

3.4 ANATOMICAL PROGRAMMER (APR)

Anatomical Programmer (APR) module is comprised of the controls which select the Patient Size and Display Selectors. The process is shown on the APR Display.

The APR techniques are factory pre-programmed according to different standard technique sets in a X-Y matrix format that combines eight Body Regions (Y-axis) with eight Anatomical Views (X-axis). Besides the radiographic parameters, selections of the workstation or AEC (density, fields and film/screen combination) can be assigned to the APR techniques. These selections will be always common for all the patient sizes of each Anatomical View. These techniques may be modified and stored anew into non-volatile memory by the operator.

The APR techniques are intended only as a guide line, they are only starting points that can be replaced by more specific protocols developed by the operator. Accurate exposure factors are dependent among other things on grid factors, table top absorption, screen film combinations, film processing or detector features.

The APR is activated when the paediatric push-button or one of the three Patient Sizes (small, medium or large size) push-buttons are pressed (push-button lighted), and it is deactivated when all of them are deselected.

Note 

If an APR technique is to be stored with AEC parameters, a suitable back-up time (and/or mAs) MUST be stored in the program by the operator.



APR DISPLAY: Shows the different Body Regions, Anatomical Views and Projections available for each APR technique, and the final APR selection.

Because each area of the APR Display is limited in length to eight characters, some regions and views are abbreviated.



PATIENT SIZE: These push-buttons are used to adapt the APR technique chosen according to patient size. Six patient sizes are available. The three right-hand push-buttons select Small, Medium and Large adult sizes (one only illuminated when selected). The left-hand paediatric push-button changes the function of the three right-hand push-buttons from adult patient size to paediatric patient size. (In this mode, the paediatric push-button and one of the other three buttons may be illuminated at the same time).



ANATOMICAL VIEW SELECTORS: Each push-button is related with the nearest area of the APR Display and they are used to select one of the displayed Body Regions and Anatomical Views.

After pressing the patient size push-button, the APR Display shows the following Body Regions: “Skull”, “Facial”, “Upper Trunk”, “Lower Trunk”, “Chest”, “Extremity on Bucky”, “Extremity on Table Top” and “Special”. When a Body Region has been selected, the APR Display shows directly all its respective Anatomical Views. In some cases an Anatomical View may show a sub-menu with its respective Projections (*refer to Appendix B for APR Matrix*).

When the APR selection is finished, the APR Display shows the final selection (Body Region, Anatomical View and Projection) and the Console indicates the respective position, the AEC selections and the technique parameters.

Note 

If any of the APR techniques in the APR file contains a combination of parameters not allowed by the Generator, that combination will be replaced with the nearest allowed parameters for the technique. In this case, the corresponding display of the replaced value blinks and the Control Console shows the message “modified” to alert the user of the changes made by the Generator.

Press on the push-buttons related to the final Body Region or Anatomical View selection, showed on the APR Display, to go back to the previous Anatomical Views level or to the Body Regions level.

APR TECHNIQUE CHANGES

The APR techniques are factory pre-programmed to standard technique sets. All parameters of the APR techniques may be manually modified by the operator and stored in the non-volatile memory for later use.

If the operator determines that some factors in an APR technique should be re-programmed, use the following procedure:

1. Select an APR technique and modify the factors and selections of Workstations or AEC which require to be re-programmed.
2. Verify that all factors of the technique are at the required values.
3. Simultaneously press the push-buttons 2–6 of the APR Display to store the new technique. (*Refer to Illustration 3-2.*)

The newly selected technique is now stored in memory and can be recovered for future examinations.

Note 

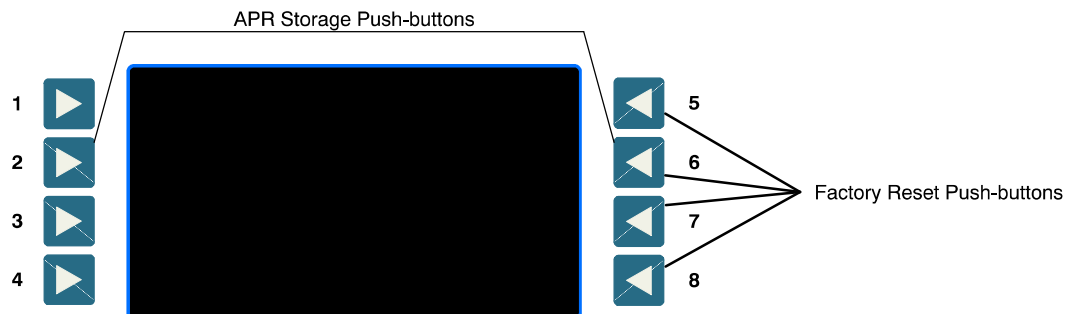
This procedure only changes the technique values of the selected Patient Size, repeat the procedure for other Patient Sizes.

Once the factors of one or more APR techniques have been modified, a factory reset can be performed. To do so, press the APR Display push-buttons 5, 6, 7 and 8 all together when APR is active. The message “Restoring backup” will be shown on screen.

Note 

When the factory reset is performed, every APR data that had been previously modified is restored to the default value.

Illustration 3-2
APR Storage Push-buttons



Note 

If an APR technique with AEC parameters is stored but the AEC is not configured in the Generator, the three AEC area selectors will blink when selecting this particular technique to indicate the invalid technique selection. The previous technique parameters will remain selected.