



Thank you for purchasing the TEMP-est TEMPerature Equilibration System for Telescopes.

## INSTALLATION

### Vent Fans

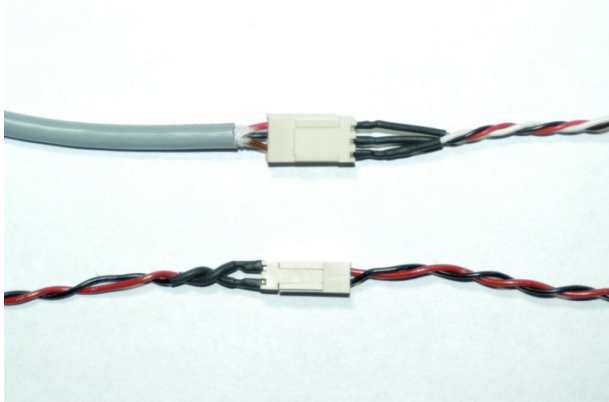
**WARNING:** Please read the instructions through before starting the installation and DO NOT put pressure on the center of the fans. The fans are fragile and the ribs can be broken if you press on the center of the fan.

To install the TEMP-est vent fans on your Edge HD, CPC Deluxe HD telescope or new vented SCT, simply take the following steps:

1. Remove the original vent covers and be sure to save the two screws from each cover.
2. Note which of the new vents is marked “in” or “out” (only one may be labeled) and plan on installing the “in” vent on the bottom of the OTA and the “out” vent(s) on the top where that is an option.
3. For the Edge HD and vented SCT models, attach the connecting cable (typically solid grey or twisted) to one of the fans and feed through the back of the telescope to the other side. You can use either fan and the connection is a one-way two or three-prong connector (see photo below). Threading the cable will probably be easiest with the telescope on a table or on a mount. Try to go along the bottom of the rear cell of the OTA underneath any obstructions like the mirror locks, central baffle tube and focuser shaft. Use a long hook (you can make one from a metal coat hanger) to grab the end of the cables from the other side of the OTA. For the CPC Deluxe HD all three vents are connected with quick connects and may be connected in any order.

Another option for running the wire is to tie a string or thread to a small weight (a spare nut from your workbench, a fishing weight or something similar would work fine) and lower the weight into the vent hole as you gently rotate your scope. The weight on the thread will follow the outside curve of the back of the scope, inside the scope, until it simply drops out the other vent hole. Remove the weight, tie the wire onto the end and gently pull the wire back through the scope. This routes the wire safely around the mirror locks and clear of all moving parts.

4. Once you have the wire routed through the back of the OTA and out the other side, attach the first fan assembly using the screws from the original vents. **DO NOT OVERTIGHTEN THE SCREWS AS IT MAY BE POSSIBLE TO BREAK THE FAN ASSEMBLY IF OVERTIGHTENED.**
5. Connect the second fan using the connector as indicated in the photos below. Note that on the C11 Edge HD and CPC Deluxe HD 1100 version, you will see only two wires (or a two-conductor wire) leading from one fan to the other(s). This will be the case on larger retrofit fans as well. On the C8 and C14 Edge HD fans and smaller retrofit fans, three wires (or a three-conductor wire) will run from one fan to the other(s). The connections are made with a one-way connector that will ensure the correct connection. Were the wrong wires connected from one fan to another, one or both of the fans would not run since these fans are unidirectional and the polarity cannot be reversed. Incorrectly connecting the wires on the C8 and C14 versions could also damage the power converter.
6. Once the second (or third) fan is connected, then attach it to the scope using the original screws.



C8, C9.25 and C14 connector on top and C11 connector below

### **Fastar Fan**

The Fastar fan is installed by simply removing the Fastar secondary from the scope and installing the fan in its place. Be careful with the secondary mirror and be sure to place it in a safe place (preferably inside a container) while using the Fastar fan for initial cooling.

### **Fan Filters**

All of the TEMP-est fans are equipped with 55 micron stainless steel mesh filters. If more air flow through the vent fans is desired, the filter(s) may be removed from the outlet (“out”) fan(s). It is not recommended to remove the filter from the inlet fan(s) since that would allow the introduction of greater amounts of dust into the OTA. If you are going to remove the filter from the outlet fan, remove the fan from the assembly, remove the filter and reinstall the fan. Please do this very carefully so as to not strip out the very small holes for the fan attachment bolts. If the filters on the inlet fan(s) or the

Fastar fan begin to collect too much dust, they may be gently blown out using some canned air. The vent fan filter is far more fragile than the Fastar filter so please keep that in mind.

### **Power Connection**

The fans are connected using standard 2.1mm or 2.5mm, center positive DC plugs. The power plugs **MUST BE CENTER POSITIVE** or the fans or power converters may be damaged. All of the TEMP-est fans are powered by 12VDC and require very little amperage (less than 0.01 amps). The power connection can be wired from a wall converter or an appropriate 12VDC battery used in the field or any other 12VDC source. Because the vent fans are wired together only a single power connection is necessary for the vent fans. A separate power supply or a cable splitter is necessary if you intend to use the Fastar fan and the vent fans at the same time.

**IMPORTANT:** If you have purchased the optional power cables, you must be very careful to connect them to your power source correctly so that they are center positive. Connecting them incorrectly will burn out your power converter (on those fan assemblies that use one) or fans. The white-striped line on these cables is the positive line.

### **USAGE**

The vent fans are intended to be used even when viewing or imaging in order to stabilize the OTA temperature and minimize and break up tube currents. The Fastar fan can only be used prior to using the scope since the secondary mirror must be removed in order to use the fan.

Enjoy your new TEMP-est and please let us know if you have any questions.

Ed Thomas

Deep Space Products