

# Version 3.11 Updates for SynScan Instruction Manual

Page 3, the following tip is added under Powering the SynScan:



In SynScan firmware version 3.10 or later, you can check the power voltage detected by hand control under "Utility \ Show Information \ Power Voltage" submenu

Page 4, under Dual Purpose Keys:

NGC, IC, M, PLANET, and OBJECT keys allow direct access to SynScan™ database of over 13,740 objects, instead of 13,400 objects.

Page 5, Initial Setup. Step 1 is replaced with:

1. Perform the Polar alignment using the polarscope. If the polar alignment method of your choice requires the hour angle of Polaris and clock position. This information will be provided after setting the Daylight Saving at step 10. You may skip the polar alignment and proceed to step 2. Polar alignment can be performed after the hand control displays the hour angle of Polaris and clock position at step 11. Make sure that the telescope is returned to its home position after polar alignment.

Page 5, Initial Setup. Step 5 and 6 are replaced with:

5. If SynScan GPS is in use, the hand control will prompt for the user to enter time zone and daylight saving. After the information is entered, the GPS receiver will retrieve the current Longitude, Latitude and Universal Time automatically. This may take up to 90 seconds. Please see SynScan GPS Instruction Manual for details. Skip to step 11.
6. If no SynScan GPS is connected, or the GPS is unable to retrieve information, the SynScan hand control will prompt for the user to enter the current latitudinal and longitudinal position using the numeric keypad. First enter the longitudinal coordinate, followed by the latitudinal coordinate. Use the scroll keys to choose between W or E, and N or S. Pressing the left or right directional keys will move the cursor to the previous or next number. Press *ENTER* to confirm. The format you enter should look like this: 123 04' W 49 09'N.

Page 5, Initial Setup. Step 10 and 11 are replaced with:

10. The SynScan™ will prompt "DAYLIGHT SAVING?". Use the scroll keys to make the selection and press *ENTER* to confirm.
11. Now the SynScan™ will display the hour angle of Polaris at present time (e.g.19:20), and the clock position (e.g. 08:19), which is the correct orientation of the smaller circle in the view of polar scope. This information comes in handy when performing the Polar Alignment.
12. Press ESC or ENTER on the hand control to exit from the information display. The hand control will ask "Begin alignment?". Press "1" or ENTER to start the star alignment procedure. Press "2" or ESC to skip the alignment and exit to the Main Menu.

Page 7, the following tip is added after "How to choose appropriate alignment stars":

In the SynScan version 3.10 or later, these criteria is implemented in the software. The list of alignment stars contains only the appropriate stars.

Page 9, "Show Information" and "GPS" are added to Utility Functions:

**Show Information** - This includes submenu Time, Version, Temperature and Power Voltage.

Time - This displays the local time and local Sidereal time.

Version - This displays the hardware, firmware, and database version of the SynScan hand control. This menu also displays the firmware version of the motor control board. Use the scroll keys to scroll up or down to view the version numbers.

Temperature - This displays the temperature detected from the thermal sensor in the hand control in both Celsius and Fahrenheit degrees.

Power Voltage - This displays the power voltage detected from hand control in Volts.

Polaris Pos. - This displays the clock position of Polaris viewed in the polar scope and current Hour Angle (HA) of Polaris. It is helpful for determining the relative position between the NCP and Polaris for polar alignment purpose.

**GPS** - When SynScan GPS is in use, this displays Longitude, Latitude, Universal Time, Date, Local Time, Local Sidereal Time, Elevation, and GPS signal quality etc. See SynScan GPS Instruction for details.

Page 15, Main Menu. The following is added to the Setup Mode:

Handset Setting

- *LCD Contrast*
- *LCD Backlight*
- *LED Backlight*
- *Beep Volume*

Page 15, Main Menu. The Utility Func. is modified to:

- Show Information
  - *Time*
  - *Version*
  - *Temperature*
  - *Power Voltage*
  - *Polaris Pos.*
- Park Scope
- PEC Training
- PAE
- GPS

Page 15, Main Menu. The Object Catalog is modified to.:

- **Named Star**
- **Solar System**
  - *Mercury*
  - *Venus*
  - *Mars*
  - *Jupiter*
  - *Saturn*
  - *Uranus*
  - *Neptune*
  - *Pluto*
  - *Moon*
- **IC Catalog**
- **NGC Catalog**
- **Messier Catalog**
- **Caldwell Catalog**
- **Double Star**
- **Variable Star**
- **User Defined**
  - *Edit Coordinate*
  - *Recall Object*

Page 16, the SynScan database now contains total 13,740 objects, instead of 13,400 objects.