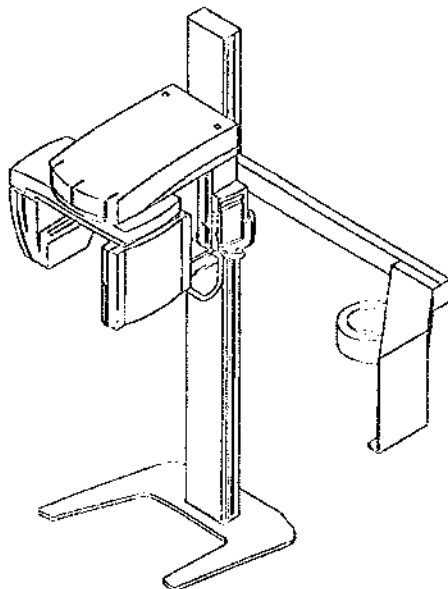

DENTSPLY
GENDEX

ORTHORALIX™ 9000
HIGH FREQUENCY
Panoramic x-ray system

user and
installation/maintenance
manual



**THIS MANUAL MUST BE RETAINED
AT INSTALLATION SITE.**

CE
0086

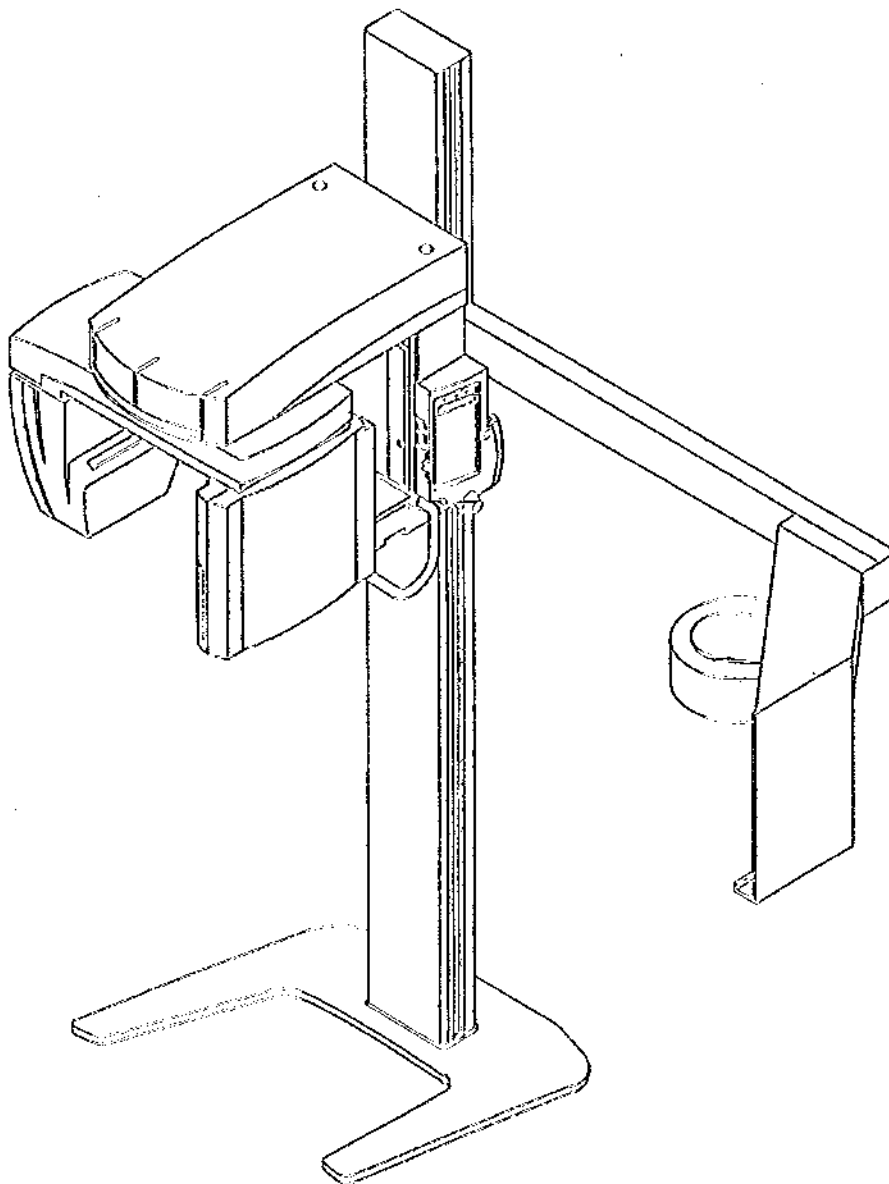
Contents

1.	Preinstallation	1-1
2.	Certified Component	1-2
3.	Site Requirements	1-4
4.	Installation	2-1
5.	Electrical System Checks	3-1
6.	System Alignment	4-1
7.	Error Codes	5-1
8.	Parts	6-1
9.	Circuit Board Diagrams, Schematics	7-1

**SECTION 1
PREINSTALLATION**

Catalog No. A9000
ORTHORALIX 9000 Panoramic System

Catalog No. A9012
ORTHORALIX 9000 Panoramic/Ceph System



Introduction

IMPORTANTI . . . X-RAY PROTECTION

X-ray equipment may cause injury if used improperly. The instructions contained in this manual must be read and followed when installing and operating the ORTHORALIX 9000. DENTSPLY/GENDEX dealers will be glad to assist you in placing the ORTHORALIX 9000 in operation.

The ORTHORALIX 9000 provides a high degree of protection from unnecessary X-radiation. However, no practical design can provide complete protection, nor prevent operators from exposing themselves or others to unnecessary radiation.

It is important that you become fully acquainted with applicable government radiation protection regulations. Many provisions of these regulations are based on the recommendations of the National Council on Radiation Protection and Measurements. Recommendations for dental X-ray protection are published in NCRP Report Number 35 available from NCRP Publications, 7910 Woodmont Ave., Suite 800, Bethesda, MD 20814.

Personal radiation monitoring and protective devices are available. You are urged to use them to protect against unnecessary X-radiation exposure.

Copyright

© 1997 by DENTSPLY/GENDEX X-Ray Division

Documentation, ORTHORALIX™ 9000, and the software are copyrighted with all rights reserved. Under the copyright laws the documentation may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine readable form in whole or part, without the prior written permission of DENTSPLY/GENDEX X-Ray Division.

GENDEX™ and ORTHORALIX™ are registered trademarks by Dentsply International Inc.

Kodak, Lanox and T-MAT are registered trademarks of Eastman Kodak company.

The original language of this manual is English.

CERTIFIED COMPONENT COMPATIBILITY

The ORTHORALIX 9000 Panoramic X-ray System consists of the following certified compatible components, manufactured by DENTSPLY/GENDEX:

Component	Model Number
Overhead/Control	110-0147G1
Column	110-0144G1
Collimator	4519-124-21312
Cephalometric Arm	110-0152G1
Free Standing Base	112-0892G1

CERTIFICATION

The certified components of the system comply with U.S. Radiation Performance Standards 21 CFR, Subchapter J, at time of manufacture.

The CE symbol ensures that the product herein specified, and manufactured from the year 1997 onwards, meets the provisions of the European Council Directive 89/336/EEC relating to electromagnetic compatibility, and European Council Directive 93/42/EEC concerning medical devices.

ENVIRONMENTAL LIMITATIONS

Cooling and duty rating specifications apply at altitudes up to 12,000 feet (3657 meters), average relative humidity not exceeding 95 percent, and maximum ambient temperature not exceeding 80°F - (26.6°C). Operational humidity 93 percent non-condensing @ 25°C, temperature 10-40°C.

APPROXIMATE SHIPPING SIZES AND WEIGHTS**ORTHORALIX 9000 Components**

	Length		Width		Height		Volume			Weight	
	In.	cm.	In.	cm.	In.	cm.	Cu. Ft.	C.M.	Lbs.	Kg.	
Overhead	55	140	27	69	40	102	34	0.99	359	163	
Column	91	231	20	51	16	41	17	0.48	465	211	
Ceph. Kit	43	109	30	76	21	53	16	0.44	57	26	
ES Base	45	144	38	97	6	15	6	0.21	178	81	
Totals									1059	481	

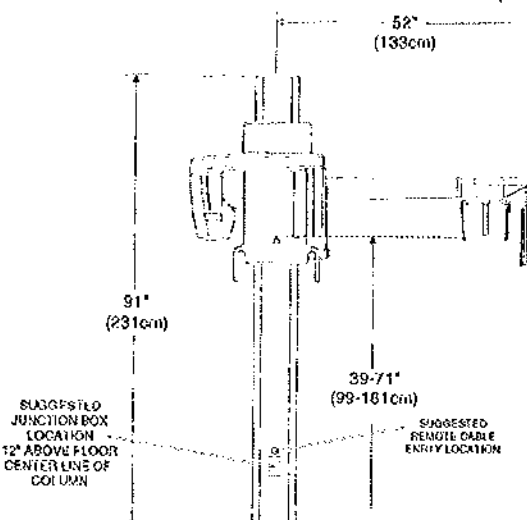
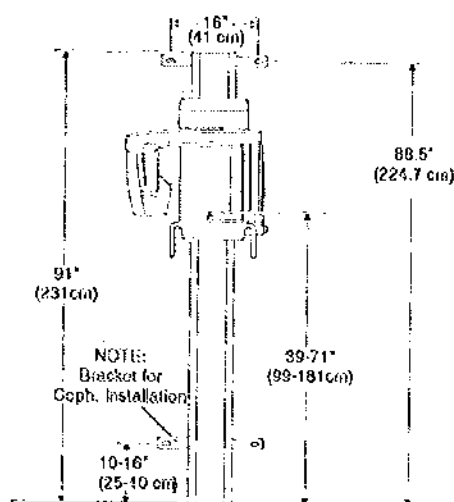
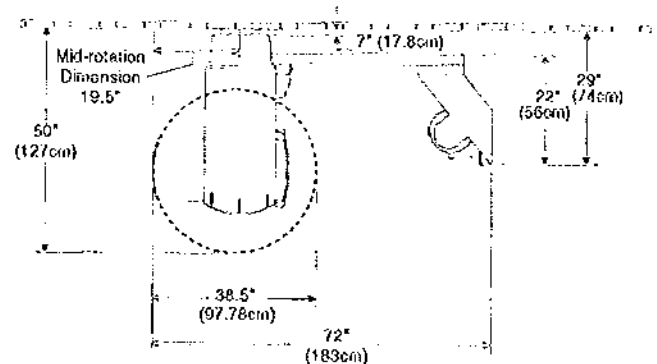
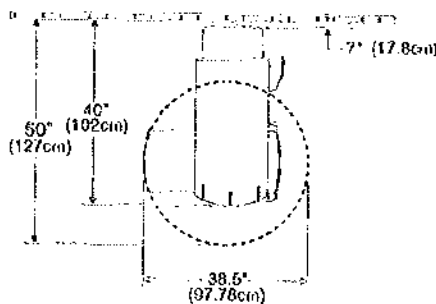
SITE REQUIREMENTS



2. LOCATION CONSIDERATIONS

- The ORTHORALIX™ 9000 should have a minimum area of 8' (244cm) high by 4'2" (127 cm) deep and 4' (122 cm) wide (6'1" (186 cm) with ceph). Access for operator and patient should be considered according to the plan below. The stand is mounted 7" (17.8 cm) from the wall, using the furnished wall brackets. The column base plate may be anchored to the floor. Wall bracket location and column base plate mounting do not apply when optional free standing base is used.
- The ORTHORALIX 9000 is operated from the right side of the equipment. It is recommended that a minimum of 34" (86 cm) from the center line of the column is allowed on the right side of stand for operator access.
- Each wall bracket support bolt (installer provided) must withstand 120 lbs. (54.4 kg.) of shear load and 400 lbs. (181.4 kg.) of withdrawal force. No external support is necessary with optional free standing base.

Floor must be able to support a weight of approximately 500 lbs. (227 kg.) wall mounted ORTHORALIX 9000 or 600 lbs. (272 kg.) free standing ORTHORALIX 9000, plus patient and operator.



ELECTRICAL POWER REQUIREMENTS

Line voltage range: 110-130 volts Selectable during installation
210-250 volts

Line frequency: 50-60 Hz.

Maximum line current: 13.0A at 120V, 6.5A at 230V.

Momentary and Long-Term Current and Voltage rating : (230 V Long-Term 0.7 A, Momentary 6.5 A);
120 V Long-Term 1.4 A, Momentary 13.0 A).

Maximum line regulation: 4% or better.

Class and Type of Certified equipment (Class 1 Type B).
UL 2601 Certification

Electrical Installation Requirements:

Conduit from electrical service distribution center to junction box or wall outlet to contain:

Power "hot" wire, power wire neutral and ground wire.

#12 wire-- up to 100 ft. (30 M)

#10 wire-- 100 ft. (30 M) to 150 ft. (46 M)

The conduit connection is user supplied and installed locally, terminated to the electrical junction box provided on the back of the column.

The line cord connection is supplied and connection is made at installation, terminated to the electrical junction box provided on the back of the column.

The circuit should be on a separate fuse or circuit breaker, rated at a minimum of 20 amps. No other load should be operated on the circuit.

The two mains 20 Amp. 250 volt fuses are located under the bite guide support table next to the main power on/off switch.

WARNING: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE AND RATING OF FUSE.

NOTE: Consult local electrical codes for further information.

DENTSPLY GENDEX ORTHORALIX™ 9000

LABELING

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

SN: 900-12345670G PRODUCT: ORTHORALIX 9000
REF: 110-0150G1

MANUFACTURED: December 1997
Des Plaines, IL USA

INPUT VOLTAGE REQUIREMENTS ✓ 50 - 60 Hz	120V 230V	CLASS 1 TYPE B	 
LONGEST RATING	1.4A 0.7A		
MAX. MOMENTARY RATING	0.0A 6.5A		

CERTIFICATION: Product complies with radiation performance standards under the Federal Food, Drug, and Cosmetic Act.

UL Classified LISTED CLASSIFIED LISTED CLASSIFIED
UL 954 AND
CNSA 622.2 Ed. 001 1993
BSI Registered No. 0003

System Label

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

CERTIFICATION: Product complies with radiation performance standards under the Federal Food, Drug, and Cosmetic Act.

REF: 110-0152G1
SN: 900-12345670G
MANUFACTURED: December 1997
Des Plaines, IL USA

Ceph Arm Label

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

n 0.5 IEC 6038 2.5 AEC 6032 1A

SN: 900-12345670G REF: 110-0150G1 SN: 900-12345670G

MANUFACTURED: December 1997
Des Plaines, IL USA

CERTIFICATION: Product complies with radiation performance standards under the Federal Food, Drug, and Cosmetic Act.

Tubehead Label Internal

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

DUPLICATE LABEL FOR FDA/CDRH ORIGINAL LABEL BEHIND THIS COVER.

n 0.5 IEC 6038 2.5 AEC 6032 1A

SN: 900-12345670G REF: 110-0150G1 SN: 900-12345670G

MANUFACTURED: December 1997
Des Plaines, IL USA

CERTIFICATION: Product complies with radiation performance standards under the Federal Food, Drug, and Cosmetic Act.

Tubehead Label External

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

DUPLICATE LABEL FOR FDA/CDRH ORIGINAL LABEL BEHIND THIS COVER.

CERTIFICATION: Product complies with radiation performance standards under the Federal Food, Drug, and Cosmetic Act.

REF: 4519-124-21312
SN: 900-12345670G

MANUFACTURED: December 1997
Milano, Italy

Collimator Label (External)

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

CERTIFICATION: Product complies with radiation performance standards under the Federal Food, Drug, and Cosmetic Act.

REF: 4519-124-21312
SN: 900-12345670G

MANUFACTURED: December 1997
Milano, Italy

Collimator Label (Internal)

GENDEX
Dental X-Ray Division
Dentsply International Inc.
Des Plaines, IL USA

REF: 110-0154G1
SN: 900-12345670G
MANUFACTURED: December 1997
Des Plaines, IL USA

Column Label

F1 F2
20A 250V 20A 250V
Fuses

Fuse Label

2. Installation

FORWARD

The following installation procedures provide the installer with information required to assemble, adjust, and test for proper operation of a ORTHORALIX 9000 panoramic x-ray system.

CHECKING STATUS OF INSTALLATION PREPARATIONS

Certain electrical and mechanical requirements have to be met to complete the ORTHORALIX 9000 installation for compliance with local, state, and federal regulations. These installation preparations include:

- Junction boxes and conduit or line cord. Where required junction boxes and conduit or line cord should be installed according to local codes in accordance with wire sizes specified in Preinstallation Data (Section 1).
- Adequate wall and floor support. Consult Preinstallation Data (Section 1) for support requirements for the ORTHORALIX 9000 stand.

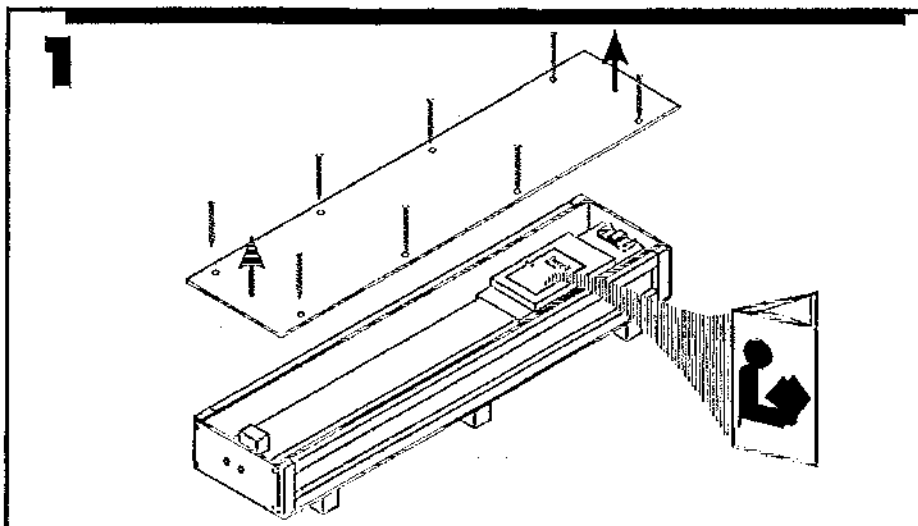
UNPACKING

The ORTHORALIX 9000 panoramic x-ray system is shipped in two wooden boxes.

Unpack the boxes only as needed. Check each box carefully for small items. Do not discard any packing material until the system is completely assembled or all parts are accounted for.

NOTE: THE COLUMN IS *HEAVY* 360 lbs. (163 kg.) USE CAUTION WHEN LIFTING. THE COUNTERWEIGHT IS LOCATED AT THE BOTTOM OF THE COLUMN.

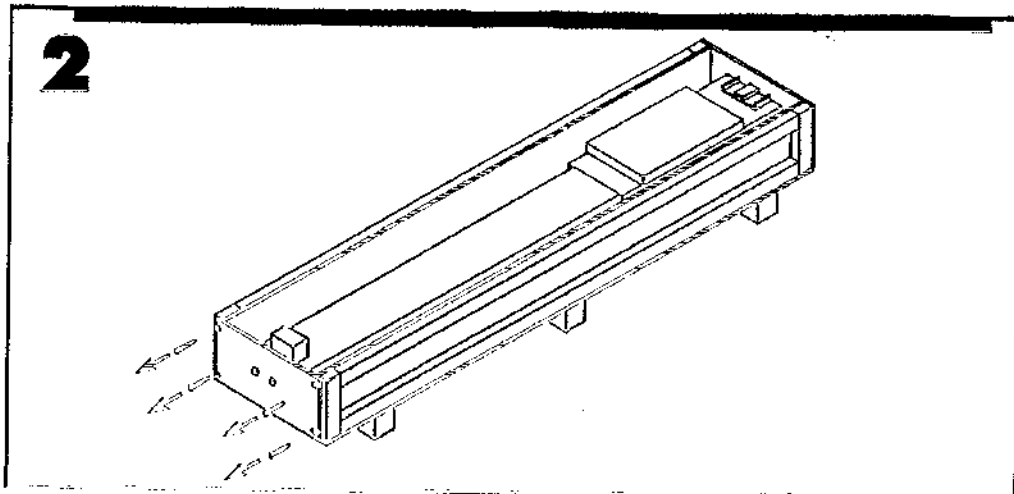
1. To unpack the ORTHORALIX 9000 column remove the wooden lid. See diagram below.



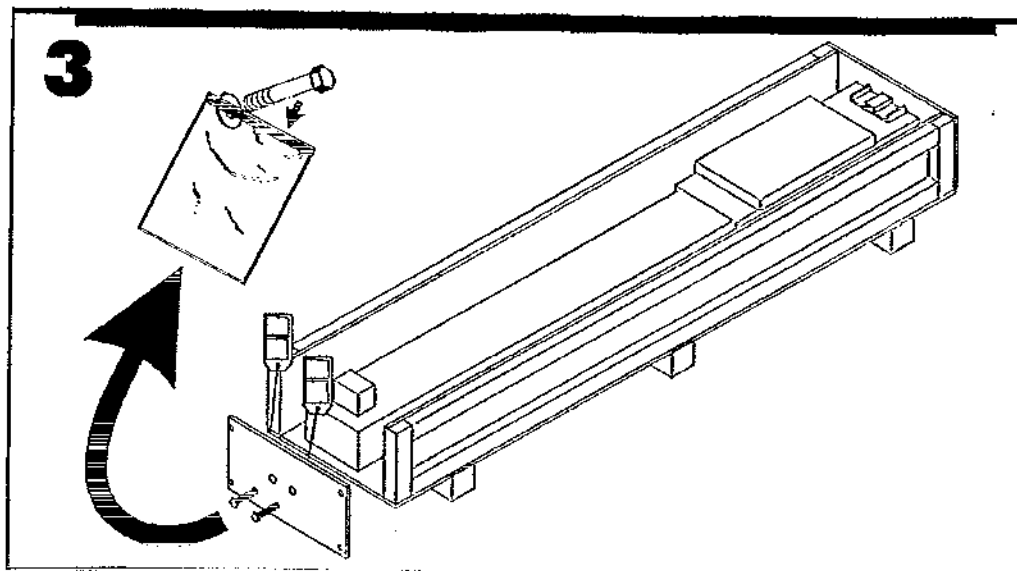
DENTSPLY GENDEX ORTHORALIX™ 9000

Note contents include (1) manual, (2) large, (1) medium, (5) small trim weights, (2) trim weight box covers, column brackets, power cord box and column.

2. To unpack the ORTHORALIX 9000 column remove the end panel screws of the wood box as shown. See diagram below.



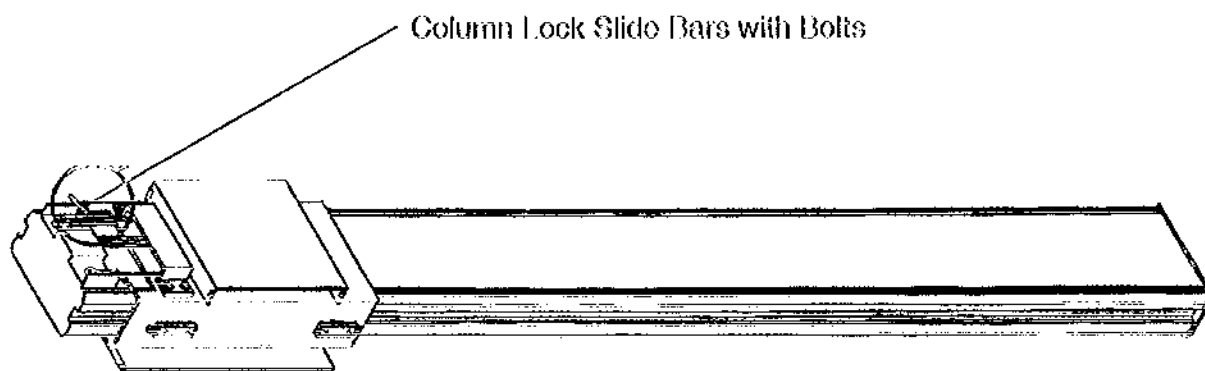
3. Remove the two 5mm hex head cap shipping bolts and the end panel of the wood box as shown. See diagram below. Save bolts in storage bag provided in the overhead kit box.



4. Carefully remove the column from the wood box to avoid any damage.

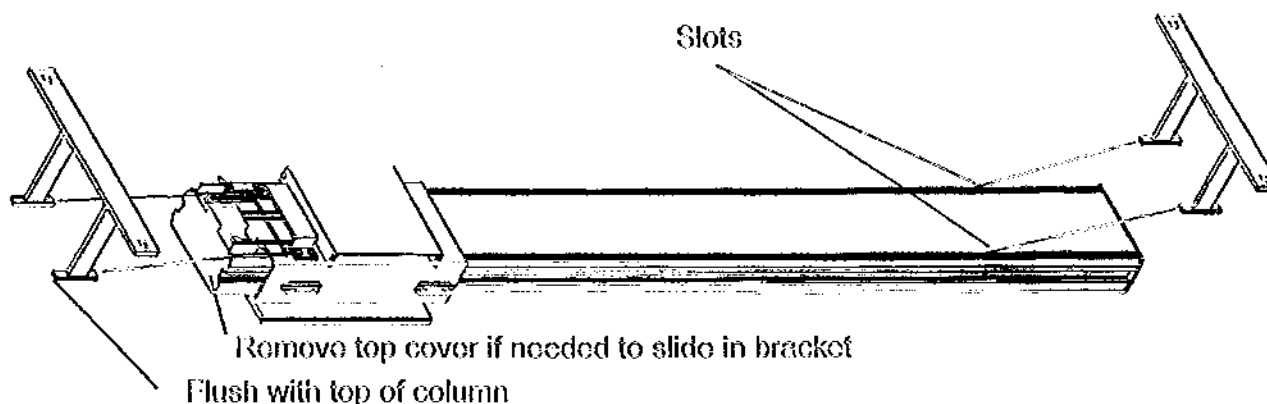
5. Remove the two 6mm cap bolts and carriage lock slide bars. See diagram below. Save bolts and carriage lock slide bars in storage bag provided located in hardware box

NOTE: Do not remove bolts if installing with free-standing base.



NOTE: FOR FREE-STANDING BASE INSTALLATION PROCEED TO PAGE 2-18

6. Install the two wall mount brackets by sliding into the column slots as shown in the diagram below, a light tap on bracket may be required. The top bracket location must be flush with the top of the column. The bottom bracket location range is 6" from the bottom of the column to 12" from the bottom of the column. NOTE: bottom bracket only required for Ceph. installations. See diagram below.



7. With the wall brackets in the proper location tighten the four M3 set screws to lock the brackets in place.

8. If the unit is to be installed with a line cord, install it at this time. See page 2-4.

9. Remove lower junction box cover, set aside for later reassembly step 41 page 2-15.

10. Remove one of the three rear knockouts from distribution box. See Following Page.

11. Attach conduit or supplied AC line cord with strain relief to distribution box.

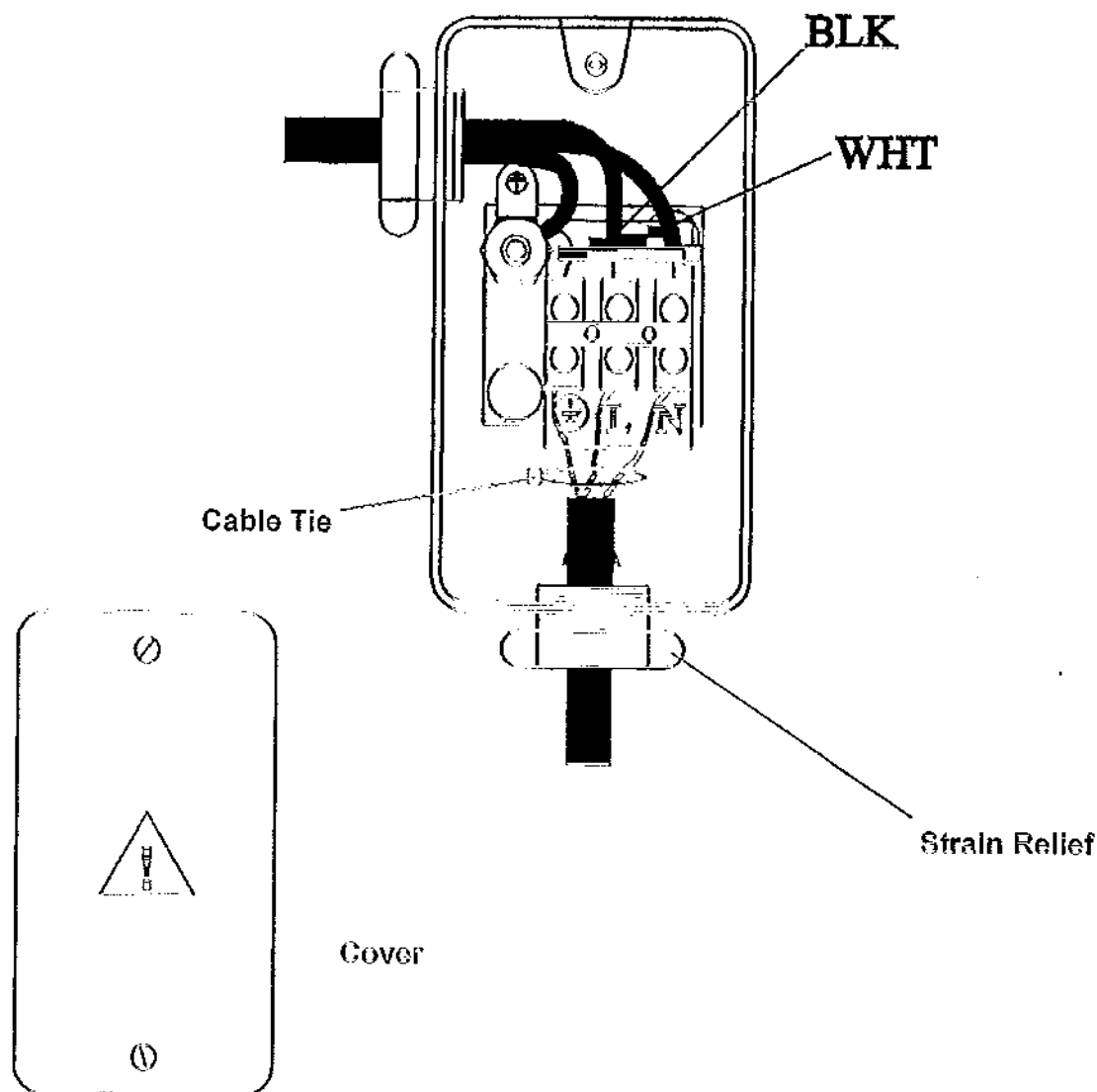
NOTE: 2-screw strain relief only provided with line cord kit, conduit strain relief supplied by installer.

DENTSPLY GENDEX ORTHORALIX™ 9000



NOTE: The power cord kit Part # 112-0909G1 packaged in the column crate, contains power cord Part # 644-00161P1, cable connector two-screw Part # 407-02081P2 for the following step.

12. Attach wiring to terminal strip as shown in diagram below, Black= L, White= N, Green= (⚡) 125V line cord kit. For hardwire installation Brown= L, Blue= N, Green/Yellow= (⚡) -In-formational (CIE) color codes typical for 230V 50 hz installation. For North American Standard color codes 120V installation Black= L, White= N, Green= (⚡) Tie wrap the three wires from the conduit or line cord together close to the terminal strip to hold wires in place in case terminal screw becomes loose. **Do not reinstall junction box cover at this time.**

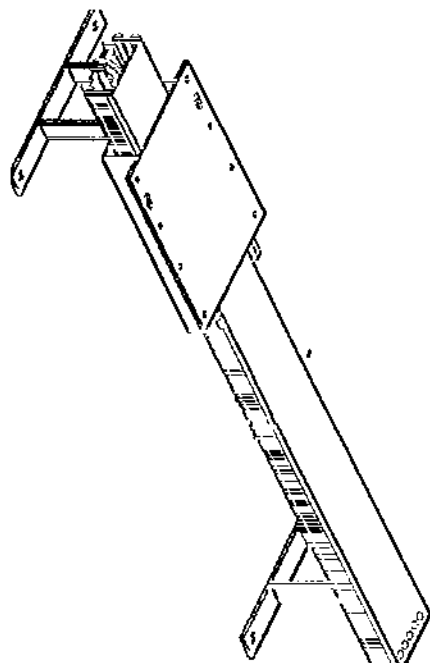


13. Warning: Do not connect Mains until unit is configured for proper voltage. See page 2-11.



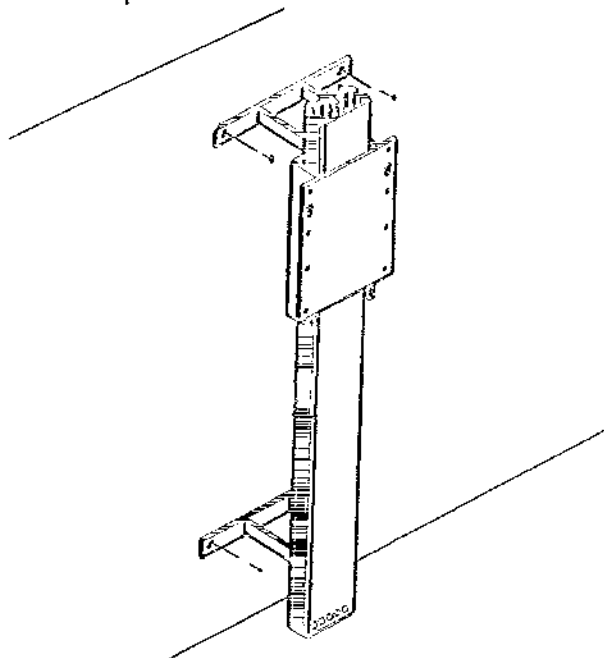
NOTE: For Free-standing base installation go to Page 2-18

14. Stand up column assembly, and move into final position. See diagram on page 2-5.



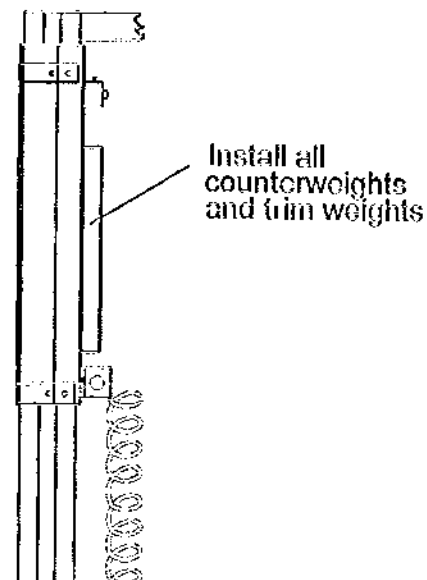
Note: Wall Mount Trim Cap Washer Set Part # 112-0918G1 is provided to trim-out user supplied mounting bolts. Set includes (4) washers Part # 421-00451P13, (4) white caps Part # 434-0061P3. This is packaged in the column power cord kit Part # 112-0909G1.

15. Mount the column to the supporting wall using (2 or 4) fasteners as required. (See Page 1-4) for mounting hardware specifications and mounting dimensions. Check column for level front to back and side to side, shim as required. NOTE: The bottom bracket is required for Ceph. Installations.



16. Install two large, one medium, and five small steel counterweights.

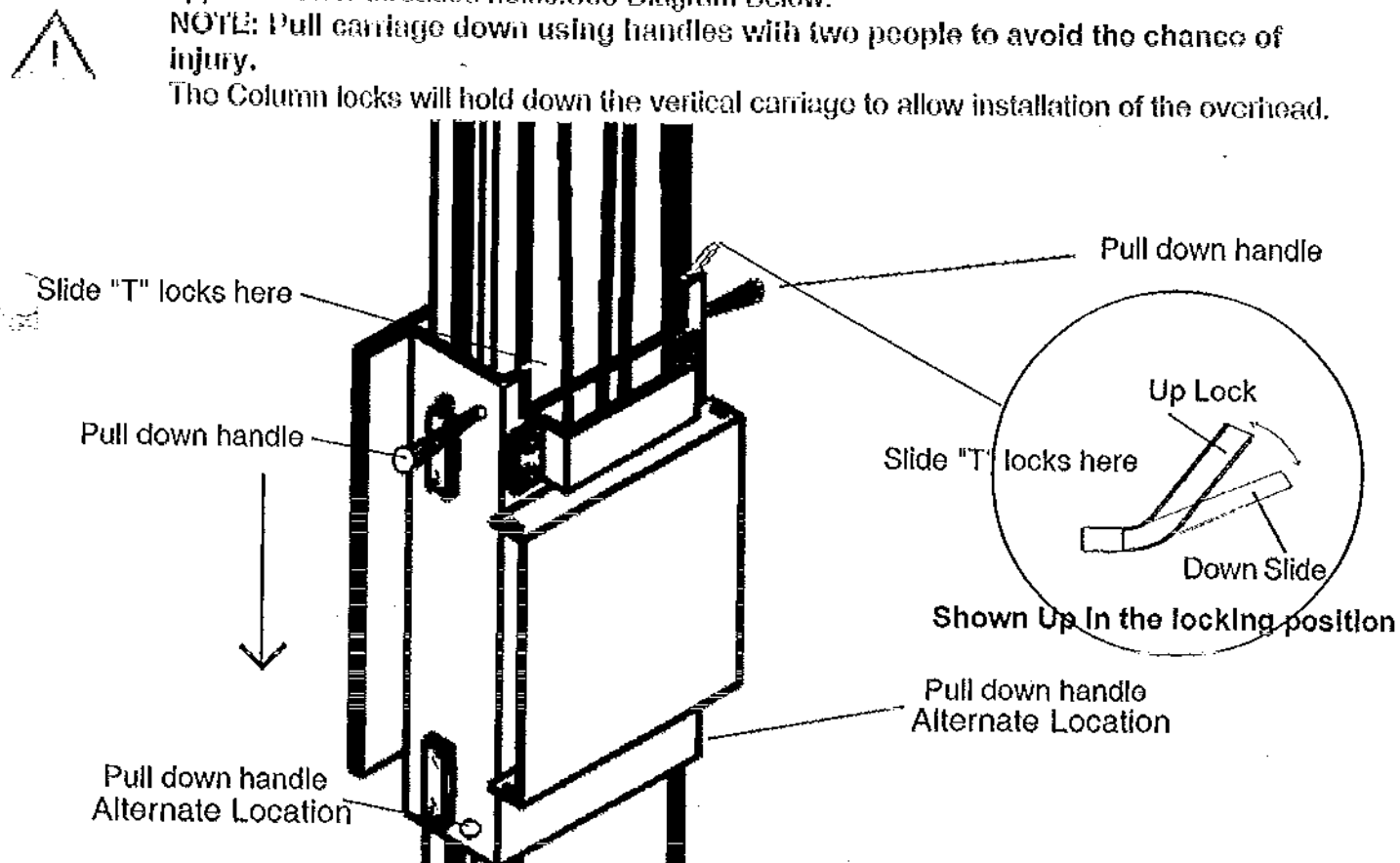
NOTE: On Ceph. installations weights will be removed after attaching Ceph. arm.



17. Locate the Column "T" locks and handles in the Line Cord Kit (112-0909G1) Box. Slide both Column locks into the back column slots with the curved bar toward the top of the column, slide down to meet the vertical carriage. These locks will slide down the slots and lock as the vertical carriage is pulled down using the screw in handles. Install handles in the upper or lower threaded holes. See Diagram Below.

NOTE: Pull carriage down using handles with two people to avoid the chance of injury.

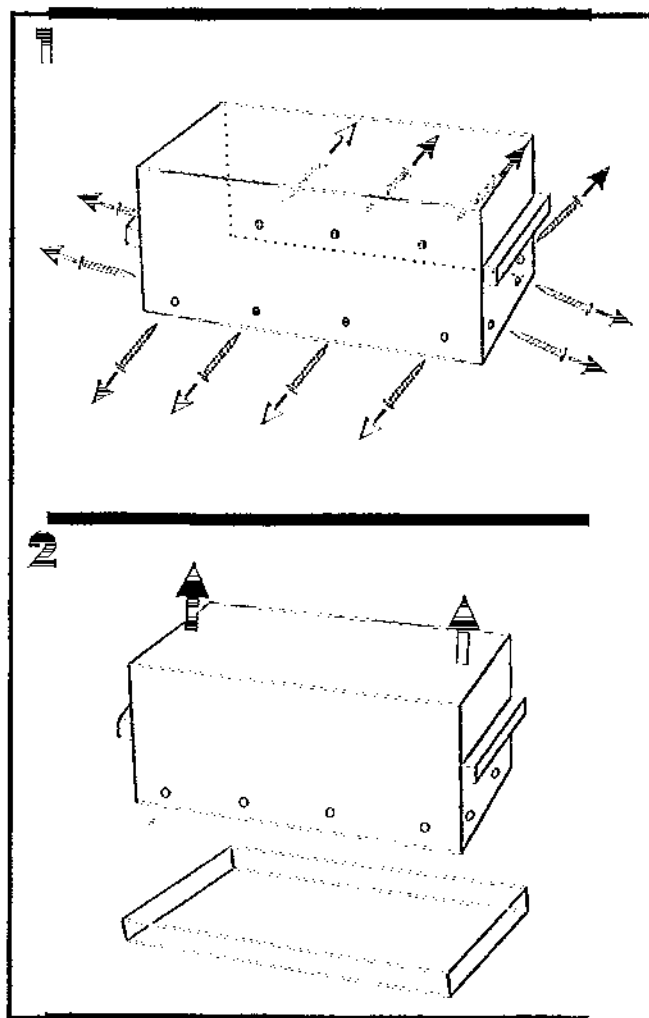
The Column locks will hold down the vertical carriage to allow installation of the overhead.



18. After the vertical carriage is pulled down, remove the screw in handles. Save in storage bag provided.

DENTSPLY GENDEX ORTHORALIX™ 9000

19. Open the overhead box as shown below to ease installation.



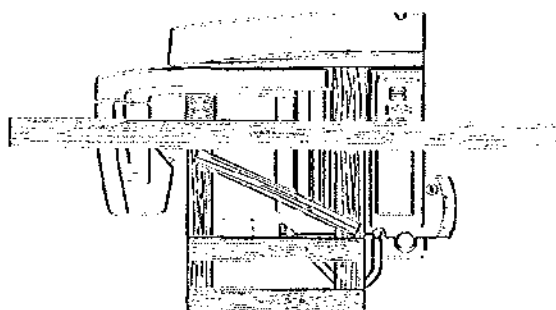
NOTE: Contents of the Overhead crate include (1) Overhead Part # 110-0147G1, wrapped in foam pack, Back Carriage Cover Part # 112-0885G1 and Accessories Kit Part # 112-0912G1.

NOTE: DO NOT REMOVE OVERHEAD FROM WOOD FRAME.

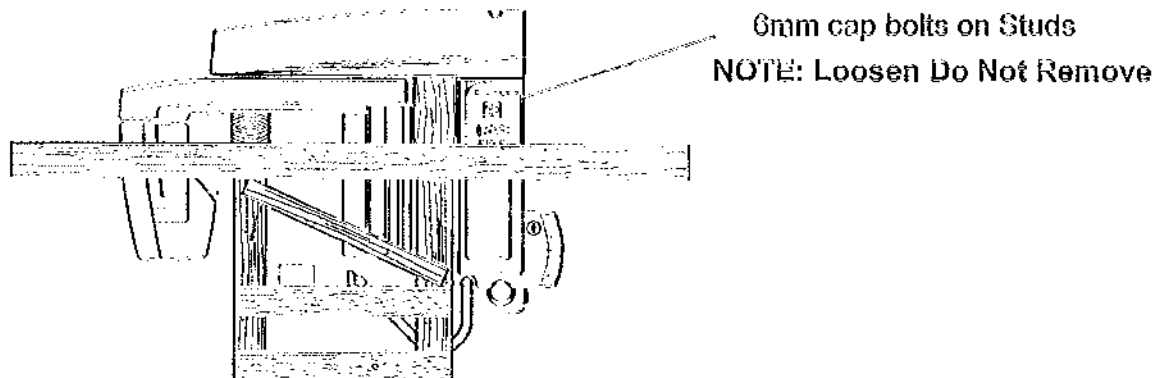
WOOD FRAME IS TO PROTECT AND MOUNT OVERHEAD

Remove wood frame only if mounting in tight location. This will allow for easier lifting of the overhead.

20. Move overhead with wood frame into position for mounting.

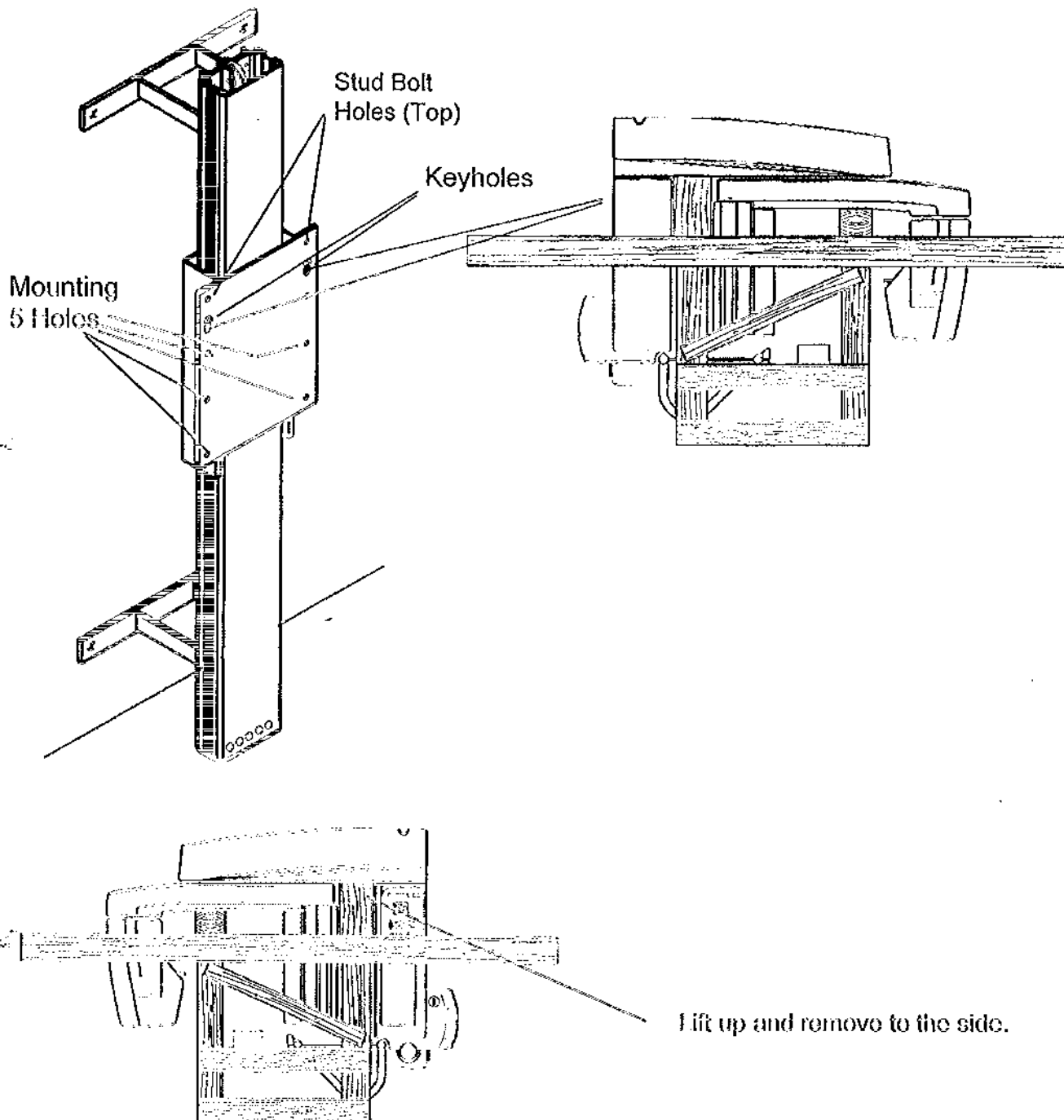


21. Loosen 6mm cap bolts on the back of the overhead but do not remove. These cap bolts will allow the overhead to be mounted to the carriage on the column assembly. The cap bolts mount through the key holes on the carriage and allow the overhead to hang on the column and hold it in place.



22. Mount overhead onto column by lifting with one person on each side of wood stand. Hook the two 6mm cap bolts through the key holes on vertical carriage, then tighten. See following diagrams.

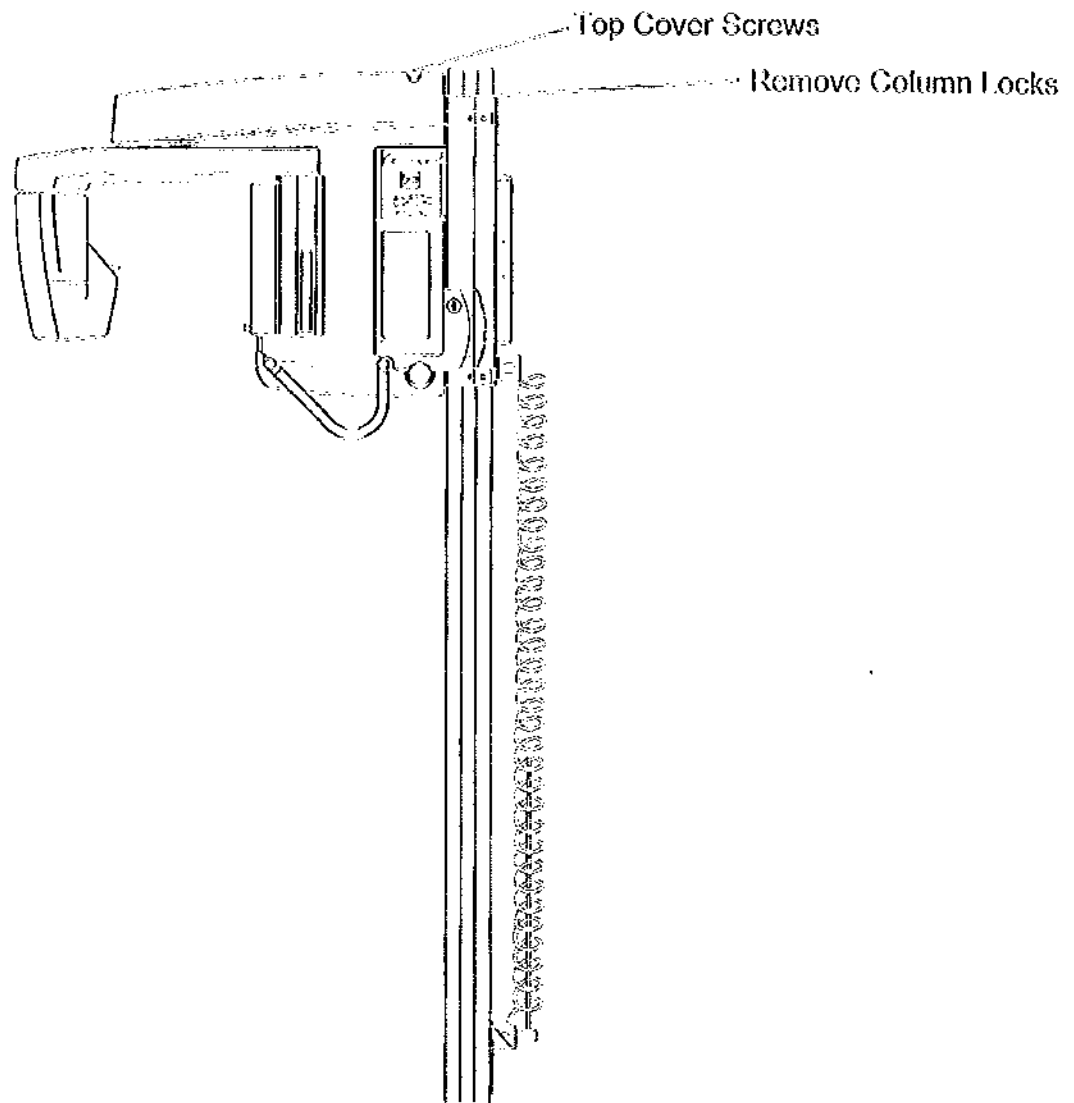




Note: Carefully remove wood frame, the top frame bracket is removable. To remove slightly lower frame, pull up straight and remove to the side. See diagram above.

DENTSPLY GENDEX ORTHORALIX™ 9000

23. Locate hardware bag 112-0910G1 from kit 112-0884G1 and install the five remaining overhead 6mm cap bolts and washers and tighten. The cap bolts should be inserted from the back of the unit. See Previous page diagrams. Note: Do not use the top two holes, these will be used in step 33.
24. Unlock Column locks and remove. At this time the overhead will move up and down with some force. See diagram below. Save Column locks in storage bag provided.

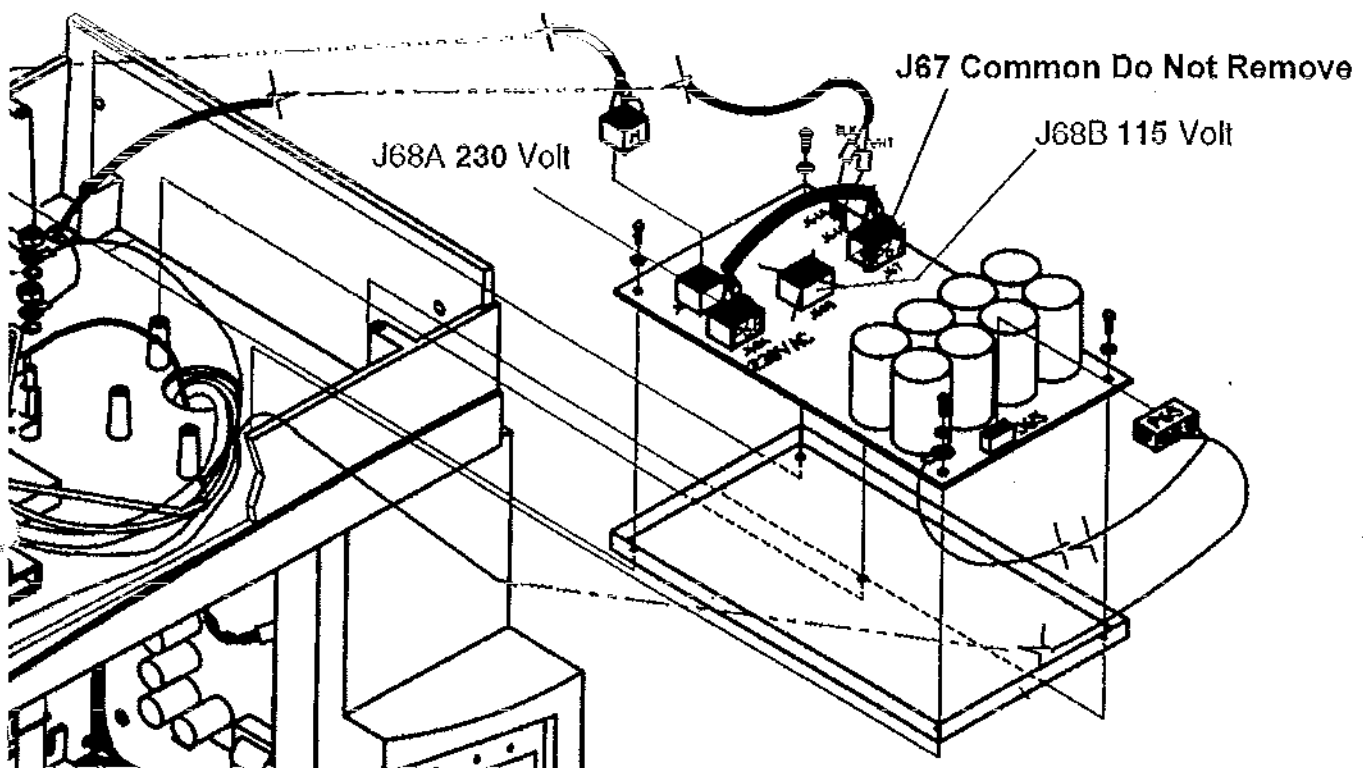


25. Remove two 4 mm cap top cover screws and remove the cover.

26. Unit is shipped in a 230 VAC configuration. Verify mains voltage located in the top of the overhead and move the Configuration PCB Jumper on the configuration PCB located in the top of the overhead assembly to the proper mains setting. See Diagram Below.

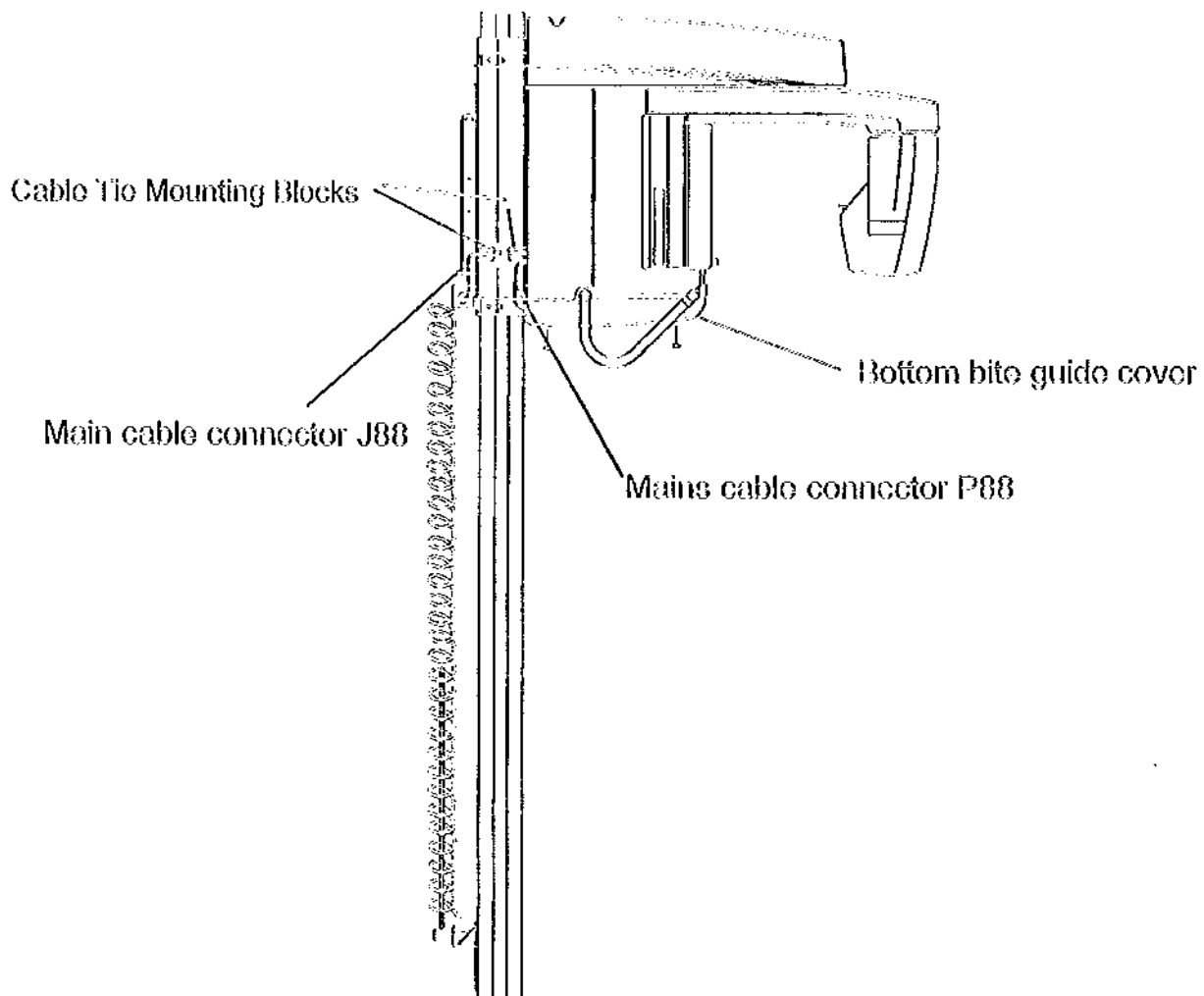
Configurations
230 Volt: Plug P67 to J67 Common
Plug P68 to J68A (Factory Configuration)

115 Volt: Plug P67 to J67 Common
Plug P68 to J68B



NOTE: Top cover will be reinstalled after electrical connection see page 3-1.

27. Route the mains cable connector J88 plug from the upper electrical junction box to mate with mains cable connector P88 from overhead. See the following diagram.

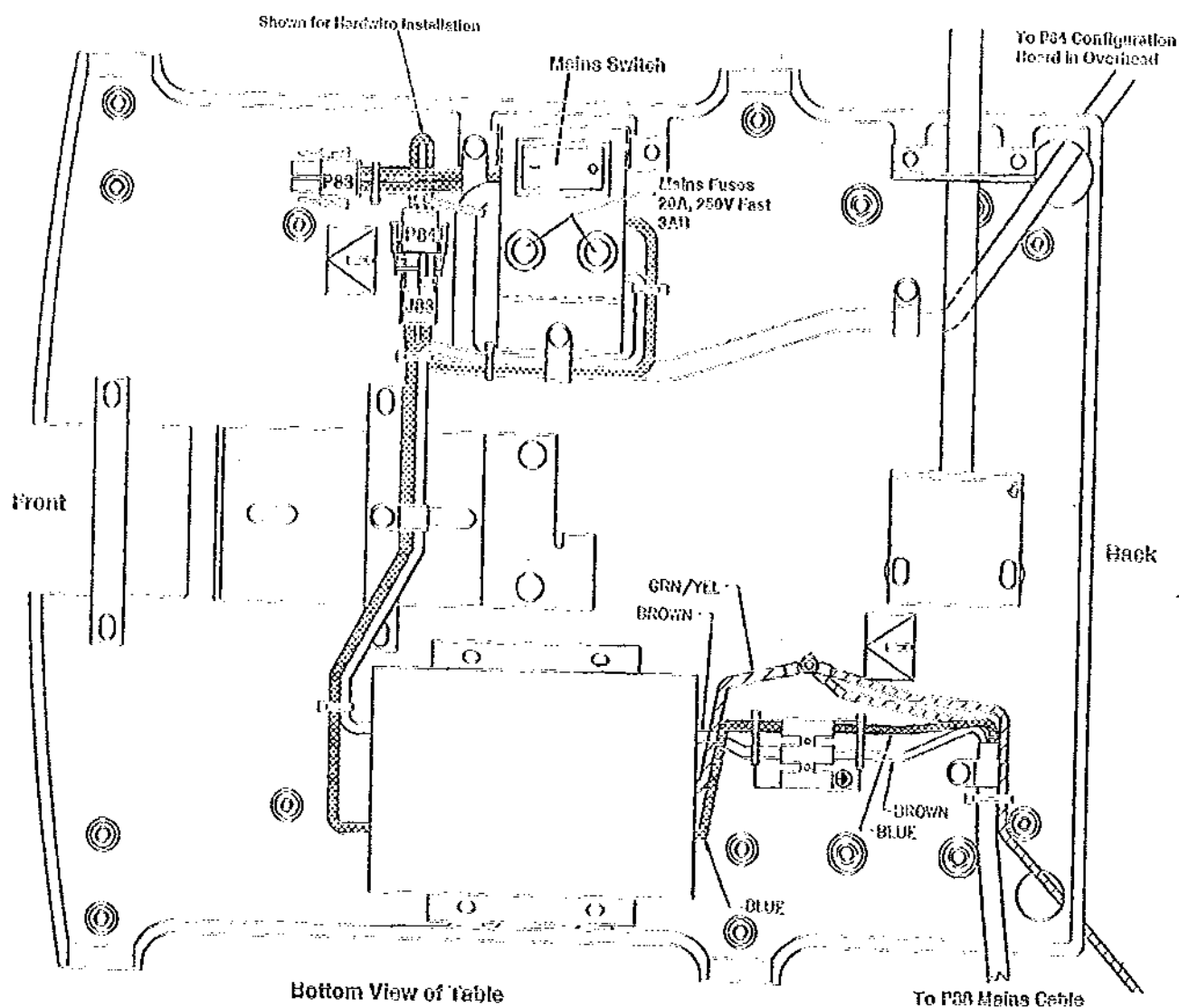


28. Secure mains cable to cable tie mounts with cable ties located in kit 112-0911G1 provided. See diagram above.

29. NOTE: if unit is to be used with the line cord kit remove the four 4 mm cap screws holding the bottom bite guide cover, and remove. See diagram above.

30. For line-cord installations only. Replace the P84 fuse jumper cable attached under the table assembly located between the gray handles, with the P83 fuse cable. This will fuse both sides of the line for line cord installations. (See Diagram Below).

31. Note: P83 is not marked

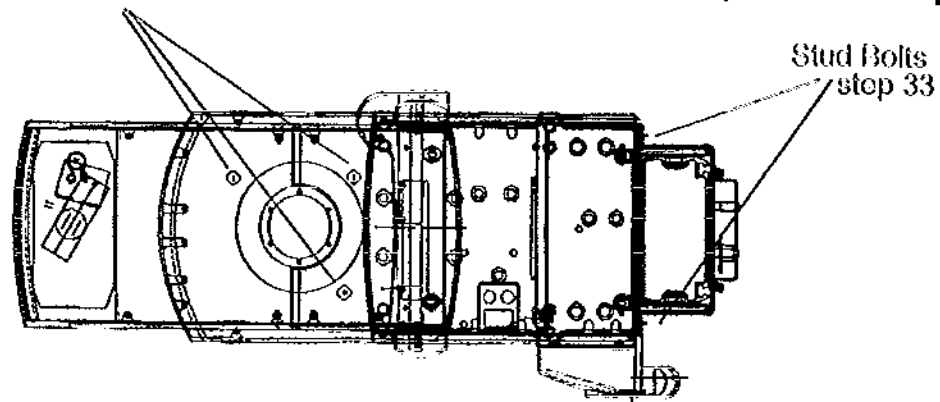


DENTSPLY GENDEX ORTHORALIX™ 9000

32. Remove the three Black, tagged locking 5 mm bolts and 15 mm nuts and bolts to release the overhead for use. See diagram below.

NOTE: The arm should not be moved by hand, to avoid damaging the system.

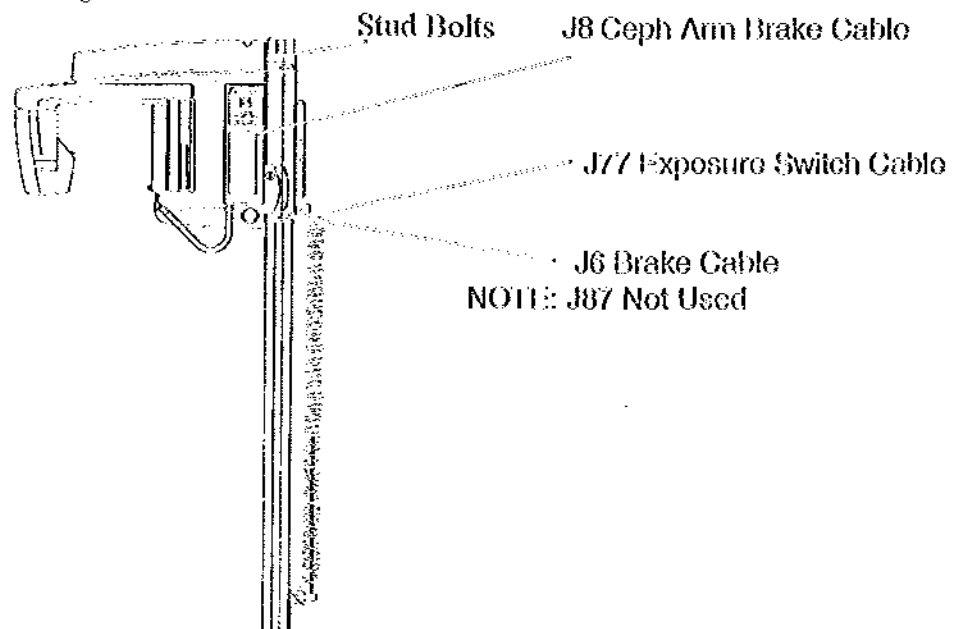
Three BLACK, tagged 5mm overhead locking bolts and three plated nuts step 32.



33. Locate stud bolts in the hardware kit 112-0911G1 box packed with the backcover. Install (2) stud bolts 13 mm in the top (2) holes of the overhead from the back with the stud holes facing toward the back. Install the nuts on the inside of the overhead and tighten. See diagram above. Locate and install (2) ball studs located in hardware kit 112-0911G1 and install in the back stud holes and tighten. Go to step 35 for pan only installation.

NOTE Ceph Only: Ceph arm cable location on side of vertical carriage. This will connect to cephalometric arm mating plugs J8 to P8 located on Ceph. Arm. See diagram below.

34. NOTE: exposure switch connector J77 and brake connector J87 locations on the side of vertical carriage. See diagram below.



DENTSPLY GENDEX ORTHORALIX™ 9000

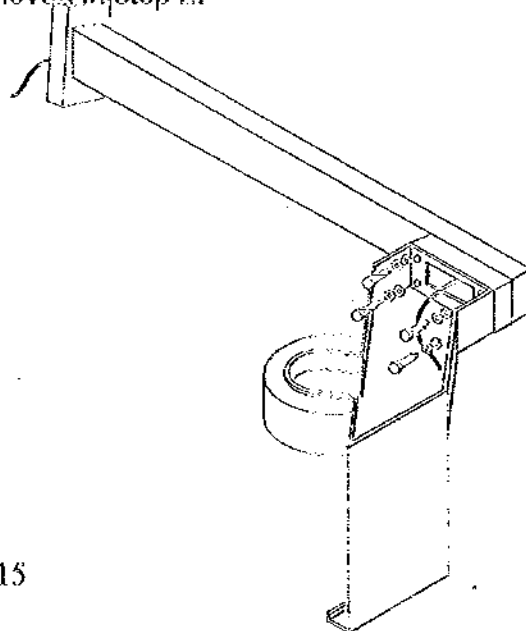
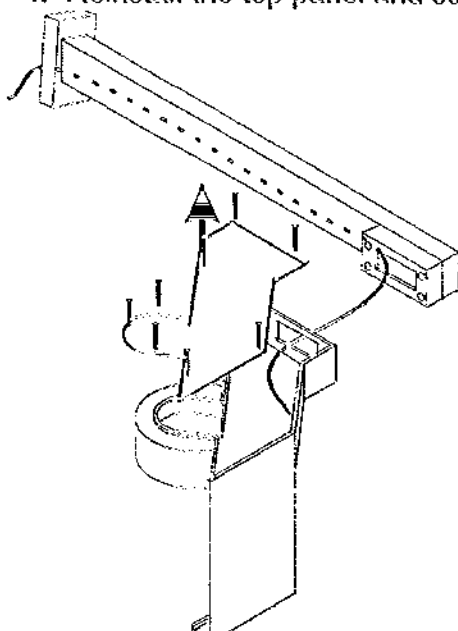
NOTE: For Panoramic only perform the following steps. For Ceph. Installation skip to installation of Ceph. arm and install Ceph. arm first.

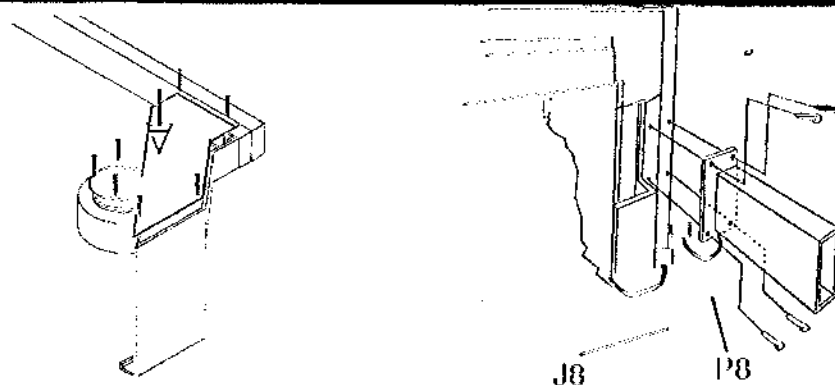
35. Connect brake cable connector J6 to P6. Cable tie to cable tie mounting blocks on the side of the vertical carriage. **NOTE:** J87 not used.
36. Locate and install counterweight trim covers to secure counterweights. Note: top and bottom of trim covers have different length tabs, long tab goes on top and slide the short into the bottom.
37. Position the back carriage cover and connect J77 to P77, this will make exposure switch cable connecton. Position cover and push on to the stud bolts and install one 4mm cap bolt to secure bottom mounting hole.
38. Connect handswitch or remote cable (see page 2-20) to connector on the bottom of the back cover.
39. Insure that the power switch is turned OFF.
40. Connect Mains power and verify proper polarity. Install lower junction box cover and proceed to Section 3 Electrical System Checks. To turn on system apply power to unit using power switch located under the bite guide mount on the right side between the handle.

Installation of Optional Ceph Arm

For the installation of the Ceph arm with Cephalostat follow the procedure below. (applicable only for the Ceph versions).

1. Unpack the Ceph arm and Cephalostat assembly. Contents include (1) Ceph. Arm, (1) Cephalostat, (1) 8x10 Cassette and (1) Pack Sample Film.
2. Remove the seven Phillips screws and top panel of the Cephalostat assembly.
3. Feed the Cephalostat arm cable with plug P8 (not Marked) through the Ceph. arm. Mount the Cephalostat to the arm using the four 13mm bolts and washers and tighten. Ceph. Hardware Kit #1 Part # 112-0095G1.
4. Reinstall the top panel and screws removed in step 2.





5. Prepare Ceph arm by bringing Ceph arm cable thru slot as shown in diagram above.
6. Mount Ceph arm to the overhead with the four 8mm hex head bolts. Ceph. Hardware Kit #2 Part # 112-0913G1. Check that arm is level.
7. Plug in Ceph arm cable connectors J8 and P8 See page 2-14 for location.
8. Carefully remove Ceph arm cutout in the back carriage cover using a utility knife.
9. Remove all trim weights installed in step 16. Install counterweight trim covers. If unit is not counter balanced after final cover trim out, install trim weights as needed. Note: top and bottom of trim covers have different length tabs, long tab goes on top and slide the short into the bottom.
10. Position the back carriage cover to allow the handswitch plug J87 and P87 to be connected. (See Figure 2) Now position cover and push on to the stud bolts and install (1) 6mm cap bolt to secure to bottom mounting hole.
11. Connect handswitch or remote (See page 2-20) cable to connector on the bottom of the back cover.
12. Mount the ear plug supports into (See Figure 1) the cephalostat with the two screws for each side.
13. Mount nasion rest with knob. (See Figure 1)

Figure 1

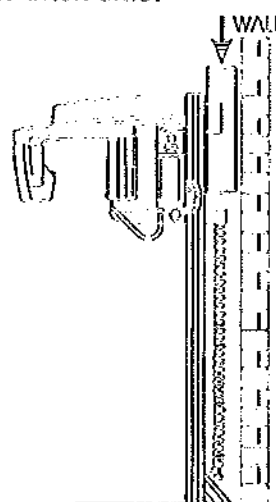
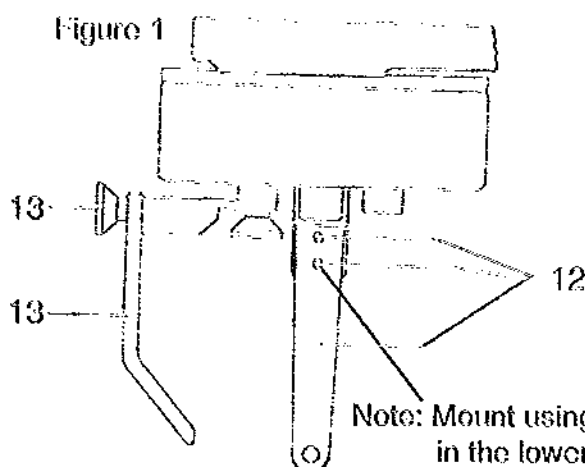


Figure 3

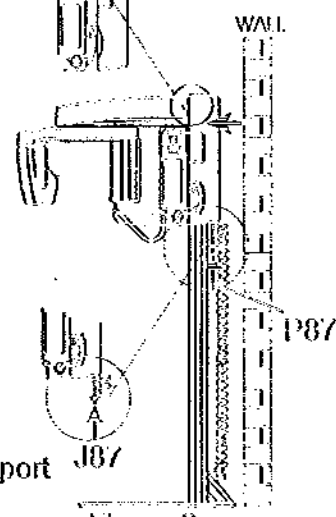


Figure 2

15. Insure that the power switch is turned OFF.

16. Connect Mains power and verify proper polarity. Install lower junction box cover and proceed to Section 3 Electrical System Checks. To turn on system apply power to unit using power switch located under the bite guide mount on the right side between the handle.

INSTALLATION OF THE CEPH COLLIMATOR FORMATS.

With the system are supplied the following load plates for different Ceph X-rays formats:

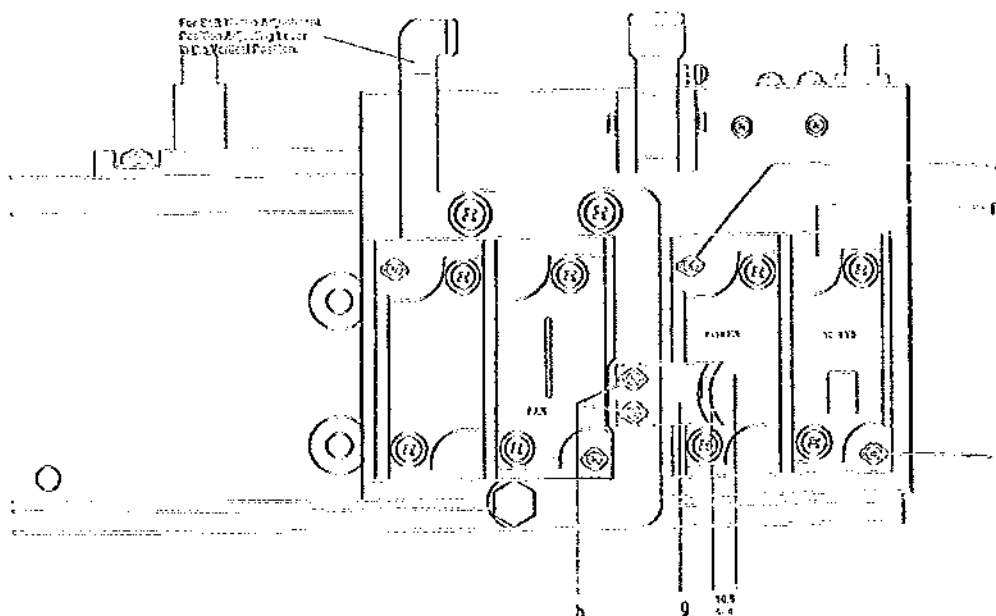
- 8 x 10 in. HIA (U.S. only) horizontal asymmetric for lateral-lateral projection
- 8 x 10 in. VS (U.S. only) vortical symmetric for anterior-posterior or posterior-anterior projection

Install the above listed formats. One for the lateral-lateral projection, HIA and one for the anterior-posterior/posterior-anterior projection, VS.

To install the selected formats on the collimator, proceed as follows:

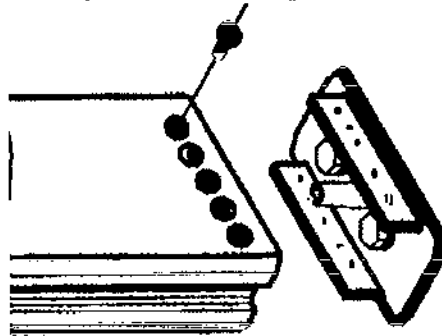
1. Remove the rear cover of the tubehead by removing the two Phillips screws on the bottom of the cover. Remove four 2.5 mm hex screws and remove front tubehead cover and set a side.
2. Remove the blank plate (f) from the collimator by unscrewing the two screws (e).
NOTE: Retain screws for step 3.
3. Install the load plate guide (f) on the collimator, using the two screws from step (2).

Before installing the soft tissue filter and tubehead front cover, perform the X-ray field adjustment of the Ceph formats as described in the Section 4.

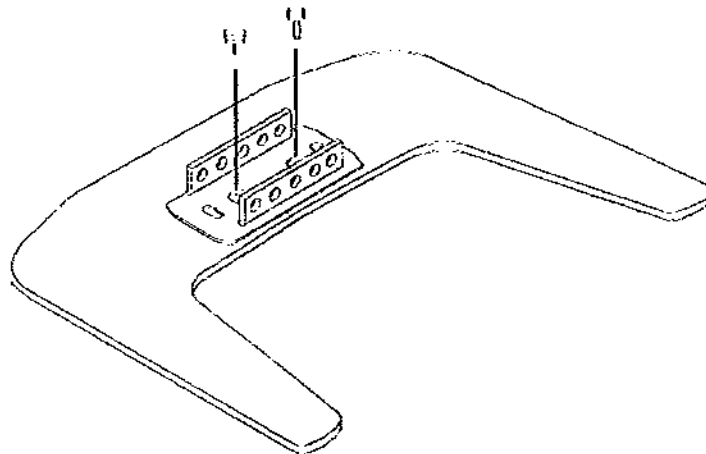


2a. Free Standing Base Installation

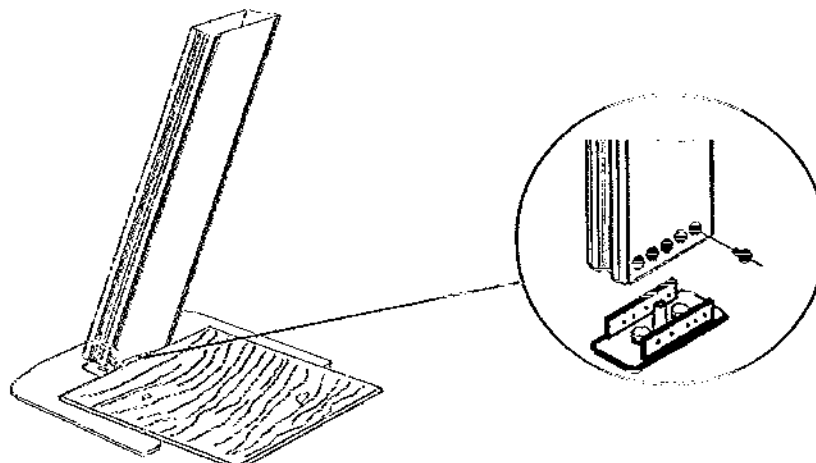
1. Remove the five 5mm bolts on the front and five 5mm bolts on the back of the column to remove column baseplate used for shipment. See diagram below.



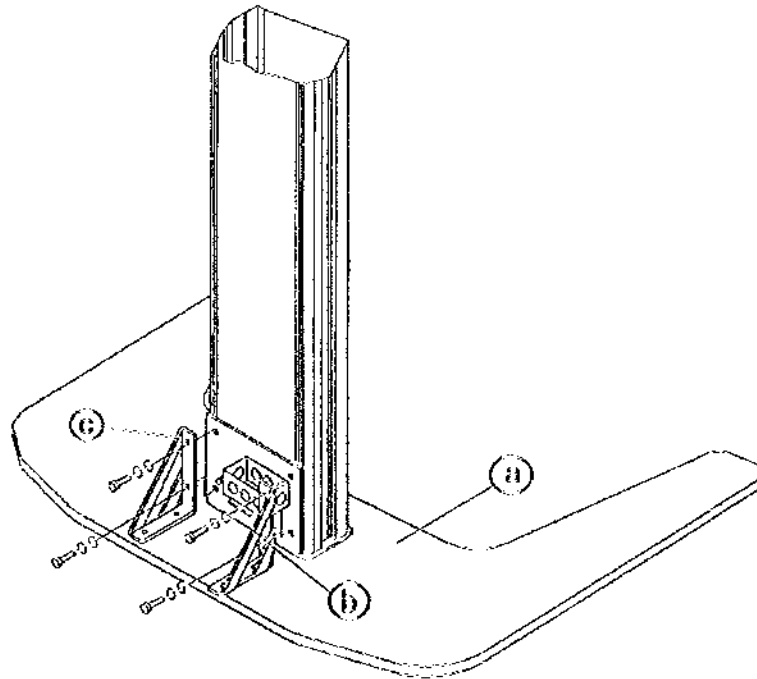
2. Connect line cord kit as described on page 2-4 of this manual.
3. Install and center the column baseplate on to the freestanding base using the two 15/16" bolts located in the Free-standing base kit Part # 112-0906G1 and tighten using the wrench supplied.



4. Place the wood end panel removed from the column and place in front and on top of the plate. This will assist in placing the column on to the baseplate and avoid damage to the base plate. See diagram below.
5. Attach freestanding baseplate to the column, secure five 5mm bolts on the front and five 5mm bolts on the back of column removed in step 1. See diagram below.



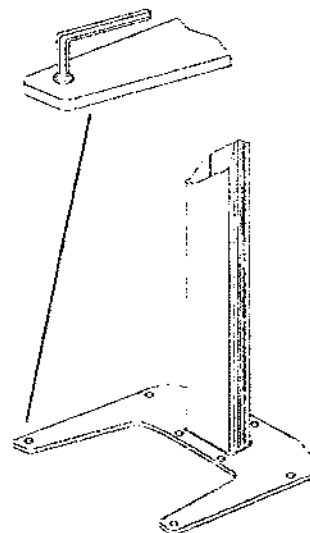
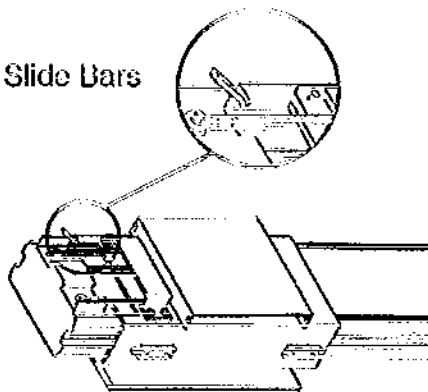
6. Install the right and left angled support brackets by removing the four 6 x15mm cap bolts holding the lower electrical box plate. With electrical box plate still in position mount brackets aligned with holes that hold the electrical box, use the eight new 8x25mm cap bolts supplied with the free-standing base kit hardware kit # 2 Part # 112-0907G1. Tighten all bolts.



7. With baseplate attached to column assembly move into final position.

8. Remove the two 6mm cap bolts and Column lock slide bars. See diagram below. Save bolts and Column lock slide bars in storage bag provided.

Column Lock Slide Bars



9. Check column for level front to back and side to side, adjust leveling feet with a 8mm hex wrench as required. Ensure all leveling feet are in contact with the floor. See diagram above.

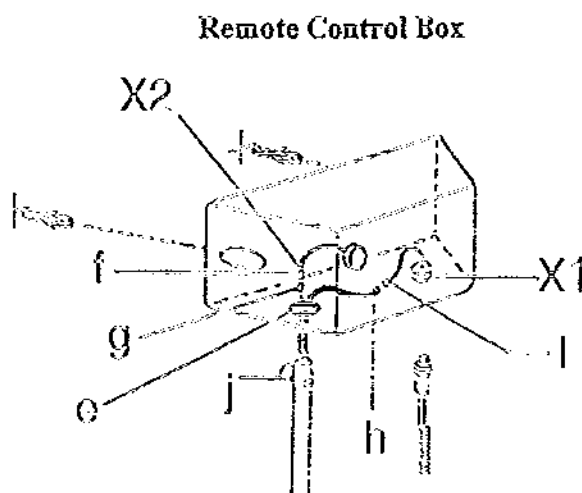
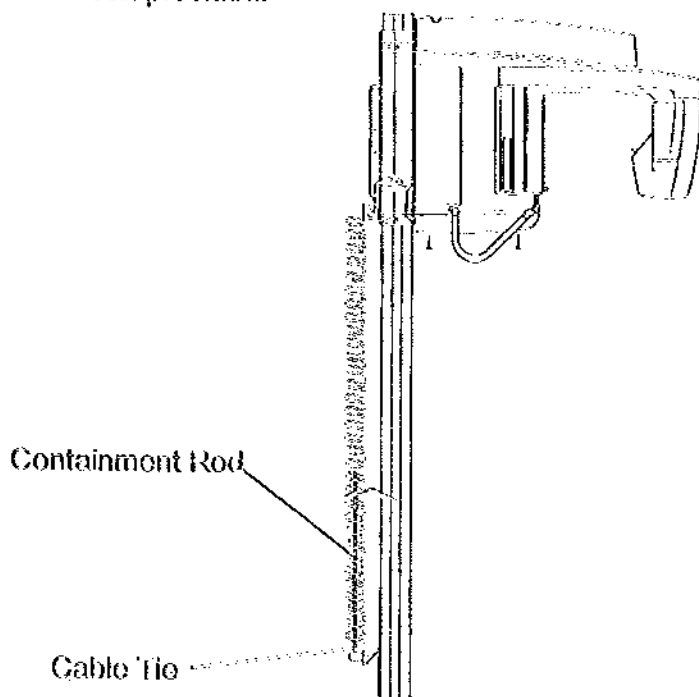
10. Continue the installation, step 16 page 2-6.

INSTALLATION THE REMOTE CONTROL.

The remote control box is standard with the Orthoralix 9000 system, to be installed on the wall. A 20m (@50ft) cable is supplied, to connect the control box to the Overhead. To mount the remote control box proceed as follows:

Note: Remote control located inside accessory box Part # 112-0912G1.

- (1) Plug the coiled end of the connecting cable into the handswitch socket located on back of Overhead.
- (2) Slide coil-cord down the vertical rod, this will contain the cord during operation. With cord in place, secure to the bottom of the rod mounting block using a cable tie.
- (3) Place the remote control box on the desired installation site on the wall and mark the mounting holes.
- (4) Drill the holes and fit the expanders.
- (5) Feed the connecting cable through the hole (e) of the remote control box.
- (6) Connect (f) to (g) (X2) and (h) to (i) (X1).
- (7) Fit the cable retainer (j) on the connecting cable and push it into the hole (e).
- (8) Mount the remote box to the wall with two screws.
- (9) Connect the exposure handswitch to socket X1 of the remote control box and hang it on the hook provided.



SECTION 3 ELECTRICAL SYSTEM CHECKS

Before turning unit on check the following electrical connections



1. Check for Mains connection J-88 to P88 located on left side of unit (facing towards unit) ref. page 2-12.
2. Check for proper connection on Overhead Configuration Board P-68 to J68B for 115 Volts ref. page 2-11. **NOTE:** Unit is factory configured as P68 to J68A for 230 Volts.
3. Check that the 3 shipping bolts and 3 large nuts were removed.
4. Replace overhead cover.
5. Line Cord Installation- Check for connection P84 fuse jumper attached to P83 fuse cable, located between gray handles ref. page 2-13. Replace lower table cover.
- 5a. Hardwire Installations- Factory configuration ref. page 2-13.
6. Check for proper connection of J6 to P6 brake cable ref. page 2-15. (Panoramic Only)
7. Check for proper connection of J8 to P8 Ceph. Arm to Overhead ref. page 2-14.
8. Check for proper connection of J87 and P87 (Ceph. Only)
9. Check for proper connection of P77 to J77 exposure switch cable ref. page 2-15. And install back cover.
10. Locate and install overhead top cover and secure with two 4mm hex head cap screws.



These function checks must be followed to insure the installation is fully compliant with applicable regulations. If the required results can not be obtained, contact GENDEX Technical Support for guidance, and advise the user not to operate the equipment.

The following electrical function checks are required to insure the ORTHORALIX 9000 installation is fully compliant with applicable regulations, and operating properly.



NOTE: kVp calibration, mA calibration, and Exposure time are microprocessor controlled, and are not adjustable. No calibration is required.

Electrical Function Checks Line Voltage Regulation Check

1. Turn off the circuit breaker, or unplug the unit before proceeding.
2. Connect an AC Voltmeter to the incoming line.

DENTSPLY GENDEX ORTHORAJIX™ 9000

3. Turn on the circuit breaker, or plug unit in. Turn unit on verify system configuration is 6 mA, see page 32 of user manual if setting is incorrect. Note: unit will automatically be in standard panoramic default when turned on.
4. Using the standard panoramic defaults make an exposure. Note that the line voltage drop must not exceed @ 6mA, 4%. If the line regulation is greater than 4% contact GENDEX Technical Support at 1-800-769-2909.
5. Turn off the circuit breaker, or unplug the unit.
6. Remove motor loads.

Dead Man Check

1. Turn on the circuit breaker, or plug unit in.
2. Using the standard panoramic defaults make an exposure. At any time during the exposure release the exposure button and verify the termination of rotation and x-ray.

Exposure Light and Alarm Check

1. Using the standard panoramic defaults make an exposure. During the exposure verify the yellow exposure light is lit, and you hear the exposure tone alarm.

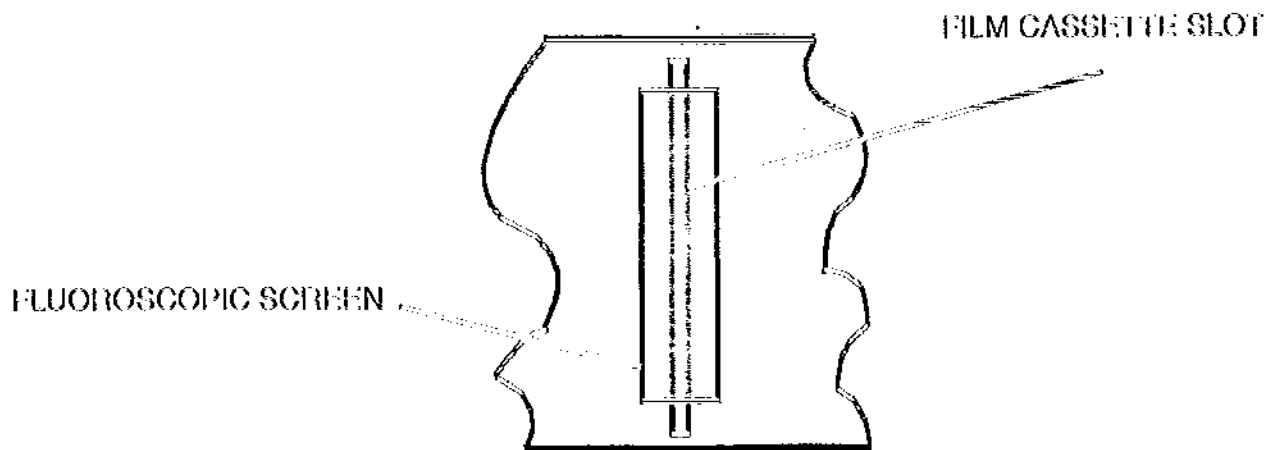
If any of the above checks can not be verified contact GENDEX Technical Support at 1-800-769-2909.

**SECTION 4
SYSTEM ALIGNMENT**

NOTE: The electrical system checks of the ORTHORALIX 9000 must be completed prior to the beginning of this procedure.

In order for the ORTHORALIX 9000 Panoramic X-ray System to function properly, the field of radiation from the ORTHORALIX 9000 tubehead must be parallel to and centered inside the film cassette slot.

1. With a fluoroscopic screen, tape screen centered over the film cassette slot. See diagram below.



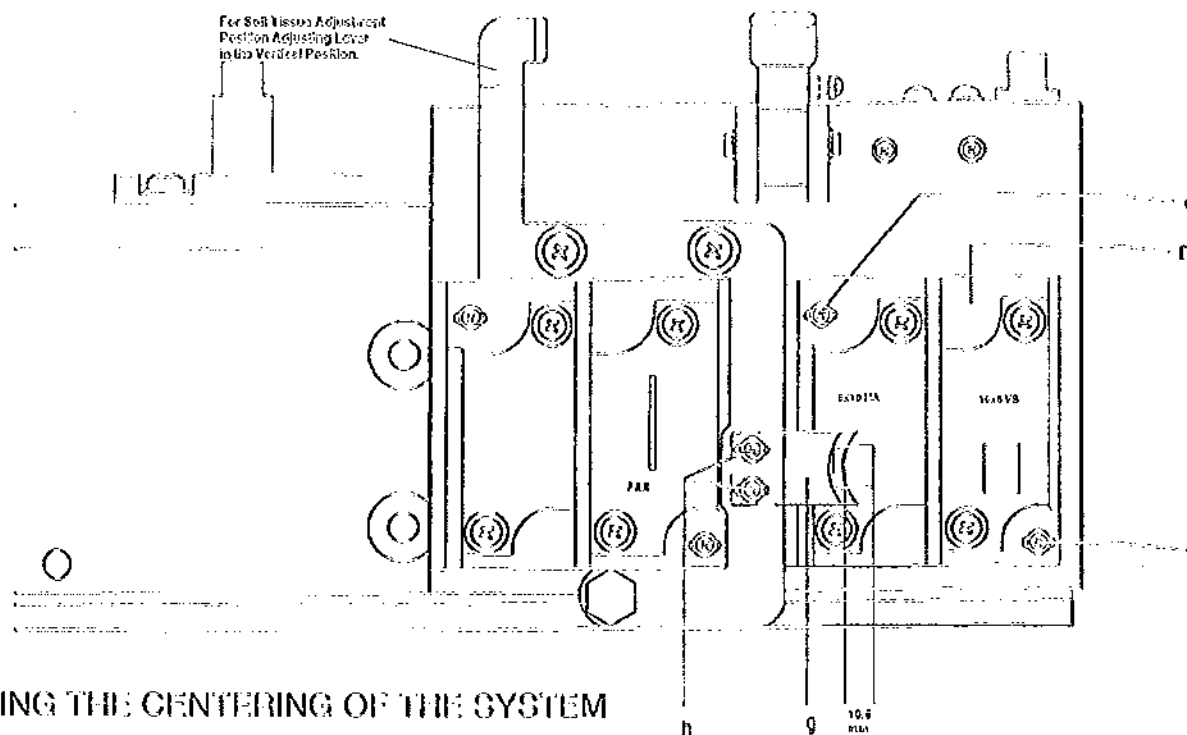
Note: See Page 7-4 of this manual for Jumper Location

2. The ORTHORALIX 9000 rotation can be stopped and be exposed for this test. To enter the test mode turn off the power and jumper JP21 pins together using jumper stored on JP18 of the logic board located inside the PCB access door. Turn on power unit will display several messages and stop at "SYSTEM REQUIRES RESET" press reset. This will now allow x-ray generation without rotation. (i.e. Ceph exposure in Panoramic configuration for test.)

Note: the display will show Ceph mode, set unit to 76kV, 6mA, and time to 0.8S

3. Dim the room lights.
- 3a. Set exposure time to 3.2s
4. While standing in a safe location (at least 6 ft. (2 M) from the x-ray or behind a protective barrier), depress the exposure switch. The fluoroscopic screen will glow during exposure. Release the exposure switch when image is observed, keep exposure "on" time to a minimum.
5. If the beam needs adjustment loosen screws (J) and adjust collimator plate, repeat the steps starting at 3a above until proper results are obtained. See diagram on the following page.
6. Following adjustment remove jumper JP21 and store on the outside pin of JP18 for future use.

DENTSPLY GENDEX ORTHORALIX™ 9000



TESTING THE CENTERING OF THE SYSTEM

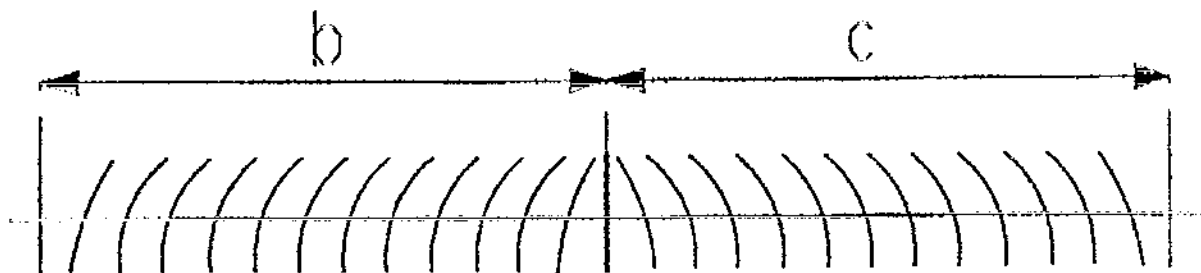
To test the centering of the ORTHORALIX 9000 system a specific optional phantom has been designed (Image Quality Phantom). The test must be done selecting the standard panoramic technique.

Proceed as follows:

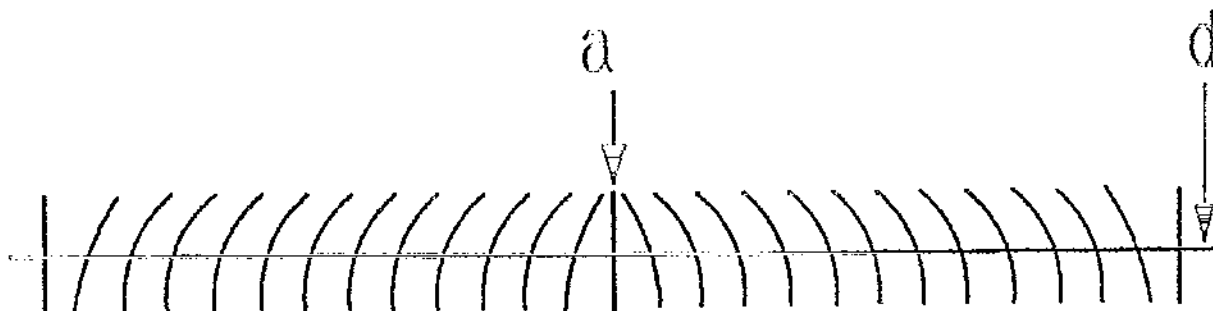
1. Switch on the unit and return to the reset position by pressing the RESET key.
 2. Select the standard panoramic mode.
 3. Ensure that bite guide adjustment knob is set to 0. See Page 15 in user manual step 4.
 4. Install the image quality phantom onto the panoramic (transparent) chin rest and insert it in the bite block holder; verify horizontal with a spirit level.
 5. If a cassette without intensifying screens is not available:
 - . take one film
 - . expose film to the light
 - . develop the film: it will be totally black
 - . put the black film in the cassette and in front of the film to be exposed (in this way the effect of the intensifying screens is limited).
 If a cassette without intensifying screens is available, put the film to be exposed into it at this time.
 6. Select 60 kV, 6 mA, make a panoramic exposure and develop the film.
- NOTE: Be sure unit is on 12 Sec. exposure not 10 Sec. Peco for this test.

7. Perform the following checks on the developed film:

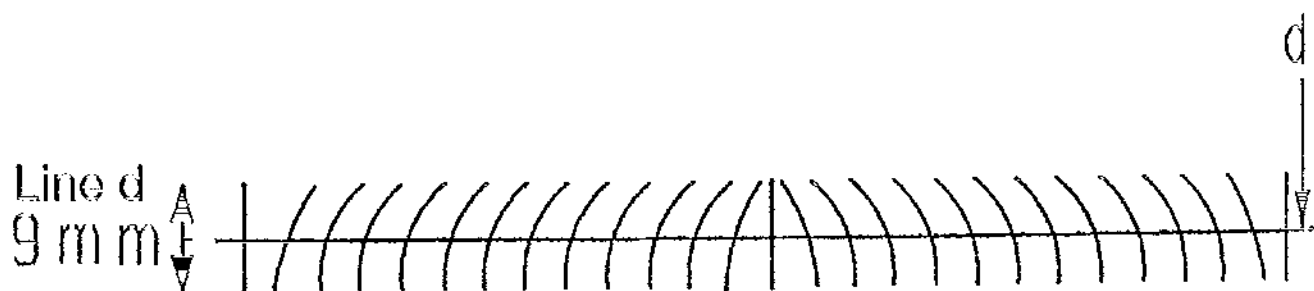
8. Verify that the semi-projections $b \pm c \pm 3$ mm (nominal value with the central vertical line well focused ± 84 mm)



(9) Verify that line "a" is vertical $\pm 3^\circ$ respect to the horizontal line "d".

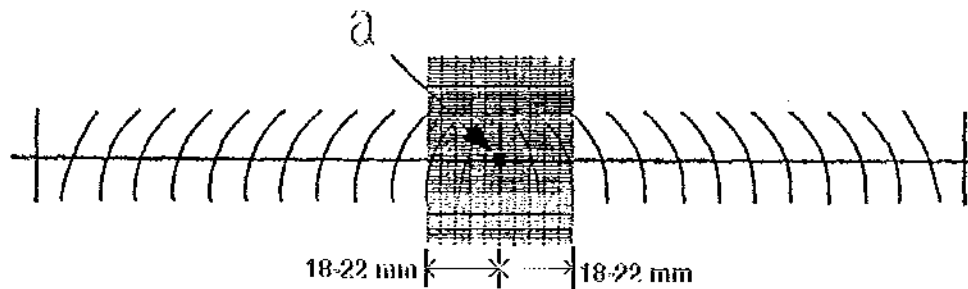


(10) Verify that line "d" is horizontal and flat within a band of 9 mm.

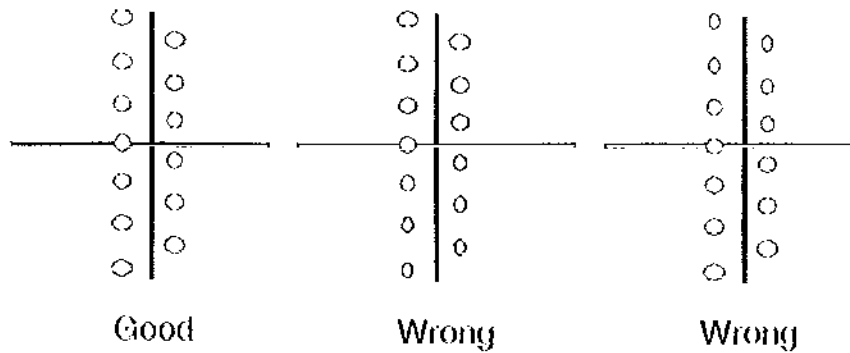


DENTSPLY GENDEX ORTHORALIX™ 9000

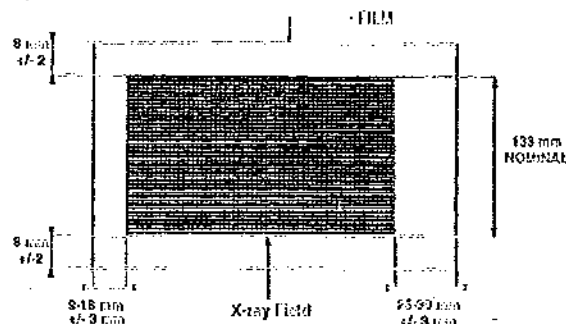
11. Verify that the darkened area is centered in respect to the central vertical line "a" with a tolerance of ± 4 mm.



12. Verify that the central vertical line "a" is well focussed:



13. Verify that the X-ray field is vertically centered respect to the film (nominal vertical dimension 133mm $\pm$ 3 mm; distance between the edges of the X-ray field and the top and bottom edges of the film is 8 mm $\pm$ 2 mm).



Refer to prior steps for any required adjustment of the X-ray collimator.

14. Insert a film in the cassette with blackened film.

15. Selecting 60 kV 6 mA make an exposure.

16. Develop the film and verify that the X-ray field is vertically centered with respect to the film (nominal vertical dimension 133 mm $\pm$ 3 mm - distance between the edges of the X-ray field and the top and bottom edges of the film is 8 mm $\pm$ 2 mm).

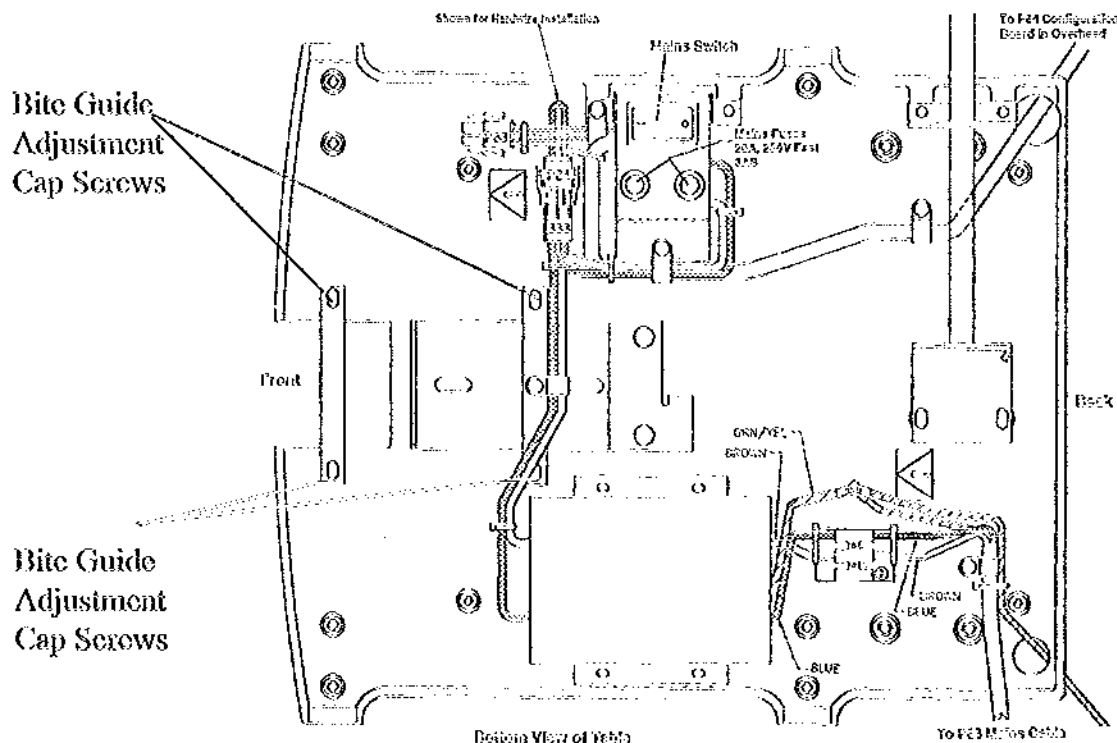
Refer to prior steps for any required adjustment of the X-ray collimator.

Symmetry Adjustment

If the results obtained making a panoramic projection with the image quality phantom are not in tolerance (during the procedure to test the system centering as explained in the previous pages.

If the symmetry was not correct (see step 9 page 3) perform the following mechanical steps.

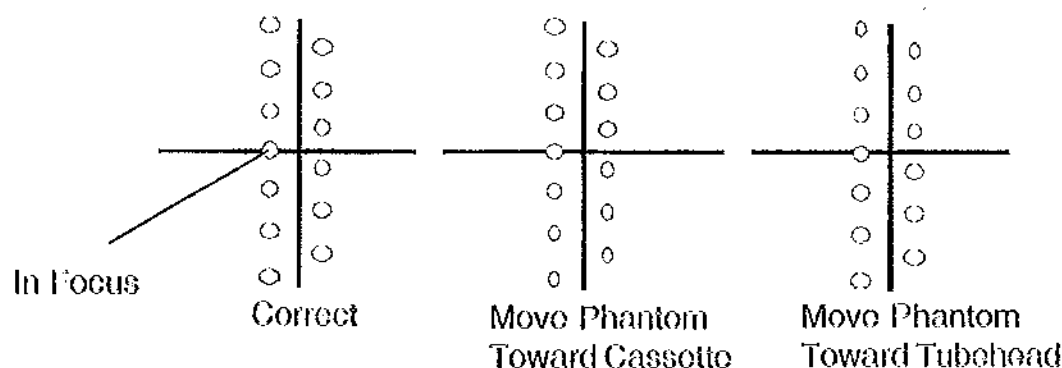
1. Rotate the tubehead to the center of rotation using the Demo No X-ray program.
2. Turn off unit
3. Insert the Zero Set Pin p/n 891-0295P1 from the (alignment kit 112-0915G1) into the 0 POS hole located on the rotation arm support plate. Gently move the tube arm back and forth until the pin seats fully into the camplate.
4. Install image phantom on to bite guide holder and level.
5. Locate from the alignment kit system alignment cord p/n 112-0916G1. With cassette removed install the red block into the film cassette slot and turn 90 deg. to lock in place. Next stretch the cord toward the collimator and over the image phantom install the brass tab into the pan collimator plate with the longer tab down. Adjust the red block height to allow the minimal cord clearance of the phantom.
6. The cord should fall on the centerline and parallel to the image phantom.
TECH TIP: View from below.
7. If the cord does not fall on the centerline and parallel to the image phantom, remove the four 4 mm cap screws holding the bottom bite guide cover, and remove.
8. Loosen the bite guide adjustment 4mm cap screws see diagram below. Move the bite guide assembly side to side to align the cord to centerline of phantom and retighten cap screws.



DENTSPLY GENDEX ORTHORALIX™ 9000

9. Remove the Zero Set Pin and Alignment Cord.
10. After adjustments take another test film see page 2.

Central Vertical Line Adjustment

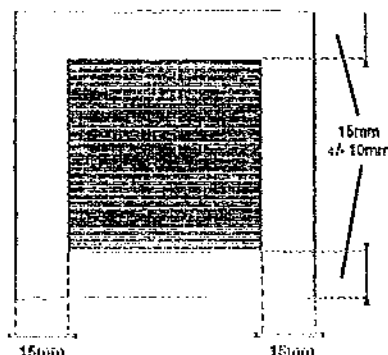


1. Refer to diagram above, and move the phantom using the bite guide adjustment knob. The correct example above should correspond with the bite guide scale at a setting of (0).
2. Make adjustment and take another test film see page 2.
3. After the correct (0) position is determined, verify the bite guide scale is at (0). If the scale is incorrect carefully remove the scale and reposition to indicate (0).

ALIGNMENT OF X-RAY FIELD CEPH MODE

To check the alignment of the X-ray field in Ceph mode proceed as follows:

1. Verify that the metal ear rings are present on the
2. Set the earplugs in the middle position.
3. Turn tubehead to Ceph. position. Select Lateral Collimator position. Select 60 kV, 6 mA, 0.80 sec. insert a loaded film cassette in the Lateral position, make an exposure and develop the film.
4. Verify that the X-ray field limits centrally located within film borders are at a distance of about 15 mm from the film edges. If not adjust the X-ray collimator as described earlier in the section. If lateral collimator position is not lined up in this configuration AP/PA will not be adjusted correctly.

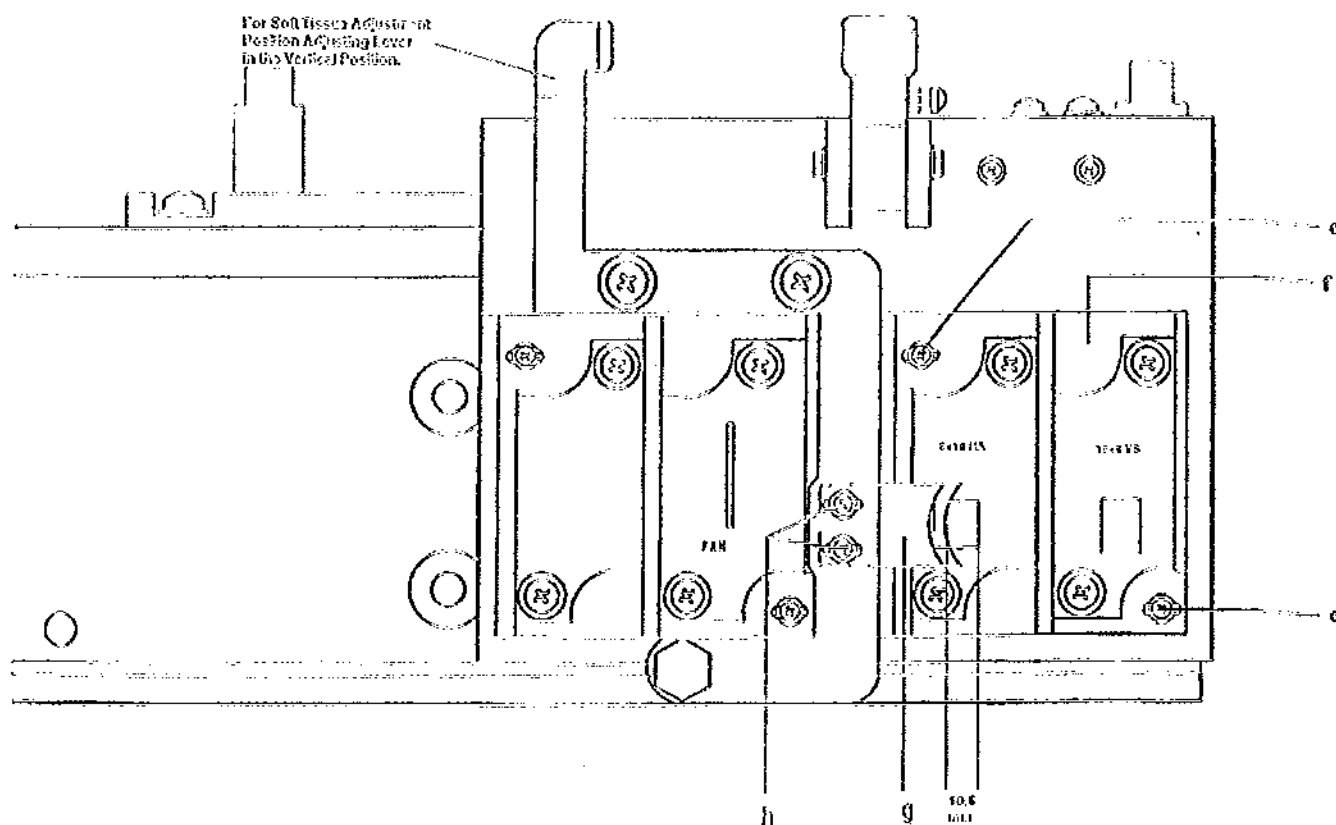


5. Verify that the images of the ear rings are concentric on the film (the smallest depicted ring is the closest to the cassette) and that they lie in the correct position. If not adjust the earplugs.
6. Repeat the tests for the other film formats

INSTALLATION OF SOFT TISSUE FILTER

The soft tissue filter must be mounted after the alignment of the Ceph. X-ray field as described on Page 4-5.

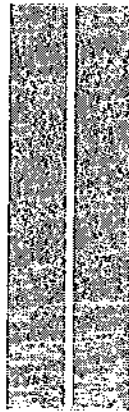
1. Install the soft tissue filter (g) on the collimator using the two screws (h).
2. Position the adjustment arm in the vertical position, this corresponds to position 2 on the tubehead cover.
3. Measure 10.5mm from the front middle edge of the soft tissue filter to the back edge of the window. See Diagram Below.



CHECKING THE CENTERING LIGHTS WITH LIGHT BEAM PHANTOM.

Check the adjustment of the centering light with light beam phantom (part no. 891-0115P1), as follows:

1. Install the light beam phantom into the bite block holder.
2. Switch on the lights and verify the horizontal light is lit, the only adjustment is to loosen the set screw and rotate the lamp socket to set the filament perpendicular to the moveable slot (horizontal to the floor).
3. Verify that the Vertical mid-sagittal light is corresponding with the vertical vertical silver line of the phantom. See diagram 1 below.
4. Verify that it is aligned. If not adjust vertical mid-sagittal lamp as explained on page 4-9 POSITIONING LAMP ADJUSTMENT.

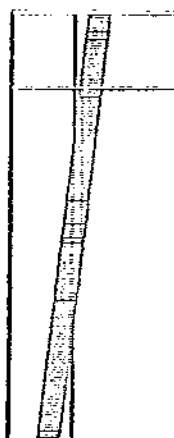


1

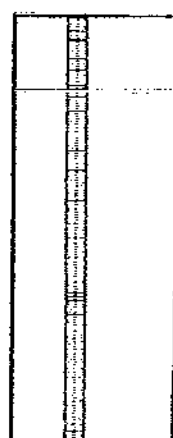
5. Make sure that the system is at the reset position, and switch on the lamps.
6. Verify that the bicuspid light is in sharp alignment on the vertical silver line of the phantom, and it is vertical. If adjustment is needed see page 9. (See figures A-B-C below).



A
Wrong



B
Wrong



C
Correct

Positioning Light Adjustment

NOTE: Use Light Phantom Part No. 891-0115P1

NOTE: Do not touch light bulbs with bare fingers, use gloves. If bulb was touched wipe clean with alcohol before installation.

a. Mid-Sagittal Light Adjustment

Do not adjust the mid-sagittal light unless it is absolutely necessary. All of the overhead rotation arm and bite guide positioner alignment was done at the factory utilizing this light. If adjustment is required, use an Allen wrench to loosen/tighten the 4 screws above the service door that the mirror is mounted to. Adjustment of those screws will cause the light assembly to move, which will shift the light beam up/down or left/right.

b. Frankfort Plane Light Adjustment

The horizontal light should not need adjusting unless the light beam fails to shine out of the slot (located to the lower right of the service door). If the beam is not coming out of the slot, remove the operator panel. Loosen screw holding light socket and move up or down until the filament is aligned and parallel with the slit. Then tighten light socket screw and reinstall the operator panel. The light has an adjustment lever which shifts the light up/down when doing the patient positioning. The lever is located next to the slot.

c. Bicuspoid Light Adjustment

The light assembly itself is not adjusted. The light directs a light beam to a mirror, which redirects the beam to the patient's face. The mirror, which is mounted behind the film cassette cover to the left of the cassette shield slot (where the x-ray passes through to get from the tube head to the cassette), has three retaining screws. Adjust those screws to obtain the correct angle for the mirror to redirect the light beam. The light beam should intersect the patient's bi-cuspid.

SECTION 5 ERROR CODES

The following is a list of error codes that are programmed into the ORTHORALIX 9000 for diagnosis in the event of a system problem. Use these codes to determine the proper plan of action to correct the system problem. If the problem persists call GENDEX Technical support at 1-800-769-2909.

The following are error numbers that can be displayed by the ORTHORALIX 9000 operator panel.

The display reads: io; Fault Detected # 19

<u>ERROR NUMBER</u>	<u>DESCRIPTION</u>
1	Arm motor over current
2	Film motor over current
3	HVDC PCB over temperature
4	X-ray tube mA under current
5	X-ray tube kV under voltage
6	HVDC PCB bias supply under voltage
7	HVDC PCB bias supply out of range
8	HVDC PCB line voltage out of range
9	Control PCB low voltage supply under voltage
10	Control PCB input under voltage
11	Control PCB low voltage supply over voltage
12	Control PCB input over voltage
13	Control PCB low voltage supply over current
14	X-ray Tube kV over voltage
15	X-ray Tube filament over current
16	X-ray Tube mA drive over current
17	X-ray Tube kV drive over current
18	HVDC PCB chopper over current
19	Back up timer expiration

GENDEX Dental Systeme

Servicetip 02/ 2003 Orthoralix 9000

B. Wittrock
techn. Schulung III

Fehler Codes des Orthoralix 9000:

Die folgende Liste erklärt die Fehlernummern auf dem Display des Orthoralix 9000
Bei diesen Fehlern nehmen sie bitte Kontakt mit dem technischen Support von
GENDEX Hamburg oder mit den Bereichstechnikern auf.

Herr Grau Tel:	040 - 89968840
Herr Banse	0171 - 3702204
Herr Jureiko	0171 - 3702203
Herr Larz	0171 - 4377670
Herr Wittrock	0171 - 4377671

<u>Fehler Nummer:</u>	<u>Bedeutung:</u>	<u>PCB = Power Control Board</u> <u>(Hinter Spiegel)</u>
1	Rotationsmotor hat Überstrom	
2	Kassettenmotor hat Überstrom	
3	HVDC PCB hat Übertemperatur	
4	Strahler	Unter mA
5	Strahler	Unter kV
6	HVDC PCB	liefert Unter - Spannung
7	HVDC PCB	liefert falsche Spannung
8	HVDC PCB	Netzspannung außer Bereich
9	Control PCB	Niederspannung zu gering
10	Control PCB	Eingangsspannung zu gering
11	Control PCB	Niederspannung zu hoch
12	Control PCB	Eingangsspannung zu hoch
13	Control PCB	Niederspannung Überstrom
14	Strahler	Überspannung
15	Strahler	Heizstrom zu hoch
16	Strahler	Röhrenstrom (Treiber) zu hoch
17	Strahler	Hochspannung (Treiber) zu hoch
18	HVDC PCB	Frequenz zu hoch
19	Kontrollzeitschalter	hat Aufnahme abgeschaltet (ist aktiv)

Logic Board Option Jumpers

The purpose of the option jumpers, JP17 through JP23, is to modify the normal behavior of the system to aid manufacturing and service activities. The user is not intended to use the machine with any of these options enabled. An option selector is a little black shorting peg that is placed on two adjacent option pins. For use by a customer, there should be no option selectors installed on the seven jumpers, numbered: JP17 through JP23. Note that there are other jumpers on the logic board that should remain installed as from the factory. Note a spare option selector should be stored on JP18, since it is not used or installed over one pin on any of the jumpers.

Installation & selection: Service personnel select a service mode by installing an option jumper onto JP17 through JP23. The computer software will only recognize these options at the time the program begins, that is, when power is applied. Refer to Table 1 to determine which jumper selects a desired option. Note that most of the options can be combined, but others must be used alone.

Table 1

Jumper Number	Option name
JP17	Setup Service
JP18	Not used
JP19	Motor movement
JP20	Disable X-ray
JP21	Pan Tube Align
JP22	Life Test Select (no X-rays)
JP23	Cooling Disable

Descriptions:

Setup Service: When this option is active, the system will not reset the user settings to defaults after every exposure. This allows the service person to do repeated tests without having to reset the parameters. Also, the patient positioning light has a longer duration, 3 minutes instead of the usual 60-second time-out.

Motor movement: This option works **alone**. Should other option jumpers be installed, they are ignored. This option allows the user to move the Arm and Film Cassette independently. The display shows which motor is active and which direction is selected. "Forward" is the direction that the motor moves during an exposure. To move the motor, activate the hand switch. The motor will continuously turn until a limit is reached or the switch is released. Each time, after the motor stops, it will reverse direction, toggling between forward and reverse. To toggle between Film and Arm motion, activate any front panel button.

Disable X-ray: This option prevents the system from generating X-rays during any operation. In all other respects, the system will work as normal. This option should be installed at a trade show or other times when there is a danger of inadvertent **exposure**.

Servicetip 01/2003
Orthoralix 9000

B. Wittrock
techn. Schulung HH

Installation und Wahlmöglichkeiten:

Der Servicetechniker hat die Möglichkeit, bei der Installation des System mit den Jumpern: 17 bis 24 auf der Platine „Control Current Board“ (hinter Spiegel) verschiedene Einstellungen vorzunehmen.

In Auslieferungszustand sind die Jumper nicht gesetzt:



Die Änderung der Jumper darf nur im ausgeschalteten Zustand des System erfolgen.

Jumper Nummer:	Wahlmöglichkeit:
JP 17	Service Setup
JP 18	z. Zt. nicht verwendet
JP 19	Motor Test Auslösung mit Handschalter
JP 20	X-ray abgeschaltet
JP 21	Strahlung ohne Rotation
JP 22	z.Zt. nicht verwendet
JP 23	Thermoschutz des Strahlers „AUS“
JP 24	Fehler Meldung abgeschaltet

weitere Erläuterungen findet man im Service-Manual des Orthoralix 9000 in der Konzernsprache „Englisch“

Aachen, 29.04.03

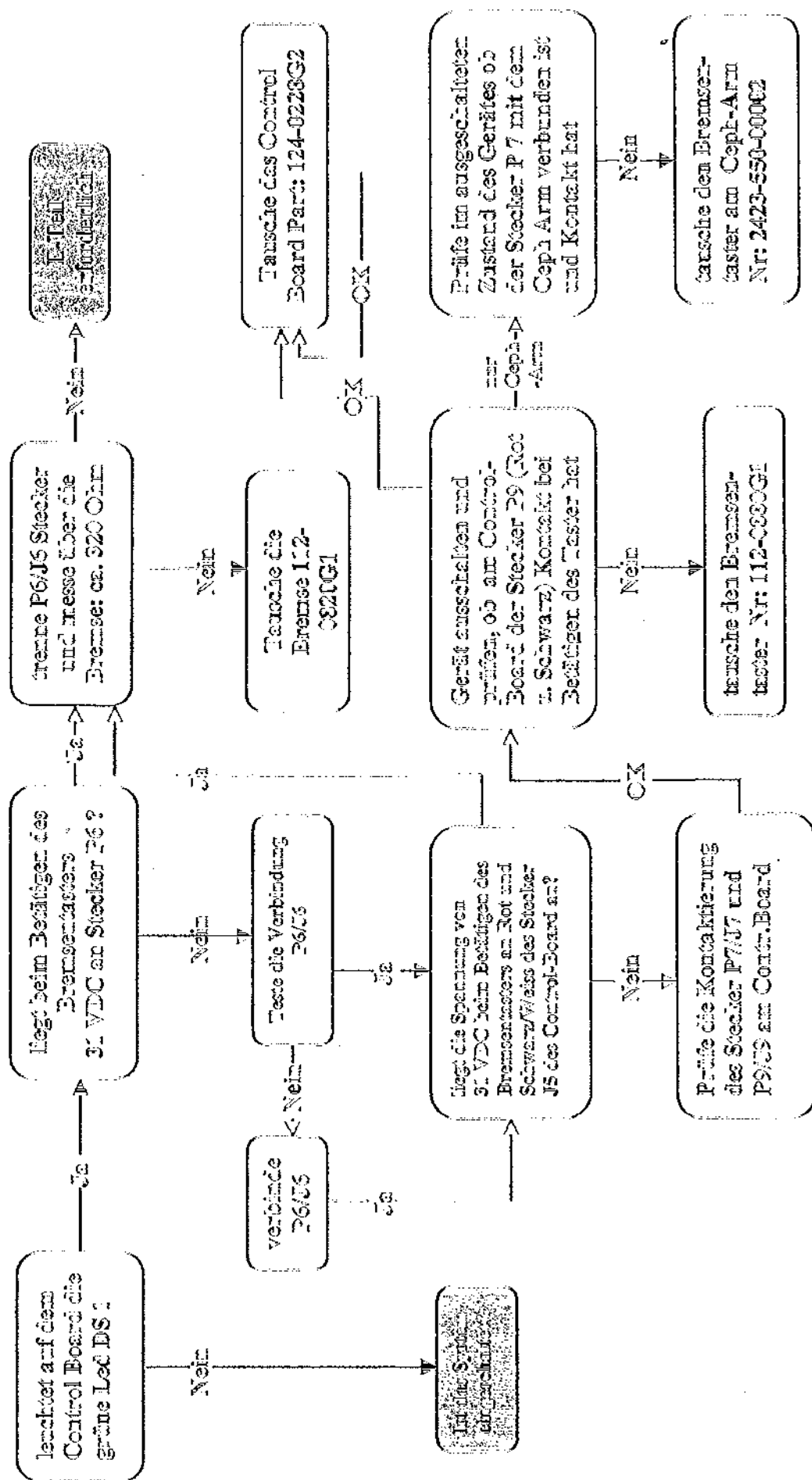
B. Wittrock

Pan Tube Align: This option disables the motor movement in the Pan mode for the purposes of X-ray beam alignment. The unit will behave as if it is in Ceph mode while the tube is in Pan position.

Life Test Select: This option only works alone or with "Disable X-ray". Any other option will disable this one. With this option installed, the system will continuously operate "NO X-ray" cycles. To begin the cycles, after power-up, press the "MODE" key as to select "Demo" mode. The system will begin cycling and will continue until the power is turned off. This mode could be useful during trade shows or to "burn-in" the unit after repairs.

Cooling Disable: Selecting this option allows the user to make repeated exposures without stopping for a cooling cycle. Each exposure causes the tube to heat up. During normal operation, the machine will keep track of the number of exposures taken during given span of time to determine when the system will automatically "wait" before allowing any further exposures.

Vertikal Bremse ist ohne Funktion (gilt auch bei Ceph)



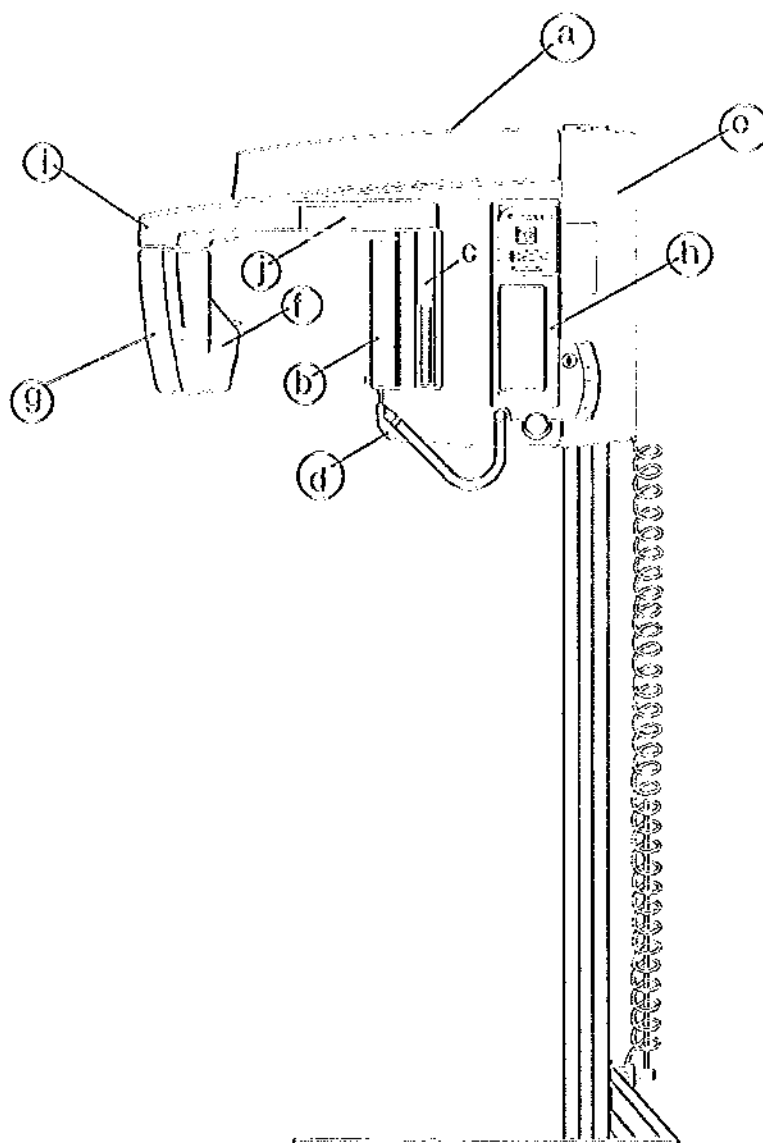
SECTION 6

PARTS

DISPOSAL OF SPARE PARTS

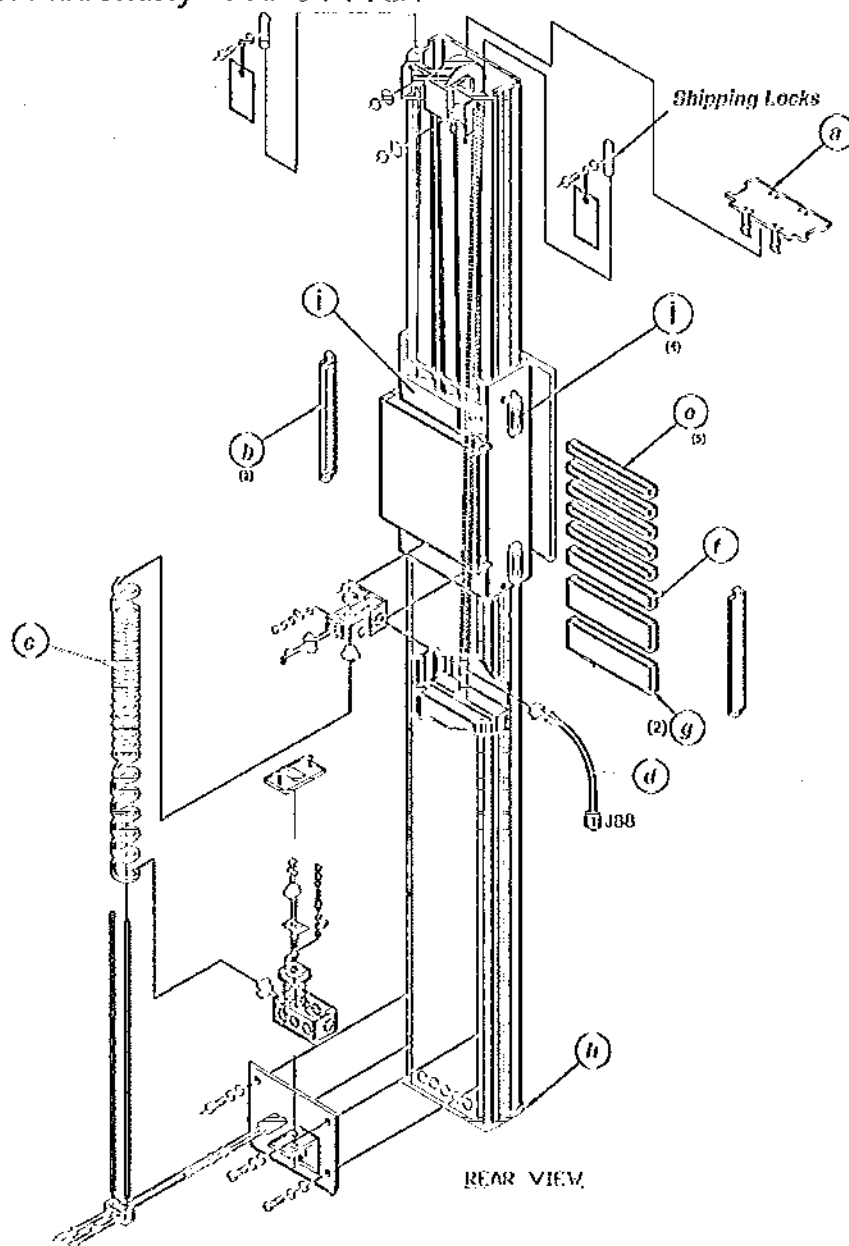
- NOTE 1** The ORTHORALIX 9000 contains non environmental friendly substances, in particular approx. 1kg of dielectric oil in the tubehead . Therefore disposal of discarded spare parts must be done via a company specializing in industrial wastes.
- NOTE 2** In case of oil leakage from the tubehead, handle the tubehead with care, and, in particular, protect hands, face and eyes with adequate protection devices (gloves, safety glasses, etc.), in order to avoid the contact of the oil with the skin.

DENTSPLY GENDEX ORTHORALIX™ 9000



REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
	Complete Overhead	110-0147G1	w/o kits
a	Overhead cover	305-0038P1	
b	Film Cassette Cover Inner	305-0034P1	with slot
c	Film Cassette Cover Outer	305-0034P2	back cover
d	Table Cover	305-0037P1	
e	Back Carriage Cover	112-0885G1	w/o harness
f	Front Tubehead Cover	305-0035P1	
g	Back Tubehead Cover	112-0882G1	
h	Control Cover	305-0041P1	
i	Arm Cover- tube side	305-0039P1	
j	Arm Cover- film side	305-0039P2	

Column Assembly 110-0144G1

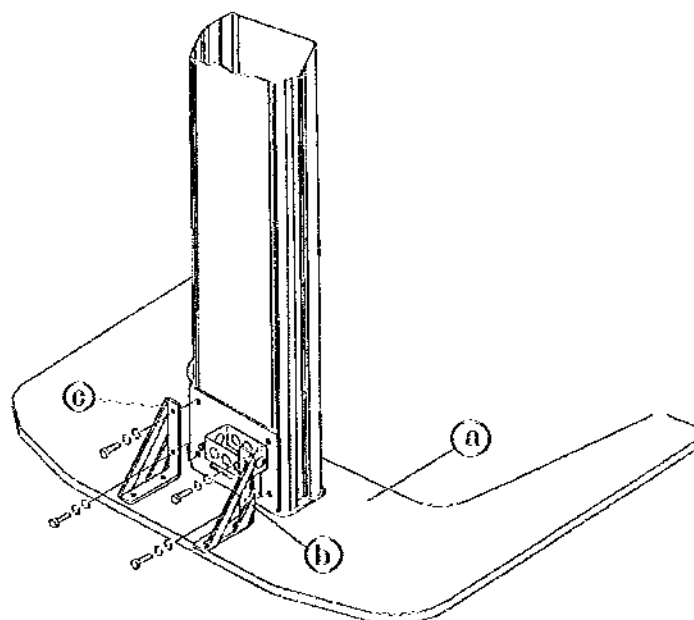


REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Top Column Cap	203-0352P2	
b	Trim Weight Door	112-0809G1	2 Ea.
c	Mains Coil Cord	126-0349G1	w/connector
d	Top Dist. Box Cable	126-0357G1	J88
e	Trim Weight 1.1 lbs.	236-0205P2	5 Ea.
f	Trim Weight 6.8 lbs.	236-0204P2	1 Ea.
g	Trim Weight 13.5 lbs.	236-0203P2	2 Ea.
h	Column Base	114-0424G2	
i	Carriage Lock Assm.	112-0820G1	
j	Cross Level Bearings	112-0854G1	4 Ea.
NS	Line cord	644-0016P1	
NS	Pulldown Handles	437-0016P1	2 Ea.
NS	Pulldown T-Lock	230-0184P2	2 Ea.

DENTSPLY GENDEX ORTHORALIX™ 9000

Free-Standing Base A9002

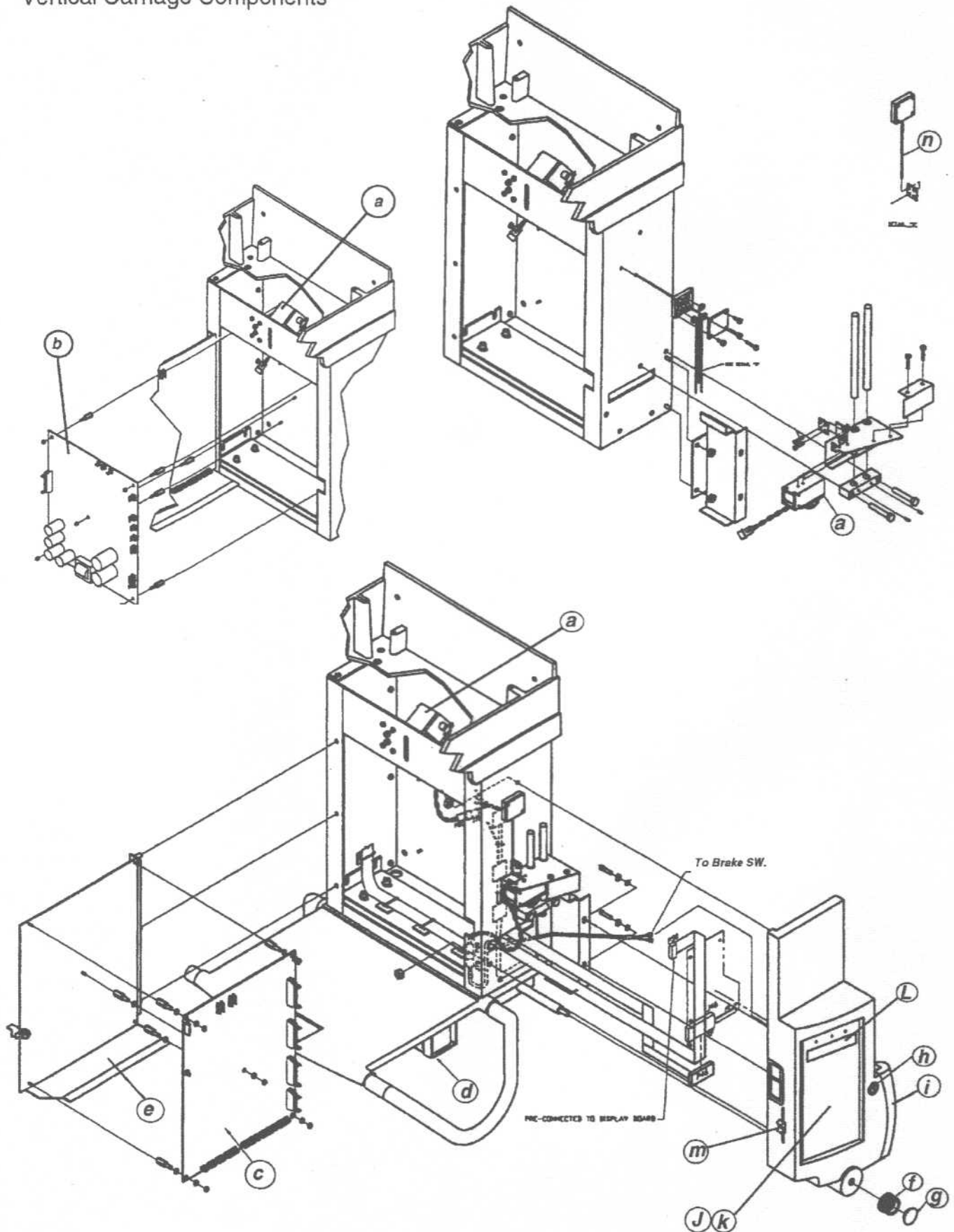
REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Base Plate	112-0908G1	
b	Right Column Bracket	114-0421G2	
c	Left Column Bracket	114-0425G2	
NS	Hardware Kit #1	112-0906G1	hardware for column
NS	Hardware Kit #2	112-0907G1	hardware for brackets
NS	Wrench	201-0376P2	use with kit #1



Vertical Carriage Components

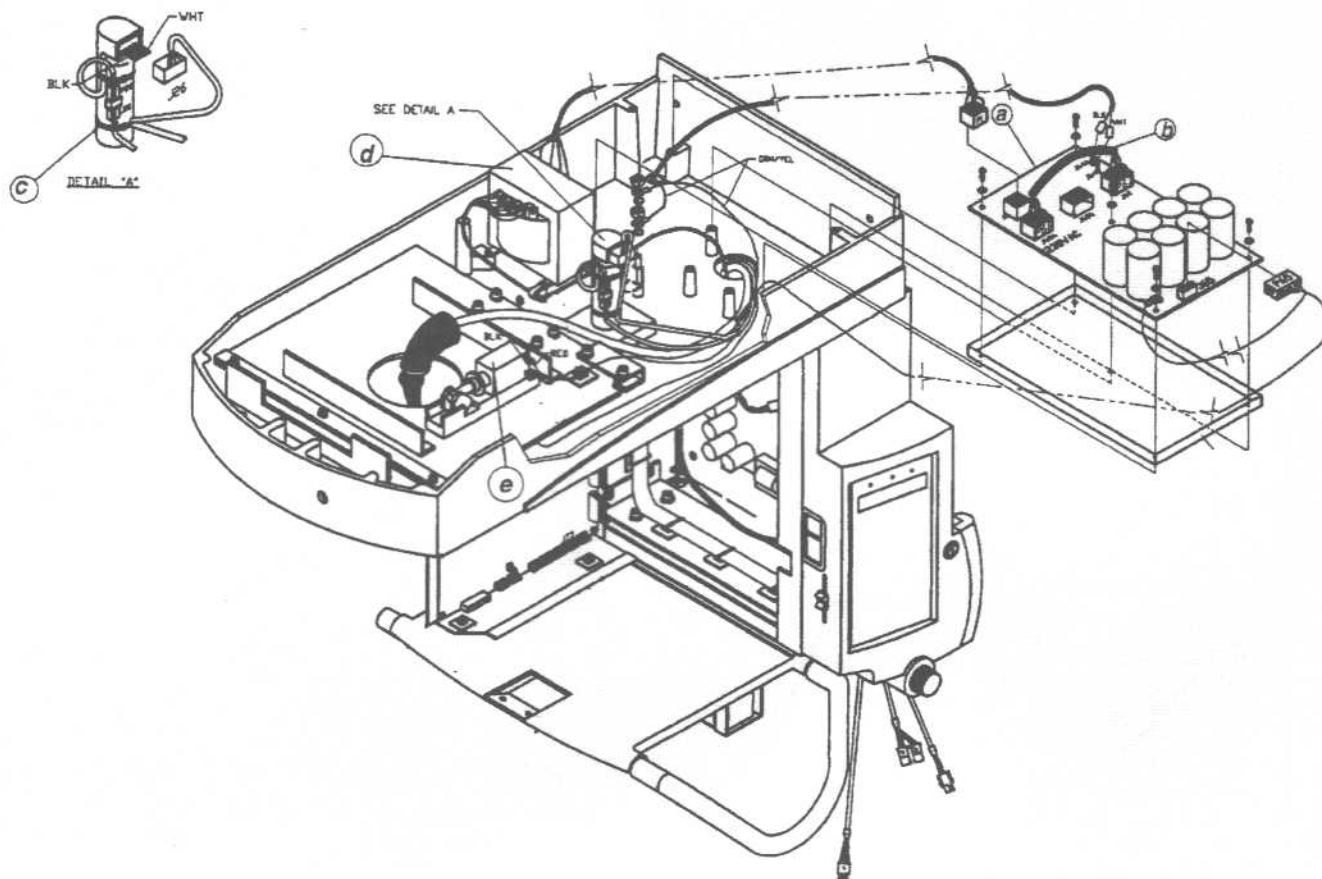
REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Positioning Light Assm.	112-0852G1	
b	Control Board	124-0228G2	
c	Logic Board	124-0229G2	
d	Power Switch	632-0044P1	
e	Inner Door	112-0877G1	
f	Bite-guide Knob	437-0013P1	
g	Bite-guide Knob Cover	437-0015P1	
h	Brake Switch	112-0880G1	
i	Handle Grip	305-0044P2	
j	Membrane Switch Pad	632-0079P1	
k	Interface Board	124-0231G1	
L	Display Board	122-0127G1	
m	Frankfort Plane Knob	437-0017P1	
n	Frankfort Plane Spring	405-0047P1	
NS	Positioning Lamp	634-0012P1	

Vertical Carriage Components



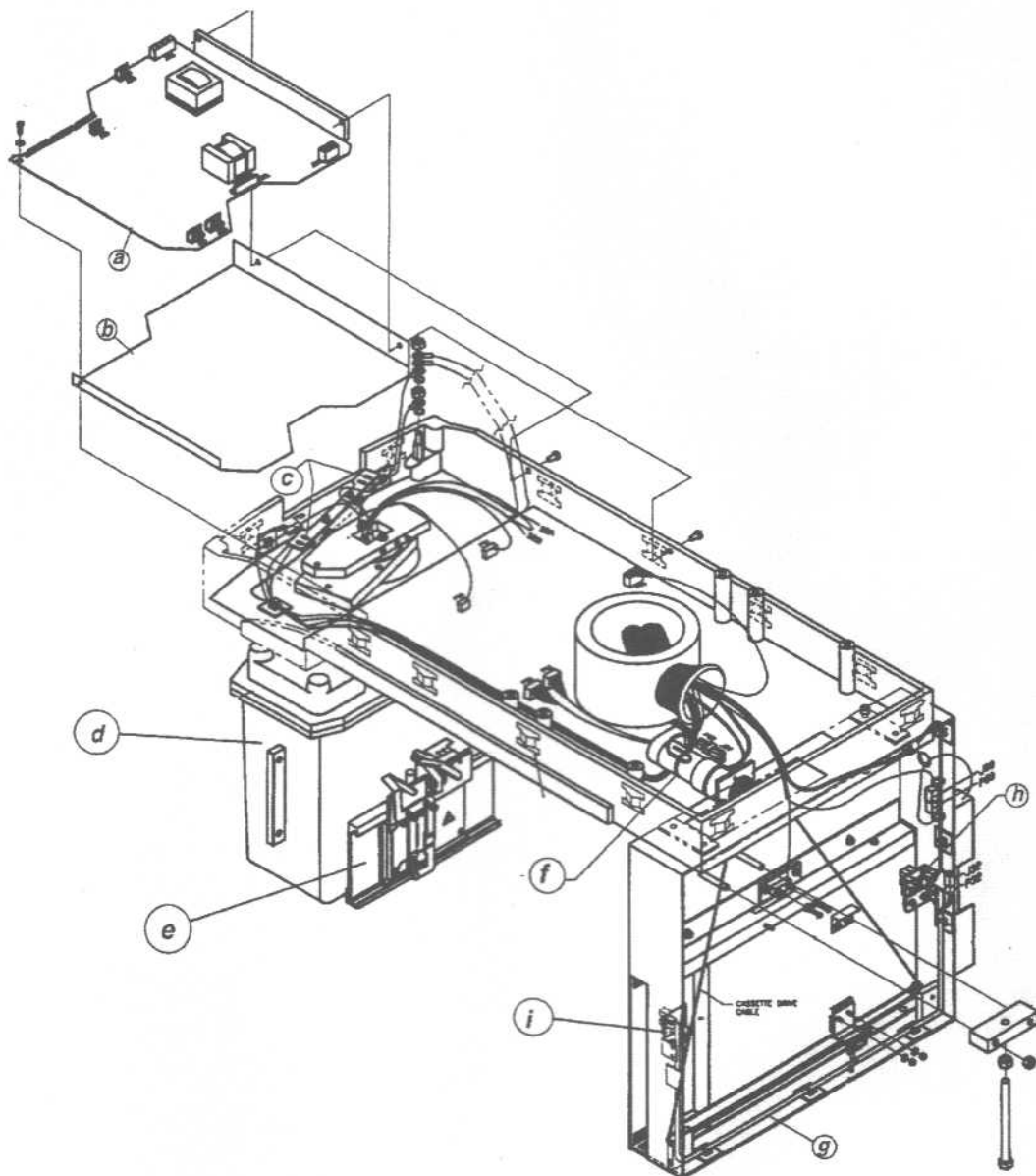
DENTSPLY GENDEX ORTHORALIX™ 9000

Overhead Components



REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Configuration Board	124-0230G1	
b	Voltage Config. Cable	126-0347G1	
c	Drive Motor	112-0819G1	
d	Transformer	122-0126G1	
e	Ceph. Lock-Pin Assm.	112-0851G1	
NS	Mirror Door Assm.	112-0878G1	w/mirror
NS	Mirror (only)	439-0039P1	
NS	Rotation Belt Replacement Kit	112-0923G1	

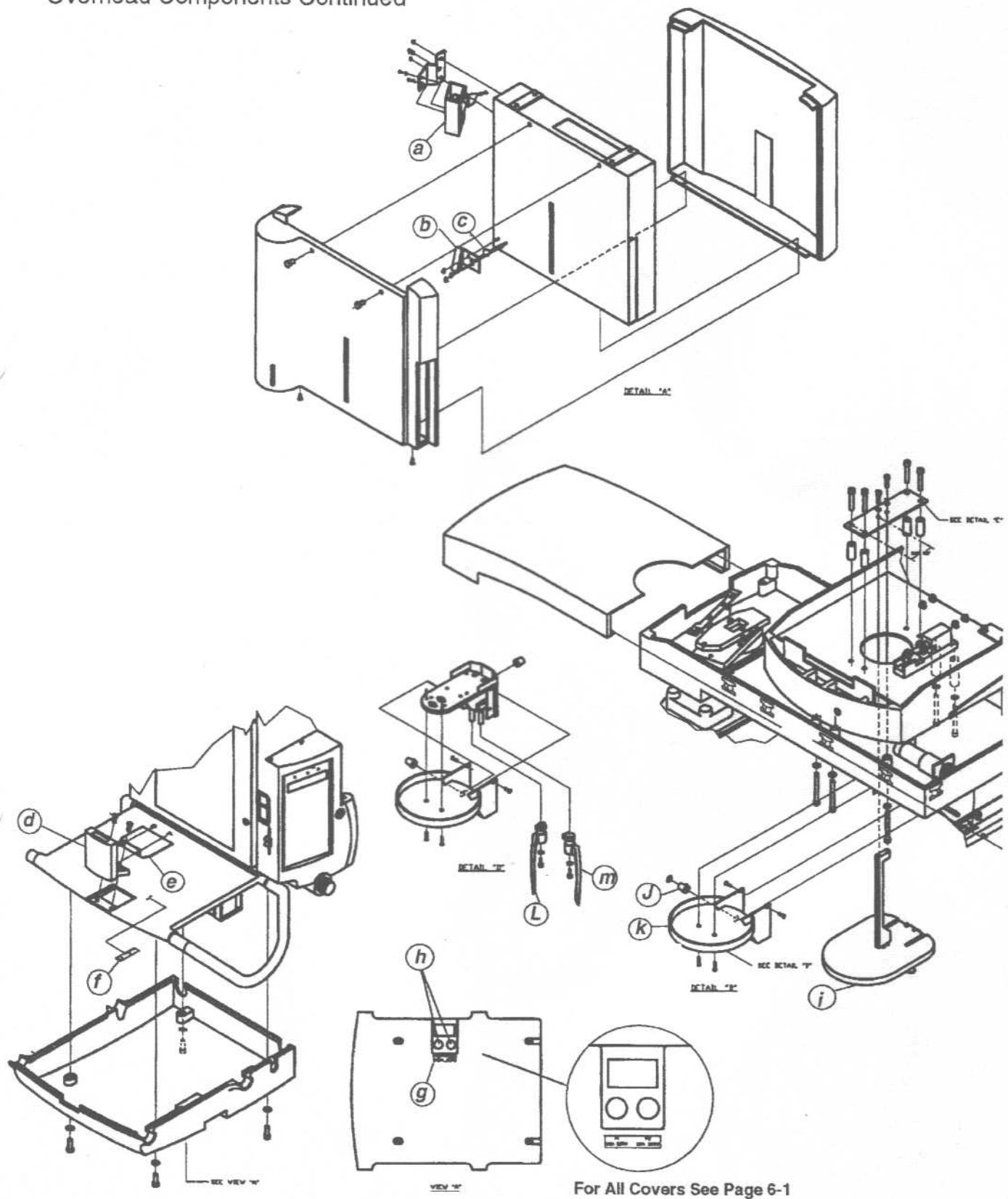
Overhead Components Continued



REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	HVDC Converter Board	124-0234G2	
b	HVDC Board Insulator	306-0040P1	
c	Tubehead Position Microswitch	632-0076P1	
d	Tubehead	A9001	
e	Collimator Assm.	4519-124-21312	
f	Cassette Motor	112-0816G1	
g	Film-Stop Cassette Harness	126-0358G1	
h	Opto-Interrupter Board	124-0233G1	Film Start
i	Opto-Interrupter Board	124-0233G2	Film End
NS	15x30 cm. Kodak cassette with Lanex Regular screens	A9701R	

DENTSPLY GENDEX ORTHORALIX™ 9000

Overhead Components Continued



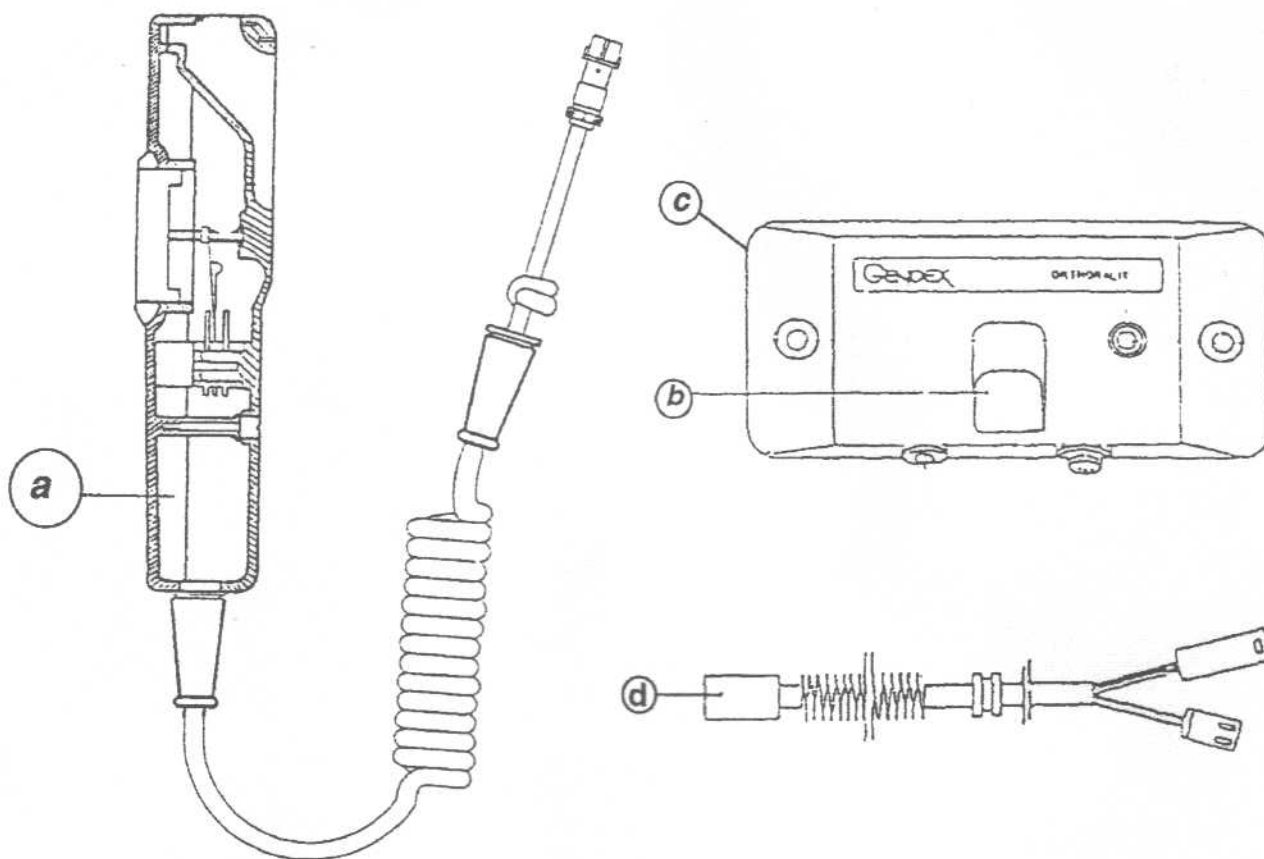
DENTSPLY GENDEX ORTHORALIX™ 9000

Overhead Components Continued

REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Light Assm.	112-0852G1	
b	Mirror Assm.	112-0871G1	
c	Ball Bearing	400-0045P1	used w/item b
d	Bite Guide Holder Assm.	4519-124-20781G2	
e	Trim Cover	206-0003P3	
f	Bite Guide Scale	408-0211P1	
g	Fuse Label	408-0205P1	
h	Fuses 20A / 250V	46-170021P47	2 used
i	Complete Headrest Assm.	112-0883G1	includes items i,J
J	Headrest Knobs	437-0021P1	2 used
k	Headrest Cover	4519-128-21451P2	
L	Left Headrest Flipper	303-0065P1	
m	Right Headrest Flipper	303-0066P1	
NS	Bite Guide	P20211	
NS	Chin Rest	P20221	
NS	Hygienic Bags for Bite Guide	P13362	
NS	Lamp	634-0012P1	3 used

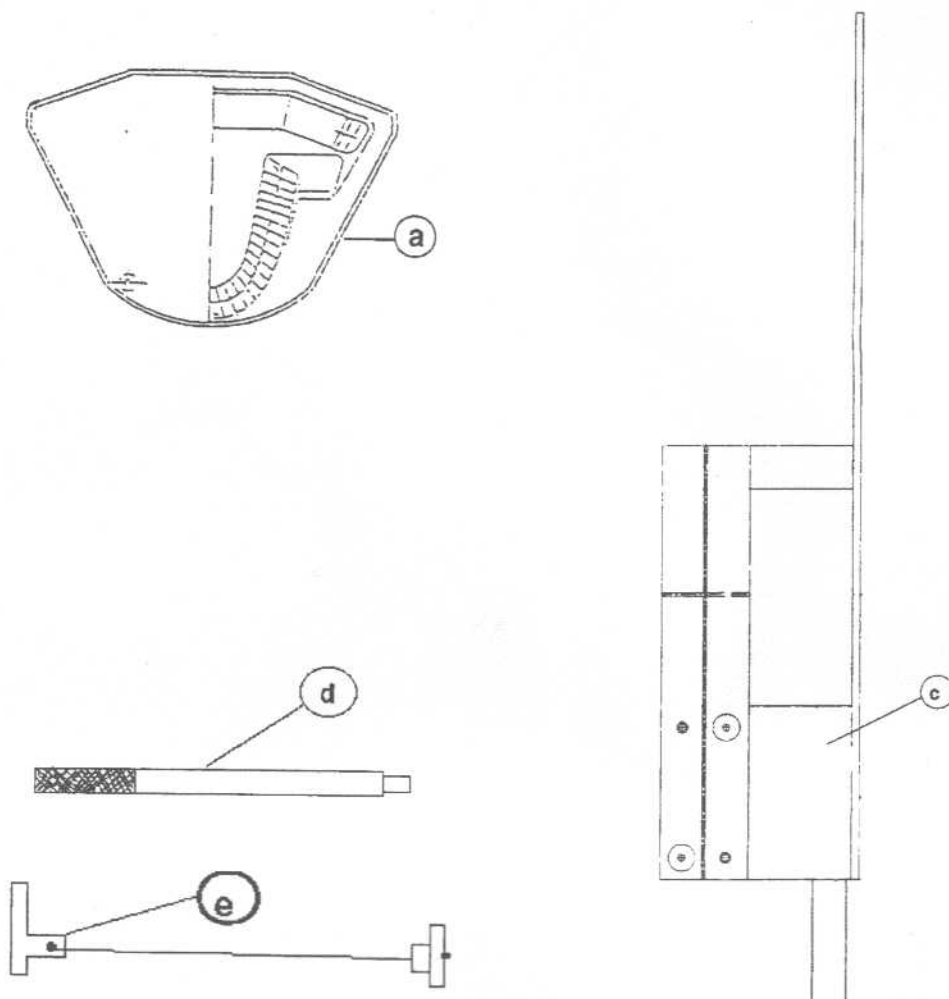
DENTSPLY GENDEX ORTHORALIX™ 9000

Exposure Switch and Remote Station Parts



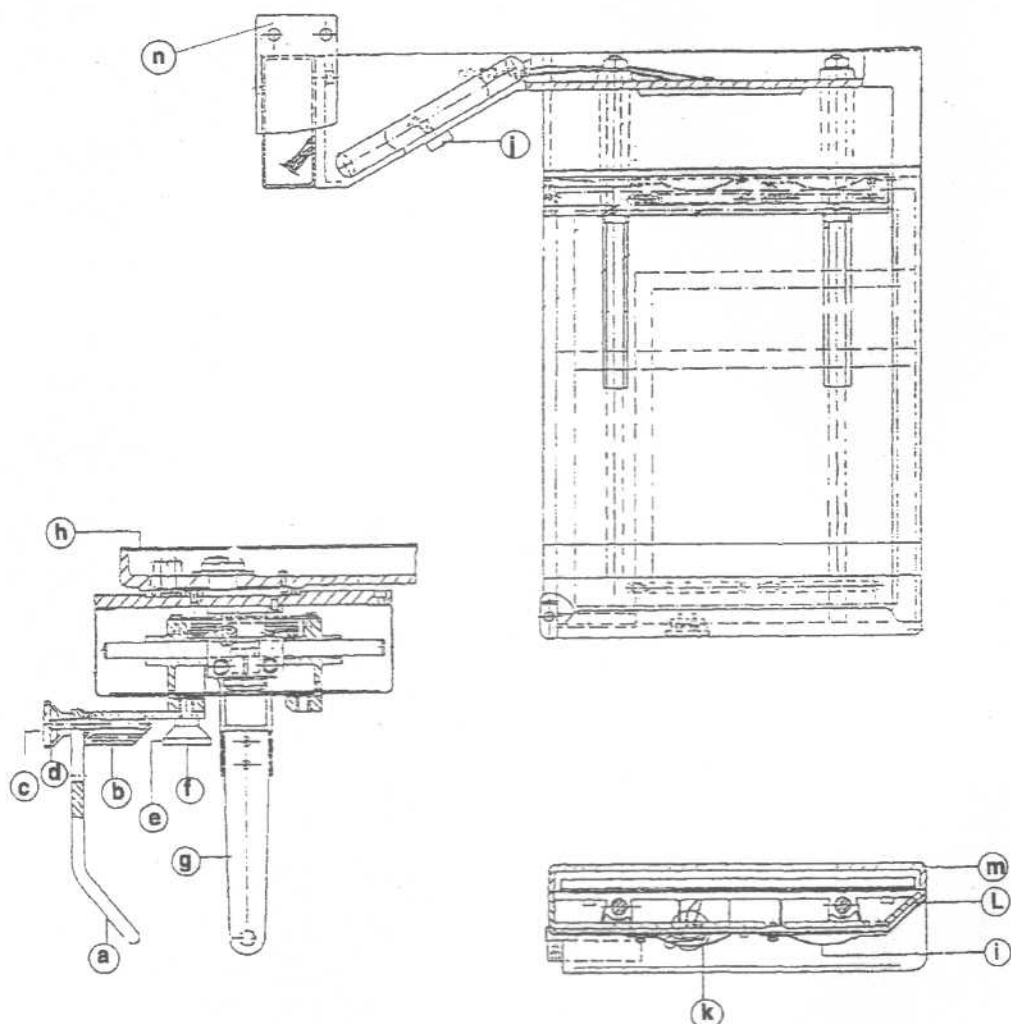
REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Exposure Switch w/ Cable	4519-105-20031	Complete
b	Exposure Switch Hook	112-0920G1	
c	Remote Exposure Station	4519-105-20092	Complete w/cable
d	Remote Cable	4519-190-01771	20m

Alignment Kit 112-0915G1



REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Image Phantom	4519-124-20471	
c	Light Phantom	891-0115P1	
d	Zero Set Pin	891-0295P1	
e	System Alignment Cord	112-0916G1	tubehead to film slot
NS	Fluoroscopic Screen	46-163266P1	

DENTSPLY GENDEX ORTHORALIX™ 9000



REF. NO.	DESCRIPTION	PART NUMBER	REMARKS
a	Nasion Rest	4519-128-20722	
b	Nasion Support	4519-190-01081	
c	Knob Cover	4519-122-22021	
d	Friction Knob	4519-122-22411	
e	Knob	4519-122-22031	
f	Snap Out Cap	4519-120-73852	
g	Ear Plug Support Arms	4519-190-30581	2X
h	Cover	4519-122-22401	
i	Spring	4519-122-20611	6X
J	Brake Switch	2423-550-00002	
k	Microswitch	4519-105-20151	
L	Rear Cover Cassette Holder	4519-128-20531	
m	Front Cover Cassette Holder	4519-128-20521	
n	Ceph. Arm Only	112-0914G1	
NS	Soft Tissue Filter	4519-122-24582	
NS	Lead Window 8"x10" H.A.	4519-122-24722	
NS	8"x10" cassette with Kodak Lanex Regular screens.	A0510R	