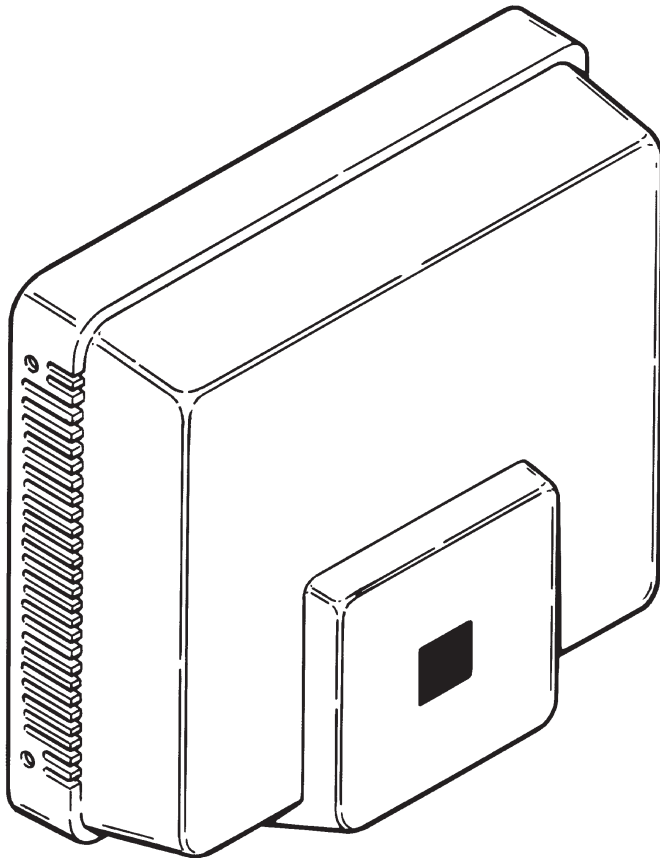




EHD I.I. — Rev. 2 (01/01)
Code No. 0816167

INSTALLATION INSTRUCTIONS AND MAINTENANCE GUIDE
OPTIMA™ SYSTEMS
SENSOR OPERATED SURFACE MOUNTED ELECTRONIC HAND DRYER



Model EHD 120

Sensor Operated Hand Dryer
120 VAC

Model EHD 208/240

Sensor Operated Hand Dryer
208 VAC or 240 VAC



Made in the U.S.A.

Installation of the Sloan OPTIMA Series Electronic Hand Dryer makes drying of hands totally "hands-free" providing the ultimate in sanitary protection and automatic operation. There are no buttons to push. The OPTIMA series electronic hand dryer uses fiber optic and adaptive sensing technology to sense the user's presence and activate. When the user's presence is no longer detected, the hand dryer automatically stops.

The OPTIMA series electronic hand dryer is designed for easy installation and maintenance, quiet and efficient operation, and years of dependable, trouble-free service.

The following instructions will serve as a guide when installing the OPTIMA Series electronic hand dryer. As always, good safety practices and care are recommended when installing your new hand dryer. If further assistance is required, contact your nearest Sloan Representative office.

LIMITED WARRANTY

Sloan Valve Company warrants its Electronic Hand Dryers to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of five years from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

PRIOR TO INSTALLATION

Prior to installing the Sloan OPTIMA Series Electronic Hand Dryer, determine the location where the dryer will be installed. Read the following paragraph entitled "Installation Precautions" and then refer to Table 1 and Figure 1 for recommended mounting heights.

Installation Precautions

- Mounting surface should be smooth and flat.
- Mount dryer at least 24 inches (610 mm) away from basins.
- Mount dryer at least 20 inches (508 mm) away from corners.
- Mount multiple hand dryers a minimum of 20 inches (508 mm) apart, center to center.
- Avoid installing hand dryers in narrow hallways and behind swinging doors.

Table 1 — Recommended Mounting Height

Users	Height
Men	50 Inches (1270 mm)
Women	48 Inches (1219 mm)
Children	44 Inches (1118 mm)
Handicapped	42 Inches (1067 mm)

Prepare wall to receive mounting fasteners as shown in Figure 1. Refer to Table 2 for recommended fasteners.

Note: A mounting template is provided to locate fastener positions.

Table 2 — Recommended Fasteners

Wall Type	Fastener Type	Qty.
Wall board, metal, hollow tile	1/4" Toggle Bolts	3
Stud wall, wood	#14 Screws	3 †
Cement, brick, tile	#12-14 Anchors	3 †

† Installation hardware provided by Sloan.

Drill a 7/8" (22 mm) minimum diameter hole in wall for electrical connection. Install electrical line in the location shown in Figure 1.

Table 3 — Electrical Requirements

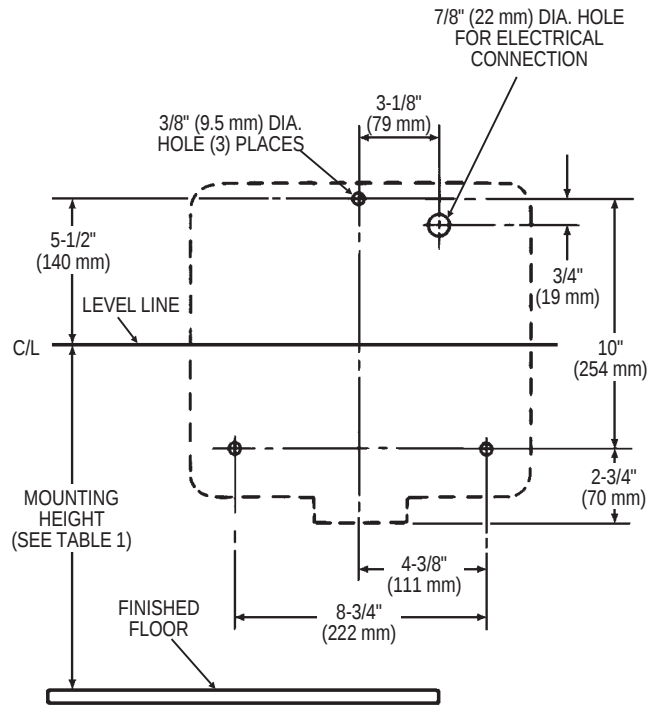
Model	Voltage	Amps	Hz	Watts
EHD 120	120 VAC	20	50/60	2400
EHD 208/240 ‡	208 VAC	9	50/60	1870
EHD 208/240 ‡	240 VAC	10	50/60	2400

‡ Type EHD 208/240 can operate on either 208 VAC or 240 VAC per the requirements listed.

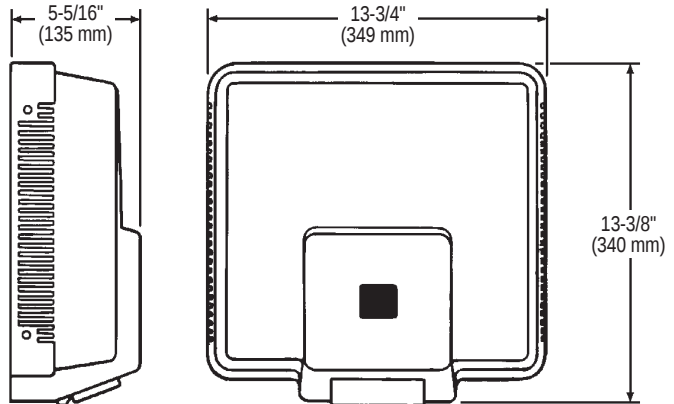
Note: Connect Hand Dryer to a separate 20 amp branch circuit from the nearest electrical distribution panel. Use No. 14 gauge or larger wire from electrical distribution panel to Dryer.

Important: ALL ELECTRICAL WIRING SHOULD BE INSTALLED IN ACCORDANCE WITH NATIONAL/LOCAL CODES AND REGULATIONS.

ROUGH-IN — Figure 1



USE MOUNTING TEMPLATE PROVIDED



INSTALLATION

Step 1 — Mount Chassis to Wall (Figure 1)

String electrical wires through Chassis Assembly and secure Chassis Assembly to wall using the recommended Fasteners listed in Table 2.

Step 2 — Electrical Hook-Up (Figures 2, 3 and 4)

Be certain that power is disconnected at the main power source. Connect electrical wiring to the Hand Dryer as shown in the appropriate wiring diagram in Figure 2.

WIRING DIAGRAM — Figure 2

CAUTION

1. DISCONNECT POWER SOURCE BEFORE SERVICING.
2. POWER SOURCE SHOULD BE PROTECTED WITH FUSE OR CIRCUIT BREAKER.

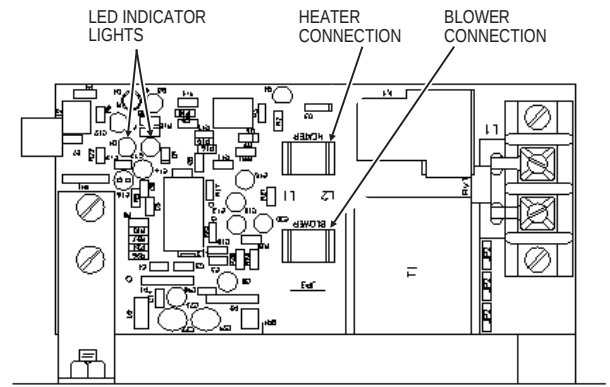
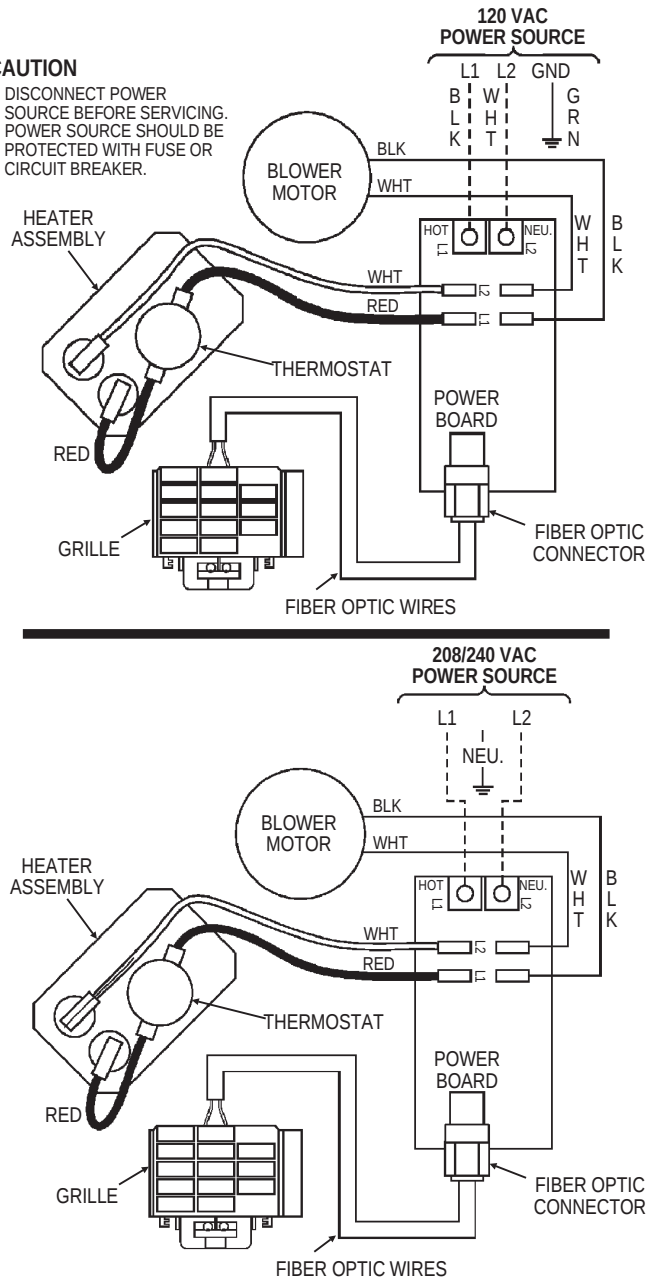


Figure 3

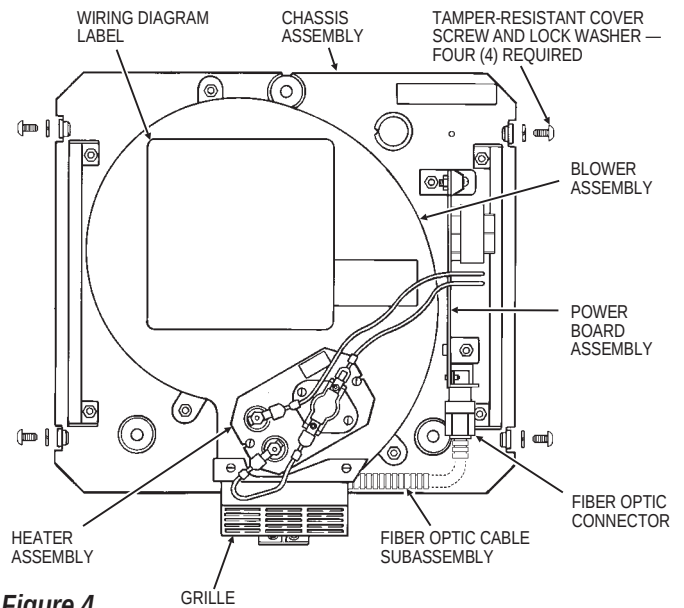


Figure 4

Step 3 — Test Self-Calibration and Operation

Turn on electrical power. The red LED should illuminate for approximately thirty (30) seconds. The green LED should then illuminate, indicating that the self-calibration procedure has completed and the Dryer is ready for use. Place hands in the sensor's detection zone (beneath the exhaust port of the Dryer). The Dryer should start and emit a powerful flow of warm air. Remove hands from beneath the Dryer. The Dryer should stop.

Step 4 — Install Cover Assembly

Install Cover over Chassis Assembly. Use a 5/32" hex wrench to secure using four (4) Tamper-Resistant Cover Screws and Lock Washers.

Note: Do not overtighten fasteners.

SELF-ADAPTIVE SENSING

When this Hand Dryer powers up, it automatically sets its sensing range depending on the environment in which it is installed. No mechanical range adjustment is required.

The OPTIMA Series electronic hand dryer is factory set to operate at a range of 4 to 11 inches (102 to 279 mm). This range should be satisfactory for most installations.

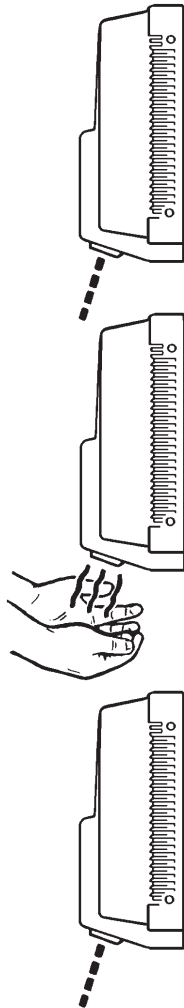
OPERATION

The Sloan Electronic Hand Dryer operates by means of an optical sensory device. The sensor automatically activates the unit when hands are placed in front of the sensor located at the exhaust port. A powerful flow of warm air will dry hands in approximately 30 seconds and will shut off automatically when hands are withdrawn, or after 60 seconds of continuous operation.

1. The OPTIMA/EHD functions by means of an electronic fiber optic photo-sensor located at the exhaust port beneath the Hand Dryer.

2. When hands are placed beneath the exhaust port, the fiber optic photo-sensor activates the Hand Dryer which emits a powerful flow of warm air to dry hands within 30 seconds.

3. When hands are withdrawn, the Hand Dryer shuts off automatically. It is then ready for the next user.



TROUBLESHOOTING GUIDE

FOR NEW EHD HAND DRYER MODELS MANUFACTURED SINCE JUNE 1999 (MODELS WITH FIBER OPTIC ADAPTIVE SENSOR)

Note: Each power board has two (2) LED's: a green power indicator and a red sensor indicator. Electrical power must be supplied to Hand Dryer for indicator lights to function.

If none of the solutions shown below works, the power board may need to be reset; disconnect then reconnect electrical power and retest.

- I. No air is supplied when hands are placed in Sensor's detection zone.**

Remove Cover and check LED indicator lights on the Power Board.

 - A. If green LED does NOT illuminate:
 1. Power is not being supplied to dryer; check all electrical connections and main power supply.
 2. Power Board has failed; replace Power Board.
 - B. If a green LED illuminates first and then red LED illuminates when hands are placed in the Sensor's beam:
 1. Blower Motor is not connected properly; check Blower Motor leads for secure connection.
 2. Power Board has failed; replace Power Board.
 3. Blower Motor has failed; replace Blower Motor.
 - C. If green LED illuminates first, but red LED does NOT illuminate when hands are placed in the Sensor's beam:
 1. Power Board or Power Board detection circuit has failed; replace Power Board.
 - D. If only the red LED illuminates (green LED does NOT illuminate when hands are removed from the Sensor's beam):
 1. Power Board or Power Board self-calibration circuit has failed; replace Power Board.
 2. OPTIMA Fiber Optic Cable has failed; replace Fiber Optic Cable.
- II. Only unheated air is supplied when hands are placed in the Sensor's beam.**
 - A. Heater is not properly connected; check Heater leads for secure connection.
 - B. Heater Assembly is defective; replace Heater Assembly.
- III. Air cycles intermittently on and off.**
 - A. OPTIMA Sensor blocked or out of position; clear obstruction and make sure that it is positioned properly in Exhaust Grille.
 - B. The Power Board's range feature is not functioning properly; replace Power Board.
- IV. Dryer runs continuously (will not stop).**
 - A. Disconnect OPTIMA Fiber Optic Cable from Fiber Optic Connector on the Power Board.
 1. If dryer continues to operate, the Power Board has failed; replace Power Board.
 2. If dryer stops operating, the OPTIMA Fiber Optic Cable has failed; replace Fiber Optic Cable.

TROUBLESHOOTING GUIDE (Continued)

FOR OLDER EHD HAND DRYER MODELS MANUFACTURED PRIOR TO JUNE 1999

I. No air is supplied when hands are placed in Sensor's detection zone.

Remove Cover and check LED indicator light on the Power Board.

A. If LED does not illuminate:

1. Power is not being supplied to dryer; check all electrical connections and main power supply.
2. Power Board has failed; replace with Sensor/Power Board Replacement Kit.

B. If green LED illuminates and then turns red when hands are placed in the Sensor's beam:

1. Blower Motor is not connected properly; check Blower Motor leads for secure connection.
2. Power Board has failed; replace with Sensor/Power Board Replacement Kit.
3. Blower Motor has failed; replace Blower Motor.

C. If green LED illuminates but does NOT turn red when hands are placed in the Sensor's beam:

1. OPTIMA Sensor blocked or out of position; clear obstruction and make sure that it is positioned properly in Exhaust Grille.
2. OPTIMA Sensor has failed; replace with Sensor/Power Board Replacement Kit.
3. Power Board has failed; replace with Sensor/Power Board Replacement Kit.

D. If red LED is illuminated but does not turn green when hands are removed from the Sensor's beam:

1. OPTIMA Sensor is locked on and unit has exceeded 60 second time out; reduce range.
2. OPTIMA Sensor blocked or out of position; clear obstruction and make sure that it is positioned properly in Exhaust Grille.
3. OPTIMA Sensor has failed; replace with Sensor/Power Board Replacement Kit.
4. Power Board has failed; replace with Sensor/Power Board Replacement Kit.

II. Only unheated air is supplied when hands are placed in the Sensor's beam.

A. Heater is not properly connected; check Heater leads for secure connection.

B. Heater Assembly is defective; replace Heater Assembly.

III. Air cycles intermittently on and off.

A. OPTIMA Sensor blocked or out of position; clear obstruction and make sure that it is positioned properly in Exhaust Grille.

B. Range may be too long; reduce range.

C. OPTIMA Sensor has failed; replace with Sensor/Power Board Replacement Kit.

IV. Unit is difficult to activate.

A. OPTIMA Sensor blocked or out of position; clear obstruction and make sure that it is positioned properly in Exhaust Grille.

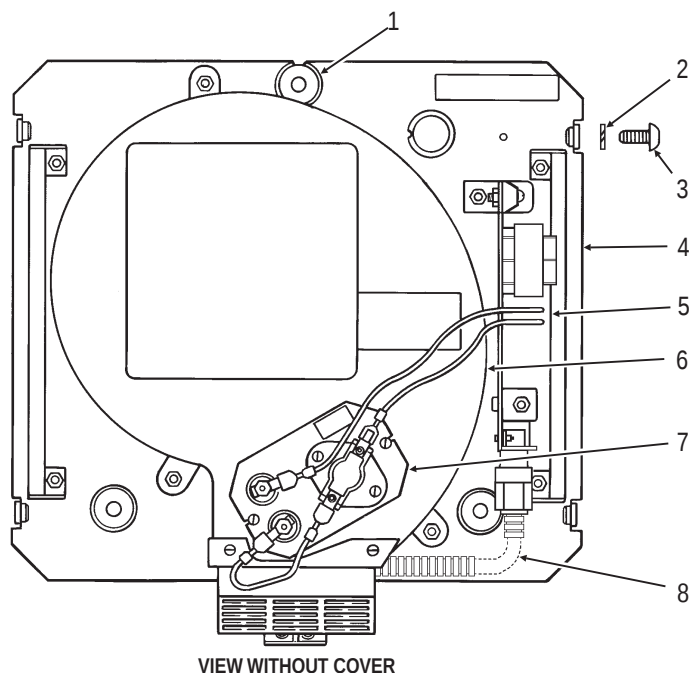
B. Range may be too short; increase range.

C. OPTIMA Sensor has failed; replace with Sensor/Power Board Replacement Kit.

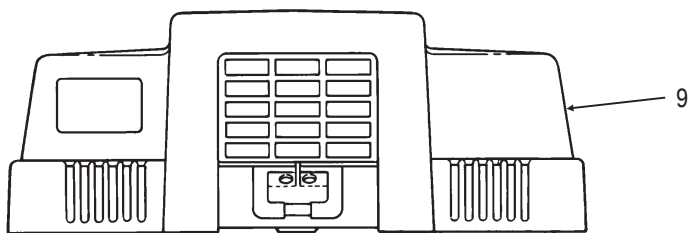
V. Dryer runs continuously (will not stop).

A. Disconnect OPTIMA Sensor from Power Board. If Dryer continues to operate, the Power Board has failed. If Dryer stops operating, OPTIMA Sensor has failed. In either case, replace with new Sensor/Power Board Replacement Kit.

If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at 1-888-SLOAN-14.



VIEW WITHOUT COVER



BOTTOM VIEW OF COVER

Parts List — EHD Hand Dryer

Item No.	Part No.	Code No.	Description
1	EHD-93	0305427	Mounting Hardware (Not Shown)
2	EHD-127	0305438	Lock Washer (4 Required)
3	EHD-17	0305437	Cover Screw (4 Required)
4	EHD-214-A	0305574	Chassis Assembly, 120 VAC
	EHD-215-A	0305540	Chassis Assembly, 208 VAC/240 VAC
5	EHD-182-A	0366002	Power Board Assembly, 120 VAC
	EHD-183-A	0366003	Power Board Assembly, 208 VAC/240 VAC
6	EHD-216-A	0305577	Blower Assembly, 120 VAC
	EHD-217-A	0305541	Blower Assembly, 208 VAC/240 VAC
7	EHD-11-A	0305401	Heater Assembly, 120 VAC
	EHD-14-A	0305543	Heater Assembly, 208 VAC/240 VAC
8	EHD-184-A	0366004	Exhaust Grille/Fiber Optic Cable Sub-Assembly
9	EHD-204-A1	0305709	Cover Assembly, White
	EHD-204-A2		Cover Assembly, Black
	EHD-204-A3	0305711	Cover Assembly, Almond
	EHD-204-A4	0305712	Cover Assembly, Gray

WHEN SERVICING OLDER SLOAN EHD HAND DRYERS

Sloan Valve Company is dedicated to providing sensor operated products that incorporate today's latest electronic technologies. To keep pace with these new technologies it is often necessary to make changes to our products. Current EHD Hand Dryer Power Boards and OPTIMA Fiber Optic Sensors will operate in older Sloan EHD Hand Dryers if the following conditions are met:

- Hand dryers built between September 1995 and June 1999 used Power Board Assemblies EHD-1004-A (120 VAC) and EHD-1005-A (208/240 VAC) and OPTIMA Sensor Assembly EHD-1003-A. These units can be identified by a Range Potentiometer located on the Power Board.
- Hand dryers built before September 1995 used Power Boards EHD-12-A (120 VAC) and EHD-65-A (208/240 VAC) and OPTIMA Sensor EHD-234-A (EHD-13-A if built before 1991). These units can be identified by a Range Potentiometer located on the OPTIMA Sensor (NOT on the Power Board).

IF EITHER THE POWER BOARD OR THE OPTIMA SENSOR HAS FAILED IN AN OLDER UNIT, **BOTH COMPONENTS** MUST BE REPLACED.

Note: Hand Dryers built before 1991 included a flashing indicator light visible through a window on the Hand Dryer Cover. Replacement Covers no longer furnish the indicator light; therefore, disconnect and remove the light if replacing the Cover or OPTIMA Sensor.

Table 4 — Power Board and Sensor Replacement Kits †

Production Dates	Voltage	Power Board Part No. (Obsolete)	Sensor Part No. (Obsolete)	Sensor/Power Board Replacement Kit Part No. (Code No.) ‡
1986 - 1991	120 VAC	EHD-12-A	EHD-13-A	EHD-1006-A (3366007)
	208/240 VAC	EHD-65-A	EHD-13-A	EHD-1007-A (3366008)
1991 - 1995	120 VAC	EHD-12-A	EHD-234-A	EHD-1006-A (3366007)
	208/240 VAC	EHD-65-A	EHD-234-A	EHD-1007-A (3366008)
1995 - 1999	120 VAC	EHD-1004-A	EHD-1003-A	EHD-1006-A (3366007)
	208/240 VAC	EHD-1005-A	EHD-1003-A	EHD-1007-A (3366008)

† Power Boards and Sensors are no longer available for EHD Hand Dryers manufactured prior to June 1999. When servicing this older product, both the Power Board and Sensor must be replaced using the Sensor/Power Board Replacement Kits listed in Table 4 above.

‡ The Sensor/Power Board Replacement Kits include Sloan's latest technology Power Board Assembly (Item No. 5), Exhaust Grille/Fiber Optic Cable Sub-Assembly (Item No. 8), Wiring and Installation Instructions.

NOTICE: The information contained in this document is subject to change without notice.

SLOAN

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