



## A COMMITMENT TO SAFETY

The Vendo Company is committed to safety in every aspect of our product design. Vendo is committed to alerting every user to the possible dangers involved in improper handling or maintenance of our equipment. The servicing of any electrical or mechanical device involves **potential hazards**, both to those servicing the equipment and to users of the equipment. These hazards can arise because of improper maintenance techniques. The purpose of this manual is to alert everyone servicing Vendo equipment of potentially hazardous areas, and to provide **basic safety guidelines** for proper maintenance.

This manual contains various **warnings** that should be carefully read to minimize the risk of personal injury to service personnel. This manual also contains service information to insure that proper methods are followed to avoid damaging the vendor or making it unsafe. It is also important to understand these **warnings** are not exhaustive. Vendo could not possibly know, evaluate, or advise of all of the conceivable ways in which service might be done. Nor can Vendo predict all of the possible hazardous results. The safety precautions outlined in this manual provide the basis for an effective safety program. Use these precautions, along with the service manual, when installing or servicing the vendor.

We strongly recommend a similar commitment to safety by every servicing organization. Only **personnel properly trained** in vendor servicing **should have access to the interior of the machine**. This will minimize the potential hazards that are inherent in electrical and mechanical devices. Vendo has no control over the machine once it leaves the premises. It is the owner or lessor's responsibility to maintain the vendor in a safe condition. See Section I of this manual for proper installation procedures and refer to the appropriate service manual for recommended maintenance procedures. If you have any questions, please contact the Technical Services Department of the Vendo office nearest you. Refer to the listing at the back of this manual.

## SAFETY RULES

- Read the Safety Manual before installation or service
- Test for proper grounding before installing to reduce the risk of electrical shock and fire.
- Disconnect power cord from wall outlet before servicing or clearing product jams. The vending mechanism can trap and pinch hands.
- Use only fully trained service technicians for "Power On" servicing.
- Use adequate equipment when moving a vendor.
- Always wear eye protection, and protect your hands, face, and body when working near the refrigeration system.
- Use only authorized replacement parts.
- Be aware of inherent dangers in rocking or tipping a vending machine.



## SECTION I: VENDOR INSTALLATION

- A. Vendors are large, bulky machines of significant size and weight. Improper handling can result in injury. When moving a vendor, carefully plan the route to be taken and the people and equipment required to accomplish the task safely.
- B. Remove all tape, shipping sealant, and Styrofoam from the vendor. Loosen any shipping devices used to secure interior parts during shipping. Remove the wooden shipping base, attached to the vendor base by the vendor leveling screws. Make certain the leveling screws are in place and functional.
- C. Position the vendor three to four inches (7.6 cm to 10.2 cm) from a well-constructed wall (of a building or otherwise) on a flat, smooth surface.

***IMPORTANT:*** *The vendor requires three inches (7.6 cm) of air space from the wall to ensure proper air circulation to cool the refrigeration unit.*

- D. Adjust the leveling screws to compensate for any irregularities on the floor surface. Ideally, no adjustment will be necessary and the leveling legs will be flush with the bottom of the vendor. A spirit level is a useful aid to level the vendor. When the vendor is properly leveled, the outer door, when opened, will remain stationary. Vendors must be level to assure proper operation and to maintain stability characteristics. Do not add legs to the vendor.
- E. Check the manufacturer's nameplate on the left or right side of the vendor outer door to verify the main power supply requirements of the vendor. Be sure the main power supply matches the requirements of the vendor. To ensure safe operation, plug the vendor only into a properly grounded outlet. **DO NOT USE EXTENSION CORDS.**

**NOTE:** Any power supply variance more than  $\pm 10\%$  may cause vendor to malfunction.

- \* Power outlets must be properly **grounded**.
- \* Power outlets must be properly **polarized**, where applicable.  
Test the outlets using the following information. (Refer to Figure1 on Page 3.)

TEST OUTLET DIAGRAM

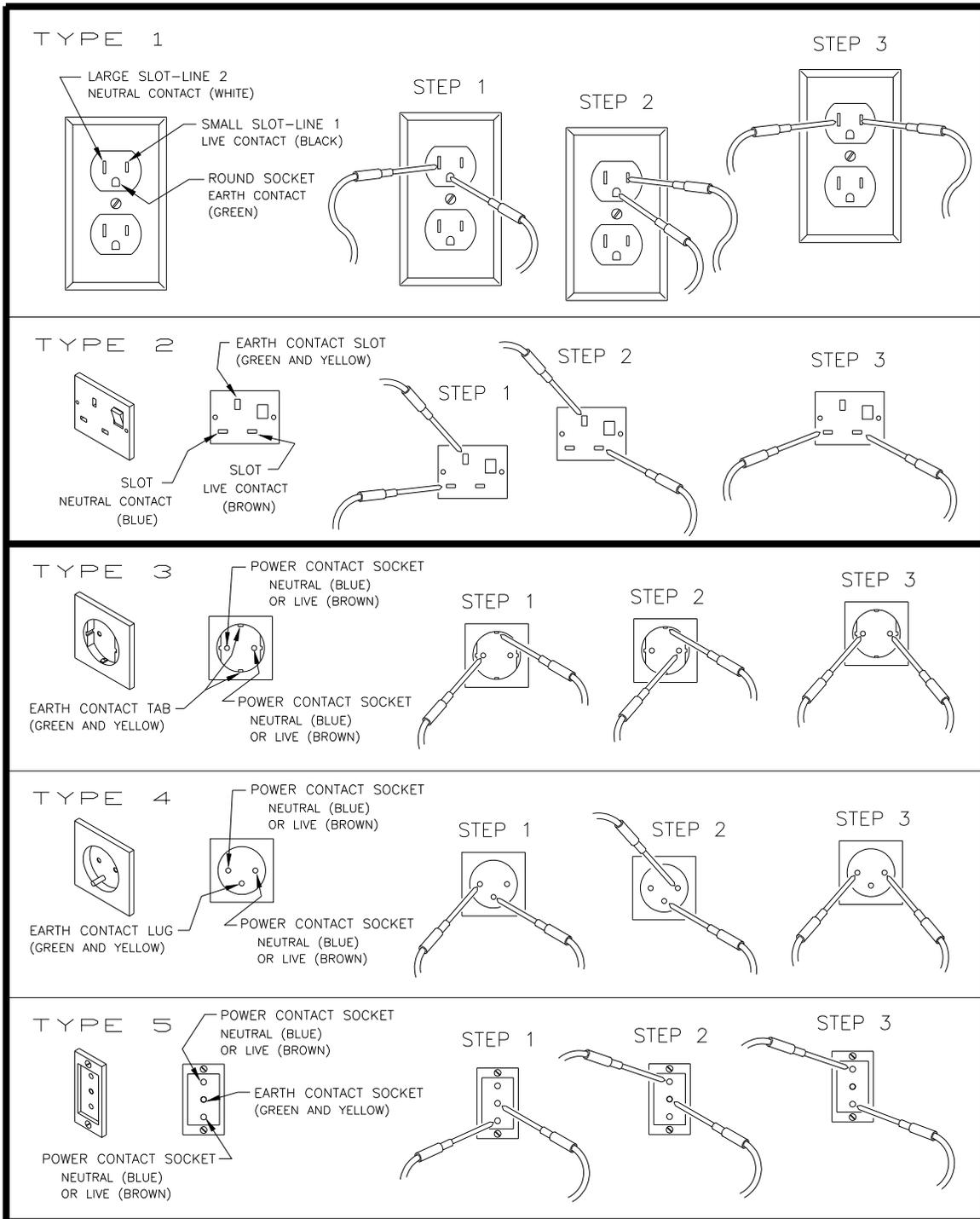


FIGURE 1



## SECTION I: VENDOR INSTALLATION (CONT'D)

**For Type 1 and Type 2 outlets, test for Grounding and Polarization as follows:**

1. With a test device (volt meter or test light), connect one probe to the receptacle's Neutral contact and the other to the Live contact. The test device should show a reaction.
2. Connect one probe to the receptacle's Earth contact and the other to the Live contact. The test device should show a reaction.

**For Type 3 through Type 5 outlets, test for Grounding as follows:**

1. With a test device (volt meter or test light, determine which of the receptacle's Power contacts is the Live contact.)
  - A. Connect one probe to the receptacle's Earth contact.
  - B. Connect the second probe to the left (or upper) Power contact. If a reaction occurs, this is the Live Power contact. If a reaction does not occur, move the second probe to the right (or lower) contact. A reaction should occur, indicating that this is the Live Power contact.
2. Connect one probe to the receptacle's Live Power contact (as determined in step 1). Connect the second probe to the other Power contact (neutral). The test device should show a reaction.

**IF THE ABOVE CONDITIONS ARE NOT MET FOR THE GIVEN  
OUTLET TYPE, CONTACT A LICENSED ELECTRICIAN AND  
HAVE THE NECESSARY CORRECTIONS MADE.**

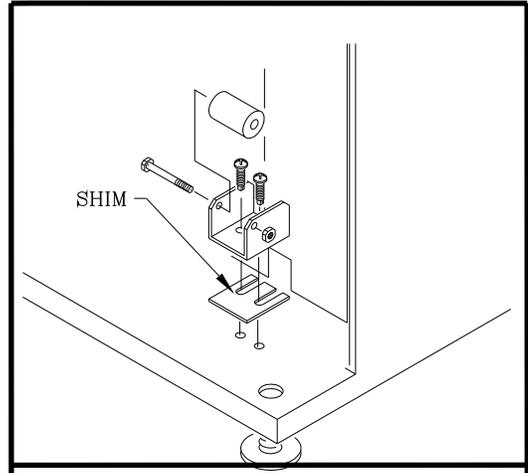
- F. Ambient temperature operating range for this vendor is +5°F to +113°F (-15°C to +45°C). The climatic rating of this vendor is "N" (Normal).

**SECTION I: VENDOR INSTALLATION (CONT'D)**

**G. Door Support (Fig. 2)**

The door support may be raised or lowered by adding or removing shims, to insure that the outer door closes squarely to the cabinet. Raising or lowering the door support can also insure proper alignment of the door latch.

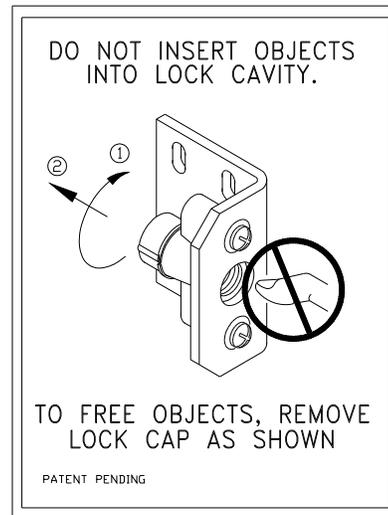
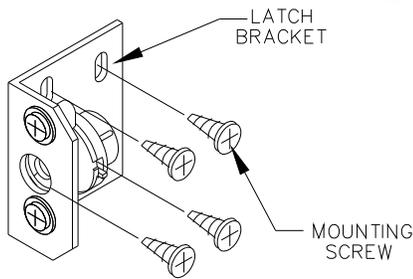
**FIGURE 2 - Door Support**



**H. Door Latch Alignment (Fig. 3)**

After any door adjustment, the floating Quicker Lock assembly should align itself automatically. The latch assembly is adjustable. To adjust, loosen the latch bracket mounting screws, and raise or lower the latch assembly into position, then tighten the mounting screws.

**FIGURE 3 - Door Latch Alignment**



**FIGURE 4 - Warning Label**

**WARNING:**  
**KEEP FINGERS AND OTHER OBJECTS OUT OF LOCK CAVITY**

**NOTE:** Refer to the Appropriate Parts and Service Manual for Detailed Instructions, Operating Principles, and Recommended Maintenance Intervals and Procedures.



## SECTION II: ELECTRICAL HAZARDS

### GENERAL

Vendo vending machines are provided with the appropriate power supply setting for your area. Some models are equipped with step-down transformers, as required, enabling the vending machines to operate on different mains voltages. Refer to section I. E. for information to determine the main power requirements. Refer to the appropriate Service Manual for details of step-down transformer operation.

The power sources mentioned above are standard for both household and commercial lighting and appliances. However, careless or improper handling of electrical circuits can result in injury or death. Anyone installing, repairing, loading, opening, or otherwise servicing a vending machine should be alerted to this point. Apply all of the normal precautions observed in handling electrical circuits, such as:

- Refer servicing to qualified personnel only.
- Unplug the vendor before servicing or clearing product jams.
- Replace electrical cords if there is any evidence of fraying or other damage.
- Keep all protective covers in place.
- Plug equipment into outlets that are properly polarized (where applicable), and protected with fuses or circuit breakers.
- All electrical connections must be dry and free of moisture before applying power.

#### A. Grounding Systems

Vendo vending machines are provided with the appropriate service cord for the power supply in your area. The service cord will connect to the matching electrical outlet. Always ensure that the outlet to be used is properly grounded (and polarized where applicable) before plugging in the vendor. (See pages 3 and 4).

**WARNING:**  
**ALWAYS TEST TO VERIFY PROPER GROUNDING PRIOR TO  
INSTALLATION, IN ORDER TO REDUCE THE RISK OF ELECTRICAL  
SHOCK AND FIRE**

The electrical grounding system also includes the bonding of all metal components within the vendor. This involves a system of bonding wires identified by green or green and yellow marking. The system uses serrated head screws, lock washers, and star washers to assure the electrical connection between parts. Maintenance of vending equipment may involve disassembly. Include the above items when reassembling, even if the vending machine may appear to function normally without them. Omitting any of these items can compromise a link in the grounding system. See the appropriate Service Manual or kit instructions for components and assembly instructions.



## SECTION II: ELECTRICAL HAZARDS (CONT'D)

### B. Servicing with “Power Off”

For maximum safety, unplug the service cord from the wall outlet before opening the vendor door. This will remove power from the equipment and avoid electrical and mechanical hazards. Service personnel should remain aware of possible hazards from hot components even though electrical power is off. See the appropriate sections of this manual for further information.

### C. Servicing with “Power On”

Some service situations may require access with power on. Power-on servicing should be performed **only** by fully qualified service technicians. Particular caution is required in servicing assemblies that combine electrical power and mechanical movement. Sudden movement (to escape mechanical action) can result in contact with live circuits and vice versa. It is therefore doubly important to maintain maximum clearances from both moving parts and live circuits when servicing.

**WARNING:**  
**“POWER-ON” SERVICING SHOULD BE ACCOMPLISHED ONLY BY  
FULLY TRAINED PERSONNEL. SUCH SERVICE BY UNQUALIFIED  
INDIVIDUALS CAN BE DANGEROUS.**

**NOTE:** For Power-On servicing of vendors with a **door power switch**, it is necessary to activate the switch when the outer door is open. This is accomplished by one of the following methods:

1. Straight Plunger Switch: Pull plunger forward.
2. Protected Plunger Switch: Place key (provided) in position to hold plunger inward.



### SECTION III: MECHANICAL HAZARDS

#### A. Servicing of Moving Parts and Assemblies

When servicing assemblies involving moving parts, **use extreme caution!!** Keep fingers, hands, loose clothing, hair, tools, or any foreign material clear of entrapment.

As noted before under the Electrical Hazards section, "Power On" servicing should **only** be performed by qualified personnel. Refer to and heed the warnings noted in Electrical Hazards section. These warnings refer to the potential hazards associated with electrical power and moving parts. Always maintain maximum clearances from electrical and moving parts.

Always install protective covers and guards when reassembling equipment.

#### B. Product Conversions

See the Service Section of the appropriate Service Manual for stack (or module) conversion procedures. Improper installation of product shims or spacers can result in product jams.

**WARNING:**  
**ALWAYS UNPLUG OUTLET CORD BEFORE ATTEMPTING TO CLEAR  
PRODUCT JAMS, TO PREVENT ENTRAPMENT OF HANDS IN  
MECHANISM.**

**WARNING**  
**THIS VENDING MACHINE INCLUDES MECHANICAL EQUIPMENT  
WHICH CAN BE HAZARDOUS IF IMPROPERLY HANDLED OR  
SERVICED. USE CAUTION AND CONSULT THE VENDO SAFETY  
MANUAL AND THE VENDO SERVICE MANUAL FOR ADDITIONAL  
SAFETY INFORMATION.**





## SECTION IV: REFRIGERATION HAZARDS

### GENERAL

Refrigeration systems involve both electrical power and mechanical action. These systems may present any of the potential dangers shown in the sections on Electrical and Mechanical Hazards contained in this manual. See Sections II and III for further information.

#### A. **Compressed Refrigerant**

Refrigeration systems involve the compression and evaporation of gases. The pressures contained represent a potential hazard if suddenly released in confined areas. Caution is required when performing maintenance tests or repairs. All testing of sealed refrigeration systems should be done by trained personnel who are familiar with the systems and pressures involved.

#### B. **Physical Protection**

The accidental release of refrigerant gases can result in physical injuries. Always wear protective glasses and protect your hands, face, and body when working near the refrigeration system.

**WARNING:**  
**ALWAYS WEAR EYE PROTECTION AND PROTECT YOUR HANDS,  
FACE, AND BODY WHEN WORKING NEAR THE REFRIGERATION  
SYSTEM.**

## SECTION V: TEMPERATURE HAZARDS

### GENERAL

Maintenance personnel should be alert to the potential hazards from hot metal surfaces. High temperatures may be present throughout the refrigeration system although electrical power has been removed



## SECTION VI: SUBSTITUTIONS AND MODIFICATIONS

### GENERAL

Unauthorized changes or the substitution of unauthorized parts can compromise the equipment designs. This can result in unsafe conditions for either the service personnel or the equipment users. Always refer to the appropriate Parts and Service Manual for replacement parts and maintenance instructions. If questions arise, contact the Technical Services Department of the Vendo office in your area. (Consult the listing at the end of this manual.)

When servicing the vending machine, always reassemble all components to their original location and position. Maintain the correct routing for tubing, electrical wiring, etc. Replace all clamps, brackets, and guides to their original locations. Replace all tubing, sleeving, insulating material, and protective covers to their original condition.

#### **WARNING:**

**VENDO EQUIPMENT HAS BEEN PROVIDED WITH APPROPRIATE PROTECTIVE DEVICES TO PROTECT AGAINST THE POSSIBILITY OF OVERHEATING AND FIRE, AS A RESULT OF EQUIPMENT OR COMPONENT FAILURES. SUBSTITUTION, MODIFICATION, OR BYPASSING OF SUCH PROTECTIVE DEVICES CAN CREATE DANGEROUS CONDITIONS. PROTECTIVE CIRCUITS SHOULD NEVER BE BYPASSED, AND FAILED PROTECTIVE DEVICES MUST BE REPLACED ONLY WITH FACTORY-AUTHORIZED PARTS.**

#### **A. Service Cord Replacement**

Vendo vending machines are furnished with unique power supply cords. If replacement becomes necessary, consult the appropriate Parts and Services Manual and order the correct replacement cord for the model of vending machine in question. Do not use substitute replacement cords. Only authorized service personnel with appropriate training should replace the vending machine service cord. If a question should arise concerning which service cord to order, contact the Technical Services Department of the Vendo office in your area for assistance.

## SECTION VI: SUBSTITUTIONS AND MODIFICATIONS (CONT'D)

### B. Service Cord Replacement (For 240 Volt System Used in the United Kingdom)

As the color of the wires in the mains lead of the vending machine may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:



The wire which is colored **Green and Yellow** must be connected to the terminal in the plug which is marked with the letter **E** or by the earth symbol or colored **Green** or **Green and Yellow**.

The wire which is colored **Blue** must be connected to the terminal which is marked with the letter **N** or colored **Black**.

The wire which is colored **Brown** must be connected to the terminal which is marked with the letter **L** or colored **Red**.

Should the plug on the flexible cord not be the type for your socket outlets, do not use an adapter, but remove the plug from the cord and discard. Carefully prepare the end of the supply cord and fit a suitable plug.

**WARNING:**  
**THIS APPLIANCE MUST BE EARTHED**  
**IMPORTANT**

The wires in the mains leads are colored in accordance with the following code:

<b>Green and Yellow</b> .....	<b>Earth</b>
<b>Blue</b> .....	<b>Neutral</b>
<b>Brown</b> .....	<b>Live</b>



## SECTION VII: CONSUMER SAFETY WARNING

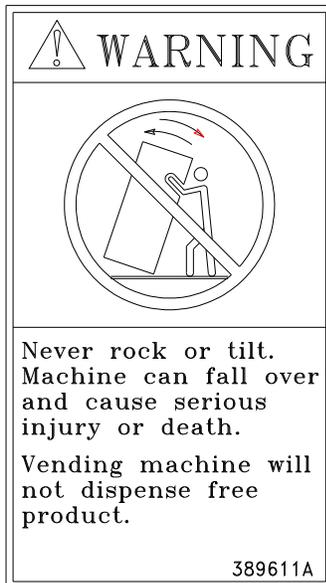
**WARNING:**  
**VENDOR CAN BE OVERTURNED IF SUFFICIENT FORCE IS APPLIED,  
AND MAY RESULT IN SERIOUS INJURY OR DEATH.**

### GENERAL

There have been incidents, including fatalities, when vending machines have been vandalized by being pulled over in an attempt to obtain free product or money.

To warn of the danger involved in tipping, shaking, or rocking the vending machine, a decal has been designed to be affixed to vending machines. (One such decal is supplied with the vending machine.) Vendo will supply sufficient decals to be placed on all machines, on request. If you have any questions, contact the Vendo office in your area. (Consult the listing at the end of this manual.)

**THE FOLLOWING DECAL SHOULD BE PLACED IN A POSITION  
ON THE VENDOR CONTROL PANEL AT EYE LEVEL.**



ENGLISH



FRENCH



SPANISH



**PARTS, SALES, & SERVICE CENTERS OF VENDO/SANDEN COMPANY**

AREA	ADDRESS	PHONE NUMBERS
United States, Canada	The Vendo Company 7209 N. Ingram Fresno, CA 93650 U.S.A.	Tel: (209) 439-1770 Fax: (209) 439-2083
Japan	Sanden International Corporation 31-7 Taito 1-Chome Taito-ku Tokyo 110, Japan	Tel: (03) 3835-1321 Fax: (03) 3835-3169
Europe, Mid-East, Africa, U.S.S.R.	Vendo GMBH Spangerstr. 22 D-40599 Dusseldorf Germany	Tel: (211) 746012 Fax: (211) 7488541
Australia, New Zealand	Sanden International Pty. Ltd. 54 Allingham St., Condell Park N.S.W. 2200 Australia	Tel: 2-7910999 Fax: 2-7919029
Singapore, Hong Kong, Indonesia, Philippines, India	Sanden International (Singapore) Pte., Ltd. Sanden House, 25, Ang Mo Kio st. Y5 Singapore 2056 The Republic of Singapore	Tel: 4825500 Fax: 4825039
Taiwan	Sanden International Taiwan Corp. 7th Floor, No. 16, Alley 56, Lane 181 Sec. 4 Chunghsiao E. Rd., Taipei Taiwan, Republic of China	Tel: 2-751-2266 Fax: 2-731-3903
Belgium	N.V. Vendo Benelux, S.A. Industrial Research Park N.O.H. St. Lendriksborre 13 Font St. Landry B-1120 Brussels Belgium	Tel: (2) 2682595 Fax: (2) 2682862
England	Vendhall, Ltd. Unit 17, The Basingstoke Centre Westham Lane, Worting Rd, Basingstoke Hants RG22, 6NQ Great Britain	Tel: (01256) 479309 Fax: (01256) 844469
Italy	Vendo Italy S.p.A. Casella Postale 9 1-15033 Casale Monferrato Italy	Tel: (142) 76391 Fax: (142) 562348
Spain	Vendo Iberia, S.A. C/C Sant Ferran No. 92 Poligono Industrial la Almeda E-08940 Cornellà (Barcelona), Spain	Tel: (03) 4741555 Fax: (03) 4741842



**PARTS, SALES, & SERVICE CENTERS OF VENDO/SANDEN COMPANY  
FOR LATIN AMERICA**

AREA	ADDRESS	PHONE NUMBERS
Mexico	Vendo de Mexico Camino Real de Toluca No. 154 Col. Bellavista 01140 Mexico D.F. Mexico	Tel: (525) 515-9745 Fax: (525) 277-0111
Central America	Midland Inter-American, Inc. 700 West 48th Street Kansas City, MO 64112 U.S.A.	Tel: (816) 561-5788 Fax: (816) 531-5544
Chile	Sidex San Juan 4519 - San Joaquin Santiago de Chile	Tel: (562) 553-1001 Fax: (562) 552-1982
Brazil	Cimaq Industria e Comercio de Maq, Ltda. Estrada Uniao e Industria, 9.120 Itaipava 25730-730 Petropolis Rio de Janeiro, Brazil	Tel: (55242) 22- 2666 Fax: (55242) 22- 3244
South America	The Vendo Company 7209 N. Ingram Ave. Fresno, CA 93650 U.S.A.	Tel: (209) 439-1770 Fax: (209) 439-2083