Calibrating the Vet ABC

Materials required:

1. Blood Control Smart card

2. One vial of Minocal calibration solution. Prior to use, bring the solution to room temperature by <u>gently rolling</u> the vial between the palms until it is warm and completely re-suspended. Also verify the expiration date.   Do not shake the vial or place it on a blood rocker.

Procedure:

1. The instrument must first be programmed to analyze calibration material. Insert the BLOOD CONTROL Smart Card into the Smart Card reader. From the MAIN MENU, move the cursor to 2) VETERINARY and press ENTER. The display should read TYPE: BLOOD CONTROL. Press ENTER again to verify the card type. The instrument then downloads the programming necessary for analysis of the calibration material.

2. From the MAIN MENU, press 3) CALIBRATION and press ENTER.

3. From the CALIBRATION menu, move the cursor to 1) AUTOCALIBRATION and press ENTER. The instrument will then move through a series of entries that require input from the operator.

4. The first entry asks that the operator be identified by displaying the SELECT OP menu. The operator(s) may enter their names if desired by using the UP or DOWN cursor for letters.   If operators have not been identified, however, the menu lists generic OP_1, OP_2, etc. Select one by moving the cursor to that position and press ENTER.

5. The instrument will then look for a Calibration Smart Card and display an error message (ERROR: NO SMART CARD) when no card is found. Press ESC to exit this function.

   **NOTE: Calibration may be performed without the requested Smart Card. This specific card only contains the 5 target values that are easily entered manually and then it is discarded. Because of this and the substantial added expense to the operator, the following protocol is used.

6.
   a. The instrument then moves to the program that allows for calibration without the use of a calibration card. The next entry asks for the lot number of the calibrator solution. At the CHANGE LOT #? prompt, compare the lot number currently in memory to the lot number of the solution to be used. If the lot number is the same, press ESC to indicate that the lot is not to be changed. If the number is different, however, press ENTER.

   b. At the LOT # prompt, type in the new lot number. Numbers are entered using the keypad; letters are entered using the UP and DOWN arrow keys followed by ENTER to advance to the next letter. When the entry is complete, press ENTER again.

7.
   a. The next entry asks for the expiration date of the calibration solution and shows the expiration date of the solution currently in memory. If the date is the same, press ESC. If the date is to be changed, press ENTER.

   b. At the EXP DATE prompt, type in the date using the displayed format then press ENTER. NOTE: "Bad Date Error" will appear if a period is not used when typing the date.

8. The next entry asks for the target values for each parameter, following the same format as above (displaying the currently stored values, asking if change is required, and allowing new values to be entered if needed). These target values are located in the paperwork enclosed with the Minocal solution. Complete the target value entries for each parameter using the values for MICROS 45 on the reference sheet.

9. The number of samples to be run is the next entry. This value is the number of times the calibrator solution will be run to generate a coefficient of variation and calibration coefficients. Calibration can be performed on 3 to 11 runs; verify that the number is set to 6. At the CHANGE # SAMPLE? prompt, press ESC to maintain the stored sample number or press ENTER to enter a new value. Note that the first run is not used for calculation. It is used by the instrument as a "primer" for the remainder of the runs.

10. The instrument is now ready to run the calibration solution. At the RUN CAL? prompt, mix the Minocal solution by gentle inversion about 10 times, then press ENTER. A brief clean cycle will occur. The display then reads START CALIBRATION #1X. Press ENTER and another brief wash cycle occurs. Then the sample probe will descend indicating that it is ready to aspirate the first sample. Open the vial and place the sample probe into the solution, then press the sampling bar. The probe aspirates the solution and moves into the instrument. Wipe the cap and threads of the vial and immediately replace the cap on the calibrator. Continue to gently invert the vial all through the calibration process. When the results of the run are displayed, compare the values to the target ranges provided with the solution. With each run, the results may be written down on the chart located just below the target values Though the results of this first run are not used in the statistical calculations, they are still displayed for evaluation and may be discarded if necessary. If the results are outside the target limits, press ESC to discard the run. If the results are acceptable, however, press ENTER.

    **Acceptable results are those which generally fall within 20% of the target values. For example, if the target PLT value is 245 and the result is 125 you should discard the run. If such a result is kept it is highly likely the Vet ABC will FAIL the entire calibration. If three or more such aberrant results occur in a row the operator should contact Technical Services. Furthermore, if such variation is noted between sample runs, the operator has the option to VOID a run. This is not encouraged if 2 or more runs appear off target.

11. The display then asks for the remainder of the runs. As before, mix the solution by gentle inversion, then aspirate the sample. Evaluate the results of each run against the target values and accept or discard the run as needed. When the pre-programmed numbers of runs is entered, the instrument calculates the statistical values and indicates if calibration passed or failed. The mean, coefficient of variation, percentage difference between the target value and the mean, the old calibration coefficient, and the new calibration coefficient for each parameter are displayed and OK or FAILED is displayed under each parameter. For calibration to pass, the CV must be within the following limits:

    WBC <2.5
    RBC <2
    HGB <1.7
    HCT <2
    MCV <1
    PLT <5

The percent difference between the target value and the mean must also be less than 20%. If these criteria are met, OK is printed under each parameter, and the display reads CALIBRATION ENDED WITH NEW COEFF. Press any key to return to the main menu.

If any of the parameters failed the above limits, the word FAILED is printed under that parameter. Note that if any of the parameters fail, none of the new calibration coefficients are entered. The instrument reverts to the previously stored factors and returns to the calibration menu. The operator should then attempt to calibrate the instrument second time. If the calibration fails again, consult Technical Services for troubleshooting options.