### **Dishwasher** — **Technical Information**

### ADB/CDB1500AW\*, ADB2500AW\*, CDU650AW\*, DDB1501AW\*, PDBL390AW\*, MDBH945AW\*, MDBH955AW\*, MDBH965AW\*, MDBM601AW\*, MDBS561AW\*, MDBTT50AW\*, MDBTT60AW\*, MDBTT70AW\*, MDB4651AW\*, MDB5601AW\*, MDB6601AW\*, MDB7601AW\*

- Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.
- Refer to Service Manual 16021814 for detailed installation, operating, testing, troubleshooting, and disassembly
  instructions

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All safety information must be followed as provided in Service Manual 16021814.

### WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to dishwasher before servicing.

Benefits	ADB/CDB1500AW * CDU650AW* DDB1501AW* PDBL390AW*	MDBH945AW* MDBTT50AW*	ADB2500AW*	MDBH965AW* MDBTT70AW* MDB6601AW*	MDBM601AW* MDB5601AW*
Wash cycles	3	4	5	6	5
Heavy Wash	Х	Х	Х	Х	Х
Normal Wash	Х	Х	Х	Х	Х
Quick Wash	Х		Х		
Light Wash		Х		Х	Х
Insta Wash				Х	
Rinse Only		Х	Х	Х	Х
Features					
Sound package	Sofsound I™	QuietSeries™ 200	Sofsound II™	QuietSeries™ 300	QuietSeries™ 300
High Temp Wash	х	Х	Х	Х	Х
Electronic Controls	Х	Х	Х	Х	Х
Sanitizer		Х	Х	Х	Х
Sensor clean		Х	Х	Х	Х
Water Filtration	100% Filtered wash water	Micro-Fine Plus Filtration	100% Filtered wash water	Micro-Fine Plus Filtration	Micro-Fine Plus Filtration
Delay Start	2,4 or 6 Hour Delay Start	2,4 or 6 Hour Delay Start	2,4 or 6 Hour Delay Start	1-9 Hour Delay Start	2,4 or 6 Hour Delay Start
Energy Star	Х	X	X	Х	X
Hard Food Disposer	х	Х	Х	Х	Х
Child lockout		Х	Х	Х	Х
Touch Pad Controls	5	6	10	12	11
Silverware Location	In door	Wash Compartment	In door	Wash Compartment	Wash Compartment
Low rinse aid indicator	Х		Х		

# **Component Specifications**

### WARNING

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Benefits	MDBS561AW*	MDBTT60AW*	MDB4651AW *	MDB7601AW*
Wash cycles	4	5	4	5
Heavy Wash	Х	Х	Х	Х
Normal Wash	Х	Х	Х	Х
Quick Wash				
Light Wash	Х	Х		Х
Insta Wash				Х
Rinse Only	Х	Х	Х	Х
Features				
Sound package	QuietSeries™ 300	QuietSeries™ 300	QuietSeries™ 200	QuietSeries™ 400
High Temp Wash	Х	Х	Х	Х
Electronic Controls	Х	Х	X	Х
*Sanitizer	Х	Х	Х	Х
Sensor clean	Х	Х	Х	Х
Water Filtration	Micro-Fine Plus Filtration	Micro-Fine Plus Filtration	Micro-Fine Plus Filtration	Micro-Fine Plus Filtration
Delay Start	2,4 or 6 Hour Delay Start	2,4 or 6 Hour Delay Start	2,4 or 6 Hour Delay Start	1-9 Hour Delay Start
Energy Star	·	X	X	Х
Hard Food Disposer	Х	Х	Х	Х
Child lockout	Х	Х	Х	Х
Touch Pad Controls	7	10	7	12
Silverware Location	Wash Compartment	Wash Compartment	Wash Compartment	Wash Compartment
Low rinse aid indicator				

Specifications	Value		
Power Source			
Voltage AC	120 VAC		
Amperage (Single Unit)	15 A		
Frequency	60 Hz		
Motor horsepower	1/3		
Dimensions			
Height-overall	33 ½" to 35 ¼"		
Weight	71		

# **Component Specifications**

### WARNING

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Illustration	Component	Test Procedure	Results
	Dishwasher Motor CCW rotation only viewed from shaft end. 1/3HP 120V/60hz, 3.2 amps, 3250 RPM Main Wattage, 285 watts Start Wattage, 1115 watts	Measure resistance from ST5 (Motor Common – blue) to ST8 (Motor Main - yellow) See Component Specifications/Motor Connections for details.	3 to 4 Ω
	Control Panel	See Component Specifications/ Membrane Readings for troubleshooting/pin-out instructions.	
	Water valve 120V/60hz, 7 watts 1.13 ± .10 gpm at 20- 120 psi	Measure resistance from J6 Pin 4 Aqua (Float switch) to ST4 Black (Common)	1.1 k $\Omega$ (This value assumes the float switch is closed).
	Vent wax motor 120V with 1/4" actuation stroke within 90 seconds	Measure resistance from J6 Pin 1 Purple (Vent) to ST4 Black (Common)	1.2 k Ω
	Dispenser wax motor 120V with 1/4" actuation stroke within 90 seconds	Measure resistance from J6 Pin 3 Tan (Dispenser) to ST4 Black (Common)	2 k Ω

# **Component Specifications**

### WARNING

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Illustration	Component	Test Procedure	Results
	Limit Thermostat	Close on Temperature drop @ 149°F ± 7°F (Temp) Open on Temperature drop @ 164°F ± 4°F (Temp)	$0 \Omega$ = Closed Infinite $\Omega$ = Open
	Sensor/Thermistor	$10K\Omega \pm 3\%$ at 77°F and 2.4 k $\Omega \pm$ 6.5% at 140°F J5 pin 1 - Orange (Temp) to J5 Pin 4 - Red (Neutral)	Infinite $\Omega$ = Open 0 $\Omega$ = Closed
	Heater/Heating Element 120v/60hz, 650 watts ± 5% in air, 830 watts ± 5% in 90°F water	Measure resistance from ST1 Red/Black (Heater) to ST11 White (Common)	16 $\Omega$ (This value assumes the high limit thermostat is closed).
	Drain Motor 120v/60hz 45 watts	Measure resistance from ST6 Gray (Drain) to ST4 Black (Common) See section "Motor Connections and Diagram" for wiring contacts.	25 Ω

### **Component Readings/Testing**

### WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to dishwasher before servicing.

#### Manual Function Test

A Manual Function Test may be started by pressing the Heated Dry key 5 times followed by the Start key within 8 seconds.

The Normal Wash LED will Flash 3 times indicating manual test mode is active. Specific keypads will turn on or off a component as follows:

		•
KEY	Function	LED
Hi Temp Wash	Wash Motor	Hi Temp Wash
Delay	Water Inlet Valve	Delay
Heated Dry	Heating Element	Heated Dry
Cycles Select / Normal		
First Press	Vent	Heavy Wash
Second Press	Dispenser	Normal Wash
Third Press	Drain Pump	Light Wash / China Crystal

The test will cancel 120 seconds after the last keypad is pressed. The display (if available) will show '99' until the remaining timeout period is less than 99 seconds. At this point it will countdown until the modes times out, is cancelled, or another key is pressed. To cancel test, press the Start / Cancel keypad.

#### **Diagnostic Tips**

To check control, LED's and components, enter **Field Service Test**. If control fails to perform sequence as described, and a fault is detected, determine failure as described in the Field Service Test. If a load component failure has been diagnosed, proceed to the Manual Function Test. To check individual load components for proper operation, enter Manual Function Test. Follow test procedure as described. Repair or replace component as needed.

Note: The High Current or Low Current Motor Error may be detected during a wash cycle selected by a consumer. If this happens, the control will go into a 30 second auto restart mode and shut down if the unit is not able to restart the motor.

#### Membrane Readings (All Models)

	Connector	Measure Between
Heavy Wash *	J1	Pin 9 - Pin 5
Normal Wash *	J1	Pin 9 - Pin 6
Light Wash / China Crystal / Gentle Wash /		
Quick Wash *	J1	Pin 9 - Pin 7
Rinse Only *	J1	Pin 9 - Pin 8
Auto Clean / Sensor Clean *	J1	Pin 10 - Pin 5
Heated Dry	J1	Pin 11 - Pin 5
Sanitize *	J1	Pin 11 - Pin 6
Hi Temp Wash	J1	Pin 11 - Pin 8

#### (Front Only Controls)

	Connector	Measure Betweer
Cycle Select *	J1	Pin 9 - Pin 5
Start / Cancel	J1	Pin 10 - Pin 6
Delav	J1	Pin 10 - Pin 7
Tough Scrub Plus / Super Scrub / Power Scrul	h ∗ J1	Pin 10 - Pin 8
Tough Scrub / Extra Wash / Hi Temp *	J1	Pin 11 - Pin 7
Insta Wash *	J1	Pin 12 - Pin 5
Model ID Jumper *	J1	Pin 12 - Pin 7

An unpressed switch will read as an open circuit. A pressed switch will read as 10k.

\* On select models

#### Field Service Test

A Field Service Test may be started by pressing the Heated Dry key 6 times followed by the Start key within 8 seconds. This test must be performed with clean water to insure proper sensor performance.

"88" will appear in the display (if available\*) and the following sequence of events will occur:

SECONDS 106	FUNCTIONS / ACTIVE LOADS Vent Wax Motor / Water Valve
5	Thermistor check / Turbidity Sensor check & calibration - no loads active.
120	Wash Motor / Vent Wax Motor / Dispenser Wax Motor
180	Wash Motor / Heater / Vent Wax Motor
120	Drain Pump
4	Water Valve

The time for the Thermistor check / Turbidy Sensor check & calibration may vary slightly.

The Field Service Test will not repeat. The Heavy Wash LED will Flash during the test mode. All Indicator lights (except Heavy Wash) will illuminate. If the dishwasher door is opened during the test, the test sequence will pause, and resume when the door is closed. To the cancel test, press the **Start / Cancel** keypad.

The control has been designed to test the Sensor, Memory, and Motor. During the Field Service Test, if a fault has been detected, the test will abort any time after the motor current has been checked and 2 or more LED's will begin to Flash. A Memory / Software Check will occur immediately after the test is started. The (Delay / Delay 2 hr) LED and one of the following

> Turbidity Sensor - failure - Hi Temp Wash LED Thermistor - failure - Heavy Wash LED Motor - high current - Normal Wash LED Motor - low current - Light Wash LED Memory Failure - Heated Dry LED

\* On select models

#### **Membrane Readings** (Front & Top Controls)

	Connector	Measure Between
Insta Wash *	J1	Pin 10 - Pin 6
Tough Scrub Plus / Super Scrub / Power Sc	rub*J1	Pin 10 - Pin 7
160° Wash *	J1	Pin 10 - Pin 8
Tough Scrub / Extra Wash / Hi Temp *	J1	Pin 11 - Pin 7
Model ID Jumper *	J1	Pin 12 - Pin 8
Start / Cancel	J3	Pin 9 - Pin 5
Delay	J3	Pin 9 - Pin 6
-		

#### (Top Only Controls)

	Connector	Measure Between
Insta Wash *	J1	Pin 10 - Pin 6
Tough Scrub Plus / Super Scrub *	J1	Pin 10 - Pin 7
160° Option	J1	Pin 10 - Pin 8
Tough Scrub / Extra Wash / Hi Temp *	J1	Pin 11 - Pin 7
Model ID Jumper *	J1	Pin 12 - Pin 6
Start Cancel	J1	Pin 13 - Pin 12
Delay	J1	Pin 13 - Pin 14

#### Load Readings

Between

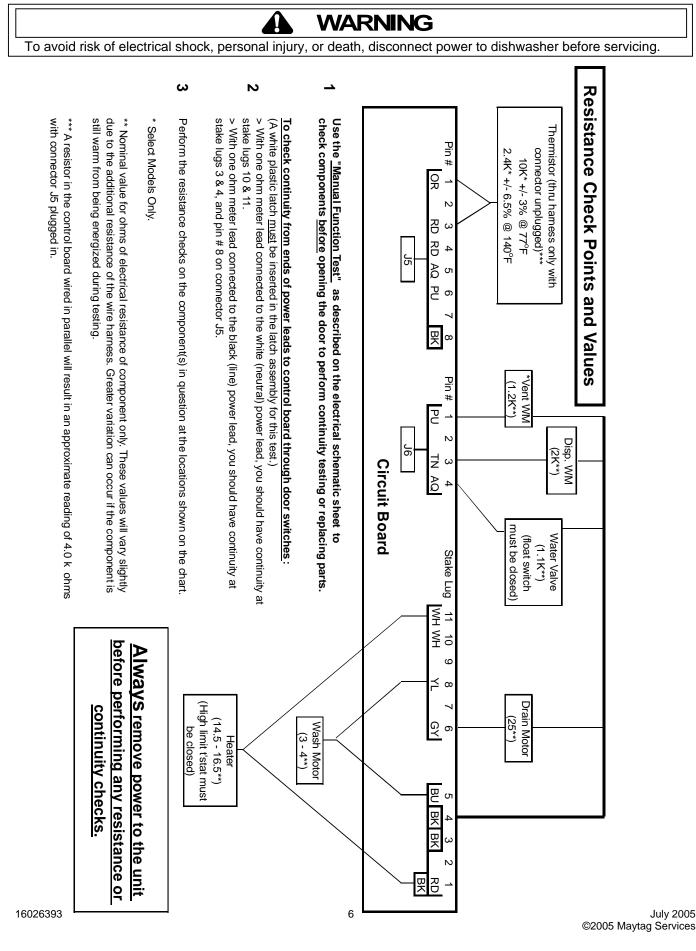
	Measure Between	Result
Heater <sup>1</sup>	ST1 (Heater) - ST11 (Dlb Neutral)	16
Wash Motor	ST5 (Motor Common) - ST8 (Motor Main	) 3 to 4□
Drain Motor	ST6 (Drain) - ST4 (Dlb Line)	25
Vent Wax Motor	J6 Pin 1 (Vent) - ST4 (Dlb Line)	1.2k□
Dispenser Wax Motor	J6 Pin 3 (Disp) - ST4 (Dlb Line)	2k
Water Valve <sup>2</sup>	J6 Pin 4 (Inlt) - ST4 (Dlb Line)	1.1k□
Thermistor	J5 Pin 1 (Temp) - J5 Pin 4 (Neutral)	See Component Info

Notes:

1. This value assumes the high limit thermostat is closed.

2. This value assumes the float switch is closed.

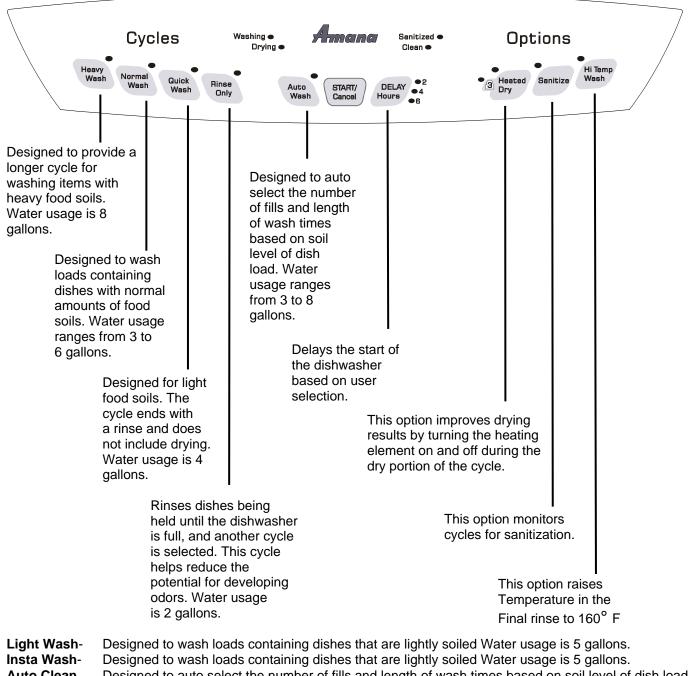
### **Electrical Diagnostics**



## **Control Definition**

To avoid risk of electrical shock, personal injury, or death, disconnect power to dishwasher before servicing.

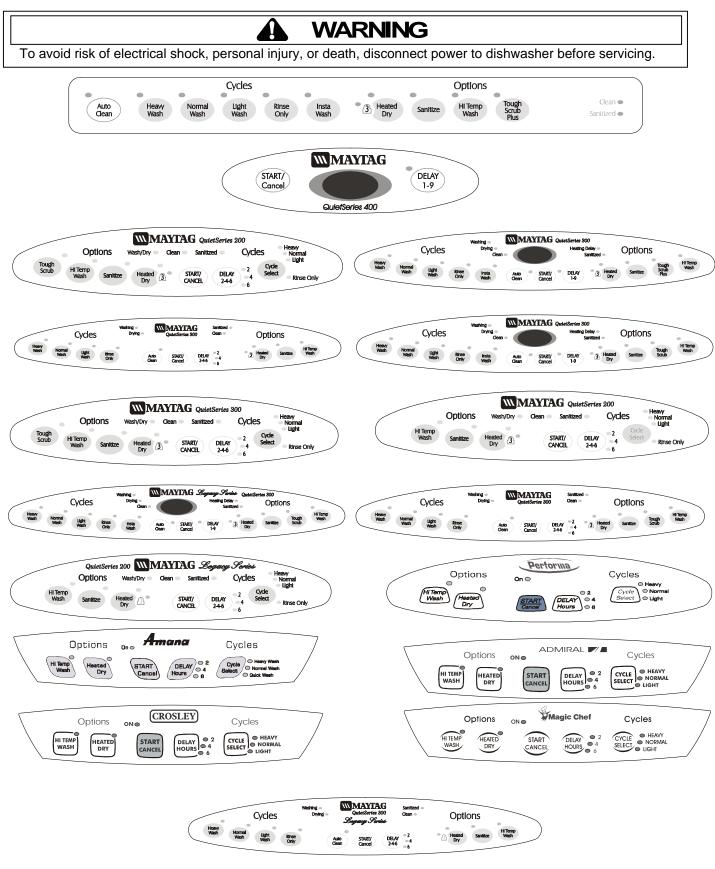
WARNING



Auto Clean- Designed to auto select the number of fills and length of wash times based on soil level of dish load. Water usage ranges from 3 to 8 gallons.

**Tough Scrub**- This option adds fills, heat and/or wash time to the wash cycle.

## **Control Definition**



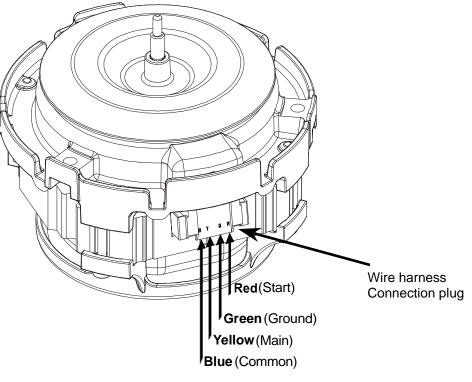
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# **Motor Connectivity**

### WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to dishwasher before servicing.

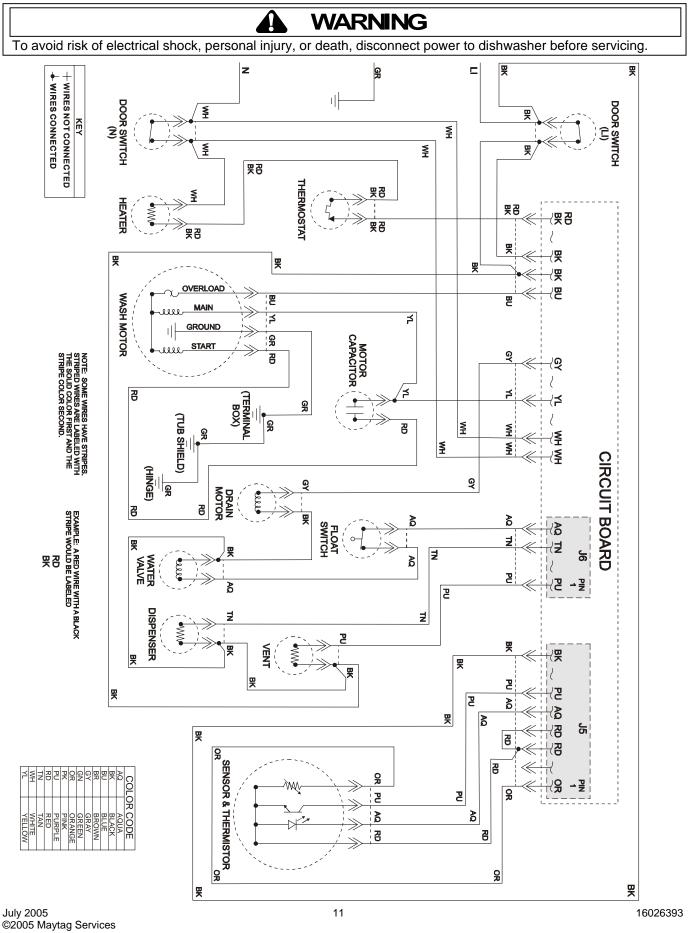


1/3HP 120V/60hz, 3.2 amps, 3250 RPM

# **Cycle Chart**

		A WARNING														
To avoid	To avoid risk of electrical shock, personal injury, or death, disconnect power to dishwasher before servicing.															
<ul> <li>Notes</li> <li>1. All times are approximate.</li> <li>2. Temperature checks force a maximum 20 minute heating delay to reach the desired temperature.</li> <li>3. The Auto Clean/Sensor Clean cycle definition gives the minimum and maximum possible cycle lengths.</li> <li>4. Fill length varies between different models.</li> </ul>	Temperature Options (Available on select models) Sanitze: If the Sanitize option is available for a given cycle, it forces a 140°F temp check at the adds 5 minutes unheated circulation prior to rinse aid dispense. 160° Option: If the 160° Option is available for a given cycle, it forces a 160°F temp check prior	Available Options: Hi Temp Wash - This option has no effect on this cycle, Tough Scrub/Extra Wash/Hi Temp - This option overrides the sensor's decision to skip cycle Tough Scrub Plus/Super Scrub/Power Scrub - This option is the same as Tough Scrub but		AUTO CLEAN CYCLE/ SENSOR CLEAN CYCLE (94 Minutes - min) (128 Minutes - max)	Available Options: Hi Temp Wash - This option has no effect on this cycle. Tough ScrubErztra Wash/Hi Temp - This option adds an additional 5 minutes of heated wash to the main wash and a 10 Tough Scrub Plus/Super Scrub/Power Scrub - This option is the same as Tough Scrub but the main wash temp check	HEAVY WASH CYCLE (132 Minutes - min) (133 Minutes - max)	Available Options: HI Temp Wash - Overrides the sensor's decision to modify the temp checks and skip a rinse. Tough ScrubErzra Wash/HI Temp - This colion overrides the sensor's decision to skip cycle functions / modify temp checks and adds an additional 5 minutes of heated wash to the main wash Tough Scrub Plus/Super Scrub/Power Scrub - This colion is the same as Tough Scrub but the main wash temp check is boosted to 145° F.	NORMAL WASH CYCLE (97 Minutes - min) (117 Minutes - max)	Available Options: Hi Temp Wash-This option boosts the final rinse temp check to 145°F. Tough ScrubEtrar Wash/Hi Temp - This option adds an 8 minute preveash and 5 minutes of heated wash to the main wash Tough Scrub Plus/Super Scrub/Power Scrub - This option is the same as Tough Scrub but the main wash temp check is boosted to 145°F.	LIGHT WASH CYCLE CHINA/CRYSTAL CYCLE GENTLE WASHQUICK WASH 81 Minutes - Min 82 Minutes - Max	Averation to Convolts.	INSTA WASH CYCLE 20 Minutes - Min 51 Minutes - Max	No options are available with the Rinse Only cycle	RINSE ONLY CYCLE 9 Minutes		
e a maximi e a maximi <b>Clean</b> cyc i different r	ible on sel ion is avai nheated cin t <b>ion</b> is ava	offect on this office of this option ower Scrub		FILL 1:36 min 1:46 max	or effect on this - This option ower Scrub	FILL 1:36 min 1:46 max	sor's decision - This option ower Scrub	FILL 1:36 min 1:46 max	the final rins - This option ower Scrub	FILL 1:36 min 1:46 max	able with the	FILL 1:36 min 1:46 max	nse Only cy	FILL 1:36 min 1:46 max		
um 20 min le definition nodels.	ect models lable for a rculation pr ailable for a	s cycle. n overrides th This option	8:00	HEATED PRE WASH	s cycle. 1 adds an add - This option	HEATED PRE WASH 8:00	n to modify th n overrides th - This option	HEATED PRE WASH 8:00	e temp check 1 adds an 8 n - This option	DET	Insta Wash	DISP	de.	RINSE 5:00		
n gives the	s) given cycle rior to rinse a given cyc	ie sensor's de is the same a	SKIP?	DRAIN 2:20	ditional 5 min is the same a	DRAIN 2:20	e temp check he sensor's dr is the same a	DRAIN 1:3 2:20 1:40 SKIP?	< to 145°F. ninute pre-wa is the same a	HEATED WASH 10:00	cycle.	HEATED WASH 4:00		DRAIN 2:00		
g delay to i ∍ minimum	e, it forces e aid dispe cle, it force	ecision to skij as Tough Sci	Ρ?	FILL 1:36 min 1:46 max	nutes of heate as <b>Tough Sc</b>	FILL 1:36 min 1:46 max	ks and skip a ecision to skij as <b>Tough Sc</b>	FILL 1:36 min 1:46 max <b>IP?</b>	ash and 5 mir as <b>Tough Sc</b>	DRAIN 2:00		DRAIN 2:00		FILL 0:02		
and maxi	a 140°F te anse. Is a 160°F	p cycle functions : rub but the main		DISP	ad wash to the n	HEATED WASH 8:00	rinse. p cycle functi <b>rub</b> but the n	DISP	nutes of heat <b>rub</b> but the n	FILL I 1:36 min 1:46 max	-	FILL   1:36 min 1:46 max				
desired ter mum poss	emp check temp chec	ions and add nain wash ter		HEATED WASH 25:00	e main wash nain wash ter	DISP	ions / modify nain wash ter	HEATED WASH 26:00	ed wash to th nain wash ter	HEATED RINSE 10:00	-	HEATED RINSE 2:00				
nperature. ible cycle l	check at the end	and adds 5 minutes of Heated Wash to main wash, wash temp check is boosted to 145°F.		TEMP CHECK 140°F	and a 10 mir mp check is t		temp checks mp check is t	HEATED WASH 2:00 SKIP?	ne main wash mp check is t	DRAIN 2:00	-	DRAIN 1 2:00 1				
engths. A	end of the main wash for the Light Wash, a 154°F temp check prior to to the rinse aid dispense in the final rinse.	of Heated Wa poosted to 14		DRAIN 1 2:00	minute heated pre- rinse is boosted to 145°F.	TEMP CHECK 140°F	and adds ar poosted to 14	TEMP CHECK SEE NOTE TC 1	n. boosted to 14	FILL F 1:36 min 1:46 max	-	FILL H 1:36 min 1:46 max				
Actual cycle length and executed cycle functions will vary	nain wash for aid dispense	sh to main w 5°F.		FILL H 1:36 min 1:46 max		DRAIN 1 2:00	1 additional <b>5</b> 5°F.	2:00 1:	ся .т	00 NTED	-	HEATED RINSE 3:00		DRY CYCLE (From HEATER HEATER H ON OFF 3:00 1:30		
length an	or the <b>Ligh</b> e in the fin	ash.		HEATED PRE RINSE 10:00		FILL 1:36 min 1 1:46 max	minutes of h	FILL H 1:36 min I 1:46 max		TEMP CHECK 140°F	-	DRAIN 2:00		DRY CYCLE (Front Only Display Models)           EATER HEATER HEATER HEATER HEATER           ON           0FF           3:00           1:30           1:30		
d execute	e <b>Light Wash,</b> a the final rinse.		SKIP?	DRAIN 1 2:00 1:		PRE 10:00	eated wash t	HEATED PRE RINSE SKIP?		AID	-	FILL 0:02		ont Only Display Models) HEATER HEATER HEATER ON OFF ON 1:30 1:30 1:00		
d cycle fur	154°F ter			FILL H 1:36 min 1:46 max		2:00 1:	o the main w	2:00 1		5:00	z	т	z	Day Mode EATER H OFF 1:30		
nctions will	np check p			HEATED PRE RINSE 10:00		FILL H 1:36 min F 1:46 max	rash.	max min		DRAIN 2:00	Notes: If Ho If 16 the	HEATER HEATER 3:00 or 1:00 3:00	Note: If He	8×1		
vary base	orior to the			DRAIN 2:00 1:		HEATED PRE RINSE 10:00	TC 1: If ser If ser TC 2: If ser If ser	HEATED RINSE SE 20:00		0.02 02 02	If Heated Dry If 160° Option the dry cycle.		ä	HEATER H OFF 1:30		
based on the sensor input	the rinse aid dispense in the final rinse, and			FILL HI 1:36 min F 1:46 max		DRAIN 1: 2:00 1:	I sensor detects lighter soil, the temp check will be 128 ° F I sensor detects lighter soil. The temp check will be 140 ° F I sensor detects lighter soil, the temp check will be 140 ° F I sensor detects lighter soil, the temp check will be 145 ° F	TEMP CHECK SEE NOTE TC 2		DRY CYCLE 30:00	is not selecte	HEATER HEATER HEATER HE ON OFF ON 2:00 3:00 1:00 3	Dry is not selected, the heater will not be activated during the dry cycle.	ON 1:00		
sensor inpu	dispense i			HEATED RINSE 20:00		FILL HI 1:36 min F 1:46 max	lighter soil, th heavier soil, lighter soil, th heavier soil,	AID DISP F			acted, the ad, the firs	Only Disp EATER H OFF 3:00	ected, the	OFF 1:30		
lt.	n the final			TEMP F CHECK 145°F		HEATED RINSE 20:00	he temp chec the temp chec the temp chec the temp chec	5:00			heater will t two minu	HEATER HEATER ON 0FF 1:00 3:00	heater will	EATER HI 1:00		
	rinse, and					TEMP CHECK 145°F	k will be 128 k will be 140 k will be 140 k will be 140	DRAIN 2:00			not be ac tes of hea	OFF FR	not be act	OFF 1:30		
SK This I omitte is ski	_			5:00		AID	້ " ແ ເບີ້ອີ້ ເບີ້ອີ້	0:02 C			tivated du	HEATER H	tivated du	ON HI		
SKIP? This represents mitted. The d s skipped or no				DRAIN 2:00		5:00		DRY CYCLE 30:00			nged to 2	HEATER H OFF 3:00	ring the dr	OFF 1:30		
s the portic eterminati ot is made				0:02 0:02		DRAIN 2:00					y cycle. minutes o	R HEATER HEATER HON OFF 1:00 3:00	y cycle.	EATER H		
on of a cyc on of whet by input fi				DRY CYCLE 30:00		0:02 0:02					funheated	OFF 3:00		OFF 1:30		
SKIP? This represents the portion of a cycle that MAY be omitted. The determination of whether a segment is skipped or not is made by input from the sensor.						DRY CYCLE 30:00					Dry is not selected, the heater will not be activated during the dry cycle. Ion is selected, the first two minutes of heating is changed to 2 minutes of unheated at the end of le.	HEATER HI		HEATER     HEATER <td></td>		
nnen ? be 16026393									10		d of	HEATER OFF 9:00		EATER OFF 9:30	July 2005 ©2005 Maytag Services	

## Wiring Diagram



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