

Suprema

2001

**AUXILIARY
POWDER PRODUCT SYSTEM
(APP) INSTALLATION**

**PLEASE READ THIS MANUAL BEFORE PROCEEDING WITH THE INSTALLATION, AS
IT CONTAINS IMPORTANT INFORMATION ABOUT SETTING UP THE EQUIPMENT.**

Software Version APP 6.0

VKI
TECHNOLOGIES INC.

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

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NOTE: This Auxiliary Powder Product (A.P.P.) system should only be used on Suprema coffee makers.

SECTION I - REMOVE THE PERFORATED METAL KNOCK-OUTS ON THE MACHINE

On all Suprema models, the holes required for mounting the A.P.P. unit to the side of the machine (*figure 1*), and for passing the wiring through the rear of the machine (*inset*) are pre-punched (sheet metal is perforated). The metal centers of these holes are referred to as knock-outs.

To remove the knock-outs from the machine cabinet:

1. Place the tip of a screwdriver on the edge of the knock-out.
2. With a hammer, strike the screwdriver handle to loosen the knock-out from the sheetmetal.
3. Using pliers, grasp the knock-out and remove it.
4. File or sand the inside of the hole to remove any sharp edges in the metal.

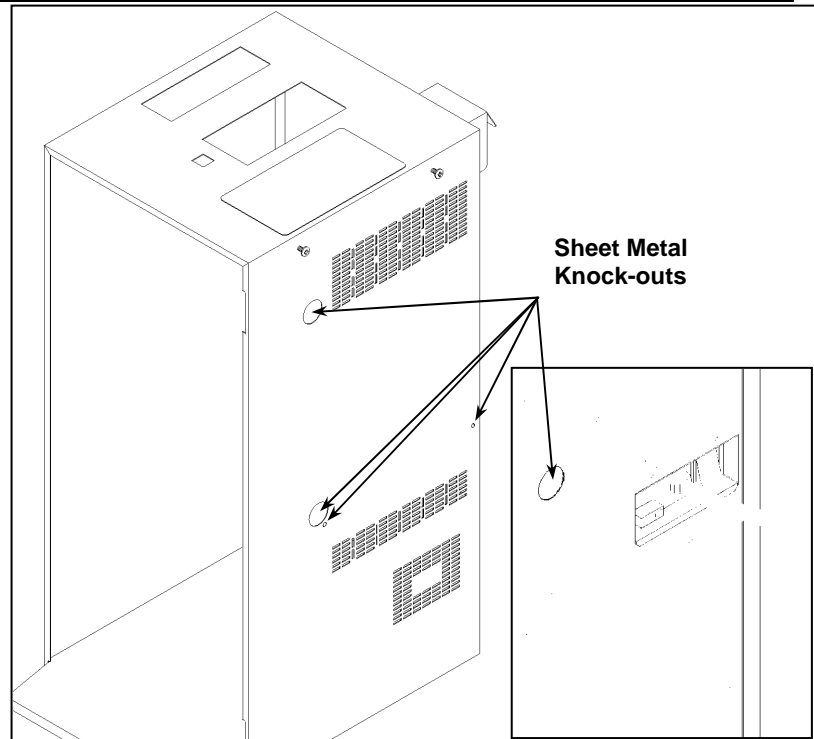


Figure 1 - Remove the sheet metal knock-outs.
Inset - Knock-out on rear panel of machine.

SECTION II - SECURE THE A.P.P. UNIT ONTO THE RIGHT SIDE OF THE MACHINE

1. Insert two 8-32 screws (provided) into the clinch nuts on the right side of the machine. Do not tighten these screws yet.
2. Mount the A.P.P. unit onto these screws the same way you would mount a condiment bin or cup holder to the machine (*figure 2*).
3. From the inside of the machine, pass two 8-32 screws (*identified in figure 2*) through the side wall (where the two smaller holes have been punched), and into the clinch nuts on the A.P.P. This will help secure the assembly in place.
4. Using a short Phillips screwdriver, tighten the first two screws installed in step #1 above.

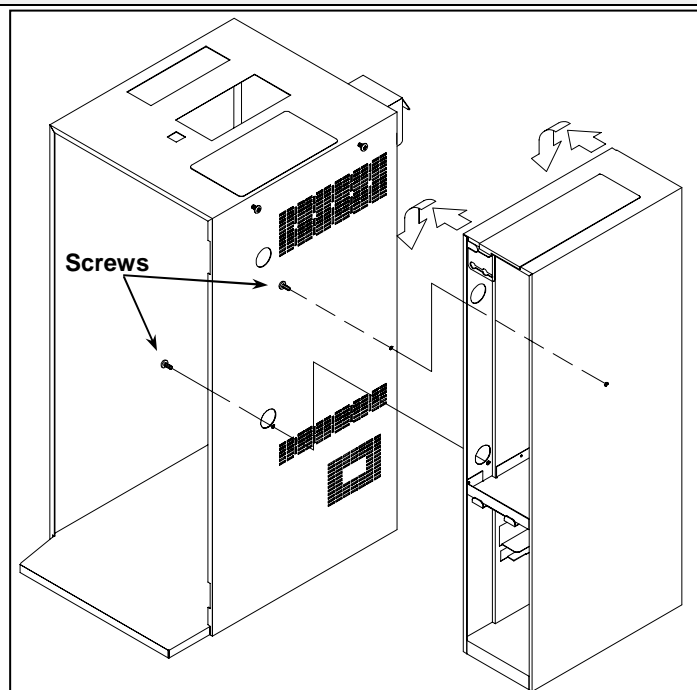


Figure 2 - Mount the unit to the side of machine, then secure it in place with the screws.

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SECTION III - INSTALL THE VALVES AND HOSES

1. Drain the water tank until the water level is below the valves.
2. Remove the chocolate valve, but not the silicone valve seal support.
3. Insert the "T" shaped outlet tube into the seal support that the chocolate valve was installed.
4. Inside the machine, install the chocolate valve onto the new "T" (figure 3).
5. Inside the A.P.P., install the new valve onto the "T" (figure 4).
6. Remove the existing door tube assembly and replace it with the new one, including a new outlet spout weld assembly (figure 5).
7. Connect the new powder product hoses to the whipper assembly inside the A.P.P. (figure 6).

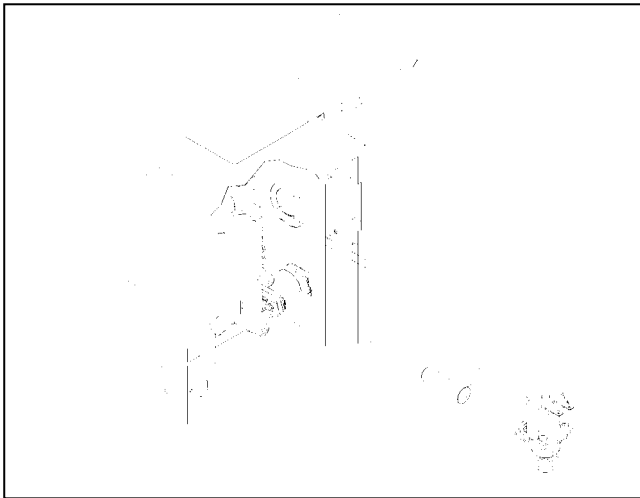


Figure 3 - Install the valve onto the new "T" inside the machine.

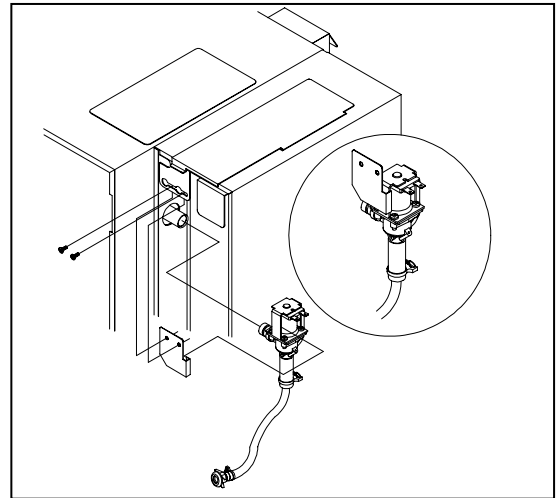


Figure 4 - Install the valve onto the "T" inside A.P.P. Inset shows valve plate already mounted.

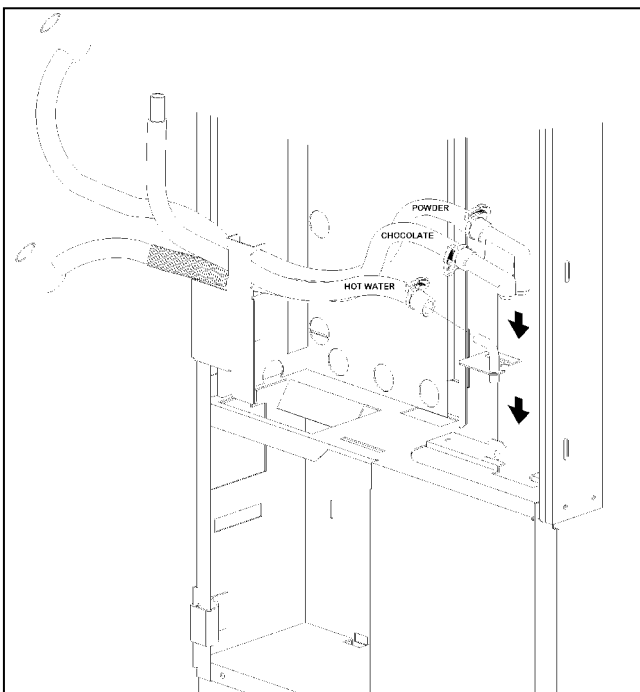


Figure 5 - Install the new door tubes assembly.

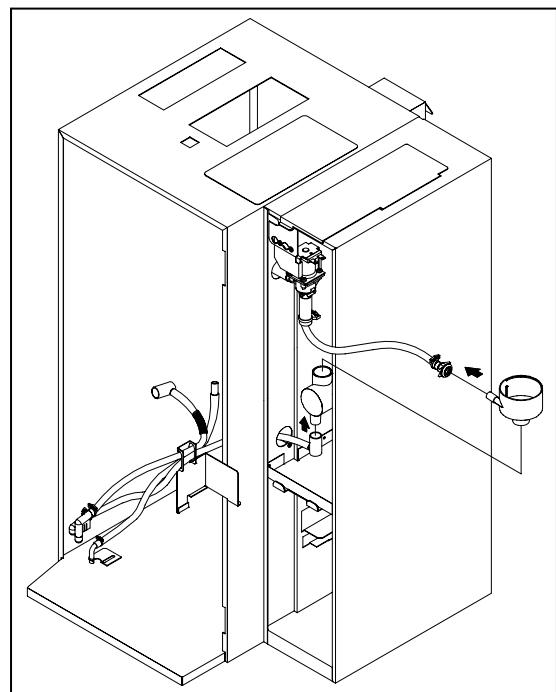


Figure 6 - Connect the hoses inside the A.P.P. (door is removed from illustration to simplify parts identification).

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SECTION IV - MAKE ALL THE NECESSARY ELECTRICAL CONNECTIONS

1. Pass the longer end of the wiring harness through the hole that was drilled at the back of the machine.
2. Using the following chart as a reference, make all the necessary wiring connections from the A.P.P. to the machine.

CONNECTIONS FOR MACHINE / A.P.P. HARNESS (Machine Side - Longer End) *	
Phone Type Cable	<i>Connect to:</i> Inline Adapter
Phone Type Cable	<i>Connect to:</i> Rear Board
Wire # APP 7 (green)	<i>Connect to:</i> Ground Stud, rear board cover (stud must be added)
Wire # APP 2 (white)	<i>Connect to:</i> Position #2, general harness connector at rear board. ➤ Insert wire in open slot between wire #1 and wire #3.
3 Pin Connector (black)	<i>Connect to:</i> 12 Volt Connector, rear board
Wire # APP 3-1 (blue)	<i>Connect to:</i> Wire # 11 of tank harness
Wire # APP 3-4 (blue)	<i>Connect to:</i> Wire # 3-2 of fuse box harness

* A drawing of the connections inside of the coffee machine has been provided on the next page. Please use the chart above, as well as the wiring drawing, as references.

NOTE: Moisture and condensation may enter the inline adapter and cause the contact pins inside to develop a non-conductive film. To protect against this, we recommend wrapping the adapter and (about 1" of the phone type cables before and after the adapter) with electrical tape. This will prevent moisture or condensation from entering the adapter.

3. The following charts detail the wiring connections inside the A.P.P. system. Although this wiring is done at the factory, it is recommended that you keep these charts as a reference should you ever need to rewire the system.

CONNECTIONS FOR 9-PIN A.P.P. HARNESS (Harness Without Phone Type Cables)	
Wire # APP 1-2 (blue)	<i>Connect to:</i> Product Motor
Wire # APP 2 (white)	<i>Connect to:</i> Product Motor
Wire # APP 7-2 (white)	<i>Connect to:</i> Whipper Motor (from transformer)
Wire # APP 9-2 (blue)	<i>Connect to:</i> Whipper Motor (from transformer)
Wire # APP 1-3 (blue)	<i>Connect to:</i> Outlet Valve
Wire # APP 5 (white)	<i>Connect to:</i> Outlet Valve

CONNECTIONS FOR MACHINE / A.P.P. HARNESS (A.P.P. Side - Shorter End)	
Phone Type Cable	<i>Connect to:</i> A.P.P. Board
Phone Type Cable	<i>Connect to:</i> A.P.P. Board
Wire # APP 7 (green)	<i>Connect to:</i> Ground Stud, Left Wall of A.P.P.
3 Pin Connector (white)	<i>Connect to:</i> A.P.P. Board
Wire # APP 11-3 (white)	<i>Connect to:</i> Wire # A-4 on Small Auxiliary A.P.P. Harness
Wire # APP 3-2 (blue)	<i>Connect to:</i> Wire # A-1 on Small Auxiliary A.P.P. Harness
3 Pin Connector (black)	<i>Connect to:</i> A.P.P. Board

CONNECTIONS FOR SMALL AUXILIARY A.P.P. HARNESS (with 4 Pin Connector)	
4 Pin Connector (white)	<i>Connect to:</i> A.P.P. Board
Wire # A-1	<i>Connect to:</i> Wire # APP 3-2 (blue) on Machine / A.P.P. Harness on the A.P.P. Side (shorter end)
Wire # A-4	<i>Connect to:</i> Wire # APP 11-3 (white) on Machine / A.P.P. Harness on the A.P.P. Side (shorter end)

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

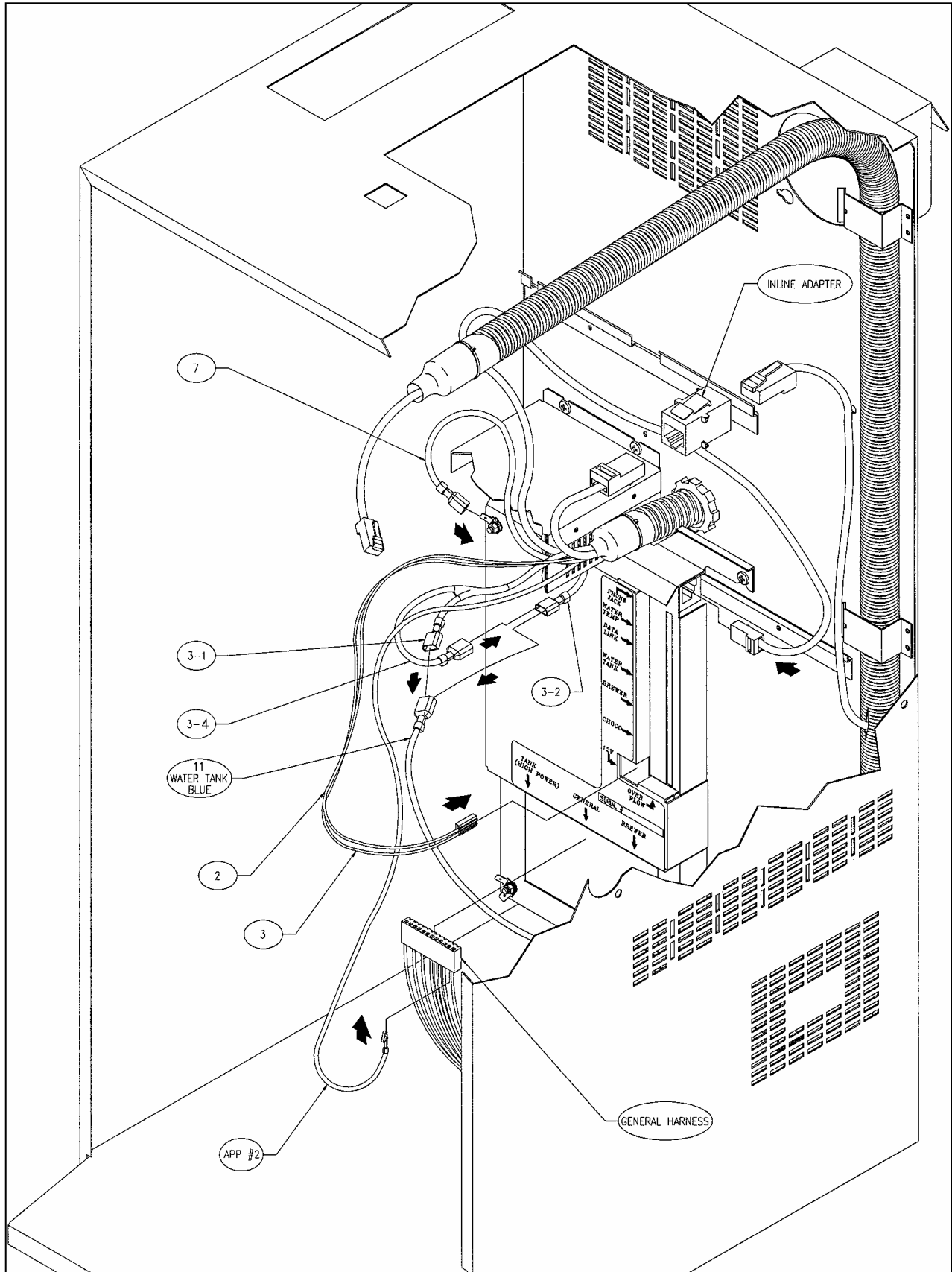


Figure 7 - Machine Wiring for the Auxiliary Powder Product System

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

SECTION V - ADD TWO SWITCH CAPS (BUTTONS) TO THE SUPREMA FRONT BOARD

1. Remove the front board assembly from the door of the machine.

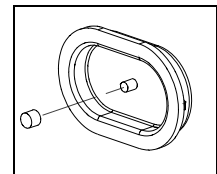
- Open the inner door.
- Remove the two screws at the top corners of the front board assembly.
- Lift and pull off the front board assembly.

2. Remove the electronic circuit board from the board cover.

- Remove the four small Phillips screws securing the LCD display to the front board cover.
- Remove the six large Phillips screws securing the main circuit board to the front board cover.
- Keep the assembly face down on the table and lift the board and LCD display assembly out of the cover. At this point, the display is secured onto the front board only with a board-mounted connector. It is not necessary to separate the display from the front circuit board assembly.

3. Add the two new switch caps to the front board.

- Add the small rubber standoff to the pins of both switches.
- Install the switch caps onto the front board cover - one to the left side of the carafe button, and the other to the right.



4. Re-assemble the front board assembly.

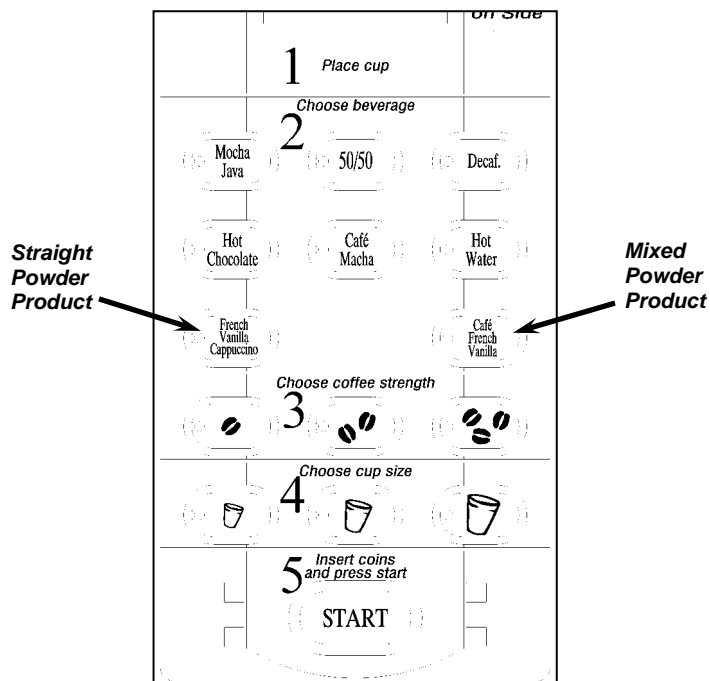
- With the switch caps all in position, add and center the foam cushion onto the board cover.
- Lay the front circuit board assembly (with the LCD display connected to it) flat onto the board cover assembly.
- Secure the board in place with the six larger screws (*removed in step 2-b*).
- Secure the LCD display in place using the four small screws (*removed in step 2-a*).

5. Re-install the front board assembly onto the front door.

- Re-install the two screws that secure the board to the door (*removed in step 1-b*).

6. Install the new fascia onto the front board.

7. Add the straight "POWDER PRODUCT" decal onto the switch below the "HOT CHOCOLATE" button, and the "MIXED POWDER PRODUCT" decal onto the switch cap below the "HOT WATER" button.



This diagram illustrates the proper positions of the "POWDER PRODUCT" and "MIXED POWDER PRODUCT" features on the front selection panel. Be certain that the overlays/decals are installed in the corresponding locations.

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

SECTION VI - DOWNLOAD THE NEW SOFTWARE

1. Insert the new EPROM (which contains the **special A.P.P. software**) into the socket on the Data Link downloader. Make certain that it is installed properly.
2. Switch the machine power “OFF”.
3. Connect the phone harness and download cable from the Data Link to the machine.
4. Press and hold down on the “50/50” button, then switch machine power “ON”. When the beeping stops, release the “50/50” button.
5. With the “**DOWNLOAD PROGRAM**” and “**DOWNLOAD FACTORY SETTINGS**” LED’s lit, press the “**START**” button on the Data Link.
6. Once the download is complete, switch the machine power “OFF” and disconnect Data Link harnesses from the machine.

NOTE: *More detailed downloading instructions can be found in the Suprema Programming Guide.*

SECTION VII - TESTING THE SYSTEM

Now that everything has been assembled and the new software has been downloaded, it is necessary to test the system to make certain that everything is working properly. For the moment, fill the hopper and test the system using the factory settings that were programmed when the new software was downloaded. The testing procedures are outlined below.

1. **Enter the “SET-UP” mode and enable the powder product features.**
 - a) Scroll to the “**ENABLE SWITCHES**” menu and switch these buttons **ON**.
 - b) Exit the “**SET-UP**” mode.
2. **Fill the A.P.P. hopper with the powder product of your choice.**
 - a) Insert the key into the A.P.P. lock and turn it to open the front panel. This will unlock the product lid on the A.P.P.
 - b) Lift the lid up and to the left.
 - c) Pour powder product into the hopper.
 - d) Close the lid, put the front panel back in place and turn the key to lock it.
3. **Prime the powder product hopper.**
 - a) On the machine selection panel, select a large cup of the straight “**POWDER PRODUCT**” (left side button) and press “**START**” to begin the cycle.
4. **Once primed, repeat the procedure and check the system for any restrictions and/or leaks (at the valves, hoses, and door tubes).**
5. **Repeat the procedure once more using the “MIXED POWDER PRODUCT” (right side button) selection on the front panel.**
6. **Taste test both the “POWDER PRODUCT” and “MIXED POWDER PRODUCT” options.**

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7. Make any necessary changes to the settings for the “MIXED POWDER PRODUCT” feature.

- a) In “SET-UP”, scroll to the “SET POWDER MIX” menu.
- b) Press the “START” button to access this menu.
- c) At this point, the “ADJUST COFFEE RATIO” menu will be displayed. This setting allows you to program the **ratio percentage** of coffee to powder product. This setting increments in 10% intervals – from 10% to 100%.
- d) Scroll **UP** and the “PRODUCT TIMING” setting will appear on the display.
- e) Increase or decrease the product setting for each cup size. Press the “START “ button to test.
- f) Scroll **UP** again and the “WATER TIMING” setting will appear on the display.
- g) Increase or decrease the water setting for each cup size. Press the “START “ button to test.
- h) Scroll **UP** once more to adjust the price for the “MIXED POWDER PRODUCT”. Please note that this price is based on the coffee price, plus the increase that is programmed in this setting. For example, if coffee price is \$0.50 and you would like to set the mixed powder product at \$0.60, then set the “**ADD \$0.00 TO COFFEE PRICE**” setting to \$0.10. This will now add \$0.10 to the coffee price (which is \$0.50 in this example). This setting can only be increased in \$0.05 intervals, and cannot be decreased below \$0.00.
- i) Increase the price setting for each cup size.
- j) Scroll “**UP**” again and the “**ADD CHOCO PUMP**” setting will appear on the display.
- k) This feature can be switched “**OFF**” or “**ON**”. If switched “**ON**”, then the chocolate pump will cycle once during the “**POWDER PRODUCT MIX**” cycle giving a mix of powder, chocolate and coffee. This cycle is fixed and cannot be programmed by the service person as it is calculated by the computer. **Refer to the note about this feature in the “General Information” section of this manual.**

NOTE: The powder timing must never exceed the water timing to prevent powder from accumulating inside the whipper bowl. The software version will automatically prevent this from happening and will not allow the powder timing to exceed the water timing.

8. Make any necessary changes to the settings for the “POWDER PRODUCT” feature.

- a) In “SET-UP”, scroll to the “SET POWDER BEV.” menu.
- b) Press the “START” button to access this menu.
- c) At this point, the “WATER” setting will appear on the bottom row of the display.
- d) Increase or decrease the water setting for all three cup sizes. Press the “START” button to test.
- e) Scroll “**UP**” and the “**POWDER**” setting will appear on the bottom row of the display.
- f) Increase or decrease the powder product setting for all three cup sizes. Press the “START” button to test.
- g) Scroll “**UP**” once again and the “**PRICE**” setting will appear on the bottom row of the display.
- h) Increase or decrease the price setting for all three cup sizes.

Once the system has been tested and is functioning properly, install the new valve cover (supplied) onto the tank in the machine, and install any other panel or component that was removed during the installation process.

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

----- GENERAL INFORMATION -----

- Software version **APP 6.0** allows the service person to transfer settings from one APP equipped Suprema to another. Please note, however, that this can only be done on machines equipped with this version of software.
- The powder product mix will function at the end of the coffee cycle.
- When selecting the powder product mix option, you may notice small pauses towards the end of the brewer cycle. This was done to synchronize the coffee and powder so that both end at approximately the same time in the cycle.
- For the powder product cycle, the powder product valve may open and close several times throughout the cycle. This is done to prevent the whipper bowl from overflowing with liquid.
- If the “**DOUBLE-CUP**” option is used for a particular cup size, the powder product needs to be set manually (by doubling the water and product timing). All the other features will revert to double-cup automatically.
- For a 6-oz cup or smaller, the ratio percentage should **never be set below 50%**.
- A variety of button decals (with different product and options) are available from VKI. Please call a Customer Services representative for more details.

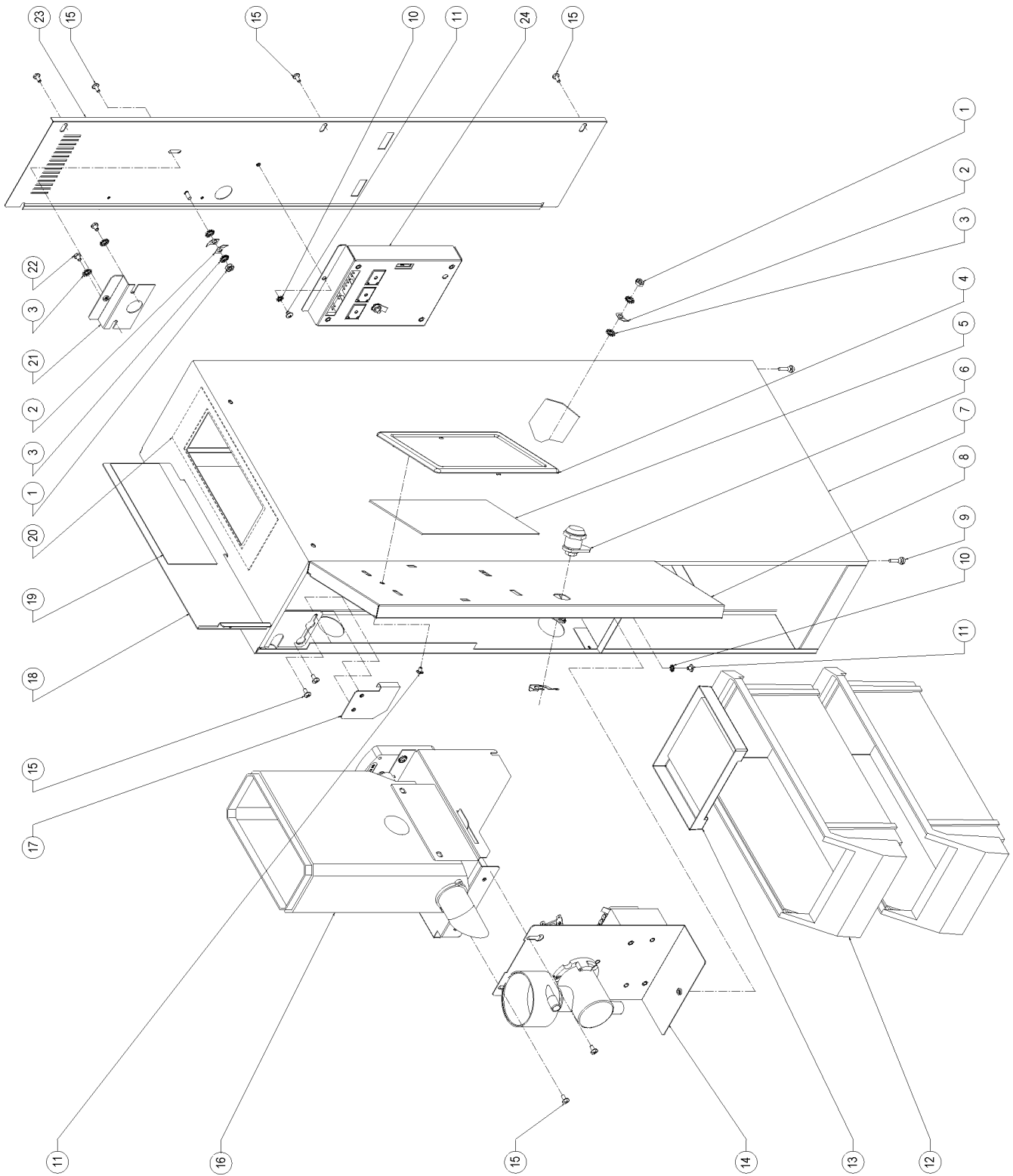
In the “SET POWDER MIX” menu, if the “ADD CHOCO PUMP” option is switched “ON”,

- The “**MIXED POWDER PRODUCT**” setting moves to the “**POWDER PRODUCT**” button on the selection panel. The “**MIXED POWDER PRODUCT**” button now dispenses the powder/syrup/coffee mix. ***Straight powder is no longer available with the “ADD CHOCO PUMP” option switched “ON”.***
- the “**SET POWDER**” menu and the “**POWDER PRODUCT**” counter can no longer be accessed.
- the chocolate pump is fixed to deliver only one cycle for all cup sizes. This cannot be programmed by the service person.
- once the powder mix and the coffee timings are set, no more settings are required. The computer will automatically re-calculate the timing for the powder/syrup/coffee mix.

Assembly Drawings and Part Numbers



SUPREMA APP SYSTEM – COMPLETE



INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)**SUPREMA APP SYSTEM – COMPLETE**

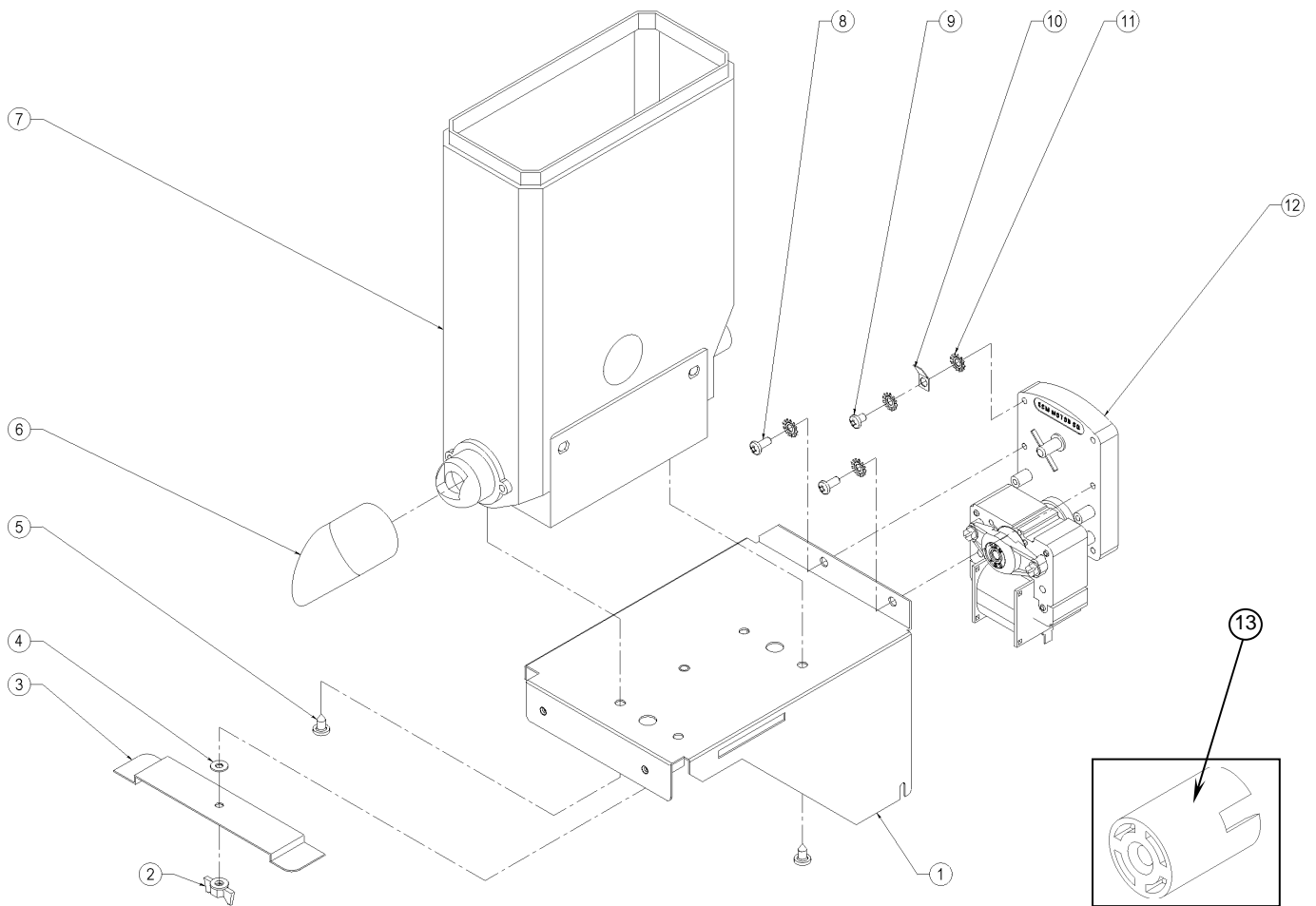
#	Description	Part #
1.	Hex Nut, 8-32, Regular	T008511
2.	.250 Tab, Stud Mountable	M019559
3.	Lockwasher, #8, Ext. Tooth	T008421
4.	Ad Frame	M044061
5.	Window, Clear Frame	M024140
6.	Door Lock	M110020
7.	Assembly, Weld, A.P.P. Box	L511036C4
8.	Door Weld Assembly, Regular	L311001C4
9.	Bumper, Rubber	M014168
10.	Lockwasher, #6, Ext. Tooth	T006421
11.	Screw, 6-32 x 3/16, Truss	T620341
12.	Condiment Bins, Black, 12/Box	M034122
13.	Drip Tray	M024010
14.	Whipper Unit Assembly	E310275
15.	Screw, 6-32 x 5/16, Truss	T620541
16.	Ingredient Dispenser Assembly	C410209
17.	Stopper, Valve	K021042C4
18.	Lid	K021151C4
19.	Gasket, Lid, Cut	K210014
20.	Gasket (Scrap Piece)	----
21.	Bracket, Shipping, Dispenser Motor	K021338C4
22.	Screw, 8-32 x 1/4, Pan	T820491
23.	Back Panel	L411008C4
24.	Assembly, Board and Cover, A.P.P.	G210015

Should you have to remove the A.P.P. from a unit, you can order black plastic snap plugs to block the holes that were punched. These plugs are listed below.

Large Plug	M019676
Small Plug	M019693

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

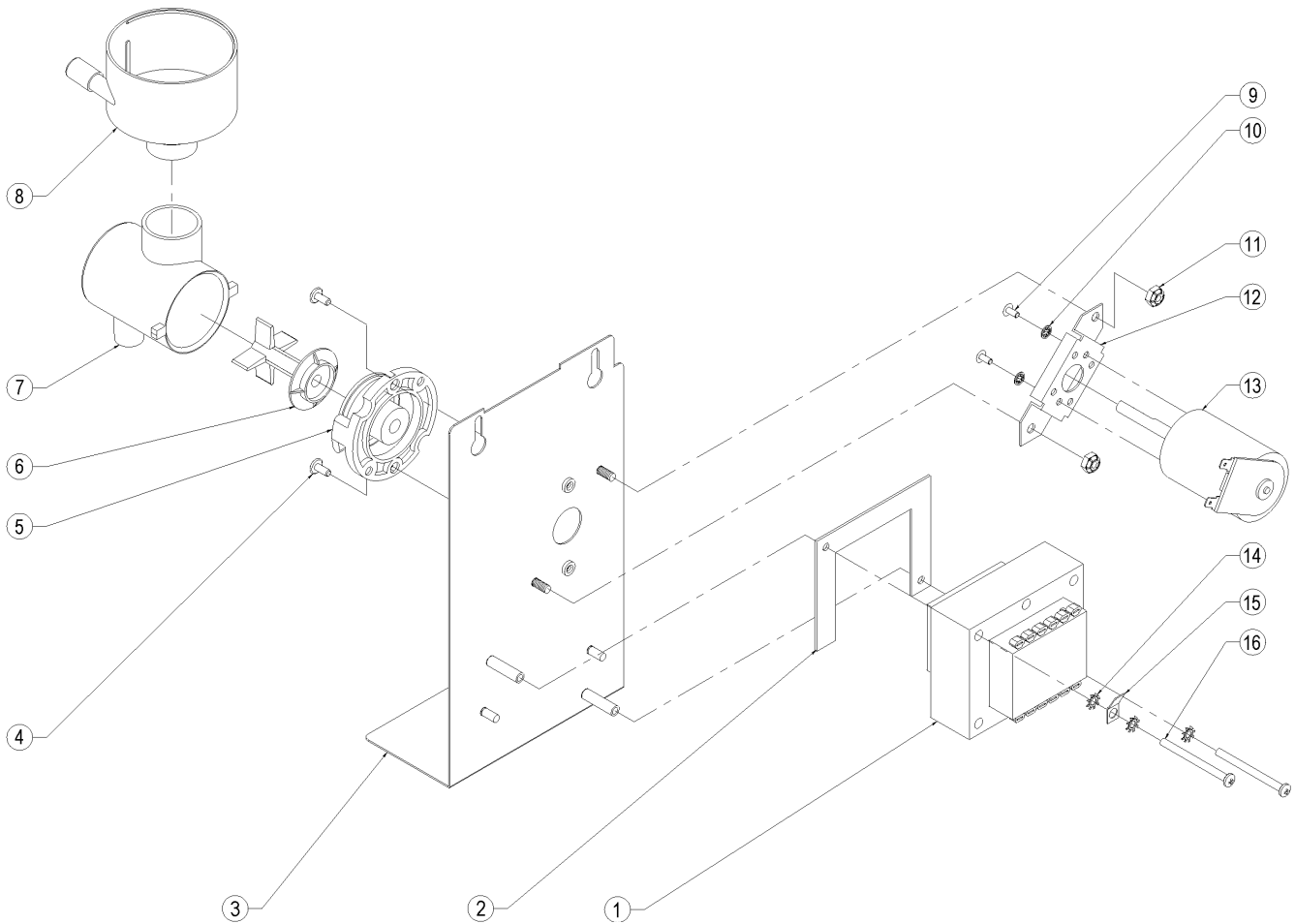
INGREDIENT DISPENSER ASSEMBLY



#	Description	Part #
1.	Support, Ingredient Motor & Dispenser	K031036C4
2.	Wing Nut, 8-32	M019670
3.	Bar, Locking	K021036C4
4.	Washer, Plastic	K014039
5.	Screw, 10-3/8, AB, Tapping	T1AB069
6.	Chute, Product	K210016
7.	Ingredient Dispenser	M039005
8.	Screw, 8-32 x 3/8, Rnd	T820611
9.	Screw, 8-32 x 1/4, Pan	T820491
10.	Terminal, .250, Stud Mount	M019559
11.	Lock Washer, #8, Ext. Tooth	T008421
12.	Assembly, Ingredient Motor	C110043
13.	Dispenser Coupling	M014019

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

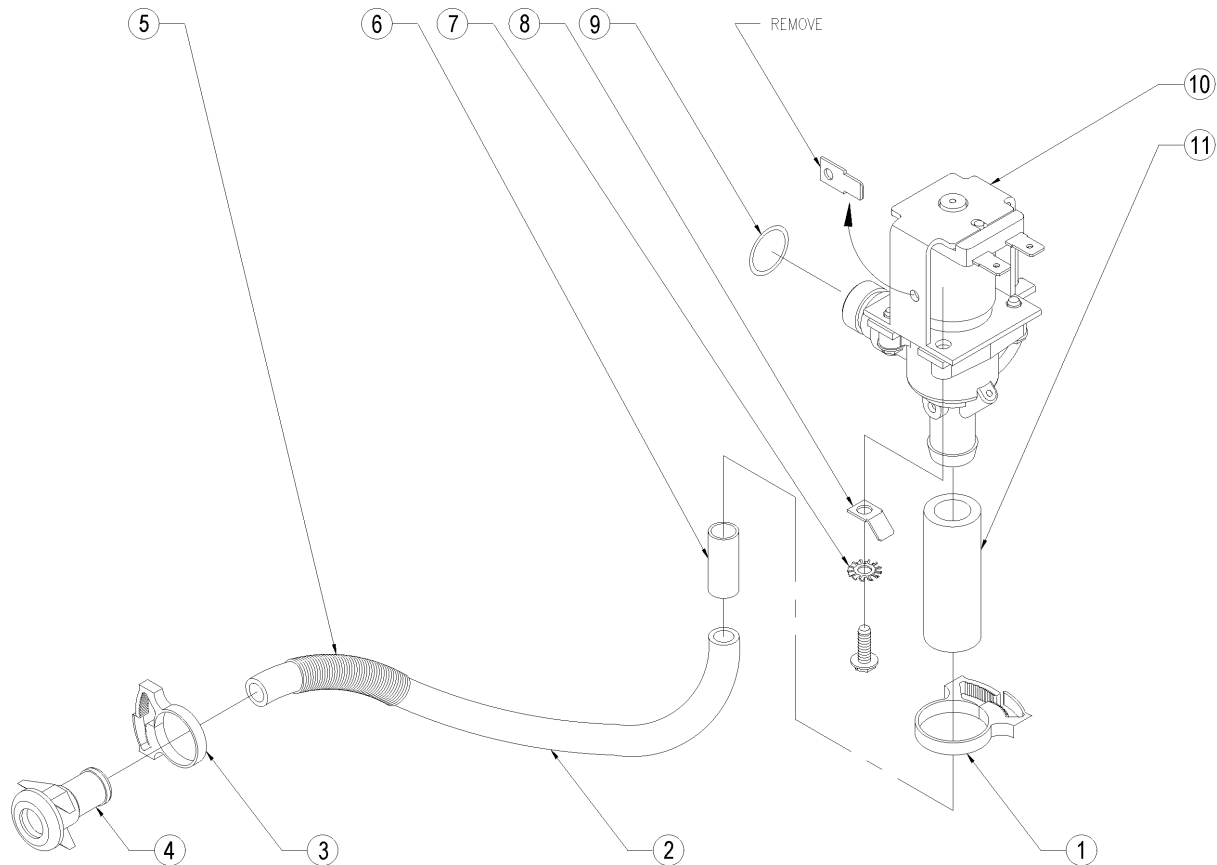
WHIPPER ASSEMBLY



#	Description	Part #
1.	Transformer, Whipper	M018023
2.	Plate, Transformer	K011238C4
3.	Support, Whipper	K021370C4
4.	Screw, 6-32 x 5/16, Truss	T620541
5.	Base, Whipper	M029070
6.	Propeller, Whipper	M019060
7.	Whipper Chamber	M029071
8.	Funnel, Whipper	K110309
9.	Screw, M3x8, Pan, Metric	T019722
10.	Lock Washer, #4, Ext. Tooth	T004321
11.	Lock Nut, 8-32	T019534
12.	Support, Whipper Motor	K021010C4
13.	Assembly, Whipper Motor	M029066
14.	Lock Washer, #6, Ext. Tooth	T006421
15.	Terminal, .250, Stud Mount	M019559
16.	Screw, 6-32 x 1.75, Pan	M019179

INSTALLATION INSTRUCTIONS - AUXILIARY POWDER PRODUCT SYSTEM (APP)

OUTLET VALVE & HOSE ASSEMBLY



#	Description	Part #
1.	Clamp, Plastic, #12	T014135
2.	Hose, Powder	K015143
3.	Clamp, Plastic, #8	T014195
4.	Coupling, Whipper Funnel	M019061
5.	Spring Hose	M017089
6.	Restrictor, Hose	K015014
7.	Lock Washer, #8, Ext. Tooth	T008421
8.	Terminal, .250, Stud Mount	M019559
9.	O-Ring	M019052
10.	Valve, Deltrol	M029082
11.	Hose, Valve	K015122

SUPREMA APP Factory settings
 (software APP 6.0 F) or (NT2 APP 6.0 E)

SELECTION		DEFAULT		
SET PRODUCT (COFFEE & DECAF)	SMALL-MILD	1.5 Sec.	6.2g	
	SMALL-MEDIUM	1.7 Sec.	7.0g	
	SMALL-STRONG	2.1 Sec.	8.5g	
	MEDIUM-MILD	1.7 Sec.	7.0g	
	MEDIUM-MEDIUM	2.2 Sec.	9.0g	
	MEDIUM-STRONG	2.4 Sec.	10.0g	
	LARGE-MILD	2.6 Sec.	11.0g	
	LARGE-MEDIUM	3.3 Sec.	14.0g	
	LARGE-STRONG	3.9 Sec.	16.0g	
FORCED VEND		OFF		
SET POWDER BEV.	WATER <i>small cup</i>	4.8 Sec.	130 ml	
	WATER <i>medium cup</i>	6.0 Sec.	160 ml	
	WATER <i>large cup</i>	8.8 Sec.	230 ml	
	POWDER <i>small cup</i>	3.1 Sec.	17 g	
	POWDER <i>medium cup</i>	3.5 Sec.	21 g	
	POWDER <i>large cup</i>	5.5 Sec.	30 g	
		PRICE (<i>small, medium, large cup</i>)	(ALL \$0.25)	
SET POWDER MIX.	ADJUST COFFEE RATIO	60 %		
	SET POWDER MIX <i>small cup</i>	1.7 Sec.	10 g	
	SET POWDERMIX <i>medium cup</i>	1.9 Sec.	12 g	
	SET POWDER MIX <i>large cup</i>	3.3 Sec.	20 g	
	SET MIX WATER <i>small cup</i>	1.9 Sec.	50 ml	
	SET MIX WATER <i>medium cup</i>	2.1 Sec.	60 ml	
	SET MIX WATER <i>large cup</i>	4.0 Sec.	100 ml	
		ADD TO COFFEE PRICE (<i>small, medium, large cup</i>)	(ALL \$0.05)	
		ADD CHOCO PUMP	OFF	
	SET WATER LEVEL		ELECTRONIQUE PROBE	
SET TEMPERATURE		93°C (199 F)		
DOUBLE CUP		(NOT ACTIVATED)		
CHOCO PUMP	MOKA SMALL	1	15 ml	
	MOKA MEDIUM	1	15 ml	
	MOKA LARGE	2	30 ml	
	CHOCO SMALL	2	30 ml	
	CHOCO MEDIUM	2	30 ml	
	CHOCO LARGE	3	45 ml	
FREE VEND KEY		MOMENTARY		
MESSAGE ON/OFF	KEY OPERATOR	ON – PASSIVE		
	TEMP. IS TOO LOW	ON – PASSIVE		
DELAY PAUSE		3 Sec.		
MAX CUP/CARAFE		OFF		
SET BOTTOM PAUSE (COFFEE & DECAF)	SMALL CUP	3.0 Sec.		
	MEDIUM CUP	3.0 Sec.		
	LARGE CUP	7.0 Sec.		
SET TOP PAUSE	SMALL CUP	5 Sec.		
	MEDIUM CUP	5 Sec.		
	LARGE CUP	7 Sec.		
SET DEFAULT		COFFEE, MEDIUM, SMALL CUP		
ENABLE SWITCH		(ALL ACTIVATED, EXCEPT APP BUTTONS)		
SET PRICE		(ALL \$0.25)		
SET WATER	SMALL COFFEE & DECAF	2.8 Sec.	145 ml	
	MEDIUM COFFEE & DECAF	3.4 Sec.	175 ml	
	LARGE COFFEE & DECAF	5.2 Sec.	275 ml	
	SMALL HOT CHOCOLATE	2.2 Sec.	115 ml	
	MEDIUM HOT CHOCOLATE	2.6 Sec.	145 ml	
	LARGE HOT CHOCOLATE	2.6 Sec.	230 ml	
	SMALL CHOCO MOKA	1.6 Sec.	45 ml	
	MEDIUM CHOCO MOKA	1.9 Sec.	55 ml	
	LARGE CHOCO MOKA	1.5 Sec.	80 ml	
	SMALL HOT WATER	4.2 Sec.	150 ml	
	MEDIUM HOT WATER	5.3 Sec.	200 ml	
LARGE HOT WATER	7.1 Sec.	275 ml		