CAUTION: Read the instructions before using the machine.

Model 540000
Install & Owner’s Guide
CAUTION: Read the instructions before using the machine.

INDUSTRIAL VACUUM SYSTEMS
www.IVS-Vacuum.com
800.968.8227

000540 11-19
# Table of Contents

- **IMPORTANT SAFETY INSTRUCTIONS.** ........................................ 1  
- **Limited Warranty** ............................................................ 2  
- **Typical Installation and Proper Placement** .......................... 3  
- **Island Installation and Electrical Connection** ....................... 4  
- **Installation to Concrete Structure** ..................................... 5  
- **Removing and Loading Product** ....................................... 6  
- **Standard LED Display** ..................................................... 7  
- **Program settings for LED9 Display.** .................................. 8  
- **Presets for the Bill Acceptor** ........................................... 9  
- **Programming the Bill Acceptor** ....................................... 10  
- **Multitron WE Coin Acceptor** .......................................... 11  
- **Sensortron Coin Acceptor** ............................................. 12  
- **Programming for MA-850** ............................................... 13  
- **Maintenance** ............................................................... 14  
- **Troubleshooting** ............................................................ 15-16  
- **Notes** ......................................................................... 17
IMPORTANT SAFETY INSTRUCTIONS

When using electrical machine, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE

This Machine is not intended for household use. It is intended for commercial use.
This machine is not intended for wet pickup use.

WARNING – To reduce the risk of fire, electric shock, or injury:

1. This machine must be connected to a permanent electrical power supply in full compliance with all applicable codes and ordinances by qualified personnel only. Read grounding instructions.
2. Do not use on wet surfaces.
3. Do not allow to be used as a toy. Close attention is necessary when used by or near children.
4. Use only as described in this manual. Use only manufacturer’s recommended attachments.
5. Do not operate of handle machine with wet hands.
6. Do not put any object into any openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
7. Keep hair, loose clothing, fingers, and all parts of the body away from openings and moving parts.
8. Do not pick up anything flammable or combustible liquids, such as gasoline, or use in areas where they may be present.
9. Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes.
10. Do not pick up hazardous dust or particulate.
11. Do not use without dust bags or filters in place.

GROUNDING INSTRUCTIONS

This machine must be connected to a grounded metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the machine.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

To provide additional protection from the risk of electric shock, this product shall only be connected to a circuit that is protected by a ground fault circuit interrupter (GFCI).

DANGER

Installation of this machine must incorporate and provide full disconnection of all poles in the event an overvoltage category III condition. Such incorporation to the fixed wiring must be in accordance with the wiring rules.
Limited Warranty

Industrial Vacuum Systems (Company) provides a limited one year warranty on components and piece of equipment produced by the Company to be free from defects in material and workmanship. Electrical assemblies see Appendix A, have a limited two year warranty on the controller to be free from defects in material and workmanship. This limited warranty does not cover equipment that has been damaged due to misuse, misapplication, modification, altered, neglected, attempted theft, vandalism, connection to improper voltage supply, modification, or such parts that are commonly recognized to be subject to wear in normal usage. Normal use products are, but not limited to, those listed on Appendix B; which are warranted for 90 days. Every component and piece of equipment is packaged to assist in safe handling of the product.

Claims must be submitted in writing within the appropriate coverage period as covered by this warranty, from date of shipment, to the Company’s warranty/repair department. If the return is approved an RMA and labeling instructions will be issued and the product can be returned. Returned product without the appropriate RMA and label will be issued to scrap and all warranties/replacements will be considered null and void. If the product receiving the RMA is not returned within 20 days from date of issuing the RMA then any credit toward the product will be reduced by 25%. If the product is not returned within 30 days of issuing the RMA then any credit will be reduced by 50%. A testing fee of $20.00 will be applied, if the product passes all tests related to the written claim, then the fee will be applied and paid prior to return of the product. If the product fails the test then the fee will not be applied.

The Company may charge a 20% restocking fee for returned product and/or an order, which is canceled and/or material has already been ordered and/or received to fill such order. The Company’s warranty/repair department will inspect all components, submitted under warranty. Warranty replacement will be based solely on the analysis and confirmation that the product defect was caused by material and/or workmanship.

The company reserves the right to change the design of the product without assuming any obligation to modify any product previously manufactured or to replace warranted product other than with redesigned product. In some cases it is easier for the customer to send a Company purchased product direct to the manufacturer for replacement. In those cases the customer will be notified that their product falls under that process and should work with that manufacturer directly. Appendix C shows the purchased parts that falls under this case.

This warranty covers the product replacement only; charges for damages, freight and/or labor will not be accepted. There are no warranties expressed or implied which extend beyond this Limited Warranty. The loss of use of the product, loss of time, inconvenience, commercial loss, incidental or consequential damages is not covered. The Company shall not be liable for incidental, special, or consequential damages including without limitation damages resulting from personal, bodily injury or death or damages to or loss of use of property.

APPENDIX A 2-Year Warranty Controllers Sensortron, Multiton, Touchtron, Timers, Liberator

APPENDIX B 90-Day Warranty Components Pressure Hoses, Swivels, Nozzles, Safety Shut-off Guns, Seals, O-Rings, Shop Vac

APPENDIX C Purchased Products that are Handled Direct with the Manufacturer Shop Vac, IDX Big Timer, Bill Acceptors, Compressors, Pump Motors
Typical Installation & Proper Placement

Consider vehicle traffic, ease of access, weather protection and lighting to enhance vacuum serviceability and income. Refer to the SAFETY INSTRUCTIONS sheet on page 1 for restrictions concerning placement of these units in gasoline dispensing locations and service stations. For more information on ADA Clearances please contact the sales department at 1-800-968-8227.

Mounting and Stub-in Area

Site Planning

Select and prepare a solid, level site for a concrete or similar base. Consult local codes for foundation requirements. Note: Although we recommend 24” base height above grade, 20” base height above surrounding surface provides minimum protection from typical bumper damage and 30” base height should be considered maximum, considering coin acceptor position.
Island Installation & Electrical Connection

Caution! Electrical Shock Hazard.

Disconnect power prior to beginning. Any service or installation work. Get Assistance if you are unsure of these procedures.

Connect to electrical service. Refer to the data label on the outside of the vacuum for electrical rating. Customer is responsible for compliance with all applicable codes and ordinances. The Vacuum should be connected to a dedicated service. Check local codes and requirements. Refer to the IMPORTANT SAFETY INSTRUCTIONS on page 1.

*Connect to a properly dedicated power source. Installation should be performed by a qualified electrician.

Unit installation must comply with local and national codes.

1. The electrical power should be stubbed in under the 18” vacuum tank cylinder (See Image to the right).
2. Maintain approximately 2” of clearance from the edge of the vacuum cylinder. There is 4 inches of vertical clearance from the mounting surface to the underside of the vacuum.
3. Route the power cable through the large hole to the right in the vacuum tank wall, through the front cabinet to the electrical power connection.
4. A make-up box is not provided, when wiring power source into vacuum. Please keep the connection in the lower door, the far right corner is recommended.
Installation to Concrete Structure

Using “J” Bolts

J-Bolts (new construction only). Carefully locate 4 “J” bolts while forming concrete or masonry base. The plywood shipping base can be used as a locating fixture for the “J” bolts while the concrete is formed.

See illustration to the left.

Masonry Anchors

Anchors are used for existing construction only. Drill and install suitable masonry anchors to accommodate a 3/8 inch lag screw. Check anchor supplier information for proper drill size. HINT: Use the plywood base as a template for drilling the anchoring pilot holes.

See illustration to the left.
Removing and Loading Product

Loading the Carpet Wizard
There are two storage bottles in the lower door of your Carpet Wizard. One bottle will have a clear and a yellow tube while the other has a clear and a red tube. The bottle with the clear and yellow tubes is for water. The bottle with the clear and red tubes is for the concentrate.

**DO NOT DILUTE THE CONCENTRATE.**

Winter Solution
As Cold Weather Approaches: protect your Carpet Wizard by install an anti-freeze solution. By adding regular blue wind shield anti-freeze to the water container this will prevent the pumps and hoses from freezing in weather below 32° F.

**IT IS IMPORTANT THAT YOU INSTALL THIS SOLUTION BEFORE FREEZING OCCURS.**

Make sure to run the solution through the entire unit before customer operation. For best results remove all water from the container and replace with Blue anti-freeze solution. This will enable your Carpet Wizard to operate at 0° F.

Prime

*Once the product is loaded properly,* feed the fluid through the hoses by pressing the Button B1 so it is in the down position (see chassis diagram for location). Then select the service you want to prime by pressing the corresponding selection button on the middle door. Then press the brush switch until the brush starts to foam. Then press the switch B1 back to the up position.
This machine employs a dual-mode timer, which features a built-in L.E.D. Digital display assembly.

The dual mode of the timer is like 3 timers running simultaneously. They communicate with each other to inform the user of the monetary credit remaining. This allows the user to switch between the 3 timers resulting in a recompiling of time remaining based on the correct service selected. An additional feature includes the grace time feature, giving the customer 17 - 20 seconds to insert more coins for additional time.

Each mode of the dual mode timer is programmable for COINS TO START and CYCLE TIME. They are preprogrammed from the factory as follows, unless specified by customers:

- **Timer A:** $1.00 (4 coins) to start for 1 minute 20 seconds of Shampoo Mode
- **Timer B:** $1.00 (4 coins) to start for 4 minute of Vacuum Mode
- **Timer C:** $1.00 (4 coins) to start for 2 minutes of Turbo Mode

The display feature of these timers is of the scrolling message type and includes three (3) different programmable messages which are pre-programmed at the factory as follows:

- **Welcome Message:** Shampoo Deposit $1.00 to Start
- **Sales Message:** Shampoo, Vacuum, Turbo
- **Exit Message:** Thank You

To change or adjust these settings, refer to page 8 for programming instructions.
# Program Settings for LED9 Display

To adjust the cash, time, and display properties of your vacuum, locate the LED display of the unit. Remove the rubber plugs from the back of the display housing using a non-metallic item and press S2 to activate program mode.

When in program mode, use S2 to toggle through the available settings. Pressing S1 will increase the value of a setting, holding S1 will decrease the value.

Any setting with a message can be customized. With your desired setting selected, press and hold S2 to edit the message. Press S1 to change the active character space and S2 to change the character itself. Use the “/” character to indicate the end of your message.

### COIN VALUE
$.25 for U.S. and Canada. $1 for Australia / New Zealand.

| A | .20 | Message fragrance or Shampoo, depending on Fresh N UP or Carpet Wizard. |
| B | 1:00 | Message Vacuum, standard 2 motor mode |
| C | .30 | Message Turbo, optional 3 motor mode. |
| D | Not used. |
| F | Not used. |
| A | 4 | Coins required to start fragrance or shampoo. |
| B | 4 | Coins required to start. Combo always starts up in vacuum mode. |
| C | 4 | Coins required to start turbo mode. |
| D | Not used. |
| E | Not used. |
| F | Not used. |
| Ax | 04 | Auxiliary coin input, not used. |

### BONUS COIN
Can be set to offer a time bonus after a coin minimum has been met. Default value is 9.

### BONUS TIME
Amount of bonus time given. Default value is 00:00.

### SINGLE BONUS / Multiple
Determines if time bonus can be given only once or multiple times.

### DELAYED START
Number of seconds before startup. Default value is 2 seconds.

### HL
With 1 minute left on the timer, this value determines how long the warning horn sounds. Default value is 10 seconds.

### PULSED HORN
Timer pulses the horn.??

### RE-START
Controls a 20 second grace period to restart vacuum with 1 or more coins. Default value is OFF.

### STD
Can be changed to USER or MIX to program in your own message, up to 64 characters.

### M
Wash down cycle time. Default value is 5:00.

### 1 2 3 4
Wash down code. Use optional remote to access.

### CC
Credit card system. Y for yes, N for auxiliary coin input. Default value is Y.

### CC PULSE VALUE
The amount each credit card pulse is worth. Default value is $.25.

### ENG
For English display, SPH for Spanish or E & S for English and Spanish. Default value is ENG.

### DM
Dimming mode. Default value is 0.

### EXIT
Exit programming mode.

---

**Access to coin counts and manual cycles:**
Inventory screen, press S1 and the inventory counts will scroll across the display. To reset the counts, press and hold S2 until CLR? displays. Press and hold S2 until DONE appears. All counts are reset.

Optional remote for easy access to the programming, inventory and wash down features. Part #5280030
Presets for Bill Acceptor

When you receive the bill acceptor all switches are off. As a result the following options are programmed:

1. Accepts $1 dollar bills only
2. Four way accept
3. High Security accept
4. Long pulse
5. Four pulses per dollar

IMPORTANT:
Do not change the settings for items 4, or 5. This will cause unit to Malfunction.

Do not program using the switches. All switches must remain in the off position. Acceptors come preprogrammed in order to work properly with the other electrical components of the machine. Use only the coupon to program the acceptor and only change sections 1 and 2.

IMPORTANT:
Placing any switch ON will override the above options, and the Bill Acceptor will operate according to the switch settings labels.
Using the Coupon to Program

Carefully remove a coupon from the page of coupons provided. If possible make copies of the page first with a standard, carbon-based, non-color copier. Copies of the coupon are usable only if cut to match the exact size of the coupon. Copies of the coupon are located on the last page of this manual.

Fill out the coupon- Use a #2 pencil. All sections must be complete and fill only one block per line. Sections 3, 4, and 5 are pre-marked with an “X”, these are the areas you need to fill in.

Complete Section 1- Enable desired bill direction. Enable 1 or 2 direction face up, or 4 way acceptance (which allows acceptance in all directions.

Complete Section 2- Enable desired bill denominations. Fill in one block for each denomination. High Accept enables maximum bill acceptance. High security may be desired for locations where a higher level of discrimination is desired. OFF will reject bills of the selected denomination.

Locate the service button- On the back of the unit Press the button once to enter coupon setup mode. Pressing again will exit the mode. All switches must be off before programming with the coupon.

Insert coupon and verify settings were accepted.

ACCEPTED: Coupon returned immediately and LED flashes 10 times when coupon is pulled out.

REJECTED: Coupon returned after 10 seconds. LED flashes number of times corresponding to section improperly filled out. Example three flashes for improper section 3. If rejected, review instructions or try new coupon.
Wire Color Function

- Red/Green Solid state relay common. See note below.
- Black 24 VAC hot. Recommended supply voltage of 22-30 VAC.
- Yellow 24 VAC common Recommended supply voltage of 22-30 VAC.
- Red/Yellow Solid state relay common. See note below)

Note: Outputs for all coins are sent via the Red/Green and Red/Yellow wires.

*The Red/Yellow wire is a solid state output to be used with any auxiliary product

PLEASE NOTE: EACH UNIT SHIPS PRE-PROGRAMMED FOR THE DOMESTIC CURRENCY SPECIFIED WHEN ORDERING.

Programming Instructions for Tokens or Non-Domestic Coins

1. Power down the Multitron GS-44WE coin acceptor.
2. Switch “on” the six (6) dip switches located on the side coin acceptor.
3. Power up the coin acceptor.
4. Insert 2 of the coin to be programmed.
5. Turn off all dip switches (except the one that equals the value of your coin.) See Table A.
6. Insert 15 more of the coin to be programmed.
7. Turn “off” the switch left on in Step 5.
8. Power down for a minimum of 5 seconds then power up.
9. Repeat above steps to program additional coins.

*If a value other than the preset amount is needed, a handheld programmer is required.
Part Number: 1102800

<table>
<thead>
<tr>
<th>Dip Switch</th>
<th>Pulses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Table A

Specifications:

- Accepts 30+ different coins
- Accepts coin size 0.64 - 1.26” diameter (16 mm - 31.5 mm)
- No permanent sample coin required
- 24 VAC and 24 DC compatible
- Adjustable output pulse (with programmer)
- Program with or without external programmer
- Power loss will not affect memory
- Corrosion proof chassis
- 2” mounting footprint
- 2 year warranty
To Install Sample Coin Or Token

1. Slide sensor coil to the right and replace plastic chip with coin or token
2. Release sensor coil, making sure sample coin or token is held firmly in place
3. Do not use a 1965 or 1974 quarter as a sample

Selectivity Adjustments

Sensortrons are Preset for Use With U.S. Quarters

1. Remove black rubber plug
2. Using small screwdriver, locate adjusting slot on potentiometer (pot.). (Slot is difficult to see in the jelly-like substance.)
3. Turn pot. clockwise as far as it will go
4. Turn pot. counterclockwise (a little at a time until it rejects all unwanted coins)
5. Replace rubber plug

The selectivity control is designed to enable field adjustments for closer coin scrutiny, thereby providing greater rejection of slugs.

Wiring

NOTE: YOU MUST HAVE AT LEAST 24 VOLTS AC ACROSS BLACK AND YELLOW WIRES.
Coin Learn Procedure for the IDX MA-800

Slide the front cover up and identify the three controls to be used in coin memory storage procedure.

- Black or red button located near bottom right corner.
- Rotary switch with sixteen positions (0 to 6 are memory positions) also located near bottom right corner.
- LED half way up on right side (green in RUN mode and red memory mode).

1. Turn the Rotary switch to one of the learn positions (1 to 6) and observe the LED turn red to indicate that the MA-800 is ready to store data.
2. Push black or red button once for each credit pulse you wish to have issued for this coin. Example, a $1 coin would be equaled to 4 pulses.
3. Slide the cover back on the unit to make sure outside light does not interfere with the sensors; light shield must click into place.
4. Deposit the coin through the acceptor between 6 to 10 times until the LED flashes red and green; this indicates the acceptor is storing.
5. Once LED starts to flash red and green, slide cover back up and turn rotary switch back to position 0. Be careful not to turn the switch too far or the acceptor will not accept coins.
6. Once the switch is back in the zero position slide the cover back to closed position and the programming is complete.

THE COIN YOU DO NOT WANT TO ACCEPT MUST BE STORED IN POSITION ONE.

Turn rotary dial to position one and press black or red button 13 times, then drop coin that you don’t want to accept through 6 to ten times until LED flashes. Turn Dial back to 0 and close light shield.

Coin De-Learn Procedure

1. Slide the front cover up and turn rotary switch to the coin # position you wish to remove from memory.
2. Push the black or red button once to initiate the memory storage sequence.
3. Turn the rotary switch back to position #0 without depositing any coins to signal the unit that you wish to erase.
4. The LED will flash red-green to indicate completion.
5. Slide the front cover back down.
• Keep the outward appearance of the unit looking good by using a glass cleaner to clean the front door and lexan faceplate in front of the visual display.
• Apply a stainless steel polish to the cabinet to maintain the appearance.
• Take care not to use abrasive cleaners or rags for these applications to avoid scratching the surfaces.
• *DO NOT USE STEEL WOOL OR OTHER FERROUS BRUSHES TO CLEAN STAINLESS STEEL SURFACES*
• Check motor Brushes for wear and replace as necessary
• If three (3) motor vacuum, order a special nozzle.
• Inspect gasket and replace with factory replacements.

Daily / Weekly Maintenance

• Remove dirt & debris from vacuum. HINT: consider ordering a debris catcher from your distributor to simplify this process.
• Empty & shake bags weekly
• Exchange bags and wash bi-monthly
• Check hand tools, as suction will be impaired if vacuum nozzle wears excessively
• Always make sure vacuum doors are closed.
• Check hose for signs of wear, replace if excessive.
• Test Vacuum suction and airflow
• Suction Test: Place hand over cuff feel for “pull”
• Air Test: Hold cupped hand near hose inlet feel for “breeze”
## Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Performance</td>
<td>Poor Suction</td>
<td>Test by placing hand over end - feel for “pull”. With hose end sealed, use plastic bag or sheet to test for leaks at door opening. (Move sheet lightly past suspected areas, plastic will “stick” at leaks.) MAKE SURE VACUUM DOORS ARE SEALED.</td>
</tr>
<tr>
<td></td>
<td>Poor Airflow</td>
<td>Check for overfilled debris areas or hose clog. Clean filters. Check motors to be sure that both are working.</td>
</tr>
<tr>
<td>Vending Problems</td>
<td>Coin jams</td>
<td>Check for “overfilled” coin box. Check for clearance of coin path to coin box (remove obstructions). Check “cradle” area of coin mechanism for severely bent coins. Check magnet for Canadian (Magnetic) coins. Clean coin path of coin acceptor.</td>
</tr>
<tr>
<td>Coin</td>
<td>Bill Jams</td>
<td>Remove bill stacker and reinstall for soft reset. Reset main power for hard reset.</td>
</tr>
<tr>
<td>Dollar Bill Problems</td>
<td>Doesn’t accept specific denomination ($1 or $5)</td>
<td>Reprogram bill acceptor (see instruction manual)</td>
</tr>
<tr>
<td></td>
<td>Doesn’t accept any bills</td>
<td>Check for bill jams in both acceptor and stacker.</td>
</tr>
<tr>
<td>Symptom</td>
<td>Problem</td>
<td>Correction</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Unit does not start</td>
<td>Test for line power to unit</td>
<td>Check 120VAC LED on lower right corner of control board.</td>
</tr>
<tr>
<td></td>
<td>Test for 24v circuit power.</td>
<td>Check 24 VAC LED on control chassis.</td>
</tr>
<tr>
<td></td>
<td>Test to timer operation</td>
<td>Check for proper timer display activity.</td>
</tr>
<tr>
<td>Unit does not operate properly.</td>
<td>No vacuum cycle operation</td>
<td>Check for tripped circuit breakers. Circuit breaker and relays are both found on the control chassis.</td>
</tr>
<tr>
<td>115 vac light is off as well as dome lights.</td>
<td>Main fuse</td>
<td>Check for the indicator light on the main fuse. If the light is on then power is available, but the fuse is blown.</td>
</tr>
<tr>
<td></td>
<td>115 vac light is off as well as dome lights.</td>
<td>Test or replace fuse, if voltmeter across fuse reads 110v to 120v, fuse is bad.</td>
</tr>
</tbody>
</table>
# Maintenance

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main power indicators lit but timer and mech will not work.</td>
<td>4 amp circuit breaker on transformer</td>
<td>Reset breaker. If breaker continues to trip, check for shorts on 24 VAC lines.</td>
</tr>
<tr>
<td>LED timer counts down without vacuum cycle starting.</td>
<td>Vacuum motors won’t start or run.</td>
<td>During count down cycle, check for tripped circuit breakers on the chassis panel. Look for overfilled filter bags and other restrictions in the vacuum cycle before restarting the system. NOTE: restrictions to the air flow such as clogged filters cause higher than normal amp draw. This can cause breakers to tip.</td>
</tr>
<tr>
<td>Air is present at brush but no Product comes out.</td>
<td>Unit needs to be primed.</td>
<td>Re-prime each product by selecting manual mode on the control board. Select desired product and press trigger switch, run until product is dispensed from applicator.</td>
</tr>
<tr>
<td>No product or air at Parts Sheet Guide rush.</td>
<td>Possible bad brush switch wiring.</td>
<td>Check the trigger indicator light located on the central chassis. IF the light doesn’t come on when the switch is turned on, check for broken wires or a bad switch on the brush.</td>
</tr>
<tr>
<td>Compressor activates but no product.</td>
<td>Possible clogged line or bad foam generator.</td>
<td>Check product delivery lines for clogs, or check foam generator for cracks or obstructions.</td>
</tr>
</tbody>
</table>