



810 Basic

(Includes Dent-X 9000)

CE

Installation, Operation and Maintenance Manual

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NOTE: Use of **DENT-X** Chemistry is strongly recommended for **optimum processor performance and highest quality diagnostic information.**

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WARNING: Study manual thoroughly before attempting to install or operate processor. Failure to do so could result in improper operation which may lead to operator injury or damage to processor.

IMPORTANT: Complete and mail enclosed warranty card promptly after equipment installation to ensure required factory warranty registration.

I. Safety Information & Labels

Safety Information

IMPORTANT SAFETY INFORMATION

TO REDUCE THE RISK OF INJURY OR ILLNESS, READ, UNDERSTAND, AND HEED THE INFORMATION ON THIS SHEET, ALL PRECAUTIONARY LABELS ON THE EQUIPMENT, AND ALL INSTRUCTIONS INCLUDED WITH THE EQUIPMENT BEFORE ATTEMPTING INSTALLATION, USE, OR MAINTENANCE.



WARNING: SERIOUS BODILY INJURY can result from improper handling or usage.



WARNING: NEVER move the equipment without enough help and/or lifting tools.



WARNING: ALWAYS use care when opening the shipping carton. Strapping bands can snap and injure you.



WARNING: NEVER operate the equipment without its protective panels and guards installed. Beware of rotating gears and belts, rollers, and chains, and keep from becoming entangled in them.



DANGER: POTENTIALLY FATAL VOLTAGES ARE PRESENT IN THIS EQUIPMENT.



CAUTION: NEVER make electrical connections to the equipment unless you are a qualified electrician.



WARNING: ALWAYS route power supply wiring through a nearby disconnect device.



WARNING: NEVER attempt electrical service on the equipment unless you are a qualified electronics technician.



CAUTION: ALWAYS shut off power at the disconnect device before making electrical connections or servicing electrical components.



CAUTION: ALWAYS replace fuses with those of the same type and rating.



WARNING: NEVER touch supply voltages; **THEY CAN BE LETHAL.**



CAUTION: NEVER operate the equipment until it is reliably electrically grounded, **NOT** through the water system.

PROCESSORS AND PROCESSOR ACCESSORIES



DANGER! POISON!  **PROCESSING CHEMICALS MAY BE HARMFUL OR FATAL IF SWALLOWED. KEEP OUT OF REACH OF CHILDREN.**

Always review and follow the hazard warnings and the ventilation, use and disposal instructions of the chemicals manufacturer. Install all fluids correctly before operating.



CAUTION: TO AVOID POSSIBLE DRINKING WATER CONTAMINATION, make certain that plumbing complies with local codes.















WARNING: PROCESSING CHEMICALS CAN CAUSE SEVERE BURNS. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor, mist or dust, and use only with adequate ventilation. **ALWAYS FOLLOW THE SAFETY RECOMMENDATIONS OF THE CHEMICALS MANUFACTURER.**

Safety Information (Cont'd)


RECOMMANDATIONS IMPORTANTES

AFIN DE RÉDUIRE TOUS RISQUES DE BLESSURES OU DE MALAISES, LIRE ATTENTIVEMENT ET APPLIQUER LES RECOMMANDATIONS INSCRITES SUR CETTE PAGE, SUR LES ÉTIQUETTES COLLÉES SUR L'APPAREIL AINSI QUE LE MANUAL D'UTILISATION FOURNI AVEC CET APPAREIL, AVANT TOUTE INSTALLATION, UTILISATION ET MAINTENANCE.

-
-
-  **AVERTISSEMENT** : risque de blessures graves en cas de mauvaises manipulation ou utilisation de l'appareil.
 -  **AVERTISSEMENT** : ne JAMAIS déplacer l'appareil sans être suffisamment aidé ou muni d'outils adéquats.
 -  **AVERTISSEMENT** : être TOUJOURS prudent lors de l'ouverture des cartons d'emballage. Les rubans de cerclage peuvent blesser en se cassant brutalement.
 -  **AVERTISSEMENT** : ne JAMAIS utiliser l'appareil sans ces couvercles et panneaux de protection. Attention à ne pas être grippé par les pièces en mouvement (engrenages, courroies, rouleaux et chaînes).
 -  **DANGER** : PRESENCE POSSIBLE DE TENSION ELECTRIQUE MORTELLE DANS CET APPAREIL.
 -  **AVERTISSEMENT** : ne JAMAIS effectuer la connexion électrique de l'appareil à moins d'être électricien qualifié.
 -  **AVERTISSEMENT** : TOUJOURS connecter le câble d'alimentation au coupe-circuit le plus proche.
 -  **AVERTISSEMENT** : ne JAMAIS faire d'interventions électriques à l'intérieur de cet appareils à moins d'être technicien qualifié en électronique.
 -  **ATTENTION** : TOUJOURS couper le courant avant toutes connexions électriques ou dépannage de composants électriques.
 -  **ATTENTION** : TOUJOURS remplacer les fusibles défectueux par des fusibles de même valeur et de même calibre.
 -  **AVERTISSEMENT** : ne JAMAIS toucher les fils d'alimentation électrique, cela peut être mortel.
 -  **ATTENTION** : ne JAMAIS utiliser l'appareil tant qu'il n'est pas relié à la terre (mais pas par l'intermédiaire des canalisations d'eau).
-
-

MACHINES A DEVELOPPER ET ACCESSOIRES



DANGER ! POISON !  **MANIPULER LES PRODUITS CHIMIQUES PEUT ETRE DANGEREUX OU MORTEL S'ILS SONT AVALES. GARDER HORS DE PORTEE DES ENFANTS.** Toujours suivre attentivement les instructions des fabricants de produits chimiques (indiquées sur les étiquettes et sur la documentation) concernant leur utilisation et leur évacuation. Veiller aussi à avoir une ventilation suffisante. Installer correctement les différents liquides avant utilisation.



ATTENTION : AFIN D'EVITER TOUTE CONTAMINATION DES EAUX POTABLES, s'assurer que toutes les canalisations et raccords de plomberie sont en accord avec la législation locale.



AVERTISSEMENT : MANIPULER LES PRODUITS CHIMIQUES PEUT CAUSER DE SEVERES BRULURES. Ne pas mettre en contact avec les yeux, la peau et les vêtements. Eviter de respirer les vapeurs, émanations et poussières, et utiliser uniquement avec la ventilation adéquate. **TOUJOURS SUIVRE LES RECOMMANDATIONS DE SECURITE FOURNIES PAR LES FABRICANTS DE PRODUITS CHIMIQUES.**

Safety Information (Cont'd)

WICHTIGE SICHERHEITSINFORMATION

BEVOR SIE DAS GERÄT VERSUCHEN ZU INSTALLIEREN, BENUTZEN ODER WARTEN, UM DAS RISIKO VON VERLETZUNG ODER KRANKHEIT ZU VERMEIDEN, **LESEN SIE, VERSTEHEN SIE UND BEACHTEN SIE DIE INFORMATION AUF DIESEM BLATT, ALLE VORBEUGENDEN AUFKLEBER AUF DEM GERÄT SOWIE ALLE MITGELIEFERTEN ANLEITUNGEN.**



WARNUNG: ERNSTE KÖRPERLICHE VERLETZUNG kann durch falschen Umgang oder Gebrauch passieren.



WARNUNG: NIEMALS bewegen Sie das Gerät ohne genügend Hilfe und/oder Hebungswerkzeuge.



WARNUNG: IMMER passen Sie auf beim Öffnen des Lieferungskartons. Verpackungsbänder können brechen und Sie verletzen.



WARNUNG: NIEMALS benutzen Sie das Gerät ohne die schützenden Seiten und installierten Schutzvorrichtungen. Um nicht darin verwickelt zu werden, passen Sie auf drehende Zahnräder, Gürtel, Rollen und Ketten auf.



GEFAHR: MÖGLICHE VERHÄNGNISVOLLE SPANNUNGEN SIND VORHANDEN IN DIESEM GERÄT.



VORSICHT: NIEMALS installieren Sie elektrische Anschlüsse zu dem Gerät außer Sie sind qualifizierter Elektriker.



WARNUNG: IMMER führen Sie Netzlinien durch eine nähere Trennungsvorrichtung.



WARNUNG: NIEMALS versuchen Sie elektrische Wartung in diesem Gerät außer Sie sind qualifizierter Elektrotechniker.



VORSICHT: IMMER trennen Sie den Strom zu dem Gerät bei der Trennungsvorrichtung bevor Sie elektrische Teile warten oder elektrische Anschlüsse machen.



VORSICHT: IMMER verwenden Sie Sicherungen von gleichem Typ und Wert.



WARNUNG: NIEMALS berühren Sie Netzspannungen; SIE KÖNNEN TÖDLICH SEIN..



VORSICHT: NIEMALS bedienen Sie das Gerät bevor es zuverlässig elektrisch erdgeschützt ist, NICHT durch das Wassersystem.

ENTWICKLUNGSGERÄTE UND ZUBEHÖRTEILE



GEFAHR! GIFT!  **ENTWICKLUNGSCHEMIKALIEN KÖNNEN SCHÄDLICH ODER VERHÄNGNISVOLL SEIN WENN SIE GESCHLUCKT WERDEN. FERNHALTEN VON KINDERN.** Immer überblicken und folgen Sie die Gefahrwarnungen und Durchlüftung, Gebrauch und Beseitigungsanleitungen von dem Chemikalienhersteller. Vor Bedienung installieren Sie

alle Flüssigkeiten korrekt.



VORSICHT: UM MÖGLICHE TRINKWASSERVERUNREINIGUNG ZU VERMEIDEN, versichern Sie sich daß alle Rohrleitungen übereinstimmen mit den örtlichen Bestimmungen.















WARNUNG: ENTWICKLUNGSCHEMIKALIEN KÖNNEN SCHLIMME VERBRENNUNGEN VERURSACHEN. Kommen Sie nicht in Berührung mit Augen, Haut und Kleidung. Benutzen Sie nur mit ausreichender Durchlüftung um Einatmung von Dampf, Nebel und Staub zu vermeiden. **IMMER FOLGEN SIE DEN SICHERHEITSVORSCHLÄGEN VON DEM CHEMIKALIENHERSTELLER.**

Safety Information (Cont'd)


IMPORTANTE INFORMACIONES DE SEGURIDAD

PARA REDUCIR EL RIESGO DE GOLPEARSE O ENFERMARCE, LEA, ENTIENDA, Y FIGESE EN LA INFORMACION EN ESTA PAGINA, TODAS LAS ESTAMPILLAS DE PRECAUSION EN EL EQUIPO, Y TODAS LAS INSTRUCCIONES INCLUIDAS CON EL EQUIPO, ANTES DE TRATAR DE INSTALARLO, USARLO O MANTENIMIENTO.

-  **PREVENSION: SERIOS GOLPES AL CUERPO** pueden resultar por impropio manejo o uso.
 -  **PREVENSION: NUNCA** mueva el equipo sin la suficiente ayuda y/o herramientas para levantarlo.
 -  **PREVENSION: SIEMPRE** sea cuidadoso cuando abra la caja de empaque. Las bandas pueden soltarse y golpearlo.
 -  **PREVENSION: NUNCA** opere el equipo sin los paneles y seguridad de proteccion instalados. Cuidese de las rotantes ruedas, rolos, correas y cadenas y mantengas alejado para no enredarse en ellas.
 -  **PELIGRO: POTENCIALMENTE FATAL VOLTAGES ESTAN PRESENTE EN ESTE EQUIPO.**
 -  **PRECAUSION: NUNCA** haga conexiones electricas al menos que sea un electricista qualificado.
 -  **PREVENSION: SIEMPRE** lleve el cable de conectar hacia un artefacto cercano.
 -  **PREVENSION: NUNCA** trate de dar servicios electricos al equipo solamente si es un tecnico electronico qualificado.
 -  **PRECAUSION: SIEMPRE** desconecte el artefacto antes de hacerle conexiones o dar servicios electronico a los componentes.
 -  **PRECAUSION: SIEMPRE** reemplace los fusibles con los del mismo tipo o calibre.
 -  **PREVENSION: NUNCA** toque la caja de voltage; **PUEDE SER MORTAL.**
 -  **PRECAUSION: NUNCA** opere el equipo hasta que este listo electronicamente, **NO** a traves del sistema de agua.
-

ACCESORIOS DE PROCESADORES Y PROCESOR



PELIGRO ! VENENOSO !  **PROCESAMIENTO QUIMICOS PUEDE SER PELIGROSO O MORTAL SI SON HINGERIDO, MANTENGALOS FUERA DEL ALCANCE DE LOS NINOS.** Siempre revise y siga cuidadosamente las prevenciones y la ventilacion, use y desagase de las instrucciones de los quimicos fabricados. Instalar todos los liquidos correctamente antes de operarlo.



PRECAUSION: PARA EVITAR HINGERIR POSSIBLEMENTE AGUA CONTAMINADA, asegurarse de que todas las tuberias cumplan con los codigos locales.



PREVENSION: PROCESAMIENTO QUIMICOS PUEDEN CAUSAR SERIAS QUEMADURAS. Evite el contacto en los ojos la piel o en la ropa. Evite respirar el vapor, humedad o el polvo y uselo solo con ventilacion adecuada. **SIEMPRE SIGA LAS RECOMENDACIONES DEL FABRICANTE DE LOS QUIMICOS.**

Safety Information, Literature

LITERATURE / BIBLIOGRAPHIE / LITERATUR / LITERATURA

The following publications relate to safety in film processing.
 Les ouvrages suivants sont dédiés à la sécurité liée au développement des films.
 In den folgenden Veröffentlichungen finden Sie Sicherheitsanweisungen von Filmentwicklung.
 La siguiente publicación esta relacionada en la seguridad en el procesamiento del rollo.

Publication Ouvrage Veröffentlichung Publicacion	Available from Disponible chez Erhältlich von Disponibleda
ANSI.PH 4.37 Photographic Processing Effluents	American National Standards Institute 1430 Broadway New York, N.Y. 10018
J4: Safe Handling of Photographic Chemicals	Eastman Kodak Co. 343 State Street Dept. 412-L Rochester, N.Y. 14650
J28: Disposal of Photographic Processing Effluents and Solutions	
J43: A Simple Waste-Treatment System	
J52: Disposal of Small Volumes of Photographic Processing Solutions	
N-413: Exposure and Processing for Dental Radiography	
N-418: Successful Intraoral Radiography	
D1-5: X-Rays in Dentistry	

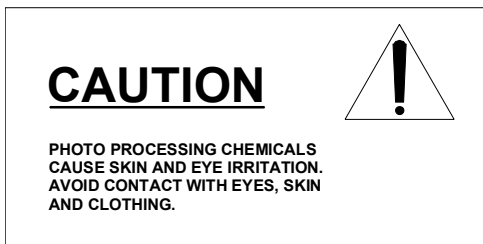
The preceding information is presented as a guide to precautions associated with photographic processing. No claim is made as to the currency, accuracy or completeness of the listed information. Please do not fail to contact your chemicals supplier to obtain additional advice and assistance.

Les informations précédentes sont présentées en tant que guide de précautions associées au développement des film photographiques. Aucune plainte ne sera prise en compte concernant l'actualité, la précision ou la exhaustivité de ces informations. Ne pas hésiter à contacter votre fournisseur de produits chimiques pour obtenir des informations complémentaires et des conseils.

Die vorhergehende Information ist dargestellt als eine Richtlinie zur Vorbeugung im Zusammenhang von fotografischer Entwicklung. Kein Anspruch ist machbar zu der Geltung, Genauigkeit oder Vollständigkeit von der aufgeführten Information. Bitte versäumen Sie nicht Ihren Chemikalienverteiler zu benachrichtigen um zusätzlichen Rat und Unterstützung zu erhalten.

La pasada informacion esta presentada como una guia en las prevenciones asociadas con el procesamiento de la fotografia. No reclamos son echos al momento, la informacion en esta lista es resiente y completa. Por favor no falte en ponerse en contacto con su proveedor de quimicos para obtener consejos adicionales y asistencia.

LABELS



PRECAUTION

Ces produits chimiques peuvent irriter la peau et les yeux. Eviter tout contact d'avec les yeux, la peau et les habits.

VORSICHT

Reizung der Haut und Augen wird durch Berührung von Filmentwicklungschemikalien verursacht. Vermeide Kontakt mit Augen, Haut und Kleidung.

PRECAUCION

Las quimicas de procesar fotografia, causa irritacion en la piel y los ojos. Evite contacto con los ojos, piel y la ropa.

VORSICHT

Vor dem Öffnen,
Netzstecker ziehen


PRECAUCION

Desconectar El
Cordon
Suplidor De Corriente
Antes De Abrirlo

**REVELATEUR
ENTWICKLER
REVELADOR**

**FIXATEUR
FIXIERBAD
FIJADOR**

LABELS, (Cont'd)

<p>CAUTION DO NOT OVER TIGHTEN FITTINGS ON WATER INPUT HOSE. TURN OFF WATER VALVE AT END OF EACH DAY.</p>	
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ATTENTION

NE PAS TROP SERRER
LE COLLIER A TOUR DU
TUYAU D'ARRIVEE D'EAU.
FERMEZ LE ROBINET D'EAU
A LA FIN DE LA JOURNEE.

VORSICHT

BEIM ANSCHLIEßEN DES
WASSEREINLAUFSCHLAUCHES,
NICHT ÜBERZIEHEN. AM ENDE VON
JEDEM TAG, DAS WASSERVENTIL
ZUDREHEN.

PRECAUSION

NO APRIETE MUY FUERTE LOS
AGUANTADORES EN LAS MANGAS
DE ENTRADA DEL AGUA. SIERRE
LA VALVULA DEL AGUA AL
TERMINAR EL DIA.

<p>CAUTION</p> <p>ELECTRICAL SHOCK HAZARD DO NOT REMOVE COVER REFER ALL SERVICING TO QUALIFIED PERSONNEL</p>

ATTENTION

DANGER D'ELECTROCUTION.
NE PAS ENLEVER LE COUVERCLE.
CONFIER TOUTE REPARATION A
DES PERSONNES QUALIFIEES.

VORSICHT

ELEKTRISCHER SCHLAG GEFAHR.
DECKEL NICHT ENTFERNEN. ALLE
WARTUNGEN NUR VOM FACHPERSONAL
AUSFÜHREN LASSEN.

PRECAUSION

EVITE CHOQUES ELECTRICOS
NO SACAR EL CUBRIDOR.
REFIERA TODO SERVICIOS A
PERSONAL CALIFICADO.

LABELS, (Cont'd)

THIS CONTROL BOX AND ITS CONTENTS HAS BEEN FACTORY CALIBRATED AND SERIALIZED FOR THE MODEL 9000 PROCESSOR. DENT-X SHALL HAVE NO LIABILITY FOR DAMAGES DUE TO MISUSE, ABUSE, SERVICE OR ADJUSTMENT PERFORMED BY UNQUALIFIED PERSONS.

L'UNITE DE CONTROLE ET SES COMPOSANTS ONT ETE CALIBRES ET IMMATRICULES A L'USINE POUR LA DEVELOPPEUSE MODELE 9000. **DENT-X** NE SERA PAS RESPONSABLE EN CAS D'ABUS, DE MAUVAISE UTILISATION, DE REPARATION OU DE REGLAGE REALISE PAR UNE PERSONNE NON-QUALIFIEE.

DIESES STEUERGEHÄUSE UND SEIN INHALT SIND VOM HERSTELLER EINGESTELLT UND NUMMERIERT FÜR DAS ENTWICKLUNGSGERÄT MODEL 9000. **DENT-X** ÜBERNIMMT KEINE VERANTWORTUNG FÜR SCHÄDEN DURCH MIßHANDLUNG, MIßBRAUCH, WARTUNG ODER NACHSTELLUNG AUSGEFÜHRT VON UNQUALIFIZIERTEN PERSONEN.

ESTA CAJACE CONTROL Y TODO SU CONTENIDOS HAN SIDO CALIBRADO POR LA COMPAÑIA Y MARCADO PARA EL MODELO PROCESADOR 9000. **DENT-X** NO RESPONDERA POR DAÑOS DEVIDO AL MAL USO, ABUSO, SERVIDIOS POR AJUSTAMIENTO DESEMPAÑADOS POR PERSONAL NO CALIFICADO.

**LOOK FOR THE RED COLOR
WHICH IDENTIFIES A GENUINE
DENTX DEVELOPER**

LOCALISEZ LA COULEUR ROUGE
QU'IDENTIFIE UN AUTHENTIQUE
DENT-X REVELATEUR

SEHEN SIE NACH DER ROTEN FARBE,
WELCHE EINE ORIGINALE DENT-X
ENTWICKLERLÖSUNG IDENTIFIZIERT

BUSQUE EL COLOR ROJO QUE
IDENTIFICA EL REVELADOR
GENUINO DENT-X.

WARNING

**FOR CONTINUED PROTECTION
AGAINST FIRE HAZARD, REPLACE
ONLY WITH SAME TYPE AND
RATING OF FUSE.**

AVERTISSEMENT

UTILISER TOUJOURS DES FUSIBLES
DE MEME VALEUR ET DE MEME
CALIBRE AFIN D'EVITER TOUT
RISQUE D'INCENDIE.

WARNING

FÜR WEITEREN SCHUTZ GEGEN
FEUERGEFAHR, SICHERUNG NUR VON
GLEICHEM TYP UND WERT BENUTZEN.

PRECAUSION

PARA UNA CONTINUA PROTECCIONAL
PELIGRO DE FUEGO, REEMPLAZAR LOS
FUSIBLES CON EL MISMO TIPO Y CALIDAD.

LABELS, (Cont'd)

**LINE FUSE-LOCATED UNDERNEATH
THE ON/OFF SWITCH**
 250V 6A BUSS MTH6
110V. CONTROL BOX- OR
 LITTLEFUSE 312006
 250V 4A BUSS MTH4
220V. CONTROL BOX- OR
 LITTLEFUSE 312004

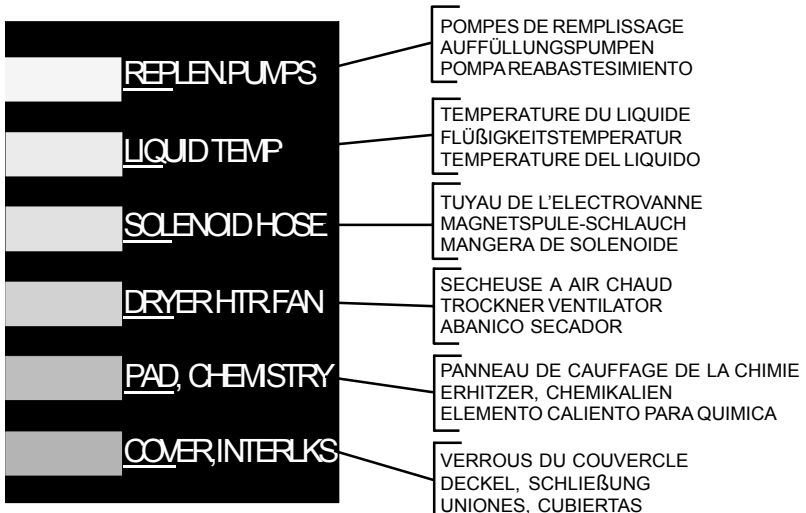
250V. 6A. BUSS MTH6
 OU
 LITTLEFUSE 312006
 250V. 4A. BUSS MTH4
 OU
 LITTLEFUSE 312004

**NETZSICHERUNG-BEFINDET SICH
UNTERHALB DES EIN/AUS SCHALTERS**
250V. 6A. BUSS MTH6
ODER
LITTLEFUSE 312006
250V. 4A. BUSS MTH4
ODER
LITTLEFUSE 312004

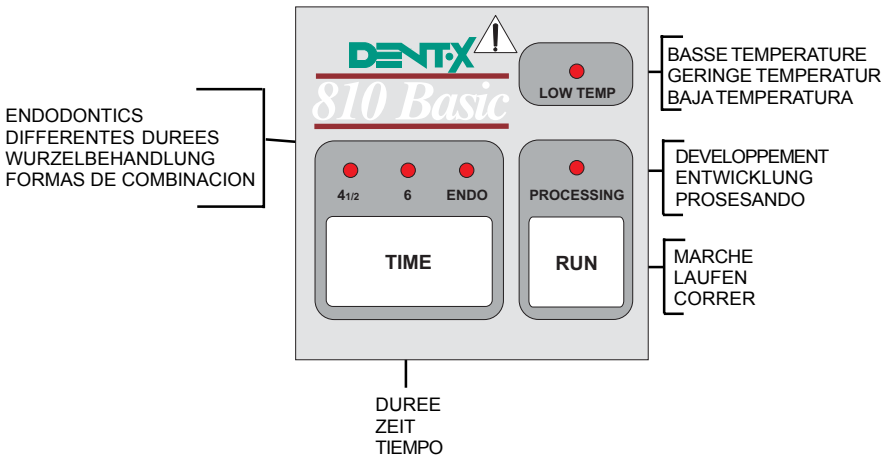
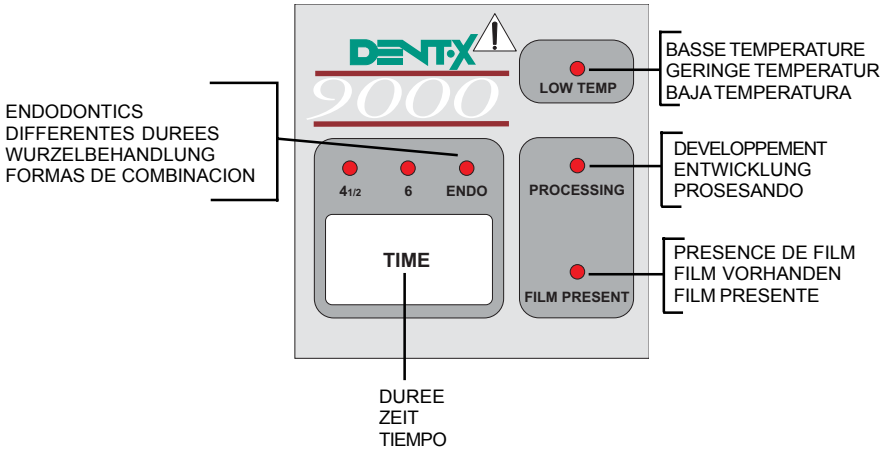
110V. STEUERGEHÄUSE-
220V. STEUERGEHÄUSE-

**LINEAS DE FUSIBLES LOCALIZADAS
DE BAJO DEL SWITCH**

CAJA DE CONTROL 110V.- **250V. 6A. BUSS MTH6**
 O
LITTLEFUSE 312006
250V. 4A. BUSS MTH4
 O
CAJA DE CONTROL 220V.- **LITTLEFUSE 312004**



LABELS, (Cont'd)





**ENLEVER LES ADHESIFS
ET LES CARTONS AVANT
D'UTILISER L'APPAREIL**

**VOR BEDIENUNG DES
GERÄTES, DIE BÄNDER
UND DAS KARTONPAPIER
ENTFERNEN**

**QUITAR CORREAS Y
CARTONES ANTES DE
PONER A OPERAR
EL PROCESADOR**

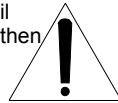
LABELS, (Cont'd)



DENT-X Processor Operation

1. Verify that water supply valve is open.
2. turn main power switch "ON" (located in the back of the rear access cover).

Note: When the processor is first turned on, the low temperature light flashes until processing temperature is reached, then goes off.



3. Set proper Development time:

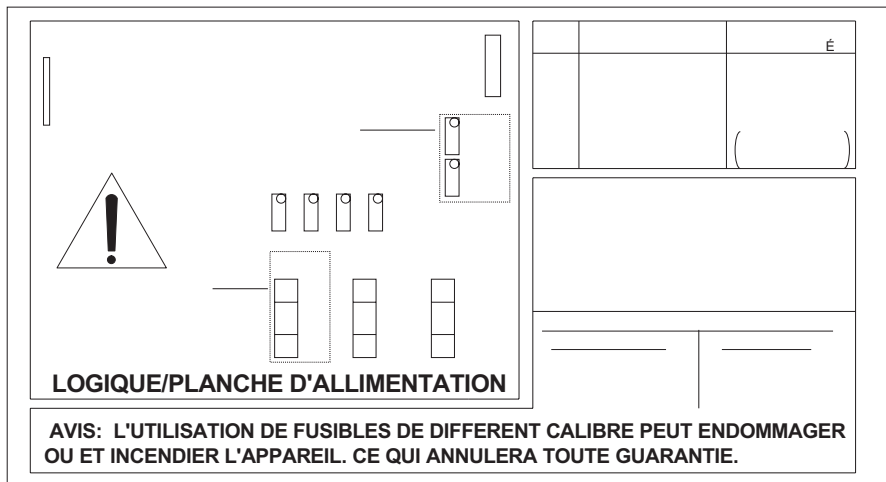
1	—Emergency films (Endo, wet).
4 1/2	—Normal Operation.
6	—If "Low Temp" light flashes.
4. On **810 BASIC**, depress "RUN" button to process film. Verify "PROCESS" light is on.
5. On **9000**, insert film in film input slot. Unit starts automatically.
6. On **810 BASIC**, Release "RUN" button to turn off processing cycle after last film exits. The "PROCESS" light will go off and the processor will go into standby.

Note: On the model **9000**, the processor automatically goes into standby after the last film is developer.

7. Turn main power switch "OFF" at end of the day. Remove front access cover. Close water supply valve.

LABELS, (Cont'd)

L'ETIQUETTE AL'INTERIEUR DE LA MACHINE EST ECRITE EN ANGLAIS. CELLE-CI, EN FRANCAIS, SERT SEULEMENT DE TRADUCTION.



L'ETIQUETTE AL'INTERIEUR DE LA MACHINE EST ECRITE EN ANGLAIS. CELLE-CI, EN FRANCAIS, SERT SEULEMENT DE TRADUCTION.

Utilisation de la développeuse DENT-X

1. Vérifier que le robinet d'arrivée d'eau est ouvert.
2. Allumer l'appareil en appuyant sur l'interrupteur principal situé à l'arrière.

Remarque: Aussitôt que la développeuse est allumée, l'ampoule indiquant "basse température" continue de clignoter jusqu'à ce que la température nécessaire soit atteinte, puis elle s'éteint.

3. Choisir la durée convenable de développement:
1 minute --Films urgents (mouillé)
4 1/2 minutes --Utilisation normale.
6 minutes --Si l'ampoule "Basse Temperature" clignote.
4. Pour la 810 Basic, appuyer sur le bouton "RUN" pour développer un film. Vérifier que l'ampoule "PROCESS" est allumée.
5. Pour la 9000, le développement automatique commence dès que le film est placé dans la fente.
6. Pour la 810 Basic, le bouton "RUN" doit être relâché après la sortie du dernier film de l'appareil, pour que la procédure de développement s'arrête. L'ampoule "PROCESS" s'éteindra.

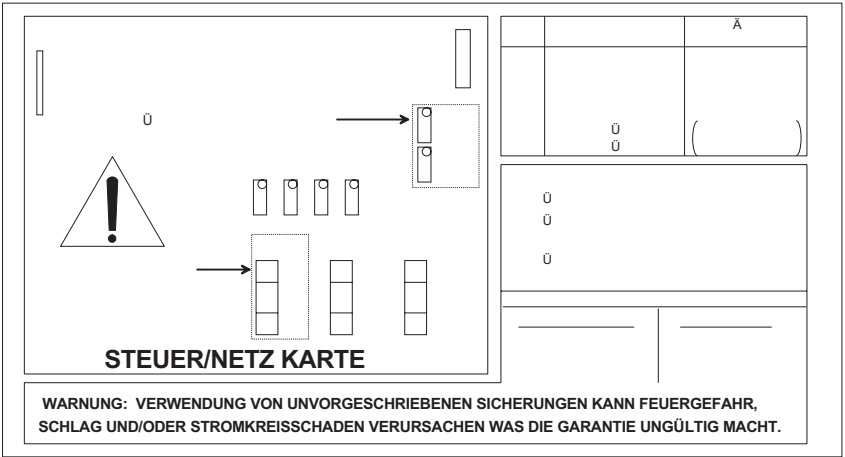


Remarque: Pour la 9000, le procédé s'arrête automatiquement dès que le dernier film est développé.

7. A la fin de la journée, éteindre l'appareil, enlever le couvercle avant et fermer le robinet d'arrivée d'eau.

LABELS, (Cont'd)

AUF DIESEM BLATT FINDEN SIE DIE DEUTSCHE ÜBERSETZUNG VON DEM AUFKLEBER, WELCHEN SIE IN DEM GERÄT IN ENGLISCH GEDRÜCKT VORFINDEN



*CW - IM UHRZEIGERSINN

AUF DIESEM BLATT FINDEN SIE DIE DEUTSCHE ÜBERSETZUNG VON DEM AUFKLEBER, WELCHEN SIE IN DEM GERÄT IN ENGLISCH GEDRÜCKT VORFINDEN

Betriebseinsatz des DENT-X Entwicklungsgerätes

1. Nachprüfen, daß das Wasserzufuhrventil offen ist.
2. Hauptschalter einschalten, "ON" (befindet sich auf der Hinterseite des Zugangsdeckels).

Bemerkung: Nach Einschalten des Gerätes, das geringe Temperaturlicht (low temperature) blinkt bis die Entwicklungstemperatur erreicht ist, danach geht aus.

3. Richtige Entwicklungszeit einstellen:

1	—Notfilme (Endo, naß).
4 1/2	—Normaler Betriebseinsatz.
6	—Wenn "Low Temp" (geringe Temperaturlicht) blinkt.



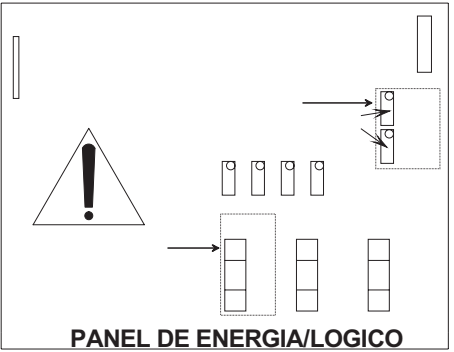
4. An der **810 BASIC**, den "RUN" Knopf drücken um den Film zu entwickeln. Nachprüfen, "PROCESS" Licht ist an.
5. An der **9000**, den Film in die Filmeingangsöffnung schieben. Das Gerät startet automatisch.
6. An der **810 BASIC**, den "RUN" Knopf auslösen um den Entwicklungszyklus nach dem letzten Film auszuschalten. Das "PROCESS" Licht wird ausgehen und das Gerät wird in Bereitschaft stehen.

Bemerkung: An dem Model **9000**, das Entwicklungsgerät wird automatisch in Bereitschaft stehen nachdem der letzte Film entwickelt ist.

7. Hauptschalter ausschalten ("OFF") am Ende des Tages. Vordere Zugangsdeckel entfernen. Wasserzufuhrventil zudrehen.

LABELS, (Cont'd)

LA INSTRUCCIONES EL LA MAQUINA ESTAN ESCRITAS EN INGLES.
LA VERSION EN ESPAÑOL ES SOLO PARA PROPOSITO DE TRADUCCION.



PANEL DE ENERGIA/LOGICO

DIRECCION DE AJUSTAMIENTO	SENSIBILIDAD APROXIMADA
CW * LA VELOCIDAD	40 SEGUNDOS POR VUELTA
CW * LA VELOCIDAD	40 SEGUNDOS POR VUELTA
CW * LA VELOCIDAD	20 SEGUNDOS POR VUELTA
CW * LA TEMPERATURA	6 GRADOS POR VUELTA
CW * REABASTESIMIENTO	(VEA LAS INSTRUCCIONES)
CW * REABASTESIMIENTO	

INFORMACION DE FUSIBLES

AVISO: INPROPIO USO DE FUSIBLES PUEDE CRUSAR FUEGO DESCARGA ELECTRICA, O DAÑO AL CIRCUITO QUE NO ESTA BAJO GARANTIA.

* - AUMENTAR

LA INSTRUCCIONES EL LA MAQUINA ESTAN ESCRITAS EN INGLES.
LA VERSION EN ESPAÑOL ES SOLO PARA PROPOSITO DE TRADUCCION.

Operacion Para Procesadores DENT-X

1. Verificar que la valvula que suple el agua este abierta.
2. Encienda el interruptor principal localizado en la cubierta trazera.

Nota: Cuando el procesor se prende por primera vez, la luz de temperatura baja prende hasta que alcanza temperatura de procesamiento y luego se apaga.

3. Ajuste propiamente el tiempo para revelar.
 - 1 —Fotos de emergencia (Endo, mojado)
 - 4 1/2 —Operacion normal
 - 6 —En "Baja Temperature" la luz enciende



4. En **810 BASIC**, oprima el boton "RUN" para procesar fotografias. Verifique que la luz de procesar (process) este in posicion "ON".
5. En el **9000**, introduzca la pelicula en el espacio indicado. La unidad enciende automaticamente.
6. En **810 BASIC**, suelte el boton para apagar el ciclo de procesamiento, despues que salga la ultima fotografia. La luz de procesar ("PROCESS") se apagara el procesador quedara en espera.

Nota: El procesador modelo **9000** entra en espera despues de la ultima fotografia.

7. Apague el interruptor principal al final de el dia. Remueva la cubierta del frente y apage la valvula de el agua

II. General Description

DENT-X 9000/810 Basic Processors

Introduction

This Manual provides information for installing, operating and maintaining the **DENT-X**™ 9000 and 810 Basic Automatic X-Ray Film Processors and Accessories.

The units feature Three Processing Speeds, True Track Transport System, Built-in Programmed Replenishing (9000 only), Automatic Start & Standby (9000 only) and Temperature Control of the chemistry while in the standby mode and during processing. In addition, the 9000 features automatic priming of both replenisher pumps upon start-up of the unit.

Both machines will process intraoral, panoramic, 5" X 7" (12.7 X 17.8 cm) and 8" X 10" (20.3 X 25.4 cm) cephalometric films designed for automatic processors. They should use only Rapid Process (RP) type chemistry. Either fresh-mixed or pre-mixed chemistry may be used. **DENT-X** Excel "Ready-to-Use" and **DENT-X** Concentrate are recommended. All **DENT-X** accessories are compatible with both machines.

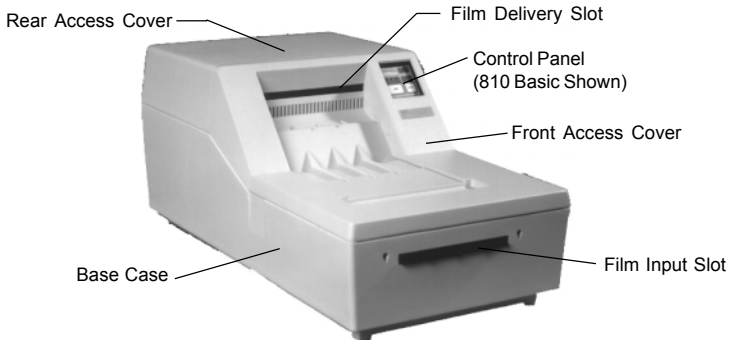
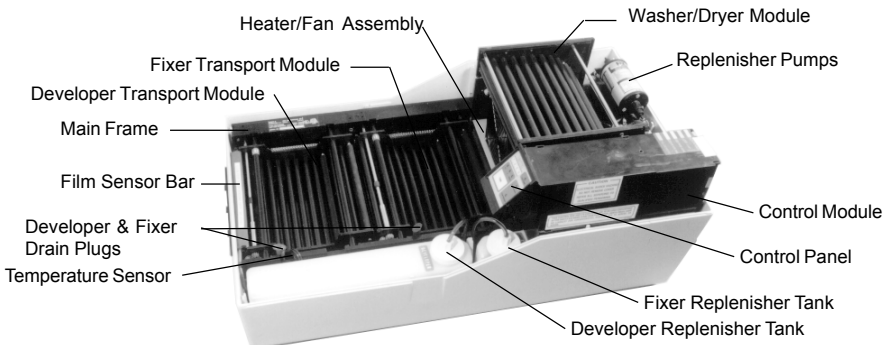


Figure 1: Major Machine Components
(810 Basic shown)

Description of Major Components

The **DENT-X** 9000 and 810 Basic machines are modular in design, facilitating exchange of major components without the use of special tools. All service and maintenance is performed from the top of the processor.



CONTROL MODULE WITH CONTROL PANEL

The processor's Control Module is mounted within the machine beneath the Rear Access Cover. It incorporates all electronic components necessary for the complete functioning of the system. The module's housing and cover are molded of corrosion- proof plastic which protects the electronics from the chemical environment. Located in the front of both the 810 Basic and 9000 Control Modules is a Control Panel which incorporates the following:

1. A sequential three-speed processing Time Selector.
2. Three lights directly above the Time Selector for indicating the throughput time selected.
3. A Processing light which indicates when the machine is in the process mode.
4. A Low Temp light which indicates that the temperature of the developer is below optimal processing temperature (83 degrees F / 28 degrees C).
5. A Film Present light (9000 model only) which indicates that a film is detected by the film sensor bar located above the film entry slot at the front of the machine. There is a 13-15 second delay from the time film clears the sensor bar to when the light goes out. This serves as a "Wait" light for helping to prevent film overlapping or light fogging.
6. A Run button (810 Basic model only) which puts the machine into and out of the processing mode.

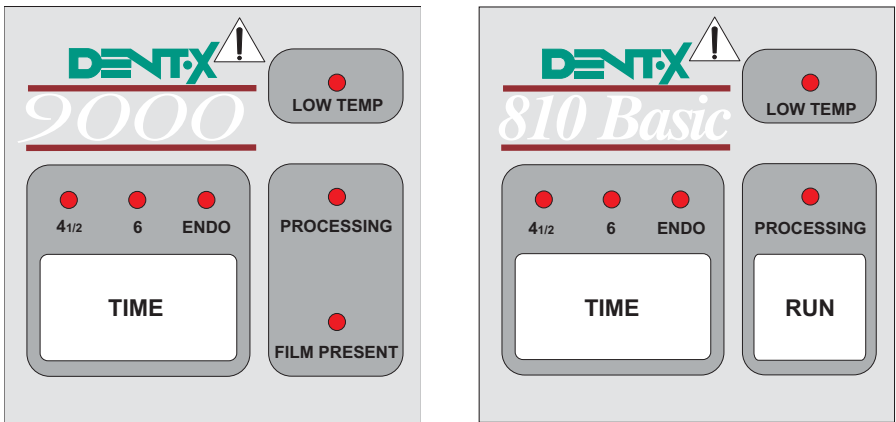


Figure 3: 9000 and 810 Basic Control Panels

ON/OFF POWER SWITCH AND ELECTRICAL CONNECTORS

The On/Off Power Switch is located at the rear of the Control Module and is accessible through the rear Access Cover. All electrical connectors and the Power Cord are located toward the rear of the unit for easy access.

CASE AND ACCESS COVERS

The molded Case is water-tight and has a drain connection for the waste effluent. The two Access Covers can be removed for solution loading, maintenance and cleaning.

MAIN FRAME ASSEMBLY

The Main Frame Assembly is supplied as a unit with the Drive Motor and Main Drive Chain Assembly. These additional components are already in place: Solution Heating Pad, Temperature Sensor, two Solution Drain Plugs, two stainless steel Solution Trays, two Transport Modules, two Evaporator Plates (Solution Tray Covers) and a Washer/Dryer Module. The two Evaporator Plates are color-coded red for developer and blue for fixer to help prevent contamination of the chemistry.

WASHER/DRYER MODULE

This module incorporates four pairs of opposed tubular spray washers providing four separate washes of the film as it passes through the first five pairs of rollers. A removable Heater/Fan Assembly for drying the film as it passes through the remainder of the module is contained in the module itself.

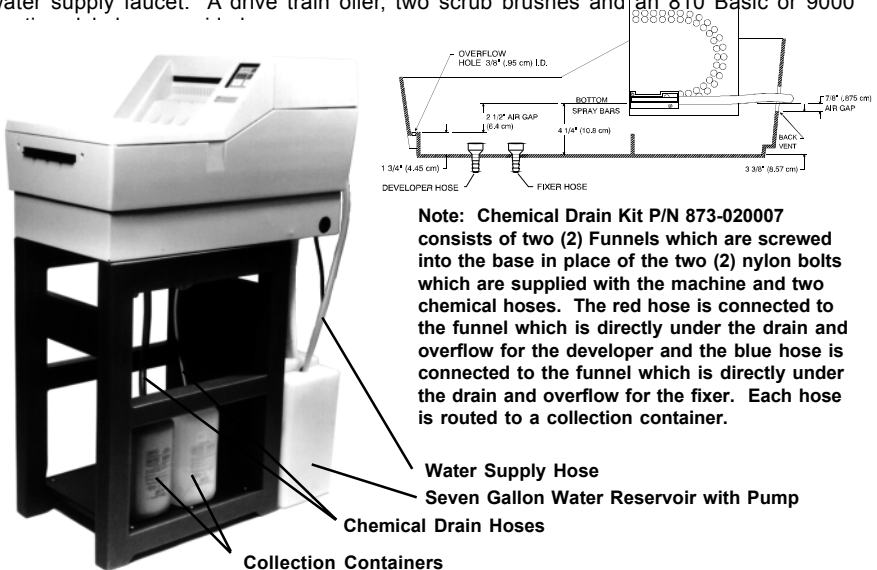
DEVELOPER AND FIXER TRANSPORT MODULES

The Developer and Fixer Transport Modules are identical. The rollers transport the film through the developer and fixer solutions and into the Washer/Dryer Module. The Transports are suspended in the Solution Trays by means of four supporting points called Hanger Assemblies that seat into notches molded into the Main Frame. A spring-loaded drive shaft provides coupling with the associated Drive Sprocket Assembly in the Main Frame. A built-in paddle on the bottom of each Transport Module *provides automatic solution agitation during processing*.

CAUTION: For best results, do not interchange the Developer and Fixer Transports. Even minor residues from Fixer chemicals can contaminate the Developer solution.

OTHER ITEMS SUPPLIED WITH PROCESSOR

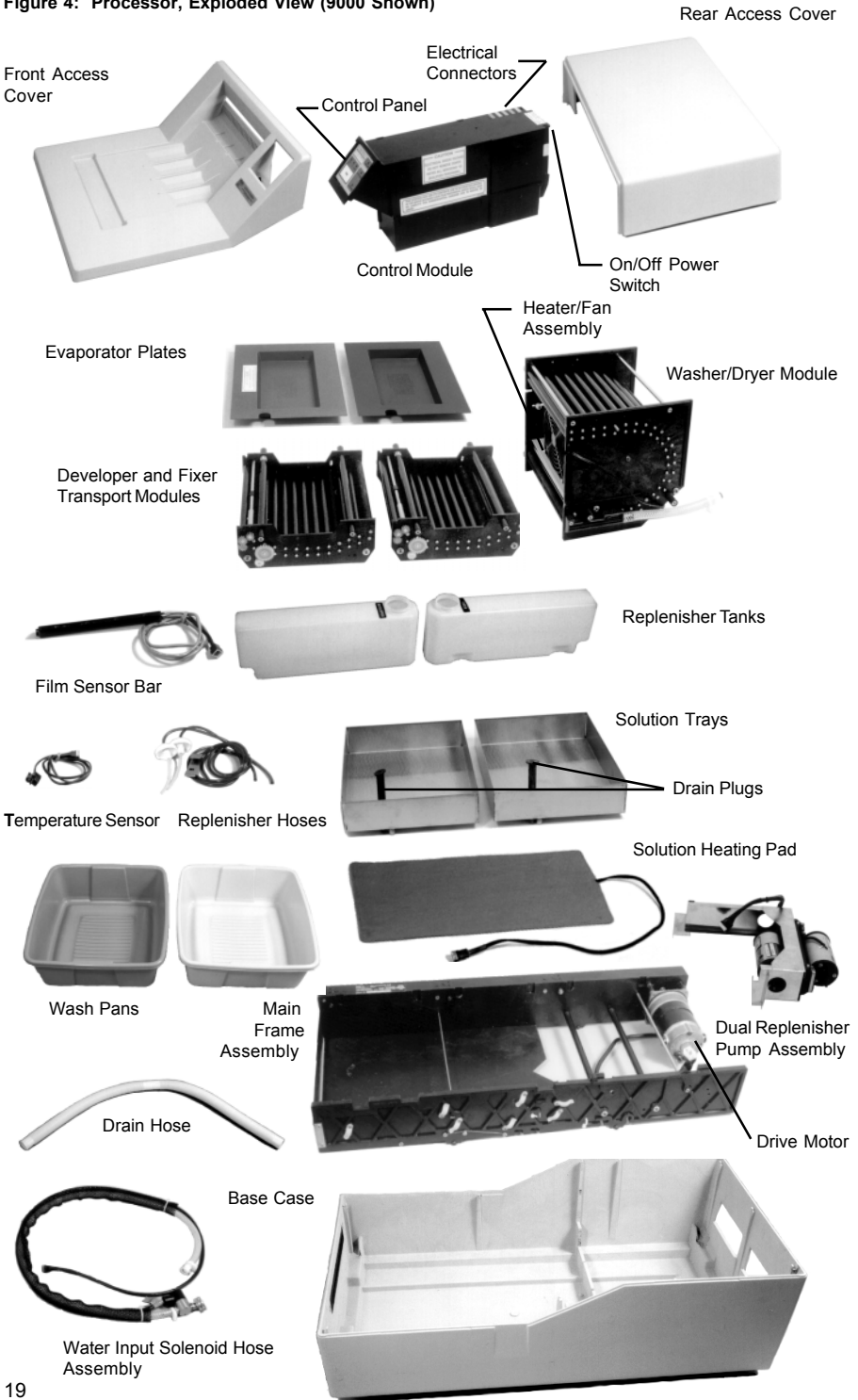
Supplied with the processor is a 1 1/4" (3.2 cm) O.D. X 36" (91.5 cm) long flexible Drain Hose, Hose Clamp, two Wash Pans for cleaning the Transport Modules and a 36" (91.5 cm) long Water Supply Hose with Solenoid valve which is terminated with a garden hose fitting to connect with a water supply faucet. A drive train oiler, two scrub brushes and an 810 Basic or 9000 Op.



Note: Chemical Drain Kit P/N 873-020007 consists of two (2) Funnels which are screwed into the base in place of the two (2) nylon bolts which are supplied with the machine and two chemical hoses. The red hose is connected to the funnel which is directly under the drain and overflow for the developer and the blue hose is connected to the funnel which is directly under the drain and overflow for the fixer. Each hose is routed to a collection container.

Figure 4a: 810 Basic Processor on Stand with optional Water Recirculator and Chemical Drain Kit installed for No-Plumbing operation (See Page 5 for Optional Accessories)

Figure 4: Processor, Exploded View (9000 Shown)



OPTIONAL ACCESSORIES

Panoramic Daylight Loader (Figure 5)

The 810 Basic or 9000 processor may be used in a normally lighted room by employing the following optionally available Daylight Loader.

This light-tight film loader accommodates all intraoral, panoramic, 5" X 7" (12.7 X 17.8 cm) and 8" X 10" (20.3 X 25.4 cm) film sizes. The large, removable amber/red safelight filter on top of the loader is designed for use with intraoral films only. **The brown, opaque cover must be used with all extraoral films.** The projecting sleeves at the front of the loader are provided for a light-tight seal around the arms of the operator. Also provided is a metal mounting bracket to firmly attach the loader to the processor. Beneath the loader is a black bag for loading and unloading flexible-type panoramic cassettes.

Water Recirculator Unit (Figure 8)

This optional system is capable of providing wash water when it is impractical to connect the processor to permanent plumbing. It consists of a submersible pump with line cord, hose for connecting the pump to the processor and a seven gallon water container. The pump line cord plugs into the same connector as would the Solenoid Assembly.

NOTE: The Chemical Drain Kit P/N 873-020007 must be used in conjunction with the Water Recirculator Unit p/N 9992405004 when used with the 810 Basic or 9000 processor. (See page 3, Figure 4a.)



Figure 5: Panoramic Daylight Loader Processor Mounting Base (Figure 7)



Figure 6: Processor Stand

The Mounting Base raises the Processor 4 1/2" (11.4 cm) above the countertop, providing clearance for all hoses and eliminating the necessity of drilling holes in the countertop.

Processor Stand (Figure 6)

The Processor Stand provides for convenient support of the Processor, Water Recirculator and storage. It is of molded construction and extremely rugged.



Figure 7: Processor Mounting Base



Figure 8: Water Recirculator Unit

UTILITIES AND PRE-INSTALLATION REQUIREMENTS

Electrical

110-130 Volts, 60 Hz, 15 amp, 3-wire grounded outlet within 4 feet of processor.
 (For 220 volt units) - 220-240 Volts, 50/60 Hz, 3-wire grounded outlet same distance from processor.

Plumbing

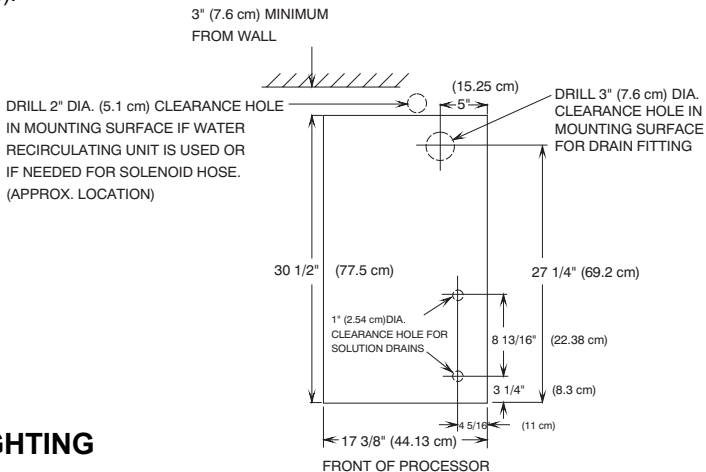
Water: Standard faucet with manual shut-off and external garden hose type deliver water between 16 - 28 degrees C (60 - 83 degrees F) @ 1.5 gallons/minute (5.7 L/min) within 3 feet (1 meter) of the processor is required.

Drain: An open, cup-type, corrosion-resistant drain (PVC or equivalent but not copper pipe), 1.5" (3.8 cm) diameter minimum, within 3 feet (1 meter) and at least 10 inches (25.4 cm) below the processor.

Structural (Figure 9)

(If processor stand will *not* be used)

1. A level surface capable of supporting 120 Lbs., (54 Kg) provided with a 3" (7.6 cm) hole to accommodate the drain fitting at the bottom rear of the processor.
2. If a water recirculator will be used or the solenoid needs to come through the counter-top, an additional 2" (5.1 cm) hole should be provided in the mounting surface at the rear of the processor.
3. See Template P/N 801-050211 for full size drawing (included with installation materials).



SAFELIGHTING

Daylight Operation

For daylight operation, a Daylight Loader is available as described on page 5 in which case safelights are not required.

Note: The brown opaque cover **must be used with extraoral film.**

CAUTION: DO NOT INSTALL UNIT DIRECTLY BELOW FLUORESCENT LIGHTING. FOGGING OF X-RAY FILM BEFORE PROCESSING MAY RESULT.

Darkroom

If a darkroom is employed, it should have adequate ventilation and maintain a temperature below 27 degrees C (80F) to minimize chemical vapor build-up. For handling most intraoral and extraoral X-Ray film, the GBX-2 safelight filter should be used with a 15 watt bulb at a distance of 4 feet (1.2 meters) from a working surface. Consult your Dental Supply Dealer for safelight and filter recommendations.

III. Installation

GENERAL

This section describes the procedure for unpacking the processor, its installation and the initial test procedure.

WARNING: X-Ray radiation can be harmful to patient, technician and dentist. Inadequate lead shielding of the darkroom or film storage area may cause undesirable fogging or exposure of films. Consult your local codes, Health Department or Dental Equipment Dealer for proper construction of darkroom or placement of film processing equipment in the vicinity of X-Ray radiation sources.

UNPACKING

The processor is shipped complete in a single package which contains the following items: two Wash Pans, a Drain Hose and Clamp, Water Inlet Hose Solenoid Assembly and a Spare Parts Kit. An instructional Video on operation and maintenance is also provided.

1. Remove processor and other materials from the carton.
2. Remove outer covering and the two Access Covers from the processor.
3. Remove all tape and protective blockers used to secure internal parts during shipment.
Note: Take care not to damage the drain hose connector which extends from the bottom rear of the processor. (If the unit is a 9000, take care to cut the strap(s) on the Replenisher Pumps located behind the Washer/Dryer Module and remove the card board from under the Fix Pump.)

ASSEMBLY AND INSTALLATION FOR COUNTERTOP MOUNTING BASE OR PROCESSOR STAND

1. Place the processor on the countertop, Mounting Base (optional) or Processor Stand (optional), aligning the rear drain hole with the 3" (7.6 cm) hole in the mounting surface.
2. Attach the Drain Hose to the Drain Hose Fitting and secure with the Hose Clamp (Figure 10).
Note: If the optional Processor Mounting Base is being used, level the processor using the four leveling feet provided.
3. Connect the solenoid end of the Water Hose Assembly to the water supply.
4. Connect the other end of the hose to the short hose on the Washer/Dryer Module at the rear of the processor (Figure 11).
5. Connect the solenoid electric cable to the receptacle on the Control Module marked SOL. There is also a light blue I.D. marker on the connector to match the color strip on top of the module. (See Figure 12).
6. A convenient "DENT-X Processor Operation" label is provided. Mount this label to an adjacent surface for easy viewing and review.

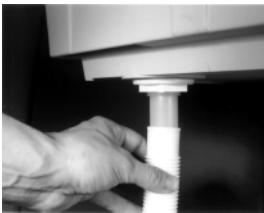


Figure 10: Attaching Drain Hose. Place clamp over hose and tighten.



Figure 11: Connecting Hose from water inlet solenoid



Figure 12: Connecting cable to light blue receptacle marked SOL.

DAYLIGHT LOADER (OPTIONAL)

Mount the Daylight Loader on the front of the processor case using the two (2) wing nuts, metal mounting bracket and bolts provided as follows:

1. Remove the Developer Evaporator Plate.
2. **(9000 only)** Carefully lift up the film sensor bar left side first and set it aside (Figure 13).
3. Remove the Developer Transport Module by pushing its spring-loaded drive shaft to the right and lifting the module out of the solution tray (Figure 14).
4. Insert the bolts through the bolt holes, from the inside of the processor case outward (Figure 15).
5. Mount the Daylight Loader and metal mounting bracket over both protruding bolts and fasten it with the wing nuts (Figure 16).
6. Replace the Transport Module.
7. **(9000 only)** Replace the Film Sensor Bar, making sure it is properly seated.
8. Replace the Developer Evaporator Plate.

NOTE: Make sure the wing nuts are tight and that the loader has a snug fit to the front of the processor to help insure against light leaks.



Figure 13: Lifting up Film Sensor Bar (9000 only)



Figure 14: Removing Developer Transport Module



Figure 15: Inserting bolts through holes in the front of the processor



Figure 16: Attaching Loader, mounting bracket and wing nuts

INITIAL TEST PROCEDURE (WITHOUT CHEMISTRY)

NOTE: Testing system functions with water helps to remove dust and particles from moving parts. Unless otherwise specified, the following instructions are for both the 810 Basic and 9000.

1. If the Hose/Solenoid is being used, verify that the main water supply valve is open. If the Water Recirculator is being used, verify that the water container is full and that the pump is completely submerged. Verify that the processor is plugged into a fused 115-130 VAC electrical supply. **Note:** 220-240 VAC where applicable.

2. **(9000 Only)** Fill the two (2) Replenishment Reservoirs with water (located on the right side of the machine).
(810 Basic & 9000) Fill the Solution Trays with water and turn ON the Main Power located at the rear of the Control Module.
switch **(9000 Only)** The Replenishment Pumps should prime (run solid) for 6-9 seconds initially.
(810 Basic & 9000) The "LOW TEMP" light should be flashing if the temperature of the water is below 81 degrees F (27.3 C). If it is desired to check the temperature, use a metal stem thermometer (available from local photographic equipment/darkroom supplier).

WARNING: Never use a mercury thermometer. If it should break, the resulting contamination would ruin all parts of the machine that it came in contact with.

3. **(9000 Only)** Verify that the "PROCESSING" light is on.
(810 Basic Only) Depress the "RUN" button on the control panel. Verify that the "PROCESSING" light is on.
4. Verify that water is being supplied to the Washer/Dryer Module and is running off into the rear drain with no sign of blockage.
5. Check for leaks at all hose and drain connections.
6. With the "PROCESSING" light on, verify that the Drive Motor is operating by observing that the Developer and Fixer Transport Module rollers are turning.
7. Remove the front and top baffles from the Washer/Dryer Module and verify that the rollers are turning and that the Heater/Fan is blowing warm air.
8. Verify that the "4 1/2" minute indicator light is on.

NOTE: Transport time through each module is automatically maintained at the following percentages of the total processing time: Developer - 25%; Fixer - 25%; Washer/Dryer - 50%.

9. To check the calibration of the speed of the machine, verify that the "4 1/2" light is on. Insert an intraoral film into the feed slot and time it through the *Developer Module only* from leading edge in to leading out. It should take 64 to 68 seconds. This same test for the 6 minute speed should take 84-87 seconds. For the "ENDO" setting, it should take 27-30 seconds. (The factory setting for "ENDO" is approximately 2 minutes).

NOTE: The 6 minute speed is for processing before chemistry is up to temperature. The ENDO speed is for quick reading of damp films such as during endodontic procedures.

10. **(810 Basic Only)** Press the "RUN" button again to put machine into standby. Turn the Main Power Switch off. Turn off water supply and drain all Solution Trays.
11. **(9000 Only)** When first turned on, the processor will run in the process mode for approximately 7 minutes and then go into standby automatically. Each time a film is inserted into the feed slot, process mode is started. The 7 minute timing film clears the Film Sensor Bar. In light comes on whenever any of activated. There is a 13-15 second delay after the film clears the Film Sensor Bar for the "FILM PRESENT" light to go out. This indicates another pro- begins again **after** the addition, the "FILM PRESENT" the four sensors in the bar are activated. There is a 13-15 second delay after the film clears the Film Sensor Bar for the "FILM PRESENT" light to go out. This indicates that it is safe to feed another film or turn on the darkroom lights, etc.

12. **(9000 Only)** The Replenisher Pumps may be tested later with chemistry.
13. **(9000 Only)** When testing is complete, turn the Main Power Switch off. Turn off water supply and drain all Solution Trays and Replenishment Reservoirs.

IV. Preparation for Use

LOOK FOR THE RED COLOR
WHICH IDENTIFIES A GENUINE
DENT-X DEVELOPER

MATERIALS

The **DENT-X** 9000 and 810 Basic processors are designed to use **DENT-X EXCEL™**, Ready-to-Use, Concentrate, or Dry-Pack chemistry (Figure 17).
DO NOT USE CHEMISTRY OR FILM DESIGNED FOR MANUAL PROCESSING.

SAFELIGHTING

(See "Safelighting" section, page 6).

LOADING REPLENISHER TANKS (9000 ONLY)

1. Unscrew the developer tank cap.
2. Fill the Developer Replenisher Tank using the funnel and hose provided.
3. Remove the funnel, screw the tank cap back on and carefully wash and dry the funnel.
4. Using the same procedure, fill the Fixer Replenisher Tank. (See Figure 18). Be sure to wash the funnel again.

NOTE: Chemical contamination can be a major contributor to poor film quality. To avoid developer contamination from the funnel, always fill the Developer Replenisher Tank before the Fixer Tank.



Figure 17: Use **DENT-X** Chemistry for best results



Figure 18: Filling Replenisher Tanks



Figure 19: Loading Fixer Solution (Note the protective baffle by using the fixer evaporator cover between solution trays when pouring fixer. Use the same procedure with the cover for developer when pouring the developer).

LOADING SOLUTION TRAYS (810 Basic & 9000)

NOTE: Developer is easily contaminated by just a few drops of fixer. To minimize the possibility of contamination, load the solutions as follows:

1. Keep the developer tray covered and fill the fixer tray with RP-type fixer to the top of the overflow spout (Figure 19).
2. Cover the fixer tray and fill the developer tray with RP-type developer to the top of the overflow spout.
3. Replace the cover on the developer tray.
4. (9000 Only) Verify that the Film Sensor Bar at the film entry slot is firmly seated in the two notches on the front of the Developer Transport.

V. Operation

The **DENT-X** 9000 and 810 Basic processors are designed to produce quality radiographs with minimal operator effort. Both models automatically control variables such as solution temperature and transport speed.

OPERATING INSTRUCTIONS

1. Verify that the water supply valve is open. (If optional water recirculator is used, verify that the container is filled with fresh water).
2. Turn the Main Power Switch ON, located in the back of the rear access cover (Figure 20).



Figure 20: On/Off Power Switch

NOTE: When the processor is first turned on, the low temperature light flashes until optimal operating temperature (83 degrees F) is reached. It will then go off.

3. Set the desired development time by depressing the "TIME" button (Figure 21) according to the following chart.



Figure 21: Depressing TIME Button (810 Basic shown)

NOTE: Allow 30 to 40 minutes for solution to warm on initial start up.

TIME	TEMPERATURE	APPLICATION
6 MIN	68 - 83 degrees F (20 - 28C)	Processing during warm-up
4 1/2 MIN	83 degrees F (28C)	Archival processing
ENDO	83 degrees F (28C)	Damp film reading

Figure 22: Development Time Chart

4. Feeding the Film: There are four Entry Guides for intraoral film. With the 9000 processor, feeding film into any one of these slots will activate the processing mode (Figure 23). With the 810 Basic, the "RUN" button must be pressed first to activate the system (Figure 24). Insert all extraoral films lengthwise. Allow 15 seconds between these large films to prevent overlapping. In the 9000, the "FILM PRESENT" light turns off when this 15 second period has elapsed.

NOTE: With the 810 Basic it is recommended to activate the process mode with the "RUN" switch for approximately 5 minutes before inserting film. This insures complete mixing of chemicals and wets the transport rollers to help prevent artifacts from crystals or residues that may have accumulated overnight.

5. The 9000 will revert to standby mode approximately 2 1/2 minutes after the last film exits (at the 4 1/2 minute speed). With the 810 Basic, the Run button must be pressed after the last film exits the machine to put the machine back into standby mode.

6. Turn the Main Power Switch OFF and close the water supply valve at the end of the day.



Figure 23: Guides for Intraoral Film



Figure 24: Pressing RUN Button

OPERATIONAL TEST PROCEDURE (WITH CHEMISTRY)

1. Using safelight conditions, with the processor at normal operating temperature (low temperature light not flashing) and 4 1/2 minute speed, process an unexposed film. It should emerge *clear* and dry.
2. Process a light-exposed film. It should emerge *black* and dry.
3. If the results are as described, the chemistry, film and processor are performing properly and the machine is ready to use.

PRECAUTIONARY NOTE

Both automatic and manual processing are based on established time/temperature relationships. In the DENT-X 9000 and 810 Basic, time and temperature are automatically controlled to provide optimal image quality for correctly exposed films. Films that have been overexposed or underexposed may result in loss of diagnostic information and subject the patient and office personnel to unnecessary radiation. To obtain desired film densities, exposures should be increased or decreased in steps of 25-33% from a test exposure and film.

THEORY OF OPERATION (9000)

A. Initial Start-Up Cycle

Upon machine turn-on, the pumps run at full power for 6-9 seconds, adding about 3-4 ounces (90 - 120 ml) of fresh chemistry to each processing tray. All machine functions activate and the machine goes through one processing cycle in the 4 1/2 minute mode. The duration of this cycle is seven (7) minutes.

THEORY OF OPERATION (9000), CONT.

During this cycle, the film transport mechanism, solution heating pad, film dryer, solenoid water valve and solution temperature controls are all activated. This initial start-up feature insures complete mixing of all chemistry in the solution trays and wets the transport rollers to help prevent artifacts from overnight crystals or residues that may have built up. After this initial 7 minute cycle, the machine goes into standby while continuing to heat the chemistry. The 4 1/2 minute mode will remain the default speed and the "LOW TEMP" light will continue to flash until the temperature reaches 81 degrees F (27.3 C). The solution temperature will maintain at 83 degrees F (28 C) for the rest of the time the machine is on. A typical warm-up time for a starting room temperature of about 70 degrees F (21 C) is 30-40 minutes.

It is important to note that a film may be inserted at any time during the initialization cycle or before the "LOW TEMP" light goes out. Insertion of a film always causes the system to begin a new timing cycle. If a film is inserted while the temperature is still low, the "TIME" select button may be used to select the 6 minute time for processing below optimal temperature.

As an added safeguard, the 9000 Control Module will **discontinue pump operation after a period of two (2) minutes of uninterrupted film bar operation**. This would be indicated by the "FILM PRESENT" light remaining on for more than two minutes. This serves to limit excess chemistry consumption.

NOTE: A panoramic film (12" or 30.5 cm) will activate the Film Sensor Bar for about 1 1/2 minutes at the 6 minute speed.

B. Process Mode

Three process times are available to the user. When first turned ON, the processor is programmed to select the 4 1/2 minute mode which is recommended for archival quality films. The operator has the option of using the 6 minute process time if the solutions are not up to temperature, as may be the case early in the morning immediately after system power-up. The ENDO mode is essentially an emergency mode and may be used if a readable but damp film is all that is required during an endodontic procedure.

The processing mode is initiated simply by insertion of film into one or any combination of the four film guides located along the input slot on the front of the processor. Four film sensors detect the presence of UNPROCESSED film and begin the processing cycle. The sensors will not respond to the presence of developed film, either clear or dark. The "PROCESS" light will illuminate immediately and stay illuminated until the processing cycle is automatically terminated. The processing time is determined by the "TIME" selection status; i.e. ENDO (factory set at 2 minutes), 4 1/2 minutes, or 6 minutes. These three times are the processing times as measured from a film's leading edge into the processor to the leading edge out of the processor. The process cycle times of 7 minutes (for 4 1/2 and 6) and 3 1/2 minutes (for ENDO) allow sufficient time for all films to exit the machine before it goes back into standby mode.

C. Standby Mode

In the Standby Mode, only one subsystem is activated. The solution temperature control system maintains the chemistry temperature at 83 degrees F (28 C). The drive mechanism, drying system and washing system are inactive to save energy and wear.

In the Standby Mode, the default processing time indicated is normally "4 1/2". Pressing the "TIME" select button will change the processing time sequentially.

The "LOW TEMP" is a warning light. It may be off or flashing. It cannot be on continuously. It reflects the status of the chemistry temperature. Below 81 degrees F (27.3 C), the light will flash to alert the operator that the chemistry is below the minimum optimal operating temperature. The actual chemistry temperature is factory-set to be 83 degrees F (28 C) + or - 1 degree. The processor location or darkroom area should be properly vented so that ambient temperatures are not above 80 degrees F (26.8 C).

THEORY OF OPERATION (810 Basic)

A. Process Mode

Three process times are available to the user. When first turned ON, the processor is programmed to select the 4 1/2 minute mode which is recommended for archival quality films. The operator has the option of using the 6 minute process time if the solutions are not up to temperature, as may be the case early in the morning immediately after system power-up. The ENDO mode is essentially an emergency mode and may be used if a readable but damp film is all that is required during an endodontic procedure.

The processing mode is initiated by pressing the "RUN" button on the front Control Panel. This will cause the "PROCESSING" light to come on and the rest of the machine functions to activate. Intraoral film may then be inserted into any of the four film guides located along the input slot on the front of the processor. Larger films may be inserted into the Feed Slot with no need to observe the guides. The processing time is determined by the "TIME" selection status; i.e. ENDO (factory set at 2 minutes), 4 1/2 minutes, or 6 minutes. These three times are the processing times as measured from a film's leading edge into the processor to the leading edge out of the processor.

After all films have exited the processor, the machine may be put back into the standby mode by pressing the "RUN" button and observing the "PROCESSING" light to go out.

B. Standby Mode

In the Standby Mode, only one subsystem is activated. The solution temperature control system maintains the chemistry temperature at 83 degrees F (28 C). The drive mechanism, drying system and washing system are inactive to save energy and wear.

In the Standby Mode, the default processing time indicated is normally "4 1/2". Pressing the "TIME" select button will change the processing time sequentially.

The "LOW TEMP" is a warning light. It may be off or flashing. It cannot be on continuously. It reflects the status of the chemistry temperature. Below 81 degrees F (27.3 C), the light will flash to alert the operator that the chemistry is below the minimum optimal operating temperature. The actual chemistry temperature is factory-set to be 83 degrees F (28 C) + or - 1 degree. The processor location or darkroom area should be properly vented so that ambient temperatures are not above 80 degrees F (26.8 C).

VI. Maintenance

CAUTION: Make sure solution heater pad is always unplugged from the black control box whenever operating the machine without processing solutions.

DAILY MAINTENANCE PROCEDURES

A. Water Supply

1. Open water valve at beginning of day.
2. Close water valve at end of day.

B. Front Access Cover

1. Remove Front Access Cover at end of day.
2. Replace Front Access Cover at beginning of day.

C. Water Recirculator (if used)

Replace water daily or sooner if required.

D. Replenishment System (9000 Only)

Visually check chemistry reservoir levels and add solution when levels drop below approximately one-quarter full.

NOTE: If you expect to do the monthly maintenance within the next two days do not add to the replenisher reservoirs. Always wash the funnel after each use. Always fill developer before fixer to avoid contamination.

E. Replenish Solutions (810 Basic Only)

Each Morning Add 6 ounces of fresh developer to the Developer Tray and 6 ounces of fresh fixer to the Fixer Tray. Pour slowly on the side of trays opposite the drain plugs. Be careful not to cross contaminate the solutions (See Figure 19, page 10).

During Each Day Replenish solutions according to the following:

1. 0 - 30 intraoral films - No additional replenishment necessary.
2. More than 30 intraoral films - 5 ml (cc's) per film.
3. 5" X 7" films - Approximately .75 oz. per film.
4. Panoramic films - Approximately 1 - 1.5 oz. per film.
5. Cephalometric films - Approximately 2 oz. per film.

NOTE: Solution levels in both Fixer and Developer Trays should never be more than 1/8" below the top of the overflow spouts. Failure to properly replenish solutions may lead to lack of development and/or film drying problems.

WEEKLY MAINTENANCE PROCEDURES

1. Turn Main Power Switch OFF.
2. Remove the Access Covers and Evaporator Plates.
3. **(9000 Only)** Remove the Film Sensor Bar and set aside (Figure 25).
4. Remove Transport Racks from the developer and fixer (Figure 26). Wash racks thoroughly with warm tap water, scrubbing with a sponge or the soft bristle brushes provided to remove any chemical residue.

NOTE: Do not use soap or any commercial cleaning agents. After rinsing thoroughly, drain and **leave racks to dry in a vertical position** over the week-end or until the start of the next working day.

5. Inspect the Washer/Dryer rollers and clean as necessary (See Monthly - As Required).

WEEKLY MAINTENANCE PROCEDURES (CONT.)

- Before starting the machine at the beginning of the next working day, replace both Transport Modules in their original Solution Trays. **Do not interchange positions** (i.e. the Transport Module used in the Developer the previous week should still be placed in the Developer).
- Top up the Solution Trays with fresh solutions to the top of the overflow spouts.
- (9000 Only)** Special attention should be paid to the Film Sensor Bar. Handle this assembly with care to avoid damaging the sensitive infrared film presence detectors and **DO NOT IMMERSER IN LIQUIDS**. Clean the assembly with a damp cotton swab or cloth and warm water to remove all chemical deposits. Replace the assembly in the processor, making sure that it is properly seated into the notches in the front of the Developer Transport Module.
- Turn Main Power Switch ON.

WARNING: Prolonged immersion of the Transport Modules in solutions may cause swelling of the rubber rollers. This could lead to damage of film emulsion and cause excessive wear to the racks. It is important to follow the weekly procedure of allowing the transports to air dry.



Figure 25: Removing the Film Sensor Bar Assembly



Figure 26. Removing the Developer Transport Module

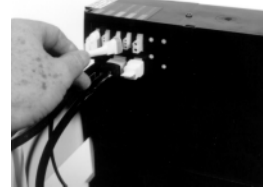


Figure 27: Heater/Fan Assembly Plug

AS REQUIRED

Clean Washer/Dryer Rollers

Every two weeks, inspect the Washer/Dryer rollers for silver and/or emulsion buildup. Depending on processing volume, variables in chemistry and water supply, it will become necessary to clean these rollers on occasion.

The rollers may be inspected by removing both outer Access Covers and sliding out the front, top and rear baffles of the module. To clean, proceed as follows:

- Turn Main Power Switch OFF.
- Remove the Fixer Evaporator Plate.
- Unplug the Heater/Fan Assembly from the rear of the Control Module (Figure 27).
- Slide the Heater/Fan Assembly out of the Washer/Dryer Module (Figure 28).
- Turn the Main Power Switch ON. Press the "RUN" button (If processor is 810 Basic).
- Using a soft nylon brush or sponge, wash the rollers on the top, rear and inside of the module while the rollers are turning (Figure 29).
- Turn the Main Power Switch OFF.
- Slide the Heater/Fan Assembly back into the Washer/Dryer Module.
- Reconnect the Heater/Fan line plug at the rear of the Control Module.
- Replace all covers.



Figure 28: Slide Out Heater/Fan Assembly



Figure 29: Washing Rollers



Figure 30: Pulling Out Drain Plug

MONTHLY MAINTENANCE PROCEDURES

1. Drain solutions from trays (Figure 30). Remove and rinse the Solution Trays thoroughly with warm water. Wipe clean with a sponge or cloth. Replace drain plugs.
2. With the processor in the process mode, apply three (3) drops of oil from the supplied oiler to each hole on the left side (drive side) of the Main Frame marked "OIL" (Figure 31).
3. Clean both Transport Modules in the same way as with the weekly cleaning with the exception of air drying. Instead, dissolve in hot water, one package of **DENT-X EasyClean™** in each of the rubber tubs provided with the machine. Place a Transport Module in each of the tubs and make sure that the water covers all of the rollers. Allow to soak at least 8 hours (or until the start of the next working day). Rinse thoroughly and place back into the machine.

NOTE: It is OK to soak the transports over a weekend once a month as an exception to the normal rule of air drying.

4. Remove the Washer/Dryer (if more intensive cleaning is necessary) by first removing the Evaporator Plate for the fixer. Then remove the front, top and rear baffles. Slide the Heater/Fan Assembly out of the module and set aside. Put the machine into process mode and turn the Main Power Switch OFF when the drive shaft of the module is vertical in the groove of the main drive coupling (Figure 32).
5. **Turn off the main water supply valve.** Uncouple the water line hose from the Washer/Dryer Module (Figure 33).
6. Lift the Washer/Dryer Module out from the Control Module side first (Figure 34).
7. Fill a wash pan or sink with warm water. Using a nylon bristle brush, thoroughly clean all rollers. If the silver, salt or emulsion deposits are heavy, the module may be cleaned with EasyClean in exactly the same way as a Transport Module. The only difference is that a container just big enough to allow water to cover all of the rollers is needed. Also, since the volume of water required is larger, 2 to 3 packages of EasyClean should be used.
8. Rinse the module thoroughly under running water.
9. Replace the module starting with the side opposite the Control Module.
10. Reconnect the water line hose coupling to the Washer/Dryer Module.
11. Slide the Heater/Fan Assembly back into the Washer/Dryer Module. Reconnect the line plug to the rear of the Control Module.
12. Replace the baffles.



Figure 31: Lubricating The Main Frame



Figure 32: Drive Shaft Coupling



Figure 33: Uncoupling Water Line Hose



Figure 34: Lifting out Washer/Dryer

MONTHLY MAINTENANCE PROCEDURES (CONT.)

Replenisher System (9000 Only)

1. Empty, rinse and fill the Replenisher Reservoirs half full with warm water.
2. With the Solution Trays removed, turn the Main Power Switch ON. The pumps will run approximately 6-9 seconds. Turn the Main Power Switch OFF, wait for about 15 seconds and then turn back ON for another 6-9 second pump cycle. Continue this procedure until the reservoirs are empty. Let the pumps pull air the last time to clear them and the lines of water.

NOTE: Direct the stream of water from the pumps into the sump of the processor.

3. Turn the Main Power Switch OFF and reload the Replenisher Reservoirs with fresh chemistry.
4. Before starting the machine at the beginning of the next day of processing, replace both Transport Modules in their original solution trays. **Do not interchange positions.**
5. Fill the Solution Trays with fresh solutions until the solution level reaches the top of the overflow spouts. Turn the Main Power Switch ON.

CONTROL MODULE

There is no required user maintenance for the Control Module. If the processor fails to operate, or for removal of electrical components, the following receptacles are located on the left side of the Control Module. Verify that each component is properly connected.

Motor - 6 Pin Plug	No color code
Heater Pad - 2 Pin Plug	Tan or Beige
Solution Temperature Sensor - 4 Pin Plug	Orange
Dryer Heater & Fan - 3 Pin Plug	Pink
Water Solenoid - 3 Pin Plug	Light Blue
Replenisher (9000 Only) - 5 Pin Plug	Yellow (Capped off on 810 Basic)
Film Sensor Bar (9000 Only) - 9 Pin Plug	No color code (Capped off on 810 Basic)

VII. Troubleshooting Guide

9000 & 810 BASIC

PROBLEM	CAUSE	CURE
1. Unit completely dead (Front panel lights off).	A. Unit not plugged into outlet or no available power to the outlet. B. Main Power Switch not turned on (top rear of processor). C. Main Fuse blown. D. Defective Control Module.	A. Plug in and check power to the outlet. B. Turn Main Power Switch ON. C. Call dealer for service. D. Call dealer for service.
2. Drive motor not running (Process light ON).	A. Motor not plugged into Control Module. B. Fuse F1 blown. C. Defective drive motor or Control Module.	A. Plug motor into module. B. Call dealer for service. C. Call dealer for service.
3. Low Temperature Light flashing for more than 1 hour. NOTE: If this occurs, first check the temperature of the developer with accurate thermometer. If temperature is too high, turn off the Control and unplug the heater pad. Call for service and operate at 6 minute speed at room temperature until problem is corrected.	A. Heater Pad not plugged in. B. Defective Heater Pad. C. Temperature Sensor not plugged in. D. Defective Temperature Sensor.	A. Plug Pad into Control Module. B. Call dealer for service. C. Plug Sensor into Module. D. Call dealer for service.
4. Solutions overheating. NOTE: As stated above, the LOW TEMP light may be flashing when this occurs.	A. Defective Temperature Sensor. B. Defective Control Module.	A. Call dealer for service. B. Call dealer for service. NOTE: Machine may be operated at 6 minute speed at room temperature until problem is corrected.
5. Intraoral films slipping or not exiting the machine.	A. Mechanical or electronic failure. B. Dirty transport rollers. C. Use of poor quality or exhausted processing solutions. D. Transport(s) not properly seated. E. Transport drive shaft not engaged with the mainframe. F. (9000 Only) Films not fed into the Feed Slot correctly.	A. Call dealer for service. B. Clean Transport(s). C. Replenish or change solutions. *Make sure solutions are DENT-X RP type. D. Seat properly, making sure all four hangers are at the bottom of their respective slots in the main frame. E. Engage shaft by moving it into the drive slot of the mainframe. F. Make sure to feed the films in correctly between the guides. (See Figure 23, Page 12).

VII. Troubleshooting Guide (Cont.)

9000 ONLY

PROBLEM	CAUSE	CURE
6. All systems continuously running (Process light on).	<p>A. Film Sensor Bar not seated properly.</p> <p>B. Film caught in entry slot.</p> <p>C. Dirty Film Sensor Bar. ("FILM PRESENT" light on with no film under the Bar.</p> <p>D. Light striking the Film Entry Slot.</p> <p>E. Faulty Film Sensor Bar.</p> <p>F. Defective Control Module.</p>	<p>A. Reseat Bar.</p> <p>B. Remove film.</p> <p>C. Clean sensors with damp cotton swab or cloth and warm water.</p> <p>D. Remove or lower the light source.</p> <p>E. Call dealer for service. In the meantime, use manual backup procedure: Unplug Sensor Bar. Turn Main Power Switch OFF and back ON when ready to process film. Processor should go into the process mode for about 7 minutes and then return to standby mode.</p> <p>F. Call dealer for service.</p>
7. Replenisher pumps continuously running.	<p>A. Defective Control Module.</p>	<p>A. Call dealer for service.</p>
8. Unit not replenishing.	<p>A. Replenisher Reservoirs empty.</p> <p>B. Blockage in replenisher dip tubes or hoses.</p> <p>C. Pumps clogged with chemical build-up.</p> <p>D. Pumps not primed.</p> <p>E. Defective pumps or electronics.</p>	<p>A. Fill Reservoirs.</p> <p>B. Check tubes and hoses for kinks or blockage and clear if necessary.</p> <p>C. Flush pumps with warm water.</p> <p>D. Turn Main Power switch OFF and back ON to prime or call dealer for service.</p> <p>E. Call dealer for service.</p>
9. System not activating when film is inserted (FILM PRESENT light not coming on).	<p>A. Using processed film (clear or black).</p> <p>B. Wrong placement of intraoral films in the Film Entry Slot.</p> <p>C. Film Sensor Bar improperly seated.</p> <p>D. Dirty Film Sensor Bar.</p> <p>E. Film Sensor Bar not plugged in.</p> <p>F. Defective Film Sensor Bar.</p> <p>G. Mechanical or electronic failure.</p>	<p>A. Use unprocessed film (green).</p> <p>B. See Figure 23, page 12.</p> <p>C. Reseat Film Sensor Bar.</p> <p>D. Clean Film Sensor Bar with damp cotton swab or cloth and warm water.</p> <p>E. Plug Sensor Bar into Control Module.</p> <p>F. Call dealer for service. In the meantime, use manual backup procedure described in Item 6.</p> <p>G. Call dealer for service.</p>

VII. Troubleshooting Guide (Cont.)

COMMON PROCESSING PROBLEMS

(Optimal Time/Temp - 4.5 minutes at 83 degrees F (28 C))

1. Films clear or too light	A. Developer solution is exhausted or low. B. Solution temperature too low. C. Processing too fast. D. Underexposed or no X-Ray.	A. Replace developer solution. B. Process at 6 minutes until "LOW TEMP" light stops flashing. C. Increase processing time. D. Increase exposure.
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2. Films brown or too dark.	A. Solutions overheated. B. Incomplete washing. C. Incomplete fixing. D. Over-exposed. E. Light leak.	A. Call dealer for service. B. Check water supply, manifold and Solenoid Assembly. C. Replace fixer solution. D. Decrease exposure. E. Eliminate light leak.
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3. Films fogged.	A. Incorrect or defective safelight filter or bulb. B. Excessive light. C. Outdated film. D. Film stored too close to X-Ray source.	A. Intraoral only: ML-2 filter, 15W bulb. Intraoral/Extraoral: GBX-2 filter, 15W bulb. B. Eliminate light leak in darkroom or loader. C. Replace film. D. Store film in lead-lined box.
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4. Films wet or tacky.	A. Wrong chemistry and/or film. B. Heater/Fan Assembly not plugged into the Control Module. C. Processing too fast. D. Defective Heater/Fan Assembly. E. Weak fixer.	A. Use only RP-type chemistry and film designed for automatic processing. B. Plug in. C. Increase processing time. D. Call dealer for service. E. Increase replenishment and/or change solution.
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5. Films greenish-yellow.	A. Fixer solution exhausted. B. Processing too fast. C. Wrong type film.	A. Replace fixer solution. B. Increase processing time. C. Use film designed for automatic processing.
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6. Films chalky or dirty.	A. Dirty Transports. B. Precipitate in fixer. C. Wash water not on.	A. Clean Transports. B. Replace fixer solution. C. Turn on wash supply.
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VIII. Calibration

WARNING: Electrical Shock Hazard. Only experienced and qualified service personnel should attempt DENT-X 810 Basic/9000 internal Control Module adjustments.

The **DENT-X** 9000 and 810 Basic processors have been calibrated electronically at the factory. Replenishment rates (9000 Only) for each solution are preset. In addition, developer solution temperature and the three (3) processing speeds have been pre-set. **In the 9000, all of the automatic timing functions are set as a function of the system clock and are not to be calibrated in the field.**

TEMPERATURE CALIBRATION:

The solution temperature is best tested approximately one hour after solutions have come up to temperature (after the "LOW TEMP" light has gone out). Use an accurate thermometer and place it in the developer tray in the same area as the temperature sensor. It should read 83 degrees F (28 degrees C) +/- 1 degree. Remove the Access Covers. Next, remove the Top Cover from the electronic Control Module by removing the screw and releasing the six plastic tabs around the edge of the box. Take care not to bend the tabs too far or they will not latch properly when the cover is reinstalled. Pry the cover off the right side of the Control Module and then lift. A trim pot is available on the Logic/Power board (inside the Control Module) for making **minor adjustments** to the solution temperature. It is designated VR4 and is marked "TEMP" on the board itself. There is a decal located on the inside of the Control Module cover that details the adjustment of all adjustment pots.

NOTE: The temperature adjustment should only be used for minor temperature adjustments. If the temperature suddenly changes by more than 5 degrees F (3 C), there is most likely a problem and a qualified service technician should be contacted.

TRANSPORT TIME CALIBRATION:

The drive motor may be checked and recalibrated if necessary. The transport time for a film is as follows:

Indicated Adjustment Pot	Actual	
ENDO	2 minutes	VR3
4 1/2	4 1/2 minutes	VR1
6	6 minutes	VR2

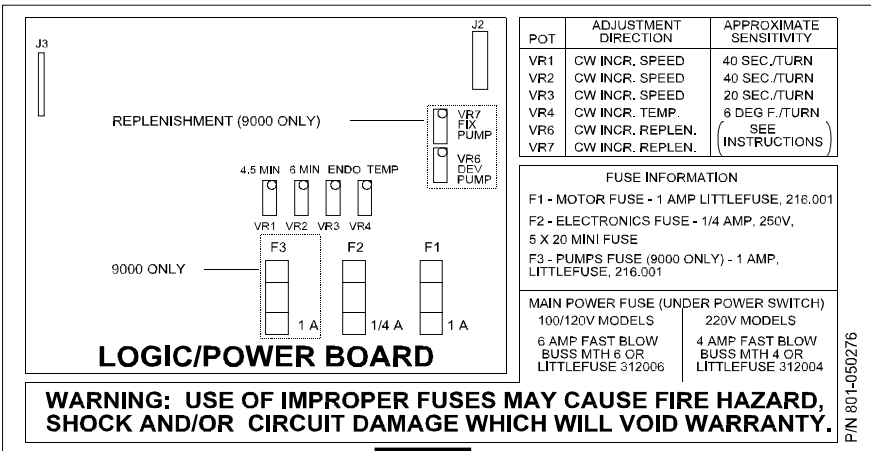


Figure 35: Inside Cover Decal

TRANSPORT TIME CALIBRATION (CONT.)

Select each process time and check the actual transport time of a test film, leading edge in to leading edge out. The time from leading edge into the Developer Module to leading edge into the Fixer Module is approximately one quarter of the total transport time through the entire machine. This may be used to expedite motor speed adjustments. (25% Dev + 25% Fix + 50% Wash/Dry = 100%)

REPLENISHMENT SYSTEM CALIBRATION (9000 ONLY)

The following procedure may be used for verifying or re-calibrating the 9000 replenishment system.

1. If the processor is ON, turn the Main Power Switch OFF, wait 10 - 15 seconds and then turn back ON. This will cycle both pumps at a full prime rate for 6-9 seconds.
2. Leave the red Evaporator Cover on the Developer Transport and place the 50 ml beaker supplied with the processor on top of the cover.
3. Pull the red developer Replenisher Tube and Clip from the Solution Tray and Frame and put the end of the tube into the beaker.
4. Hold a Size 2 unprocessed (green) intraoral film directly under one of the four (4) sensors in the Entry Feed Slot for one (1) minute. (A white business card will substitute). The output should be 20 ml (cc's). If not, adjust VR6 according to the decal on the inside of the cover accordingly.
5. Thoroughly rinse the beaker and repeat the same procedure for the fix output, using VR7 to adjust.
6. Replace the Evaporator Plates. Replace the Control Module Cover and reinstall the screw in the top of the cover. Replace the Access Covers.

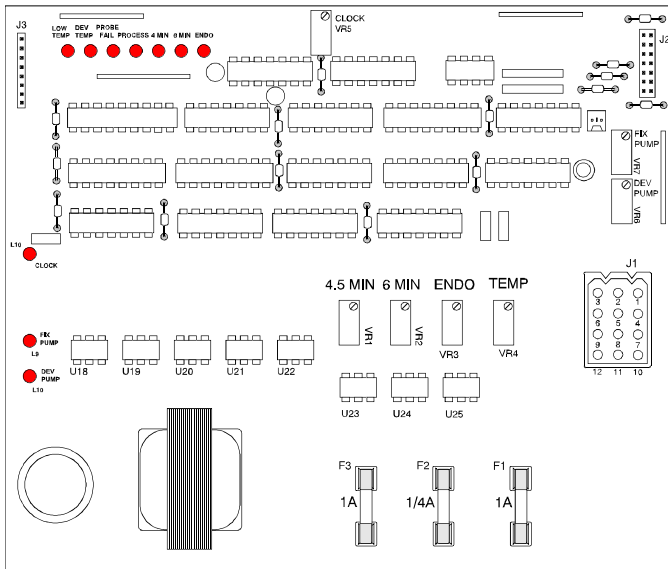


Figure 36: Logic/Power Board (9000)

IX. Specifications*

Power Requirements: 110-130 VAC, 60 Hz, 15 Amp grounded circuit.
220-240 VAC, 50/60 Hz, 15 Amp grounded circuit.

Processing Times: Three Fixed Speeds
 ENDO 2 Minutes 83 Degrees F (28 C)
 4.5 4.5 Minutes 83 Degrees F (28 C)
 6 6 Minutes 68-83 Degrees F (20-28 C)

Solution Tray Capacities: Developer - 3 Quarts (2.84 L)
Fixer - 3 Quarts (2.84 L)

Replenish Reservoirs (9000): Developer - 3 Quarts (2.84 L)
Fixer - 3 Quarts (2.84 L)

Dimensions: 30 1/2" L X 17 1/2" W x 14 1/2" H.
(77.4 cm L X 44.5 cm W X 36.8 cm H)

Weight: Shipping Weight - 85 Lbs. (38.25 Kg)

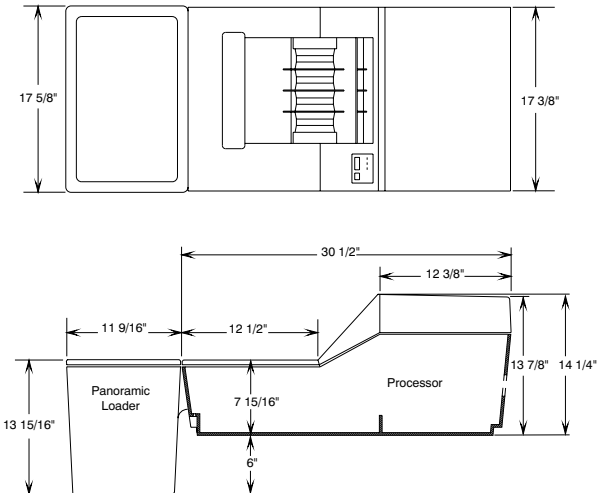
Film: Automatic Processing Type - Intraoral, 5" X 7"
(12.7 cm X 17.8 cm), Panoramic, 8" X 10" (20.3 cm X 25.4 cm).

Chemistry: **DENT-X Excel** Ready-to-Use and Concentrate Chemistry.

Water: Pressurized spray wash, using 1.5 Gallons/Minute (5.7 Liters/Minute) while processing; 60-90 degrees (16-32 C).

Plumbing: If the unit will be connected to permanent plumbing, a standard faucet with a manual shut off valve and external threading is required for the supply. For drainage, an open cup-type, corrosion-resistant drain with minimum 1 1/2" (3.8 cm) diameter is required. When installed with the Water Recirculator unit, external plumbing is not required.

*All specifications are subject to change without notice.



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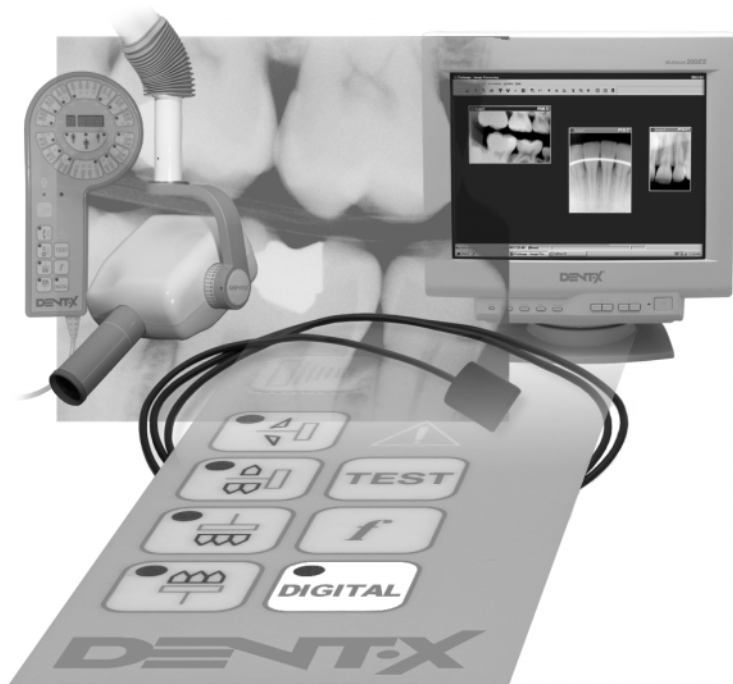
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