

# GETTING STARTED **NOMAD PRO 2**

This quick reference guide is intended to supplement the NOMAD™ Pro 2 Operator Manual and operator training materials located on the operator training DVD.

**NOTE:** The manual and training materials are also available for download: [www.aribex.com](http://www.aribex.com)

- ❶ Unwrap each component from the protective plastic and check for any noticeable signs of damage. Do not use the device if it shows signs of damage. The package system includes the following items:
  - NOMAD Pro 2 X-ray Head
  - Battery Charging Cradle
  - Certificate of Conformance
  - Training DVD (includes NOMAD Pro 2 Operator Manual)
  - 2 Handsets
  - AC/DC Power Supply
  - Warranty Card
- ❷ Verify that the serial number on the warranty/registration card matches the X-ray head serial number and the device serial number on the carrying case.
- ❸ Ensure that your product is registered with Aribex in order to facilitate proper warranty coverage. Contact your authorised Aribex™ reseller for more details.



Review the Operator Manual and training material contained on the DVD shipped with this device.

## HANDSET (BATTERY) CARE



- Handsets must be charged before initial use! Alternate handsets each week to maximize service life.
- Do not spray disinfectant or cleansers directly on to the handsets!

The following are important handset (battery) care notes:











- Battery life is expected to be between 1-2 years or 200-300 charge/discharge cycles, whichever occurs first. Routinely change out a discharged handset with a fully charged one as needed.
- Remove the handset from the charging cradle once it is fully charged.
- Battery charge will diminish during extended inactivity. **Fully recharge handsets every three months during inactivity.** Never place a low charge battery into long-term storage.
- Do not store handsets in extreme conditions: below  $-20^{\circ}\text{C}$  or above  $+60^{\circ}\text{C}$ , or beyond 95% relative humidity (non-condensing). The optimal storage location is cool, dry, and away from direct sunlight.
- When the charging cradle senses a failing handset battery, the indicator lights will illuminate red rather than green. In this case, the batteries are inoperable and must be serviced.
- Handset communications and mechanical integrity are checked when the handset is first placed on the charging cradle: good communication exists when the first bar illuminates green for approximately two seconds. The routine charging sequence should then commence.

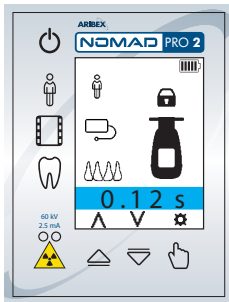


- Do not attempt to charge or use a damaged handset. Damage can occur if batteries experience liquid ingress or are dropped or punctured. Replace battery immediately if there are any signs of deterioration or if batteries do not retain a charge during normal operation.
- Risk of fire or explosion exists if batteries inside the handset are replaced by unauthorised service personnel; do not use batteries from other sources.
- Properly dispose of spent or damaged handsets; return to Aribex or an authorised distributor for replacement and recycling. Do not place in municipal waste stream.

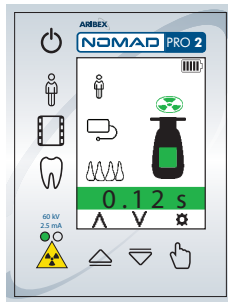
# BASIC OPERATION

NOTE: Manufacturer's recommendation is for the operator to wear nitrile or other gloves during basic operation of the NOMAD Pro 2.

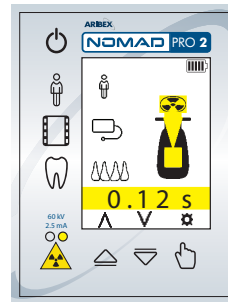
- 1 Attach a fully charged handset and turn on power by pressing the **Power**  button.
- 2 Select **Patient Size** (Adult  or Child ); **Image Receptor** type (Film , Phosphor Plate , or Sensor ); and **Tooth Group** (Anterior , Posterior , or Bitewing ). For more on adjusting the timer settings see the Operator Manual contained on the DVD.
- 3 Position the NOMAD Pro 2 relative to the receptor.
- 4 Pull and release the trigger once to put the NOMAD Pro 2 into the **Ready** state.
- 5 Pull and hold the trigger (a second time) until the **X-ray Complete** alert is displayed and the audible tone indicates the exposure is done.
- 6 Turn off the power by pressing the **Power**  button.



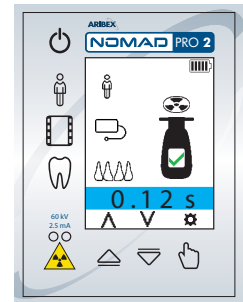
**At-Rest State:** displays after power button is pushed and initial start-up sequence is completed.



**Ready Alert:** displays after single pull of trigger; lasts for 15 seconds, or until any button is pressed, or until exposure is initiated by a second pull of the trigger; accompanied by a green LED and a double ascending tone.



**X-rays On Alert:** displays after exposure initiated by second pull of the trigger; accompanied by a yellow LED and a single tone that lasts for the duration of the exposure.



**X-ray Complete Alert:** displays after successful completion of exposure; displays briefly, then device returns to at-rest state.



Do not operate NOMAD Pro 2 or the handset, charging cradle, or AC power supply if equipment was subjected to moisture. Do not spray disinfectant or cleaners directly on the NOMAD Pro 2, handset, charging cradle, or AC power supply. Damage to your device or a shock hazard may result. Consult the Operator Manual on the DVD for proper cleaning instructions.



Do not open the housings. Doing so will void the warranty. There are not user-serviceable parts inside the NOMAD Pro 2, handset, charging cradle, or AC power supply. NOMAD Pro 2 should not be operated if it has been dropped or performance degrades; it should be returned to Aribex or an authorised service centre for a safety check. Locate the charging system away from the normal patient environment.

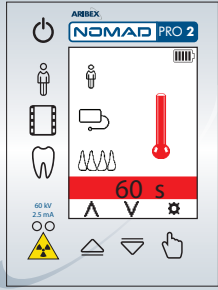
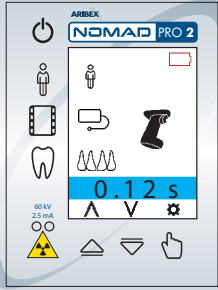
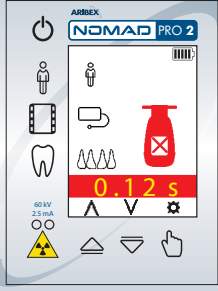
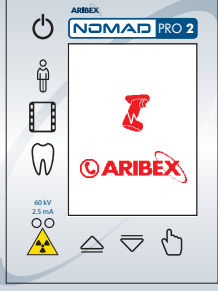

## WAYS TO ENSURE IMAGE QUALITY

To ensure image quality, use correct time settings. The NOMAD Pro 2 comes with pre-sets to give you a starting point. However, these time settings can be adjusted to achieve the desired image quality and then saved for future use. See Section 4.10, Settings Menu for further help. NOMAD works with the fastest sensor technologies in the market to assure that exposure times are as short as possible, also limiting any effects of motion.

Make sure you are as close to the patient's cheek as possible without touching. If your sensor holder prevents you from getting close enough, check with your dental supplier to find a NOMAD-friendly holder. You can also trim the rod length of your holder, enabling the NOMAD to be placed directly against the positioning ring.

Always double-check for the **Incomplete Exposure** alert on the NOMAD display. The **Incomplete Exposure** alert indicates that the trigger was released prematurely, resulting in an incomplete, timed exposure. To achieve complete exposures, do the following: quickly press and release the trigger to enable the X-ray and wait for the device to shift to the **Ready** alert; press and hold the trigger until the audible tones and the display indicate the **X-ray Complete** alert.

# ALARMS

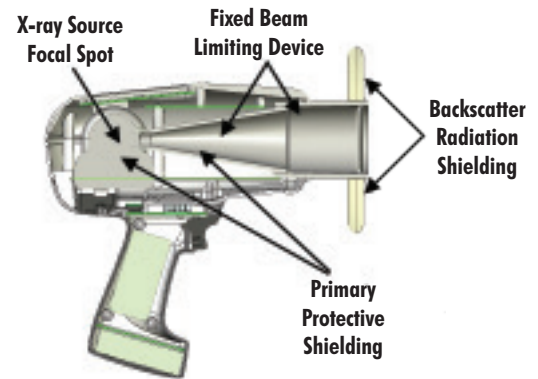
ALARMS: VISUAL AND AUDIBLE INDICATORS		FUNCTION/RESOLUTION
Cooling Down		<p>Double tone at the start and end of cool down</p> <p>Initiated if the operator presses the trigger to activate the <b>Ready</b> state before the duty cycle time has lapsed. Thermometer and countdown timer will be displayed showing time remaining until normal operation mode resumes.</p>
Recharge Handset (flashing display)		<p>Five short tones</p> <p>If battery voltage is lower than required for the X-ray exposure, the device will not allow the exposure. Replace the current handset with a freshly charged handset and recharge the handset with the low battery.</p>
Incomplete Exposure		<p>Long tone followed by descending tones</p> <p>Activates if trigger is released before the timed X-ray exposure finishes. This alarm is cleared by pressing any button on the user interface panel, by pressing the trigger, or by turning the power off then on. To avoid this alarm, depress the trigger for the duration of the exposure time.</p>
Handset Failure (flashing display)		<p>Repeating tone and then automatic shutdown</p> <p>Replace with a newly charged handset. Use charging cradle to determine handset status. If the indicator lights illuminate solid red, the handset will require authorised service.</p>
System Failure (flashing display)		<p>Repeating tone followed by a double tone and then automatic shutdown</p> <p>Power device on again. If alarm repeats after attempting the next exposure, the system will require authorised service.</p>

# THE NOMAD PRO 2 DIFFERENCE

NOMAD Pro 2 is safe to be used as a handheld X-ray source when used correctly. There is no need to leave the room during an exposure.

Besides direct beam, potential exposure from X-ray devices has only two other possibilities:

- 1) leakage radiation and
- 2) scatter radiation from the patient/subject in the direct beam.



**1 Leakage:** Unique internal shielding of NOMAD Pro 2 encases the X-ray tube, eliminating leakage radiation. As demonstrated by the data in chart 1, this makes it safe to use NOMAD Pro 2 as a handheld device during exposures.

**2 Backscatter :** When properly oriented, the transparent shield on the NOMAD Pro 2 collimator acts as a barrier against backscatter radiation, making it safe for the operator to stay in the room, as demonstrated by the data in chart 2.

CHART 1: Comparative Data for Hand and Extremity Exposure (Annual)

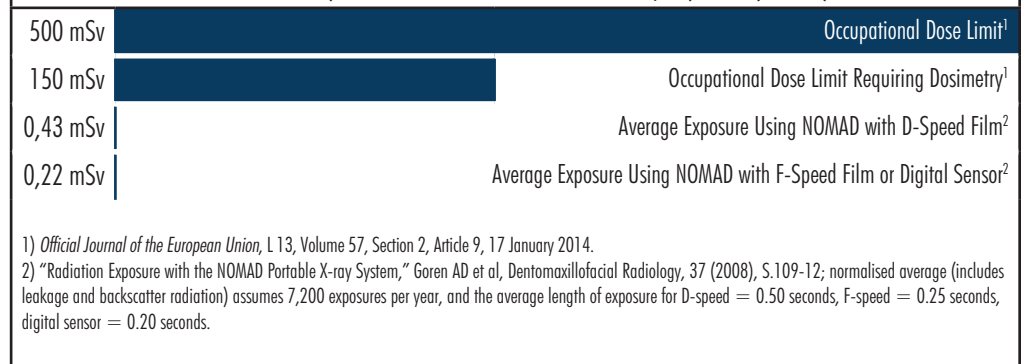
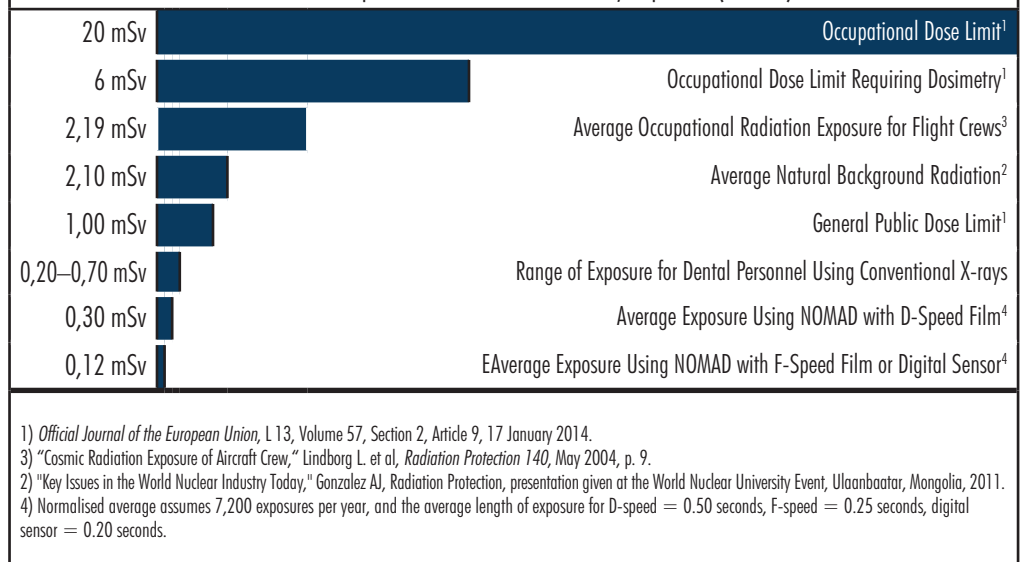


CHART 2: Comparative Data for Whole Body Exposure (Annual)



**As a result of the internal and backscatter shielding, operator X-ray exposure is far below accepted regulatory limits.**

# RADIATION SAFETY

- Operators must follow all applicable regulatory guidelines and in-house radiation protection programs in regard to patients and operators who are pregnant or expect to become pregnant.
- Operators must be fully acquainted with industry safety recommendations, established maximum permissible doses, and local jurisdiction requirements for use.
- Do not enable NOMAD Pro 2 until patient and operator are positioned and ready for the exposure, preventing interruption and inadvertent exposure of anyone to X-rays.
- Do not attempt an exposure if anyone other than patient is in the direct beam. If others are assisting, then they should wear protective covering as required by local jurisdictions.
- When selecting and using sensors, preference should be given to models that allow the backscatter shield to remain at the outer end of the collimator cone for maximum operator protection.
- An exposure can be terminated for any reason by prematurely releasing the depressed trigger.
- Optimal operator protection from radiation backscatter exists when:
  - a) the backscatter shield is positioned at the outer end of the collimator cone,
  - b) the backscatter shield is close to the patient,
  - c) the patient tilts their head when needed to accommodate exposures, and
  - d) the operator remains within the significant zone of occupancy immediately behind the device shield.
- As shown in graphic representations, maximum protection (green area) from backscatter radiation (red area) exists when the NOMAD Pro 2 is positioned near the patient, is perpendicular to the operator with the patient positioned/tilted as needed, and the backscatter shield is fully extended toward the patient.

<b>Stay in the ZONE</b>				
	Proper Position	Held Back	Shield slid back	Non-perpendicular
<b>PROTECTION:</b>	<b>MAXIMUM</b>	<b>MINIMISED</b>		

- Operation outside the protective zone (or with a diminished protective zone) requires proper precautions such as the use of lead aprons, according to requirements of local jurisdictions.

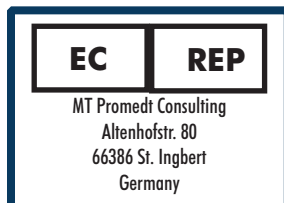
# LIMITED WARRANTY

**COVERAGE.** Aribex, Inc. warrants its medical and dental x-ray equipment to be free from any defects in material or workmanship for a period of one (1) year from the date of purchase. Aribex, Inc. also warrants any accessories purchased from Aribex to be free from any defects in material or workmanship for the period of one (1) year from the date of purchase.

The liability of Aribex, Inc. is limited to repair or replacement of any parts that Aribex or its authorised resellers determine to be defective. Contact Aribex for a Return Material Authorisation (RMA) number and shipping instructions. Parts proving defective shall be repaired or replaced free of charge (labour and shipping included), if defective equipment is returned (shipment return service) to Aribex or the location of the authorised service centre. Equipment repaired or replaced under warranty shall continue to be warranted for the balance of the original warranty term. All warranty claims must be made not later than ten (10) business days following the expiration of the applicable warranty period.

**LIMITATIONS OF COVERAGE.** This warranty does not apply to equipment that is or has been abused, misused, or altered (including opening enclosure or tampering), improperly maintained, subjected to use beyond rated conditions, or damaged as a result of any carelessness or accidents. This warranty does not cover ordinary wear and tear or maintenance.

**LIMITATIONS OF LIABILITY.** Aribex, Inc. makes no other warranty, either expressed or implied, with respect to any equipment purchased from Aribex, including without limitation any implied warranties of merchantability or fitness for a particular purpose, whether or not Aribex may have been informed of the actual uses to which any of such equipment may be put. Aribex, Inc. shall not under any circumstance be liable for incidental, indirect, consequential, punitive or exemplary damages, including without limitation damages for delay or lost profits, and in no event shall liability of Aribex arising from the purchase, sale or use of the equipment, or breach of any warranty made above, exceed in the aggregate the purchase price paid therefore.



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**Additional international and United States patents pending.**  
**English is the original draft language for this manual.**

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