | 35 |
| 03 | Modified Japan wiring | PS | 01 | 50 |
| 02 | Added Japan wiring | PS | 01 | 44 |
| 01 | Changed V1, V2 and DL | SS | 01 | 34 |

| Pos. | Qty | Part No. | Name of item | Material |
|---|---|---|---|---|

Material | Dens.Kg/dm3 | Dimensions, Type, etc.

Scale 1:1 | Gen.tolerance

Designed by SOSV | Gen.tol.Angle

Released by | Iss by Dept UT | Year 01 | Week 32

Description(ENG): CIRCUIT DIAGRAM WM 33A/44A

Description(SE): KOPPLINGSSCHEMA WM 33A/44A

ASKO CYLINDA

80 643 68 | Rev Ind 07 | Replace 80 643 68-06 | Project

1FORMAT A3

W6903 component values

80 658 33 CIM-motor Resistanser:
Pin 1-3 stator 3,7Ω
Pin 1-2 stator 3,6Ω
Pin 2-3 rotor 3,6Ω
Pin 4-5 tacho 178 Ω

80 617 06 Heater 2000 W 28,4Ω

80 761 02 Thermistor 6.1-3.8 k Ω (at room temperature 20 – 30°C/ 86°F)
The thermistor for temperature reading is located between the motor cradle and the container.
The thermistor measures and controls the water temperature that can vary from 0 to 90°C/ 194°F.
The element is disconnected if the thermistor is short-circuited or disconnected from the program control card.

88 012 63.Drain pump 50 Hz 144 Ω. The drain pump is combined with an integrated fine filter trap, which can be cleaned by the user. If the drain pump has run for 180 seconds during draining, the program stops, resets and a fault code is indicated in the display. The drain pumps capacity is 20 liters/min.

88 012 64. Drain pump 60 Hz 76 Ω

80 782 21 Level switch Electro mechanical level switch with two levels, see wiring diagram. Indicates levels for door opening, heat and overfilling.

80 762 02 EMC filter with inductor 50/60 Hz 680 kΩThe filter eliminates interference to and from the machine.

80 793 24 Inlet valve 3,7kΩ± 0,5 kΩ2 way inlet valve 8 litres / minute

80 798 73 Door lock 122 Ω The door lock is electro mechanical and equipped with a magnet.

80 773 63 Control Unit WM60.3

80 792 89 Control Unit WM60.3 FI

80 803 87 Motor Control Unit (MCU)

80 806 02 Control unit WM60.2 and WM60.1

# W6022/W6222 Components and measurement values

80 655 63
80 658 33
Motor 50 Hz
CIM-motor
Resistances:
Pins 2-3 stator 1.41 Ω
Pins 1-3 stator 0.57 Ω
Pins 4-5 rotor 1.54 Ω
(measured diagonally across the collector)
Pins 6-7 tacho 135 Ω
Resistances:
Pins 1-3 stator 3,7 Ω
Pins 1-2 stator 3,6 Ω
Pins 2-3 rotor 3,6 Ω
Pins 4-5 tacho 178 Ω
All resistance values have tolerances of ±8 %.

80 637 33 Motor 60 Hz Resistances:
Pins 2-3 stator 1.05 Ω
Pins 1-3 stator 0.58 Ω
Pin 4-5 rotor 1.75 Ω (Pins diagonally across the collector)
Pins 6-7 tacho 135 Ω
All resistance values have tolerances of ±8 %.

80 617 06 Heating Element
2000 W
28.4 Ω

80 761 02 Thermistor 6.1-3.8 k Ω (at room temperature 20 – 30°C)
The thermistor for temperature reading is located between the motor cradle and the container. The thermistor measures and controls the water temperature that can vary from 0 to 90°C. The element is disconnected if the thermistor is short-circuited or disconnected from the programme control card.

88 012 63.Drain pump 50 Hz 144 Ω. The drain pump is combined with an integrated fine filter trap, which can be cleaned by the user. If the drain pump has run for 180 seconds during draining, the program stops, resets and a trouble code is indicated in the display (on machines without a display, the LEDs flash).

88 012 64.Drain pump 60 Hz 76 Ω See above.

80 782 21 Level Switch Electro mechanical level switch with two levels, see wiring diagram. Indicates levels for door opening, heat and

W6022 and W6222 component values

80 616 64 Pressure sensor 0.5 V out from the sensor (at 0 bar pressure and 230 V mains voltage, measurement carried out with the drain pump running to ensure 0 level is reached) ASKO level sensor type 1166. Controls intake and level

80 762 02 EMC filter with inductor 50/60 Hz The filter eliminates interference to and from the machine.

80 762 01 Inlet valve 3,7kΩ ± 0.5 kΩ 3 way inlet valve 10 litres / minute

80 616 79 Door lock 122 Ω The door lock is electro mechanical and equipped with a magnet.

80 771 27 Control Unit WM25.1

80 771 28 Control Unit WM25.2

80 771 29 Control Unit WM25.3

80 803 88 Control Unit WM25.3 CIM

80 822 58 Frequency motor control

WM70 component values

80 886 44 CIM-motor See wiring diagram
80 886 42 UM-Motor 50 Hz See wiring diagram
80 886 43 UM-Motor 60 Hz
80 617 06 Värmeelement
2000 W
See wiring diagrama
80 761 02 Thermistor See wiring diagram The thermistor for temperature reading is located between the motor cradle and the container.
The thermistor measures and controls the water temperature that can vary from 0 to 90°C/ 194°F.
The element is disconnected if the thermistor is short-circuited or disconnected from the program control card.
88 012 63. Drain pump 50 Hz See wiring diagram The drain pump is combined with an integrated fine filter trap, which can be cleaned by the user.
If the drain pump has run for 180 seconds during draining, the program stops, resets and a fault code is indicated in the display. The drain pumps capacity is 20 liters/min.
88 012 64. Drain pump 60 Hz See wiring diagram
80 782 21 Level switch Electro mechanical level switch with two levels, see wiring diagram. Indicates levels for door opening, heat and overfilling
80 897 65 Level switch, WM70.1
80 762 02 Radioavstörningsfilter 50/60 Hz
See wiring diagram The filter eliminates interference to and from the machine
80 793 24 Inlet valve See wiring diagram 2 way inlet valve 8 litres / minute
80 798 73 Door lock See wiring diagram The door lock is electro mechanical and equipped with a magnet.
88 014 40 Control unit WM70.3
88 014 41 Control unit WM70.3 FI
80 896 72 Motor Control Unit, WM70.2
80 896 73 Motor Control Unit WM70.1, WM70.3

## Thermistor measurement values

70 F  3,900 ohms  3.9K
86 F 6,000 ohms  6.0K

ASKO

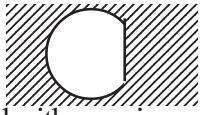
# SERVICE INFORMATION

| | | | |
|---|---|---|---|
| Product: Washer/~~Dryer~~ | **New fuse holder for Washers ~~and Dryers~~** | Group: 21/22 | |
| Date: 25.09.2002 | | Number: 60 | |
| Reference: N-Å Carlsson | | ÄO: 9801 | Page: 1(1) |

**New, improved fuse holder, article no. 8065573 USA and 8065574 EU/AU, new make with snap-in mounting, has been introduced in all washing machines ~~and tumble dryers.~~**

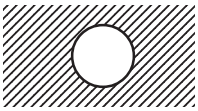
**Cause**
The replacement is the result of number of cases of contact problems.

**New fuse holder complete, article no. 8065573 USA and 8065574 EU/AU**



Installed with snap-in mounting in hole with one straight side

**Old fuse holder, article no. 8054613**



Installed with nut in round hole.

**New fuse holder, article no. 8065573, introduced on machines for the USA.**
~~Tumble dryer with electricity box, week 34, 2002, serial no. 0234-20132934.~~
Washing machines, week 37, 2002, serial no. 0235-10337058.

**New fuse holder, article no. 8065574, introduced on machines for the EU and AU.**
~~Tumble dryers, week 37, 2002, serial no. 0237-20134586~~
Washing machines, week 37, 2002, serial no. 0235-10337058.

**NB!**
**The new fuse holder only fits machines manufactured as from the above date.**

**The new fuse holders are ordered complete under article no.**

| | |
|---|---|
| 8065573 | Fuse holder complete, grey, 15 A (USA) |
| 8058140 | Fuse, 15 A (USA) |
| 8065574 | Fuse holder complete, grey, 6.3 A (EU/AU) |
| 8055421 | Fuse, 6.3A (EU/AU) |

**Machines manufactured before the modification should have fuse holders in accordance with:**

| | |
|---|---|
| 8055725 | Fuse holder insert, grey (USA) |
| 8054613 | Fuse holder base |
| 8054614 | Fuse holder insert, black (EU/AU) |
| 8058140 | Fuse, 15 A (USA) |
| 8055421 | Fuse, 6.3A (EU/AU) |

Asko Cylinda AB
After Sales

# Service

## Information

| | | |
|---|---|---|
| Product: Washing Machine | **New improved sealing cartridge and new cylinder** | Group: 21 |
| Date: 2005-04-12 | | Number: 199 |
| Reference: Service Support | | ÄO/ Info: 11383 |

Asko Cylinda has developed a new sealing cartridge with an increased service life primarily for machines with a high spin speed.

**Changes**
- The grommet now rotates instead of the v-rings (incl. grease).
- The grease is not squeezed out of the cartridge at high speeds as it was previously.
- New cylinder item no. 8077388 with extended shaft housing, which means that o-ring item no. 8058497 is no longer required.

**Order numbers for new sealing cartridge (as a spare part)**
Complete sealing cartridge item no. 8801276
Incorporated items:
Sealing cartridge item no. 8077112
Packing/spacer item no. 8078524
Installation instructions 8078528

**Order numbers for new cylinder (as a spare part)**
Complete cylinder item no. 8801277
Incorporated items:
Cylinder item no. 8077388
Sealing cartridge item no. 8077112
Installation instructions 8078532


For full backwards compatibility as a spare part for WM20/21, use the numbers for complete items when ordering.

**New sealing cartridge and new cylinder to go into production week 520.**

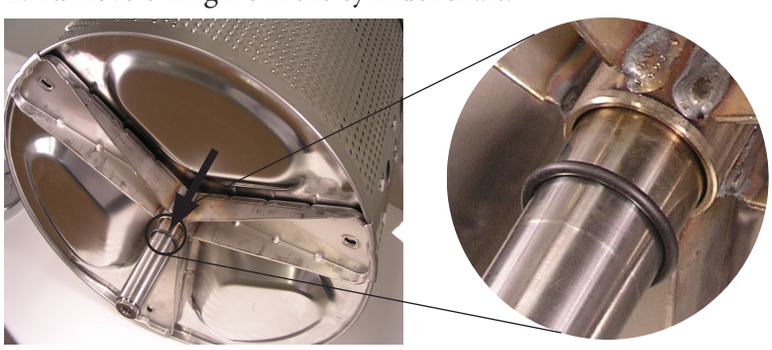
## Mounting instructions for sealing cartridge item no. 8801276.

Figure 1

**Installing/replacing a new sealing cartridge in machines with an earlier version of the v-ring cartridge and a cylinder with a short shaft housing**

1. Fit the sealing cartridge at the back end, see Figure 1. For best results, use bearing tool 8801153.

2. Remove o-ring from the cylinder shaft.



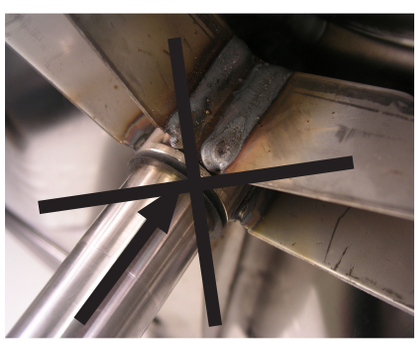
3. Install the enclosed spacer/washer.

4. To simplify the mounting of the cylinder:
Lubricate the cylinder shaft with silicone fat or soap-solution.

**Installing/replacing a sealing cartridge in machines with a new sealing cartridge and new cylinder with longer shaft housing.**

1. Fit the sealing cartridge at the back end. For best results, use bearing tool 8801153.
2. Lubricate the cylinder shaft with soap-solution.

NOTE: Do not install the enclosed spacer/washer on these machines.



Asko Cylinda AB
After Sales

# Service

## Information

| | | |
|---|---|---|
| Product: Washing Machine | **Container cylinder** | Group: 21 |
| Date: 2006-01-13 | | Number: 203 |
| Reference: Technical Support | | Info: |

**New container with cast iron end-plate**
**New cylinder with aluminium carrier**

In order to ensure durability at high speeds, a new container with an cast iron rear end-plate and a new cylinder with a cast aluminium carrier have been produced.

The container with the cast iron rear end-plate is included as standard in machines with speeds over 1600 rpm, and in certain property machines from week 32, 2005 onwards.
The cylinder with aluminium carrier is included in all machines from week 52, 2005 onwards.

**Spare parts**
When you order spare parts, the new parts will be delivered.

Complete container WM20 cast iron
Article no. 8801259
Parts included:
Container cast iron
8077112 Sealing cartridge
8064692 Bellow hose inlet long
8052909 Hose clamp 22.6
8078524 Packing D35/28x3
8062815 Rubber hood Recirculation diam. 17 mm
8063607 Hose clamp 57.5
8078359 Installation instructions for container
8078528 Installation instructions for sealing cartridge

Cylinder Aluminium Article no. 8801277
Article no. 8801277
Parts included:
Cylinder aluminium
8077112 Sealing cartridge
8078528 Installation instructions for sealing cartridge

NB!
Complete cylinder 8801277 retains the previous order number.
from week 05, 2006 onwards.

ASKO
BUILT TO LAST LONGER

# Service

## Information

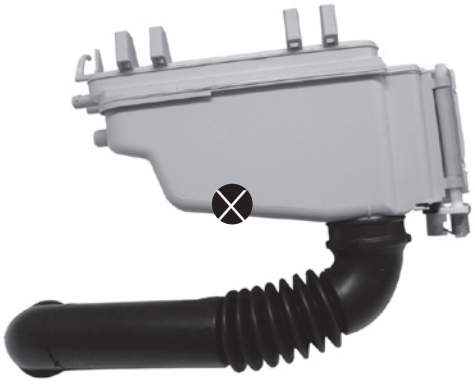
| | | |
|---|---|---|
| Product: Washing Machines | New detergent compartment / bellow hose WM60 | Group: 21 |
| Date: 2009-02-23 | | Number: 215 |
| Reference: Technical Support | | Info: ÄO13742 |

**General**

The connector for the bellow hose has been moved 6 cm closer to the front to improve rinsing of the detergent compartment. This modification also results in the extension of the bellow hose.

**Action**

If customers experience problems with poor rinsing of the detergent compartment on machines manufactured before week 09, 2009 use the spare parts kit listed below.



⊗ = Previous placement

**New items**

| | |
|---|---|
| 8081808 | Detergent compartment compl. (moved connector). |
| 8081670 | Bellow hose inlet WM60 |

**Introduction**

The modification of the detergent compartment and bellow hose inlet has been introduced on machines manufactured after week 09, 2009.

**Spare part ordering**

- Machines manufactured before week 09, 2009: Article no. 8801379 Detergent compartment WM60 kit
- Machines manufactured after week 09, 2009: Article no. 8081808 Detergent compartment compl.

**8801379 DETERGENT COMPARTMENT WM60 KIT**

| | | |
|---|---|---|
| 8081808 | Detergent compartment compl. | |
| 8081670 | Bellow hose inlet WM60 | |
| 8063607 | Hose clip 57.5 mm | |
| 8052730 | Hose clip 21.0 mm | |
| 8056656 | Cable strip x2. | |
| 8080636 | Spacer detergent compartment 33 mm | The spacers are only used on earlier machines manufactured before week 34, 2008 (different front bar design). |
| 8081699 | Spacer detergent compartment 8 mm | |

ASKO
BUILT TO LAST LONGER

# Service

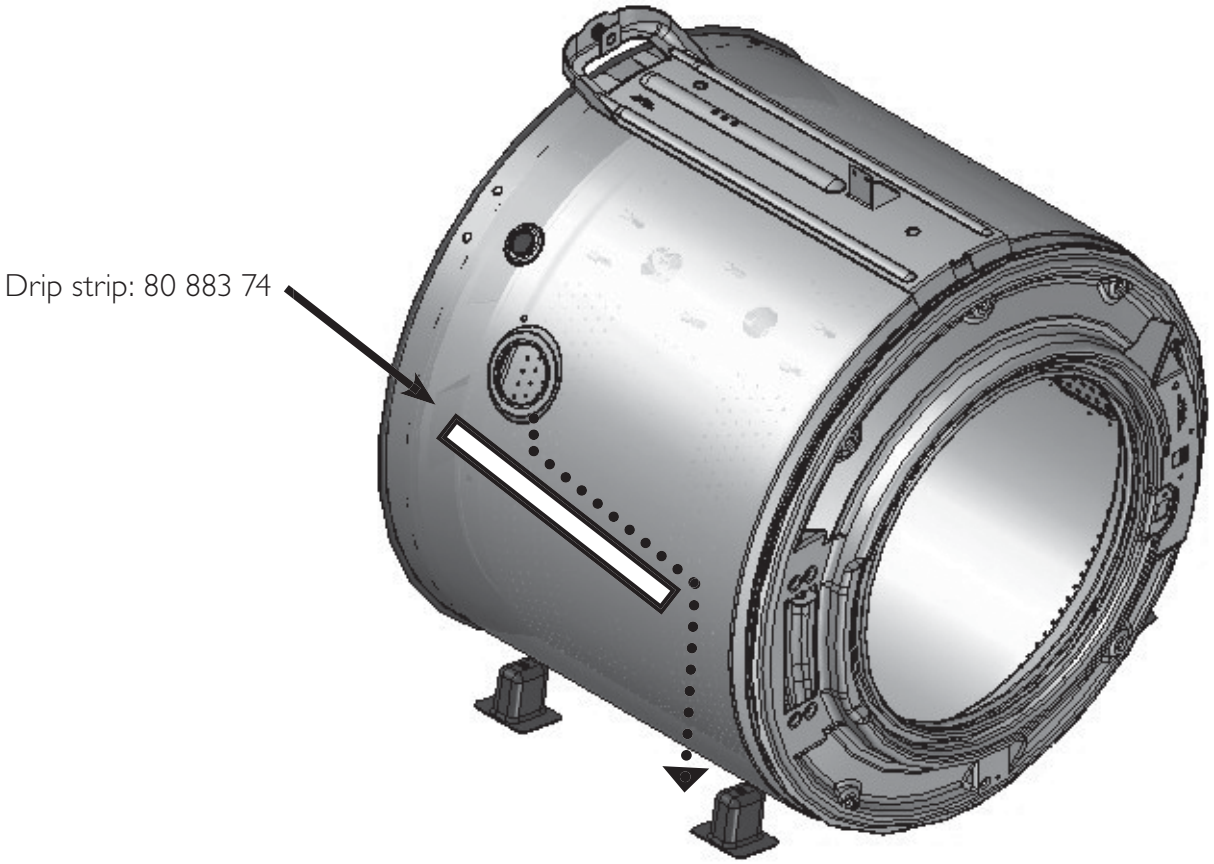
## Information

| | | |
|---|---|---|
| Product: Washing machines | Prevention of thermistor, WM25 and WM60 | Group: 21 |
| Date: 2010-03-08 | | Number: 216 |
| Reference: Technical Support | | Info: |

Occasionally, a minor leakage can appear from the attachment of the inlet bellow hose to the wash container. This leakage might follow the container downwards and reach the thermistor then causing a flash-over from thermistor to the container. Both thermistor and control unit can be damaged by such an event.

A drip strip, part no 80 883 74, was introduced consecutively in production from week 49 2009, with object to divert any leakage, if appeared.

By service of any other reason, it is suitable at the same time to fit the drip strip as a preventive action, if there is not any on the container.



ASKO

# Service

## Information

| | | |
|---|---|---|
| **Date:** may 27 2011 | Leakage from the cover<br>New seal | **Group:** 21 |
| **Product:** WM | | **Number:** 222 |
| **Item No.:** 80 811 28 | | **Reference:** N-Å Carlsson |
| **In Production from:**<br>2011 vecka 8 | | **Issued by:** Technical Support |
| | | **Pages:** 1 |

**Purpose:** Faulty seal

Leaks from the cover has occurred in some washing machines.
It has been found that there caused by an incorrect cover seal.
Tools have been adjusted and the problem with the cover seals are now corrected

When leakage from the cover occurs the cover seal has to be replaced.
It is important to check the manufacture date on the seal.

The correct new seal is manufactured, Year 11 Month 2 or later, see mark on the seal


## NOTICE!

Seals with the earlier date should be disposed

1. Are there any changes during assembly or service intervention? YES ☐ NO ☒

2. Are there any other components affected by this operation? YES ☐ NO ☒

3. Are there any changes in the artwork/ documentation? YES ☐ NO ☒

ASKO

# Service

## Information

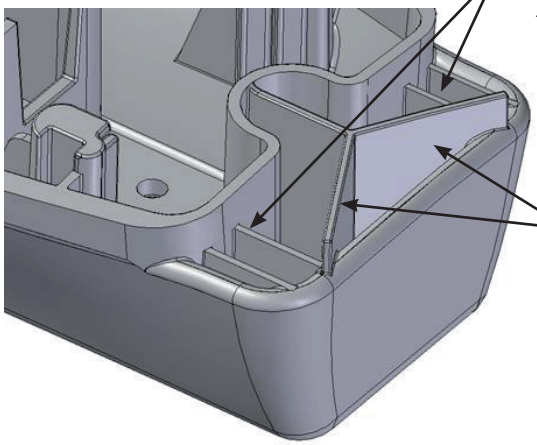
| | | |
|---|---|---|
| **Datum:** 2011-10-10 | Improved Drum paddle | **Group:** 21 |
| **Product:** Washing machine | | **Number:** 230 |
| **Item No.:** 80 903 48 | | **Issued by:** Technical Support |
| **In Production from:** 2011 Vecka 45 | | **Pages:** 1 |

It has happen that buttons or similar items may stick in the edges on the drum paddle. Adjustments has been introduced on the Drum paddle to ensure that nothing gets stuck under the Drum paddle.

The Drum paddle does not change article number.

The above mentioned changes on the Drum paddle (80 903 48) is introduced in the production from week 45 year 2011.

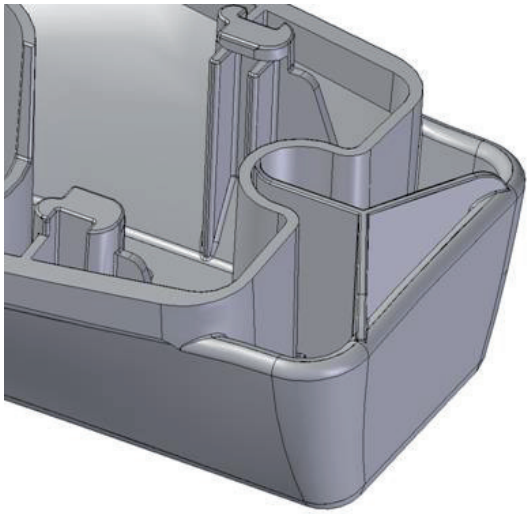
**New improved Drum paddle**



Ribs has been introdcued on the Drum paddle to prevent that buttons or similar items sticks and turns.

The marked surfaces is raised and the radius removed so that the marked surfaces is closer to mantle surface of the cylinder.

**Earlier Drum paddle**



1. Are there any changes during assembly or service intervention? Yes ☐ No ☒

2. Are there any other components affected by this operation? Yes ☐ No ☒

3. Are there any changes in the artwork / documentation? Yes ☐ No ☒

**NOTE!**

See also service message No. 223 " New drum paddle and new drum WM70"

ASKO

# Service

## Information

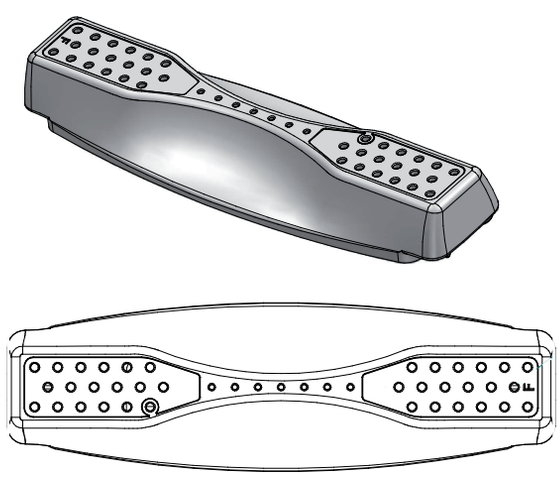
| | | |
|---|---|---|
| **Date:** 2011-05-30 | New drum paddle and new drum WM70 | **Group:** 21 |
| **Product:** WM | | **Number:** 223 |
| **Item No.:** 8081678, 8090348, 8081676-P, 8092250-P | | **Reference:** Change order 15416 |
| **In Production from:** week 23 2011 | | **Issued by:** Technical Support |
| | | **Pages:** 1 |

A new drum paddle is introduced week 23 2011, which also means introduction of a new drum.

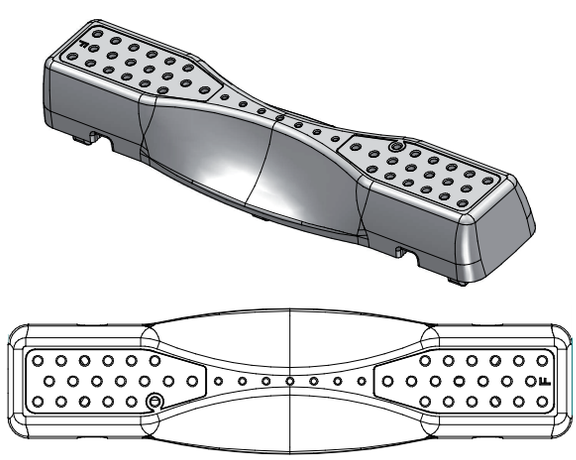
| Discontinued component (OLD) | | Replacement component (NEW) | |
|---|---|---|---|
| Item no. | Description | Item no | Desription |
| 8081678 | Drum paddle<br>Remains as a spare part | 8090348 | Drum paddle |
| 8081676-P | Drum compl.<br>Omitted, even as a spare part | 8092250-P | Drum complete<br>(including 3 drum paddles) |

Described above means that when exchanging drum, new drum paddles is incorporated which has to be considered by any future change of paddles on units manufactured before week 23 2011.
"Old" drum paddles can only be used as a spare part for units manufactured before week 23 and where change of drum not is at hand or has been done.

New drum paddle, art no. **8090348**



Old drum paddle, art. no. **8081678**



1. Are there any changes during assembly or service intervention? YES ☐ NO ☒

2. Are there any other components affected by this operation? YES ☐ NO ☒

3. Are there any changes in the artwork/ documentation? YES ☒ NO ☐
   New art. no. on drum and drum paddle.

ASKO

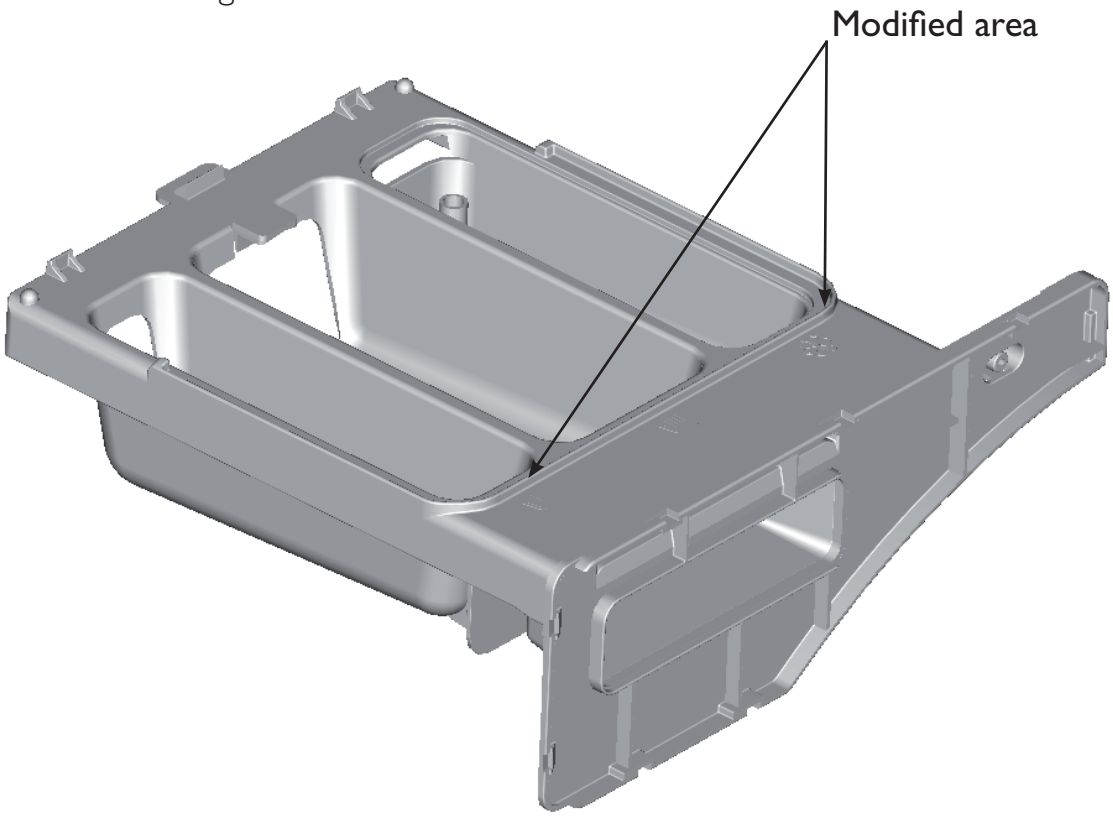
# Service

## Information

| | | |
|---|---|---|
| **Date:** June 7 2011 | WM60.1 & WM70.1 machines with pullout detergent compartment | **Group:** 21 |
| **Product:** WM | | **Number:** 224 |
| **Item No.:** 80 816 64 | | **Reference:** Change order 15454 |
| **In Production from:** 2011 week 25 AU: 2011 week 23 | | **Issued by:** Technical Support |
| | | **Pages:** 1 |

If the machine is installed in a area with a high water pressure, it may happen that water flows in to the deteregent compartment.
To avoid this problem, the detergent dispenser 8081664 has been modified.

Machines manufactured after 2011 week 25 have the modified detergent compartment.
Australia have the modified detergernt compartment in machines manufatcured after 2011 week 23.
The modified detergent compartment is backward compatible and article number: 80 816 64 is unchanged.




1. Are there any changes during assembly or service intervention? YES ☐ NO ☒

2. Are there any other components affected by this operation? YES ☐ NO ☒

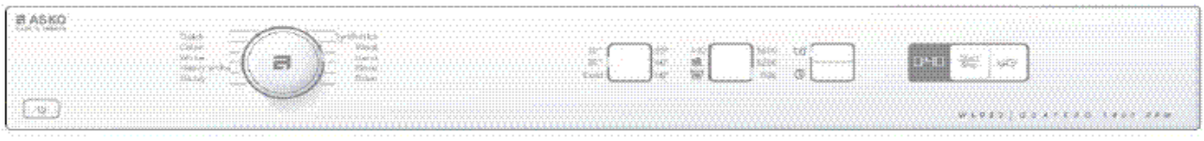
3. Are there any changes in the artwork/ documentation? YES ☐ NO ☒

ASKO
BUILT TO LAST LONGER

# Service

## Information

| | | |
|---|---|---|
| Product: Washing machine | New Software WM70.1<br>Changed time view | Group: 21 |
| Date: 2011-02-17 | | Number: 219 |
| Reference: Technical Support | | Info: ÄO15292 |



In order to achieve a more equitable view of the remaining time, the software in the control units for WM70.1 have been updated. Valid article no. 8088613 cim. and 8088614 for machines with a display.

Previously, the time view could be missleading in the load-driven programs when you switched between small and large loads. The remaining time could show 0:01 in the middle of the program. At program start, the previous time for the last load will be displayed as time for this particular program. The new software changes as below.

**New software (Remaining time display, etc.)**
When a program starts the display show a default time that is calculated for half load.
During the program there are three updates of the remaning time based on the current size of the load and incoming water temperature.

The first update will take place after about 15 minutes.
Second update occurs at the first rinse
Third update is done at the last rinse.

**New control units with the new software is introduced on machines manufactured week 05, year 2011.**

ASKO
BUILT TO LAST LONGER

# Service

## Pre-Advice

| | | |
|---|---|---|
| Product: WM | Time view WM70 | Group: 21 |
| Date: 2010-12-29 | | Number: 14 |
| Reference: Technical support | | Pages: 1 |

We will introduce changes to the software on the control units. The amendment will ensure that the 0:01 minute view do not occur and provide a more correct time view earlier in the load-driven programs.

When the new software is introduced, the machine is going to show the wash time for half-load for each program (default). Before it showed the previous program time.
This indication of time is consistent with the time of the programs shown in the user manual
( for the European assortment, see the extended user manual).

The introduction of the new software for WM70.1 is planned week 5, 2011.
Program changes will also be introduced in the control units for WM70.2 and WM70.3.
The introduction date for these models will be planned later and will be issued on separate information.

ASKO
BUILT TO LAST LONGER

# Service

## Pre-Advice

| | | |
|---|---|---|
| Product: WM | Overheat protection<br>WM70.1 | Group: 21 |
| Date: 2010-11-03 | | Number: 13 |
| Reference: Technical support | | Pages: 1 |
| | | |

The WM70 motor gets hot and stops to work.

It has happened that the motor gets to hot and then the internal motor protection disengages the motor.

You notice this when the program takes a very long time or gets interrupted.

In the later case, the consumer can not change or interrupt a program in any other way than to turn off the machine via the main power switch.

When the main power switch activates again, the program that got interrupted starts directly where it left off.

This error mostly occurs in the program Normal/White/Colour.

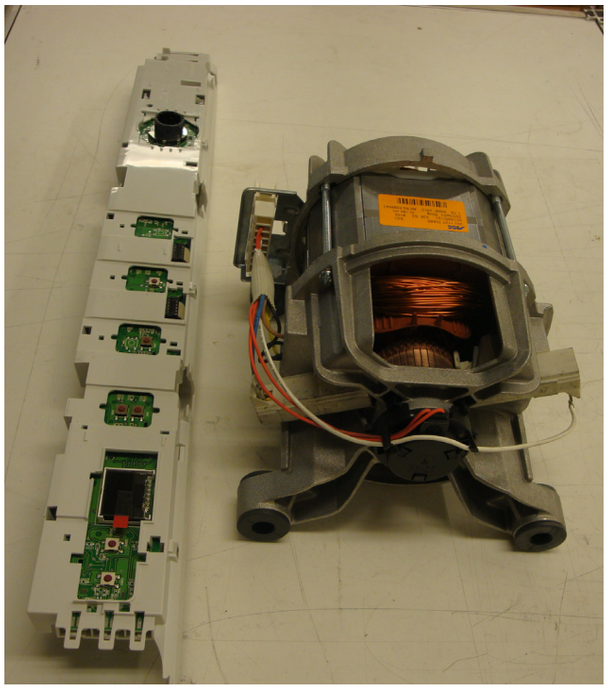
(Until the fault is fixed, you can recommend the consumers to run the program: Quick/White/Colour. This program is good enough and the motor will not get to hot.)

Action:

A new software has been developed to the control unit and it imply that the motor don't get as hot.

Service Action: Change the control unit.

The new software is introduced on machines made from week 44, year 2010.



Control unit WM70.1 B, Article no: 80 886 14

Motor, Article no: 80 886 42

ASKO

# Service

## Information

| | | |
|---|---|---|
| **Date:** August 16 2011 | Stops in the middle of the program WM70.3 | **Group:** 21 |
| **Product:** Washing machine | | **Number:** 226 |
| **Item No.:** 88 014 40 | | **Issued by:** Technical Support |
| **In Production from:** 2011 week 21 | | **Pages:** 1 |
| | | |

If a machine, type WM70.3, stops in the middle of the program it may be beacuse of a disturbance.

The machines often stops when the drain pump is activated.
The machine will start again and will continue in the program where it stopped if you turn the machine off via the main power switch and then turn the main power switch on again.

**Action:**
The cause is analyzed to the control unit and rectified by increasing the interference supression to the drain pump.

The change is introduced on machines manufactured after week 21, year 2011.

Ordering number for spare part = 88 014 40 is corrected as above from the delivary date 110815.

1. Are there any changes during assembly or service intervention? YES ☐ NO ☒

2. Are there any other components affected by this operation? YES ☐ NO ☒

3. Are there any changes in the artwork/ documentation? YES ☐ NO ☒

ASKO

# Service

## Information

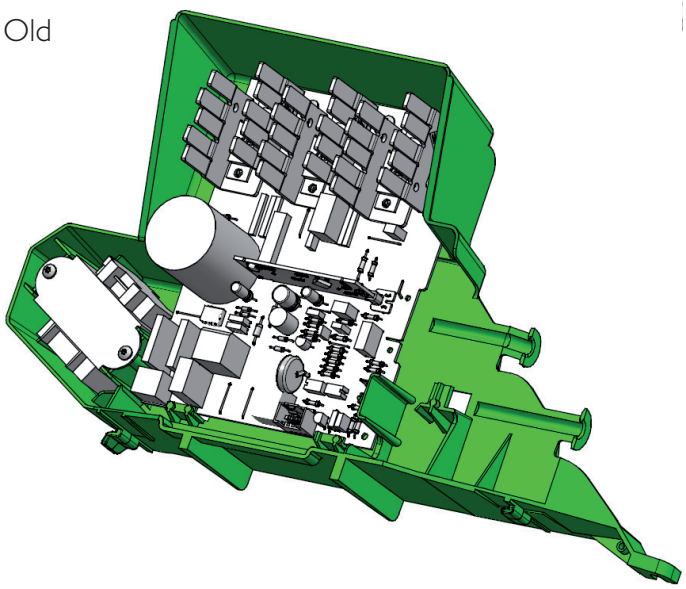
| | | |
|---|---|---|
| **Date:** August 31 2011 | New fuse MCU motor cim | **Group:** 21 |
| **Product:** WM | | **Number:** 227 |
| **Item No.:** 80 896 73 | | **Issued by:** Technical Support |
| **In Production from:** 2011 week 36 | | **Pages:** 1 |

A fuse have been integrated on the motor control unit from year 2011, week 36.

Before a change of the motor control unit the fuse must be controlled.
The function of the fuse is to protect the motor control unit against high voltage.

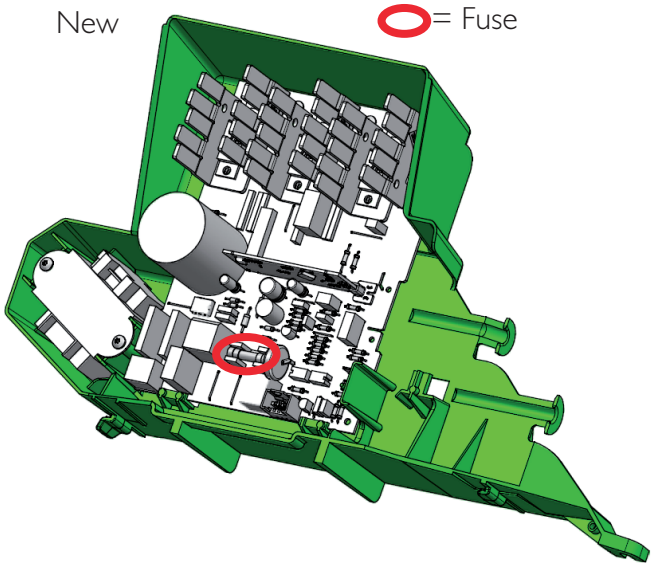
Order the fuse on the article number: 80 928 56.

Old



New

= Fuse



1. Are there any changes during assembly or service intervention? YES ☒ NO ☐

2. Are there any other components affected by this operation? YES ☐ NO ☒

3. Are there any changes in the artwork/ documentation? YES ☐ NO ☒

ASKO


# REFERENCE MANUAL

# WASHERS
# WL6511/6532 XXL
# MODELS

- DIAGNOSTICS
- TROUBLESHOOTING FLOWCHARTS
- WIRING DIAGRAMS
- COMPONENT VALUES
- TECHNICAL BULLETINS

## 5. PCB Manual Test Mode

- The PCB and other electronic parts can be tested without water supply to diagnose their operation.

1) Process
: Press the power button to turn the machine on.
Press and hold the “Wash” button.
Press the Spin button 3 times.
The display will show control version information.
Press the Signal button to cycle through the following tests.

| Step | Display | | Details |
|---|---|---|---|
| 1 | L_C | | Door Lock Close |
| 2 | run | 001 | Running times count |
| 3 | E5 | 0 | E5 Error count |
| 4 | E6 | 0 | E6 Error count |
| 5 | E7 | 0 | E7 Error count |
| 6 | E8 | 0 | E8 Error count |
| 7 | F | | Do not use |
| 8 | H | | Hot Valve on |
| 9 | C | | Cold Valve on |
| 10 | P | | Pre Wash Valve on |
| 11 | d | | Do not use |
| 12 | b | | Bleach Valve |
| 13 | dr | | Drainage pump on |
| 14 | L_O | | Door Lock Open |

2) More details
- With this test, you can see how many cycles the machine has run, and the number of E5-E8 errors. You can also activate all water valves, the door lock, as well as the drain pump. The motor is not activated through this test. To test the motor, run a spin cycle or a Rinse + Spin.

## 5. PCB Manual Test Mode

- PCB and other electronic parts will be tested without water supply whether they are normal or not.

1) Process
: Press power button -> Press "SPIN" button 3 times with pressing "WASH" button -> "X X X" will be shown on LED display-> Whenever pressing "Signal" button 1 time, below process will be occurred.

- "X X X' : Program version display

| Step | Display | | Details |
|---|---|---|---|
| 1 | L_C | | Door Lock Close |
| 2 | run | 001 | Running times count |
| 3 | b1 | 0 | HALL-SENSOR ERROR count |
| 4 | b2 | 0 | IPM-FAULT ERROR count |
| 5 | b3 | 0 | Over-load ERROR count |
| 6 | b4 | 0 | Motor align ERROR count |
| 7 | b5 | 0 | Rpm checking ERROR count |
| 8 | b6 | 0 | Overvoltage ERROR count |
| 9 | b7 | 0 | Low voltage ERROR count |
| 10 | F | | FAN "F" |
| 11 | H | | Hot Valve |
| 12 | C | | Cold Valve |
| 13 | P | | Pre Wash Valve |
| 14 | d | | No use |
| 15 | bb | | Bleach Valve |
| 16 | dr | | Drain Pump |
| 17 | L_O | | Lock Open |

2) More details
- When turn on 'LOCK' signal, all process is conducting normaly.
- In this case, BLDC Motor is not tested. In order to test it, select spin or rinse.

## 6-1. IE (Input Error) - Error in water supply

**6-1. IE (Input Error) - Error in water supply**

1) Conditions of Occurrence
   ① In case the designated water level is not reached in 5 minutes during water supply or re-supply

2) All LEDs are turned off and 'IE' blinks in18:88 display.

3) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

4) Error display is cleared when turning off/ on power.

**6-2. OE (Output Error) - Error in drainage**

1) Conditions of Occurrence
   ① In case water level does not reach reset point in 10 minutes after drainage starts

2) All LEDs are turned off and 'OE' blinks in 18:88 display.

3) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

4) Error display is cleared when turning off/ on power.

**6-3. UE (Unbalance Error)**

1) Conditions of Occurrence
   ① In case main spin-drying is not reached within 20 cycles of balance spin-drying
   ② In case balance spin-drying fails during interim spin-drying, UE occurs as the cycle moves to the next process.

2) All LEDs are turned off and 'UE' blinks in 18:88 display.

3) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

4) Error mode is cleared by opening door and organizing the laundry in spin-dry chamber, closing door and pressing start/ temporary stop button. Then, spin-drying begins again.

**6-4. LE (Lock Error) - Door opening error**

1) Conditions of Occurrence
   ① When intending to begin cycle by pressing start/ temporary stop button while door is opened

2) All LEDs are turned off and 'LE' blinks in 18:88 display.

3) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

4) Error display is cleared when turning off/ on power.

**6-5. E1 - Water level detection error**

1) Conditions of Occurrence
   ① In case water level is below reset or overflow is detected in line test mode

2) Water supply motor is kept on until water level falls below reset.

3) All LEDs are turned off and 'E1' blinks in 18:88 display.

4) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

5) Error display is cleared when turning off/ on power.

**6-6. E2 - Overflow error**

1) Conditions of Occurrence
   ① In case water level in water tank is above overflow level due to continuous operation of water supply valve

2) Water supply motor is kept on until water level falls below reset.

3) All LEDs are turned off and 'E2' blinks in 18:88 display.

4) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

5) Error display is cleared when turning off/ on power.

**6-7. E4 - Water leakage during washing**

1) Conditions of Occurrence
   ① In case water level falls below re-supply even after 15 times of re-supply prior to finishing of water heating

2) All LEDs are turned off and 'E4' blinks in 18:88 display.

3) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

4) Error display is cleared when turning off/ on power.

**6-8. E9 - Abnormalities in water level sensor**

1) Conditions of Occurrence
   ① In case water level frequency is of 15KHz or lower and 30KHz or higher during cycle due to abnormalities in water level sensor, etc.

2) All LEDs are turned off and 'E9' blinks in 18:88 display.

3) Error buzzer alarm is sounded for 10 seconds per every 10 minutes.

4) Error display is cleared when turning off/ on power.

**6-9. Motor-related Error**

1) E5 (DC-Link High Voltage) Error
① In case DC-link voltage to IPM increases to 450V or higher
② Motor operation is stopped and 'E5' is shown in display window.
③ Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
④ Error display is cleared when turning off/ on power.

2) E6 (EMG) Error
① In case current detected with EMG port is of 20A or higher
② Motor operation is stopped and 'E6' is shown in display window.
③ Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
④ Error display is cleared when turning off/ on power.

3) E7 (Direction) Error
① In case signal of Hall IC is different from the predicted signal according to direction of rotation
② Motor operation is stopped and 'E7' is shown in display window.
③ Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
④ Error display is cleared when turning off/ on power.

4) E8 (Initial Operation Fail) Error
① In case input signal of Hall IC is abnormal due to problems in motor connection, etc.
② Motor operation is stopped and 'E8' is shown in display window.
③ Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
④ Error display is cleared when turning off/ on power.

**6-10. Error in Temperature Sensor**

1) H2 Error - Washing temperature sensor open/ short
① In case washing temperature sensor is defective or not connected
② Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
③ Error display is cleared when turning off/ on power.

2) H4 Error - Washing temperature sensor overheating
① In case temperature detected by washing temperature sensor is 95℃ or higher
② Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
③ Error display is cleared when turning off/ on power.

3) H5 Error - Water temperature error in wool/ delicate course
① In case water temperature in wool/ delicate course is 45℃ or higher
② Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
③ Error display is cleared when turning off/ on power.

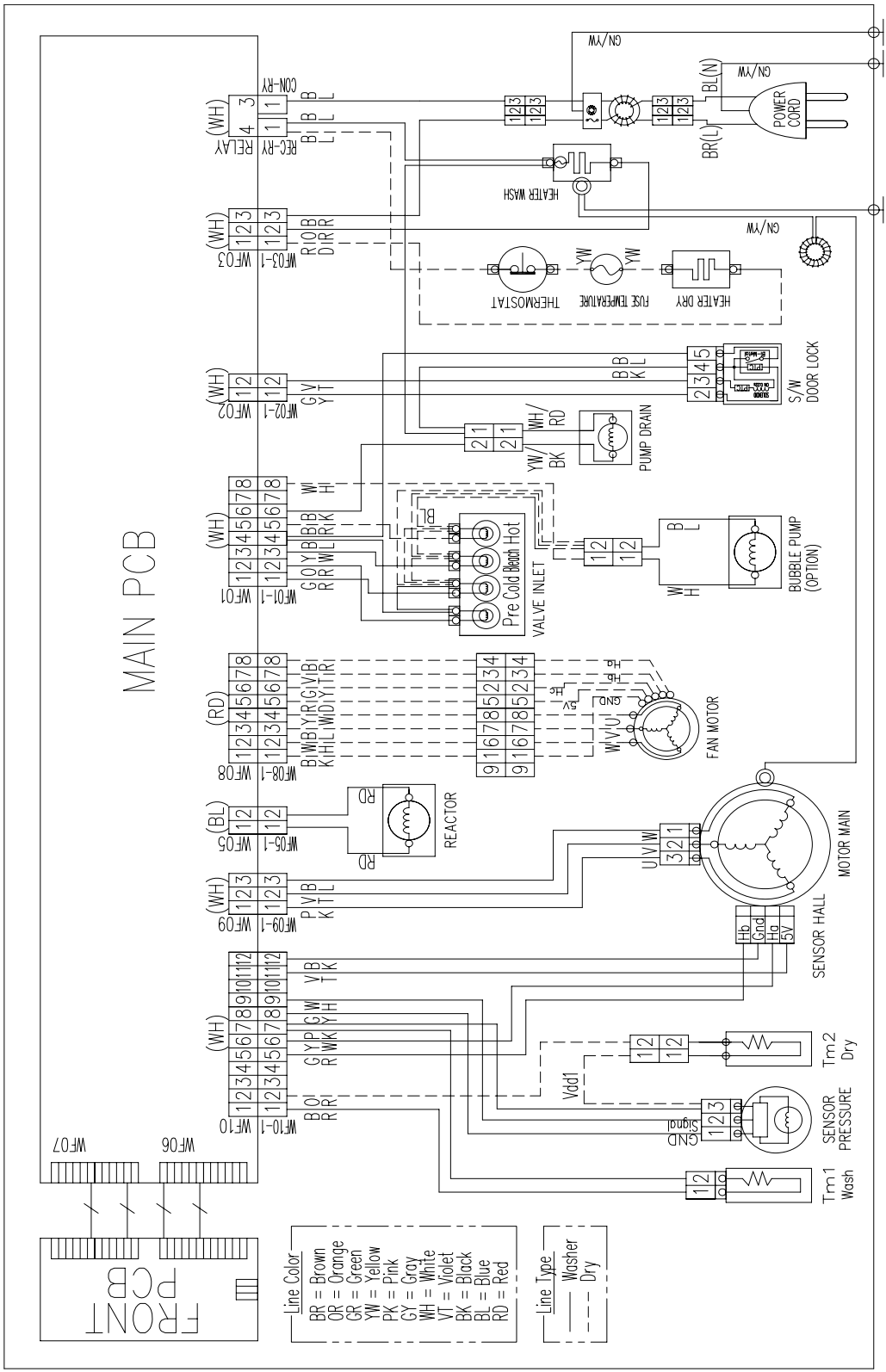
4) H6 Error - Abnormality in washing heater
① Within 15 minutes after heater operation begins;
In case standard temperature is of 42℃ or lower: If temperature does not increase by 2℃ or more In case standard temperature is higher than 42℃: If temperature does not increase by1℃ or more
② If temperature falls below standard temperature by 2℃ or more due to re-supply of water, etc., standard temperature is reset as the current temperature and error check time of15 minutes is reset.
③ Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
④ Error display is cleared when turning off/ on power.

5) H8 Error - Washing heater overheating
① In case washing heater temperature increases by 5℃ or more within 30 seconds when there is no water in tank, etc.
② Error buzzer alarm is sounded for 10 seconds per every 10 minutes.
③ Error display is cleared when turning off/ on power.

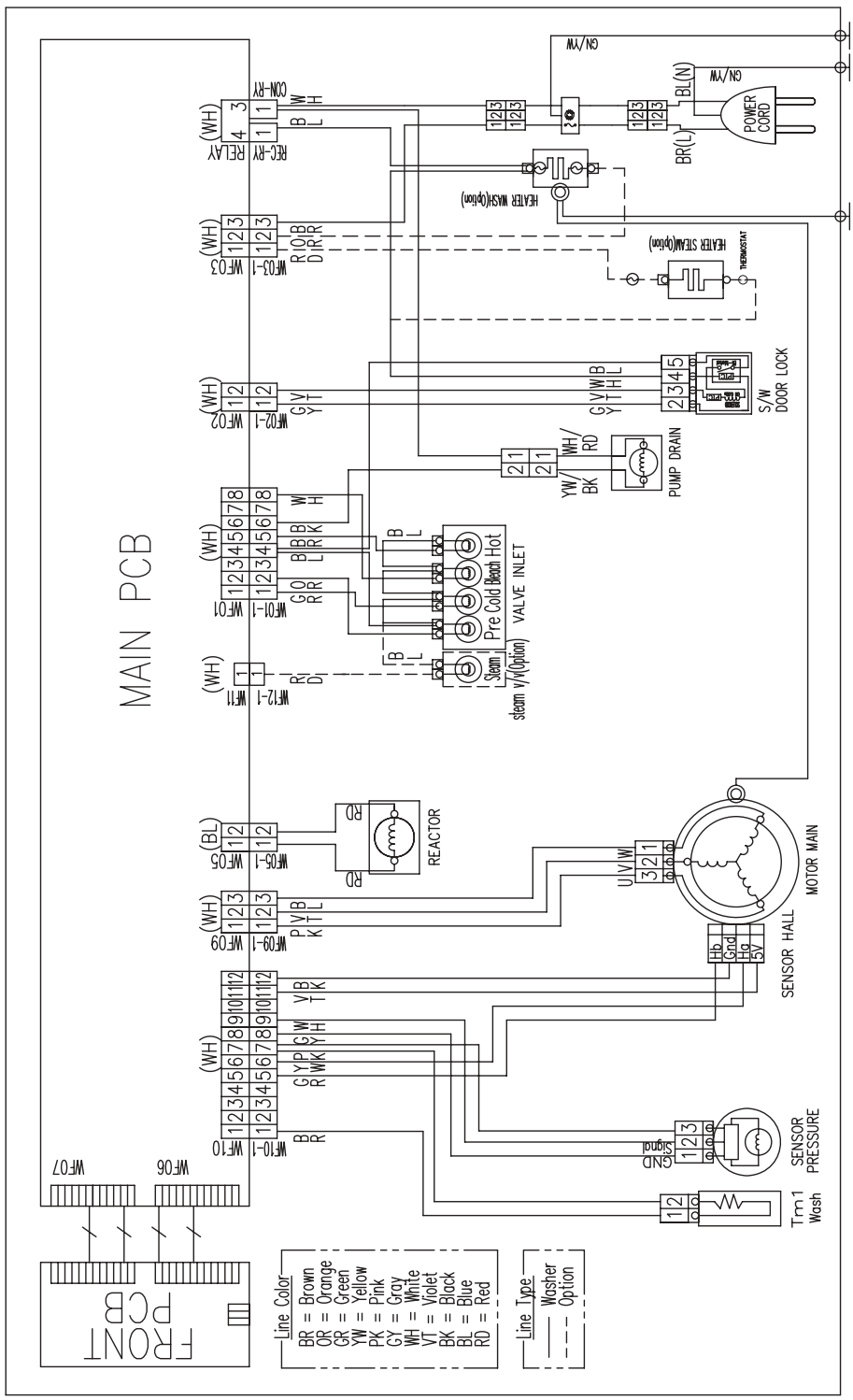
**6-11. PFE (Pump Filter Error)**
① Cycle is skipped to the next when the current r.p.m. is different from the target r.p.m by 70 during interim spin-drying.
② Cycle is skilled to balance spin-drying when the current r.p.m is different from the target r.p.m by 70 during main spin-drying.
③ 'PFE' error is caused if main spin-drying skip of ② above occurs 10 times.
④ Error display is cleared when turning off/ on power.

# Wiring Diagram

WL6511XXL



# ▣ Wiring Diagram



ASKO

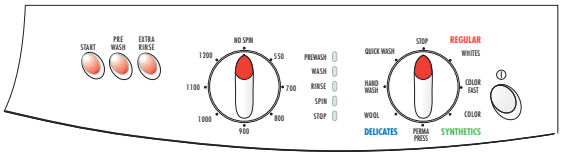

# REFERENCE MANUAL

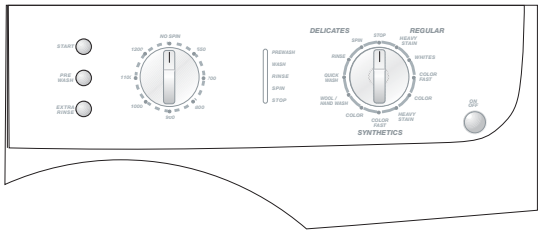
# WCAM1812 COMBINATION WASHER/DRYER

- DIAGNOSTICS
- TROUBLESHOOTING FLOWCHARTS
- WIRING DIAGRAMS
- COMPONENT VALUES
- TECHNICAL BULLETINS

# MANUAL SELF-TEST OF CIRCUIT BOARDS ON MODEL MINI-SEL with 2 knob control panels

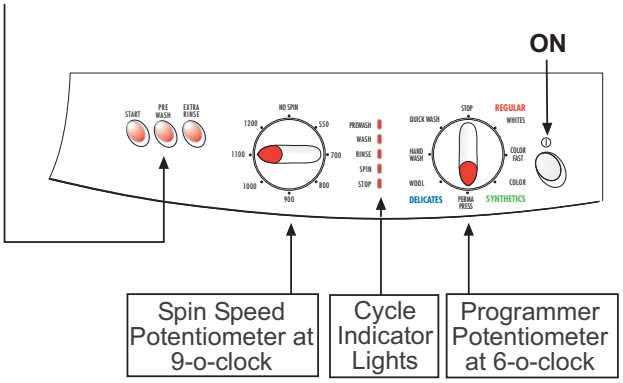
**466000001**-1-UK
07/03/2003

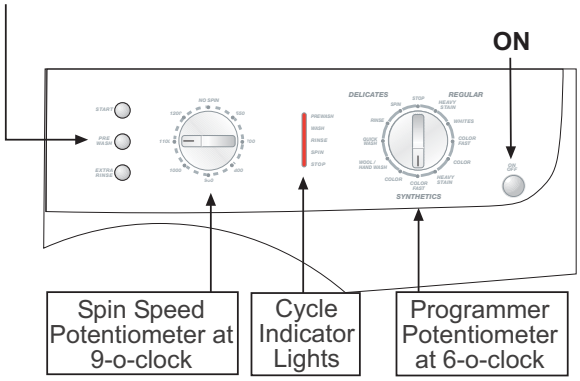




## START CONDITIONS FOR MANUAL SELF-TEST

- Set the **Programmer Knob** at **6-o-clock** position.
- Set the **Spin Speed Knob** at **9-o-clock** position.
- Keep the **PREWASH Button** pressed and **at the same time** switch the machine on by pressing the **On/Off button.**



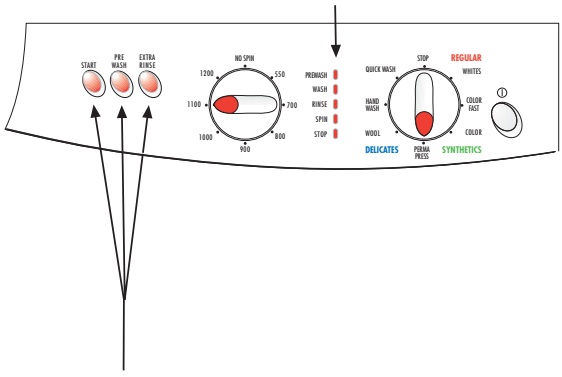



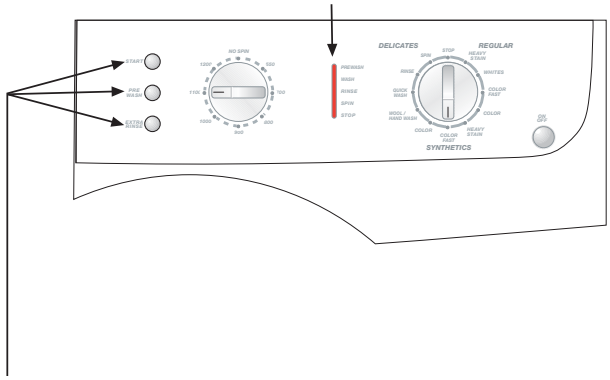

The five LEDS indicating the "Cycle Indicator Lights" will LIGHT UP.

**THE TEST CHECKS**

- **The Temperature Probe (THERMISTOR)**
- **The OFF position of the Pressure Switch (no water in tub)**
- **The door catch interlock**

**If the results of these checks are positive, the top LED will switch off.**





The luminous buttons change their status from **On** to **Off** or vice versa, each time they are pressed.
The only exception is the "**START**" button which only lights up while it is being pressed.

At this point, the test can be continued using the programmer knob as explained in chapter "MANUAL TEST SELECTION"

## DIAGNOSTICS TABLE

The electronic control unit also allows individual components to be tested by varying the knob setting and maintaining the other conditions unchanged.

Once the autotest function has been started, the required test can be selected by placing the knob in the appropriate position. Each position of the knob corresponds to a component test.
Starting from the start position (6-o-clock) and rotating the knob anticlockwise one position at a time there are **six** tests that can be carried out. Except for the first test, which is carried out by the control unit itself, in order to verify the result of the test, the behaviour of each tested component must be monitored..
The control unit takes a few seconds to pass from one test to the next. The acceptance of the test is signalled by the leds or by a display code indicating the program corresponding to the position of the knob in autotest. From this point on, all the suspect components can be tested.
The correspondence between the reference position of the knob and a wash program is purely indicative, in that this is linked to the appliance model in question.

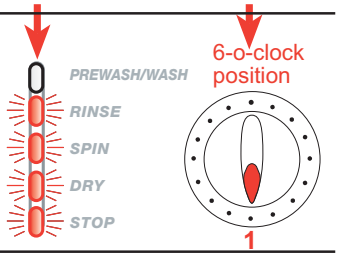
### SUMMARY TABLE

**Led on light** — **Position of knob index mark**

### Test 1

- Start position, all the functions are deactivated.

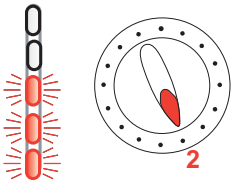
**The control unit automatically tests** the operation of the thermistor, the pressure switch OFF condition (no water in tub), the program selector and the door catch closed condition.




### Test 2

- Fills with water through the cold solenoid valve until the pressure switch trips in.
- Actuator **A** and actuator **B** are **OFF** (water enters the prewash detergent dispenser)

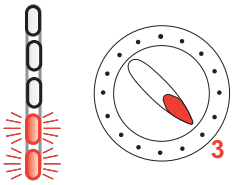
This procedure tests the operation of the **cold water solenoid valve** and the **pressure switch**.




### Test 3

- The heater element is activated (only with water)
- The motor rotates alternately in both directions (45 revolutions clockwise, pause, 45 revolutions anticlockwise).
- Thermo-actuator **A** only is activated (water enters the wash compartment).

This procedure tests the operation of the following components:
- **heater element**; **wash motor** and **thermo-actuator A.**

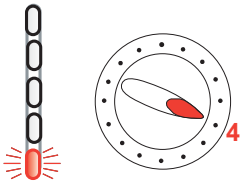



### Test 4

N.B.: In Autotest, the “No Spin” function is disabled.

- The drain pump is activated and the spin runs at the preset speed.
- Thermo-actuator **B** only is activated (water enters the softener compartment)

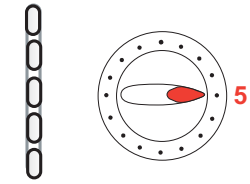
This procedure tests the operation of the following components:
**- drain pump, spin motor** and **thermo-actuator B.**




### Test 5

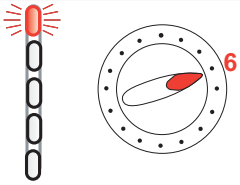
- 10” fill with hot water solenoid valve where fitted (with level pressure switch off) wash motor rotation with different rpm and direction according to the circuit board model.
- Actuator **A** and actuator **B** are **ON** (water enters the softener dispenser)

This procedure tests the operation of the hot water solenoid valve (where fitted and only with pressure switch OFF) and the wash motor.




### Test 6

This procedure tests the operation of the following components:
- drying solenoid valve.
- drying fan motor
- drying heater element

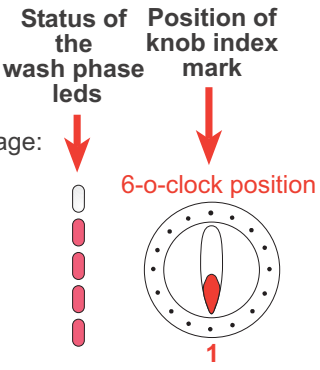


## TROUBLESHOOTING GUIDE

Before carrying out any operations on a component check the quality of the electrical connections to the electronic control unit.
Check the condition of the wiring harness (for wear, twists, breakages) and the connections.
Always check that the contacts of the connections on the electronic control unit are tight.
Always start by checking the other components involved, and then check the electronic control unit last.

### The program will not start.

Try to start the manual autotest, if the control unit does not enter autotest mode, check the connections on the control unit itself. If the connections are good, replace the control unit.
In the case where the autotest is effected, wait until the top “wash program” led switches off. If this does not happen, then the control unit has discovered a fault in one of the three components under test:
-the door catch
- the pressure switch
- the thermistor.



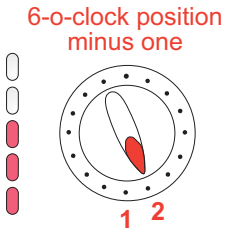

The door catch does not close the contact.
- Check that the connections have been properly made.
- Use a Tester to check the voltage between contact BP3 and BP1. If there is no voltage:
- Check that power is arriving at the control unit. If there is no power, find out why.
- If there is power arriving at the control unit but there is no current at the door catch, use a Tester to check whether there is voltage at the outputs of the control unit to the door catch. If there is no voltage, replace the control unit.
- If there is power between contact BP3 and contact BP1, replace the component.

If the door catch closes properly, check the pressure switch.
Disconnect the pressure switch from the wiring and retest. If the test is ok, replace the component, otherwise if the problem persists:
- Check that the connections have been properly made.
- Check that the pressure switch pipe and the compression chamber are not blocked.
- Disconnect the wiring from the thermistor, fit a new thermistor that is known to be working. Retest and if ok replace the component (the test is only valid if the washing machine is cold).

If the thermistor is working, replace the control unit.

### Water does not enter the tub

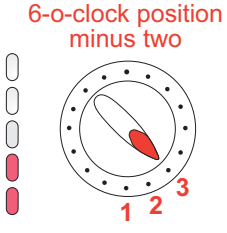
Check that the water feed valve to the washing machine is open.
Put the control unit in Autotest mode as described previously. Carry out Test 2 of the manual autotest procedure (testing the solenoid valve), The tests starts when the leds switch off:




- Use a Tester to check the voltage at the ends of the wires connecting the solenoid valve to the control unit.
- Use a Tester to check the continuity between the two contacts of the solenoid valve, if the circuit is open replace the component.
- If all the above tests result positive, replace the control unit.

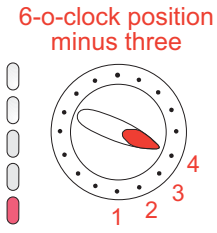
### The washing machine does not heat the water in the tub.

Put the control unit in Autotest mode and carry out Test 2 to allow water to enter the tub (this is required for the heater element to function).
With water in the tub, carry out Test 3 of the manual Autotest. Wait until the leds switch on (the washing machine is in Autotest mode) to test the heater element:




- Use a Tester to check the continuity between the two contacts of the heater element, if the circuit is open replace the component.
- Use a Tester to check the continuity at the ends of the wires connecting the heater element to the control unit.
- Use a Tester to check the continuity between the two contacts of the T90° safety thermostat, if the circuit is open replace the component.
- If all the above tests result positive, replace the control unit.

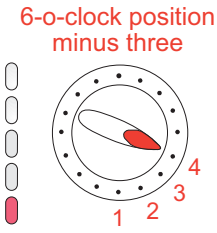
## The motor does not turn properly during a wash and/or spin




Put the control unit in Autotest mode and move the programmer knob to the Test 4 position. Wait for the leds to light up (the washing machine is in Autotest mode) and then test the motor. If the motor does not run properly:

- Disconnect the motor from the wiring terminal board.
- Use a Tester to check the continuity at the ends of the wires connecting the wiring terminal board to the control unit and check that the connectors are not damaged or dirty.
- Replace the control unit with one known to be in working order and check that the motor runs. If the motor runs replace the control unit, otherwise replace the motor.

## The washer/drier does not drain




Check that the washer/drier filter or the user's drains are not blocked.
Put the control unit in Autotest mode and move the programmer knob to the Test 4 position.
Wait for the leds to light up (the washer/drier is in Autotest mode) and then test the pump:

- remove the wires from the pump and check the continuity between the two terminals of the drain pump itself.
- if the circuit is open, replace the pump.
- if the circuit is closed, remove the pump from the washing machine and use a screwdriver to check for any foreign bodies in the scroll.
- use a tester the check the continuity in the pump power supply wires. If the tests prove negative replace the control unit.

## Water flows into the tub continuously.

Check that the solenoid valve is working by carrying out the appropriate autotest for that particular component.
- Check that the pressure switch is working by carrying out the appropriate autotest for that particular component.
- Check that there are no leaks from the tub unit.
- Remove the pressure switch pipe from the drain coupling and check that there are no holes in the pipe.
- If all the above tests result negative, replace the control unit.

## SAFETY

After eight failed attempts to start the motor (either in wash or spin mode), the control unit passes to the end of the cycle and the **End** indicator light flashes. (motor rotor blocked or tachometric open).

If the control unit does not detect the pressure switch empty condition after twenty minutes of pump running time, it passes to the next step. (Pump blocked).

If, after fifty minutes of heater element operation the set temperature has not been reached, the control unit advances and continues the cycle as normal.

WCAM1812 EWC117 COMBO

YELLOW
ORANGE
VIOLET
GREY
WHITE
RED
LIGHT BLUE
BLUE
BROWN
BLACK

AMP 6Vie Scheda SOLE
Z
ZL
ZN
ZB
ZT
ZS
ZR
ELECTRONIC MOTOR DRIVER
AMP 6 Vie MOTORE
R G
T TK
S TK
MAIN MOTOR
MOLEX 8Vie
S8
S1
S
ELECTRONIC MOTOR DRIVER
Switches
Leds
cna/display
Flat cable connection
EVH common
Att-A Common
EVC common
Att-B Common
PS
VA (BL1)
VA (BL3)
VA (BL2)
VA(C)
EVL
EVA
EVC
Att-A
EVH
Att-B
EVA Common
SONDA
TR
Progr.
Pot-ve
1 2 3 4 5 6 7 8 9 10 11 12
PCB 12v. cnB
1 2 3 4 5 6 7
PCB 7v. cnM
1 2 3 4
cnS PCB 4v.
*** AWG-SILICON Wire
T15
T90
T17
DHE
HE
RF
PREH
P14
P16
P11
BP1
BP2
BP3
N
L
fa
AS5
AS6
AS2
AS3
AS
DSS
12
6
1
4
1
(F12) RES. ASCIUG.
(F11) T90-RF
(F10) BP2-OUT
(F9) RES. ASCIUG.
(F8) BP1
(F7) P14
(F6) -
(F5) RF
(F4) P11
(F3) NEUTRO
(F2) IN - BP3
(F1) FASE
cnT TAB 6v.
cnF TAB 4v.
CU
LATO PISTE
90mm
195mm
Passaggio fili EV lato Attuatori.
TRIFASE 65lt. ac/dc USA

| | | |
|---|---|---|
| **PS** | Pompa scarico | *Drain pomp motor* |
| **AS** | Pulsante On - Off | *ON - OFF button* |
| **EVA** | Elettrovalvola Asciug. | *Water Magn. Valve* |
| **VA(C)** | Cond. Ventola Asciugat. | *Fan Motor Capacitor* |
| **VA** | Ventola Asciugatura | *Fan Motor* |

| | | |
|---|---|---|
| **IF** | Filtro antidisturbo | *Interference filter* |
| **PRL** | Pressostato liv.basso | *Low level pressostat* |
| **PRH** | Pressostato liv.alto | *High level pressostat* |
| **PREH** | Pressostato | *Pressostat* |
| **DSS** | Bloccoporta | *Micro delay switch* |
| **POT-TH** | Potenziometro temperatura | *Variable Temperature* |
| **POT-VE** | Potenziometro centrifuga | *Variable spin speed* |
| **PROG** | Programmatore | *Programmer* |
| **SONDA** | Termoresistenza | *Thermal resistivity* |
| **TACHO** | Tachimetrica | *Tachometer* |
| **EVH** | Elettrovalvola calda | *Hot Water valve* |
| **EVC** | Elettrovalvola fredda | *Cold Water valve* |
| **Att-A** | Attuatore lavaggio | *Washing actuator* |
| **Att-B** | Attuatore prelavaggio | *Prewashing actuator* |
| **DHE** | Resistenza asciugatura | *Drying Heating element* |
| **HE** | Resistenza lavaggio | *Heating element* |
| **AS** | Pulsante On - Off | *ON - OFF button* |
| **T** | Termostato fisso | *Klixon* |
| **CU** | Modulo elettronico | *Control unit* |
| **M** | Motore lavaggio | *Main washing motor* |
| **TM** | Protettore Termico Motore | *Thermal cut-off* |
| **PR** | Pompa di Ricircolo | *Re-cycle Pump Motor* |

Tratto ZB-G (sostituito cavo giallo/verde con cavo giallo)
Inserito connettore 6v+4v su circuito di potenza del modulo e eliminato il 10v.

| N° Mod. | N° C.T. | Data | Controllato | Disegnato | Posizione |
|---|---|---|---|---|---|
| 02 | 7598-1 | 03/10/05 | R.Costantini | R.Bravetti | |
| 01 | | 23/07/04 | | F. Fava | |

Modifiche

**Antonio Merloni** spa
UFFICIO TECNICO - via Dante, 284
Fabriano (AN) - Italy
Tel. 0732/6901 - Telefax 0732/627880

Denominazione
CABLLA 4P 2M Q ELETTRONICO
TEMP. AC LAE 65 TRIF
120V 60Hz 1V USA.

| Disegnato | Controllato | Data |
|---|---|---|
| F.Fava | | 13-05-02 |

Scala | N° C.T. 6325 | mm

Codice: 460610288

Derivato 552015400
Assieme 562015400
Note 0263 -2001
Disegno: **d1040702**
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