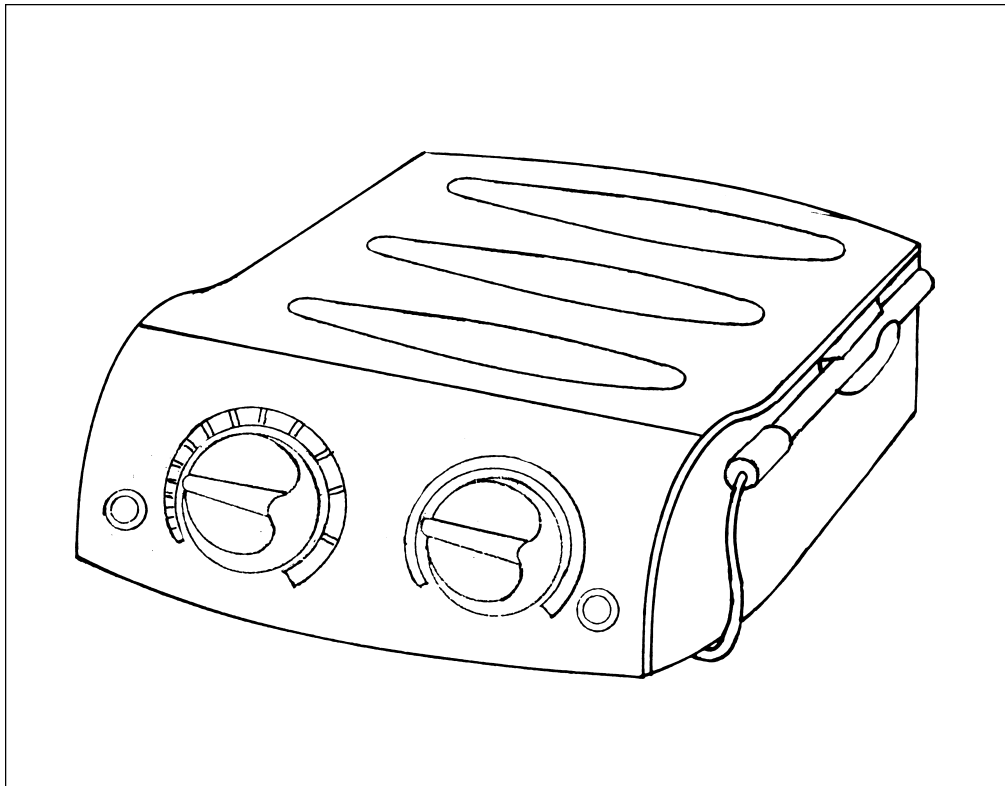


Cavitron® Products

SPS™ Ultrasonic Scaler with Steri-Mate® Handpiece
Directions For Use

Détartreur ultrasonique SPS™ avec pièce à main Steri-Mate®
Mode d'emploi

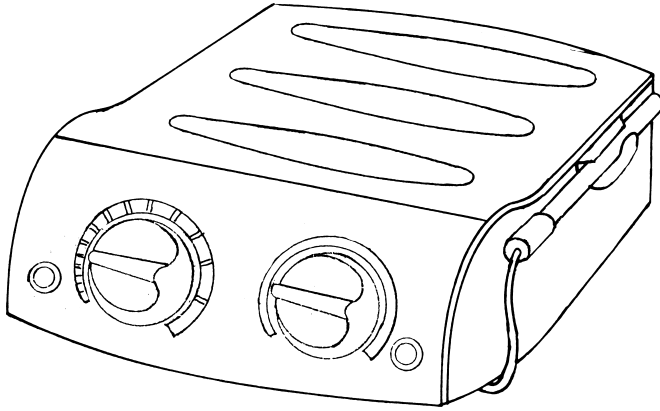
Escarificador ultrasónico SPS™ con pieza de mano Steri-Mate®
Instrucciones para el uso



Please read carefully and completely before operating unit.

Veillez lire soigneusement et complètement avant d'utiliser le système.

Por favor lea la totalidad de las instrucciones cuidadosamente antes de hacer funcionar la unidad.



Cavitron® SPS™
Ultrasonic Scaler with
Steri-Mate® Handpiece

Directions For Use

Please read carefully and completely before operating unit.

Introduction

Cavitron® SPS™ Ultrasonic Scaler with Steri-Mate® Handpiece

DENTSPLY® Preventive Care is an ISO9001 and EN46000 certified company. The Cavitron® SPS™ Scaler System is classified by Underwriters Laboratories Inc. with respect to electric shock, fire, mechanical hazards only in accordance UL 2601-1 1 and Can/CSA C22.2 NO. 601.1, assigned control # 13VA.

The System operates by converting ordinary AC house current into high frequency current. The ultrasonic system consists of two parts: an insert, and the SPS™ electronic system. The SPS™ system incorporates two closed loops. One loop provides automatic tuning (operating frequency is adjusted to be at resonance for each insert), the second loop automatically controls the tip stroke over different working conditions. The Cavitron® SPS™ scaler produces 30,000 microscopically small strokes per second at the insert's working tip. This combined with acoustic effects of the coolant water, produces a synergistic action that literally "powers away" the heaviest calculus deposits while providing exceptional operator and patient comfort.

Technical Support

For technical support and repair assistance in the U.S., call 1-800-347-7412 Monday through Friday, 8:00 AM to 5:00 PM (Eastern Time). For other areas, contact your local DENTSPLY® representative.

Supplies & Replacement Parts

To order supplies or replacement parts in the U.S., contact your local DENTSPLY® Preventive Care Distributor or call 1-800-989-8826 or 717-767-8502 Monday through Friday, 8:00 AM to 5:00 PM (Eastern Time). For other areas, contact your local DENTSPLY® representative.

Caution: Federal law restricts this device to sale by or on the order of a Dentist.

Table of Contents

Section Number	Section Title Description of Contents	Page Number
1	Indications	3
2	Contraindications and Warnings	3
	2.1 Contraindications	
	2.2 Warnings	
3	Precautions	3
	3.1 Precautions for All Systems	
	3.2 Precautions for Ultrasonic Prophylaxis Procedures	
4	Infection Control	4
	4.1 Infection Control Information Reference Card	
	4.2 General Infection Control Recommendations	
	4.3 Water Supply Recommendations	
5	Installation Instructions	4-5
	5.1 General Information	
	5.2 Water Line Requirements	
	5.3 Electrical Requirements	
	5.4 Unpacking the System	
	5.5 Power Cord/Power Connection	
	5.6 Foot Control Cable Assembly Connection	
	5.7 Water Supply Line Connection	
6	SPS Ultrasonic Scaler Description	6-7
	6.1 System Controls	
	6.2 Handpiece	
	6.3 Cavitron® 30K™ Ultrasonic Inserts	
	6.4 Foot Control Information & Operation	
7	Accessories	8
8	Techniques for Use	8
	8.1 Patient Positioning	
	8.2 Performing Ultrasonic Scaling Procedures	
	8.3 Patient Comfort Considerations	
9	System Care	9
	9.1 Daily Maintenance — Start-Up Procedures, Between Patients, Shut-Down Procedures	
	9.2 Weekly Maintenance	
10	Troubleshooting	9-10
	10.1 Troubleshooting Guide	
	10.2 Technical Support and Repairs	
11	Specifications	10

Section 1: Indications

Ultrasonic procedures:

- All general supra and subgingival scaling applications.
- Periodontal debridement for all types of periodontal diseases.
- For patients with a history of sensitivity to ultrasonics.
- Endodontic procedures.

Section 2: Contraindications and Warnings



2.1 Contraindications

- Ultrasonic Systems should not be used for restorative dental procedures involving the condensation of amalgam.
- For optimum performance use only inserts manufactured by DENTSPLY® Preventive Care.

2.2 Warnings

- Persons fitted with cardiac pacemakers have been cautioned that some types of electronic equipment might interfere with the operation of a pacemaker. Although no instance of pacemaker interference has ever been reported to DENTSPLY®, we recommend that the handpiece and cables be kept at least 6 to 9 inches (15 to 23 cm) away from any pacemaker and pacemaker leads during use.

Section 3: Precautions

3.1 Precautions for All Systems

- Do not place the System on or next to a radiator or other heat source. Excessive heat may damage the System's electronics. Place the System where air is free to circulate on all sides and beneath it.
- The System is portable, but must be handled with care when moving.
- Equipment flushing and dental water supply system maintenance are strongly recommended. See Water Supply under Section 9: System Care.
- Close the coolant water shut-off valve to the System every night before leaving the office. The use of an in-line water filter is recommended.

3.2 Precautions for Ultrasonic Prophylaxis Procedures

- Like a toothbrush, ultrasonic inserts “wear out” with use. Inserts with just 2 mm of wear lose about 50% of their scaling efficiency. In general, it is recommended that ultrasonic inserts be discarded and replaced after 2 mm of wear to maintain optimal efficiency and avoid breakage.
- If excessive wear is noted, or the insert has been bent, reshaped or otherwise damaged, discard the insert immediately.
- Ultrasonic insert tips that have been bent, damaged, or reshaped are susceptible to in-use breakage and should be discarded and replaced immediately.
- Retract the lips, cheeks and tongue to prevent contact with the insert tip whenever it is placed in the patient's mouth.

Section 4: Infection Control

4.1 Infection Control Information Reference Card

For your convenience, an Infection Control Information reference card has been included with your Cavitron® SPS™ System. Additional cards can be obtained by calling Customer Service at 1-800-989-8826 Monday through Friday, 8:00 AM to 5:00 PM (Eastern Time). For other areas, contact your local DENTSPLY® representative.

- As with high speed handpieces, and other dental devices, the combination of water and ultrasonic vibration from your Cavitron® SPS™ System will create aerosols. With proper technique, much of the Cavitron® SPS™ System's aerosol dispersion can be effectively controlled and minimized. Please carefully follow the procedural guide lines in this manual regarding the use of your System.

4.2 General Infection Control Recommendations

- As with all dental procedures, use standard personal protection equipment (i.e., wear face mask, eyewear, or face shield, gloves and protective gown).
- For maximal operator and patient safety, carefully follow the Infection Control Information procedures detailed on the reference card accompanying your System.

4.3 Water Supply Recommendations

It is highly recommended that all dental water supply systems conform to applicable CDC (Centers for Disease Control and Prevention) and ADA (American Dental Association) standards, and that all recommendations be followed in terms of flushing, chemical flushing, and general infection control procedures. See sections 4.2 and 9.

Section 5: Installation Instructions

5.1 General Information

If the installation of your Cavitron® SPS™ System is performed by someone other than trained DENTSPLY® Distributor personnel, care should be taken to observe the following requirements and recommendations.

5.2 Water Line Requirements

- The System's water supply line is factory installed. Do not disconnect from the System.
- Incoming water supply line pressure to the System must be 25 psi (172 kPa minimum) to 60 psi (414 kPa maximum). If your dental water system's supply line pressure is above 60 psi, install a water pressure regulator on the water supply line to your Cavitron® SPS™ System.
- A manual shut-off valve on the dental water system supply line should be used so that the water can be completely shut-off when the office is unoccupied.
- A filter in the dental water system supply line is recommended so that any particles in the water supply will be trapped before reaching the System.
- After the above installations are completed on the dental water supply system, the dental office water line should be thoroughly flushed prior to connection to the System.

5.3 Electrical Requirements

Refer to Section 11: Specifications.

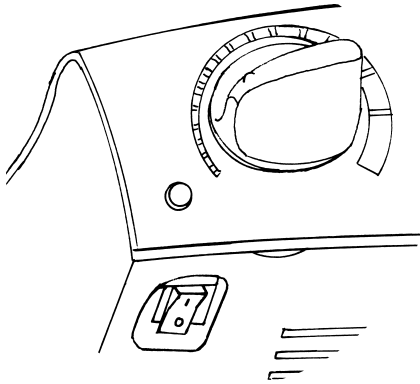
5.4 Unpacking the System

Carefully unpack your Cavitron® SPS™ System and verify that all components and accessories are included:

1. Cavitron® SPS™ System with water supply line and handpiece cable connector assembly factory installed.
2. Detachable AC Power Cord set.
3. Steri-Mate® Detachable Sterilizable Handpiece.
4. Dual position Foot Control Assembly.
5. Cavitron® Ultrasonic Inserts (quantity optional).
6. Efficiency Indicator for Cavitron Inserts.
7. Literature Packet.

5.5 Power Cord/Power Connection

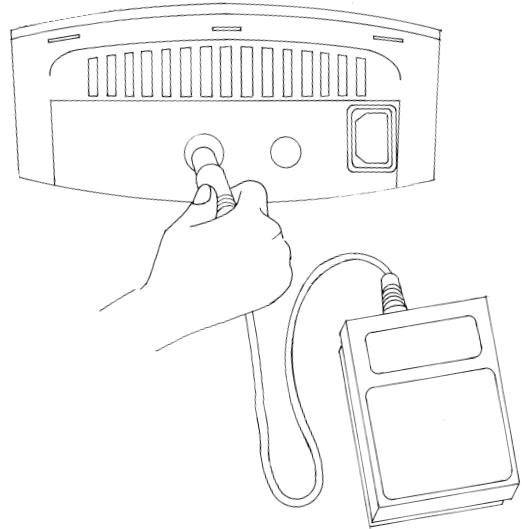
- Verify the Power Control ON/OFF switch located at the left front underside of the System is set to the OFF position before proceeding.
- Plug the detachable AC cord into the back of the System.
- Plug the 3 prong grounded plug into an approved outlet.



Left underside of System.

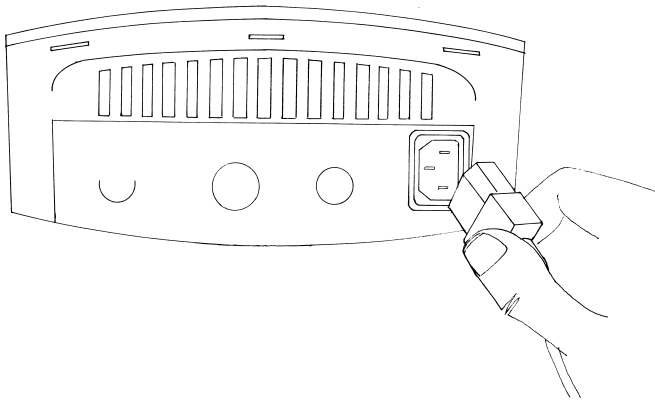
5.6 Foot Control Cable Assembly Connection

Align the Foot Control plug with the receptacle on the back of the System and push it in until firmly seated.



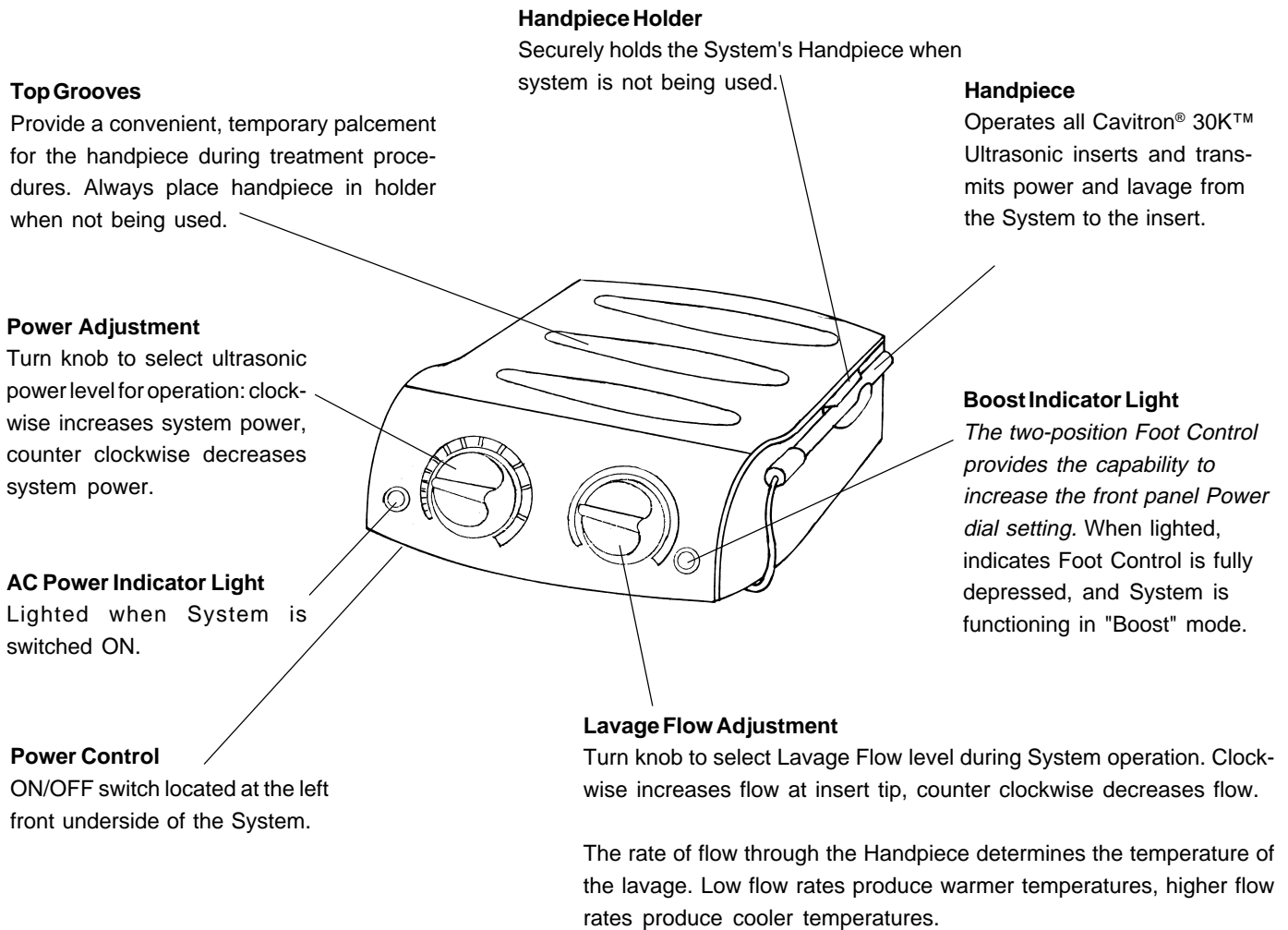
5.7 Water Supply Line Connection

- Connect the free end of the system's water supply line to the office water supply line or a Cavitron® DualSelect™ Dispensing System.
- Inspect all connections to make certain there are no leaks.



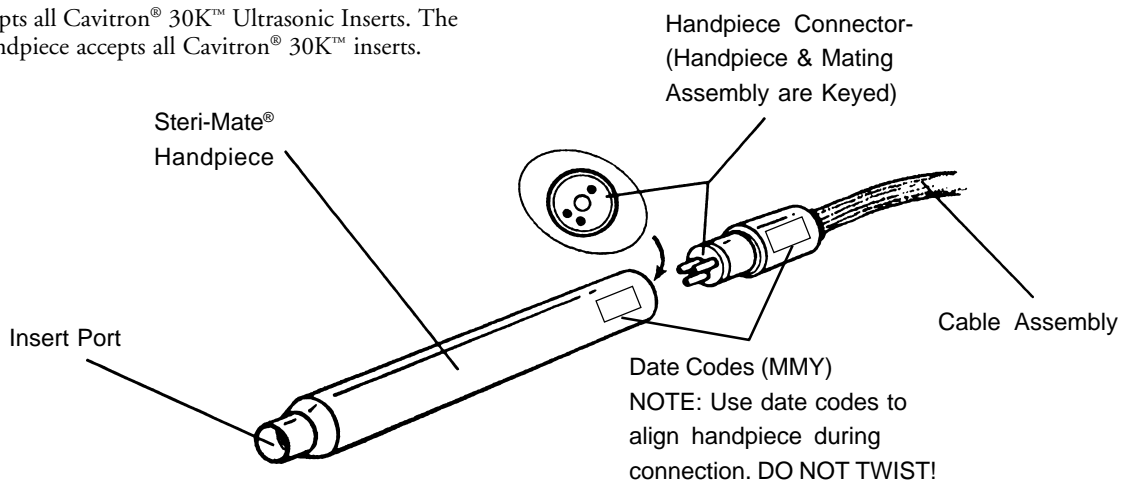
Section 6: SPS™ Ultrasonic Scaler Description

6.1 System Controls



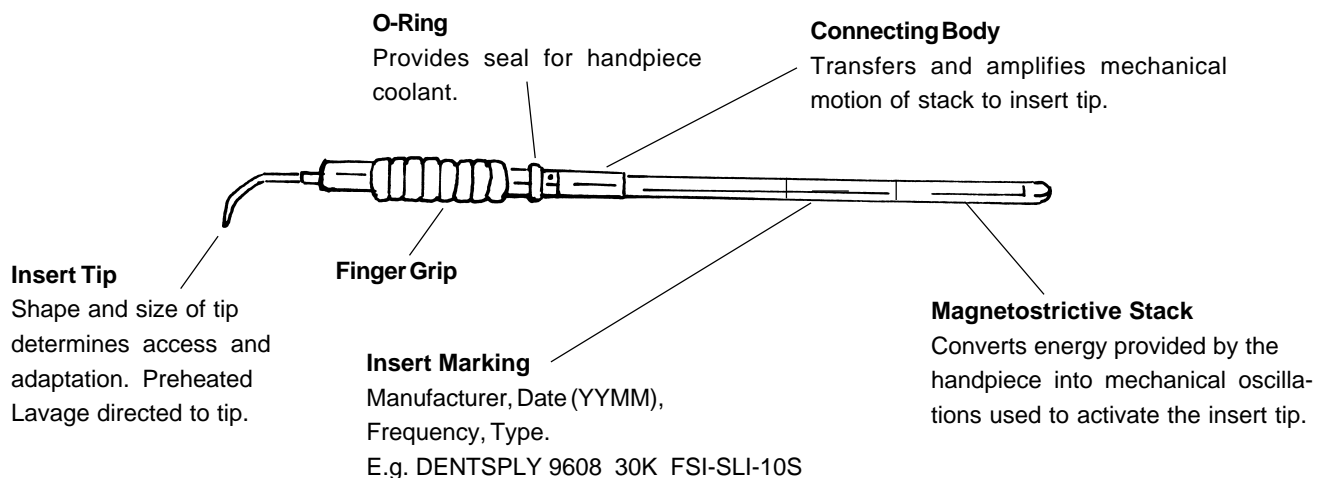
6.2 Handpiece

The handpiece accepts all Cavitron® 30K™ Ultrasonic Inserts. The open end of the handpiece accepts all Cavitron® 30K™ inserts.



6.3 Cavitron® 30K™ Ultrasonic Inserts

The many styles of Cavitron® 30K™ Ultrasonic Inserts are easily interchangeable for various procedures and applications. See enclosed booklet for specific information.

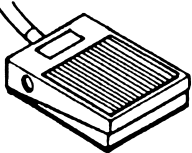
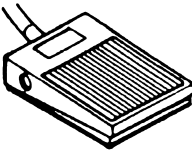
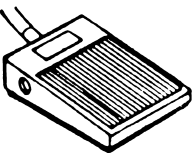

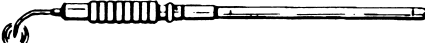
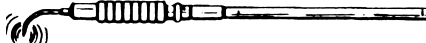


Hold the handpiece in an upright position. Activate the insert to bleed any air bubbles that might be trapped inside the handpiece. Lubricate the rubber O-ring on the insert with water before placing it into the handpiece. Fully seat insert with a gentle push-twist motion. **DO NOT FORCE.**

6.4 Foot Control Information & Operation

The Foot Control is a two-position momentary switch, which activates both ultrasonic energy and Lavage Flow at the insert tip.



<p>Foot Control released...</p> 	<p>Foot Control depressed half way... (1st position)</p> 	<p>Foot Control fully depressed... (2nd position)</p> 
<p>Both ultrasonic activation and irrigating flow stop.</p> 	<p>The ultrasonic insert tip is activated and irrigating water flows.</p> 	<p>This activates the "Boost" mode.</p> 

Section 7: Accessories

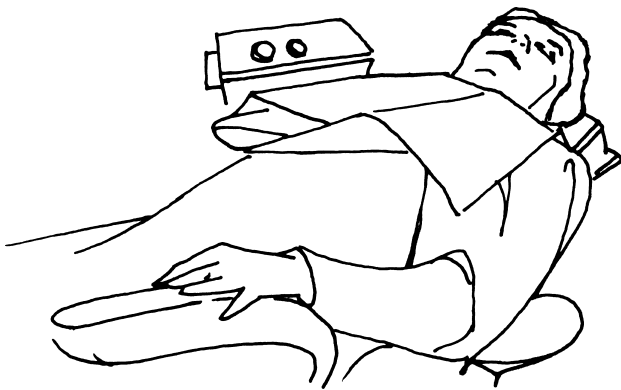
1. Steri-Mate® Detachable Sterilizable Handpiece
2. AC Power Cord Set
3. Cavitron® Ultrasonic Inserts
4. Dual position Foot Control Assembly
5. DualSelect™ Dispensing System

*For detailed information, contact your local DENTSPLY® Representative or authorized DENTSPLY® Distributor.

Section 8: Techniques for Use

8.1 Patient Positioning

- For optimal access to both the upper and lower arches, the backrest of the chair should be adjusted as for other dental procedures. This assures patient comfort and clinician visibility.



- Have the patient turn their head to the right or left. Also position their chin up or down depending upon the quadrant and surface being treated. Evacuate irrigant using either a saliva ejector or High Volume Evacuator (HVE).

8.2 Performing Ultrasonic Scaling Procedures

- NOTE: Refer to the Infection Control Information card supplied with your System for general procedures to be followed at the beginning of each day and between patients.
- The edges of Cavitron® Ultrasonic Inserts are intentionally rounded so there is little danger of tissue laceration with proper ultrasonic scaling technique. Whenever the insert tip is placed in the patient's mouth, the lips, cheek and tongue should be retracted to prevent accidental prolonged contact with the activated tip.

- Hold the empty Handpiece in an upright position. Activate the Foot Control until fluid exits.
- Lubricate the rubber O-ring on the insert with water before placing it into the handpiece. Fully seat insert with a gentle push-twist motion. DO NOT FORCE.
- Activate the System. Hold the handpiece over a sink or drain. Check spray temperature to verify fluid is reaching the working end of the insert tip. Adjust the Lavage Control knob to ensure adequate flow for the selected Power setting. Greater flow settings provide cooler irrigant.
- It may be necessary to adjust lavage with the System in "Boost" mode (Foot Control fully depressed) so adequate fluid will be available to cool tip tooth interface.
- In general, it is suggested that a "feather-light-touch" be used both supra- and subgingivally. The motion of the activated tip and acoustic effects of the irrigating fluid, in most cases, is adequate to remove even the most tenacious calculus.
- Periodically check the Cavitron® ultrasonic insert for wear with the DENTSPLY® Insert Efficiency Indicator.
- The use of a saliva ejector or High Volume Evacuator (HVE) is recommended during all procedures.
- Set the System's Power Adjustment knob to the lowest power setting for the application and the selected insert.

8.3 Patient Comfort Considerations

Reasons for sensitivity

- Incorrect tip placement. Point should be directed away from root surfaces.
- Not keeping tip in motion on tooth. Do not allow the insert to remain in a static position on any one area of the tooth. Change the insert's path of motion.
- Applying pressure. Use extremely light grasp and pressure, especially on exposed cementum.
- If sensitivity persists, decrease power setting and/or move from the sensitive tooth to another and then return.

Section 9: System Care

9.1 Daily Maintenance

Start-Up Procedures at the beginning of the day:

1. Open the manual shut-off valve on the dental office water supply system.
2. Turn the System ON using the Power ON/OFF switch. (see illustration on page 5) Verify the Power Indicator Light is lighted.
3. Set the Power Adjustment knob at the top of the blue scale.
4. Set the Lavage Control knob to maximum.
5. Hold the Handpiece (without an insert installed) upright over a sink or drain. Activate the Foot Control and flush the water line for at least 2 minutes.
6. Place a sterilized insert into the Handpiece and set the Lavage Control knob to your preferred operating position.

Between Patients:

1. Remove all ultrasonic inserts and handpiece used, clean and sterilize.
2. Clean and disinfect the surfaces of the cabinet, Power Cord, Handpiece Connector and cable assembly, Foot Control and cable assembly by applying an approved non-immersion type disinfectant solution* carefully following the instructions provided by the disinfectant solution manufacturer. To clean system, generously spray disinfectant solution on a clean towel and wipe all surfaces. Discard used towel. To disinfect system, generously spray disinfectant on a clean towel and wipe all surfaces. Allow disinfectant solution to air dry.
3. Connect a freshly sterilized handpiece to its matching cable connector. Hold the handpiece over a sink or drain and flush the water line of the unit as above at maximum water flow for 30 seconds.
4. Place a freshly sterilized insert into the handpiece.

Shut-Down Procedures at the end of the day:

1. Remove all ultrasonic inserts and handpiece used, clean and sterilize.
2. Turn the System OFF.
3. Clean and disinfect the surfaces of the cabinet, Power Cord, Handpiece Connector and cable assembly, Foot Control and cable assembly by applying an approved non-immersion type disinfectant solution* carefully following the instructions provided by the disinfectant solution manufacturer. To clean system, generously spray disinfectant solution on a clean towel and wipe all surfaces. Discard used towel. To disinfect system, generously spray disinfectant on a clean towel and wipe all surfaces. Allow disinfectant solution to air dry.
4. Close the manual shut-off valve on the dental water supply system.

*NOTE: Water-based disinfection solutions are preferred. Some alcohol-based disinfectant solutions may be harmful and may discolor plastic materials.

9.2 Weekly Maintenance

End of Week Procedures (when connected to a DualSelect™ Dispensing System).

Follow the end of week procedures listed in the DualSelect™ manual.

Section 10: Troubleshooting

Although service and repair of the Cavitron® SPS™ Ultrasonic Scaler should be performed by DENTSPLY® personnel, the following are some basic trouble shooting procedures that will help avoid unnecessary service calls. Generally, check all lines and connections to and from the System, a loose plug or connection will often create problems. Check the settings on the System's knobs.

10.1 Troubleshooting Guide

System will not operate:

(Power Indicator Light is not lighted.)

1. Check that the Power switch is in the ON position, and that the detachable Power Cord is fully seated in the receptacle on back of System.
2. Check that the System's three-prong plug is fully seated in an appropriate AC receptacle, and that AC current is present.

(Power Indicator Light is lighted.)

1. Check that the Foot Control Connector is fully seated in the Foot Control Receptacle on the back of the System.

System operates:

(No lavage flow at insert tip.)

1. Assure that Lavage control is properly adjusted.
2. Check that irrigant supply control valve/s (dental office water supply) are open.
3. If connected to DualSelect™ Dispensing System, check that fluid level in the selected bottle is sufficient. Make sure valves are open when using external water source.

Section 10: Troubleshooting cont'd

10.2 Technical Support and Repairs

For technical support and assistance call 1-800-347-7412 Monday through Friday, 8:00 AM to 5:00 PM (Eastern Time). For other areas, contact your local DENTSPLY® representative.

Section 11: Specifications

Cavitron® SPS: 100/115 VAC Systems

Electrical Voltage	100V Gen 119J 115V Gen 119
Current	.9/.8 amps @ 100V/115V
Frequency	50/60 Hertz
Water Pressure	25 - 60 psig
Flow Rate	Minimum setting (CCW) 0-15 ml/min Maximum setting (CW) >55 ml/min
Weight	12 lb.
Dimensions	Height: 4 in. Width: 7 3/8 in. Depth: 9 1/2 in. Handpiece Cable: 81 in. Foot Control Cable: 96 in. Power Cord: 84 in. Water Supply Line: 96 in. Air Supply Line: 98 in.

 SYSTEM ON/OFF

 TYPE B EQUIPMENT

 FOOTSWITCH

Cavitron® SPS: 200/230 VAC Systems

Electrical Voltage	200V Gen 119D 230V Gen 119U
Current	.5/.4 amps @ 200V/230V
Frequency	50/60 Hertz
Water Pressure	172 - 414 kPa
Flow Rate	Minimum setting (CCW) 0-15 ml/min Maximum setting (CW) >55 ml/min
Weight	5,4 kg
Dimensions	Height: 10,2 cm Width: 18,7 cm Depth: 24,1 cm Handpiece Cable: 2,0 m Foot Control Cable: 2,4 m Power Cord: 2,1 m Water Supply Line: 2,4 m Air Supply Line: 2,5 m

Footswitch Not for operating theatres
Protection Class 1PXO

Operating Environment

Temperature: 15 to 40 Deg. Celsius
Relative Humidity: 30% to 75% (non-condensing)

Transport and Storage Conditions

Temperature: 0 to 70 Deg. Celsius
Relative Humidity: 10% to 95% (non-condensing)
Atmospheric Pressure: 500 to 1060 hPa

Worldwide Service Centers
Centres de service après-vente mondiaux
Centros de servicio mundiales

U. S. A.

DENTSPLY® Preventive Care
Technical Service and Repair Department
1301 Smile Way
York, PA 17404
Phone: (800) 347-7412

Deutschland

DENTSPLY® DeTrey GmbH
De-Trey-Strasse 1
D-78467 Konstanz
Germany
Phone: 7531 583 0

France

DENTSPLY® DeTrey
17 Michael FARADAY
78380 Montigny Le Bretonneux
France
Phone: (1) 30 14 77 77

Australia

DENTSPLY® (Australia) Pty. Ltd.
204-206 Gipps Street
Abbotsford, Victoria 3067
Australia
Phone: (3) 9417 1666
(3) 9417 1777

United Kingdom

DENTSPLY® Ltd.
Hamm Moor Lane
Addlestone, Weybridge
Surrey KT15 2SE
England
Phone: (0) 1932 853422

Italia

DENTSPLY® DeTrey Italia S.r.l.
Via A. Cavaglieri, 26
I-00173 Roma
Italia
Phone: (06) 723 3626

Canada

DENTSPLY® Canada
161 Vinyl Court
Woodbridge, Ontario
L4L 4A3 Canada
Phone: (905) 851-6060

Swiss Representative

DENTSPLY DeTrey GmbH, Konstanz
Zweigniederlassung Baar
Oberdorfstrasse 11
CH-6342 Baar

Printed in U.S.A. Form #80617 Rev. C 1/99

DENTSPLY
PREVENTIVE CARE

Manufactured by
DENTSPLY Preventive Care
DENTSPLY® International
1301 Smile Way
York, PA 17404

CE
0086

Authorized EU Representative
DENTSPLY® DeTrey GmbH
D-78467 Konstanz, Germany

Disbributed By
DENTSPLY® Canada
Woodbridge, Ontario
L4L 4A3