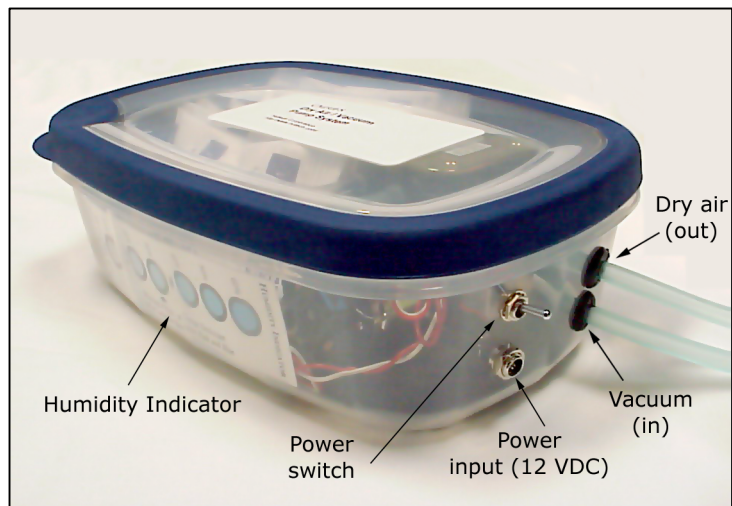
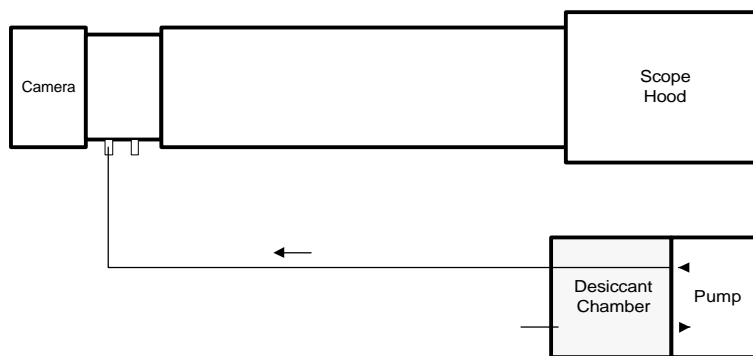


CM50FS Dry Air / Vacuum Pump System

The CM50FS Dry Air / Vacuum Pump System is designed to provide a low flow of dry air to an astro camera system and optionally to provide a low vacuum for vacuum film holders. The dry air is generated by pulling air through silica gel packets and then pumping it into the camera system. If vacuum hold is also required, a hose may be inserted into the intake port of the CM50FS. The pump system operates off unregulated 12VDC and typically draws less than 0.4 A.



Configuring Your System

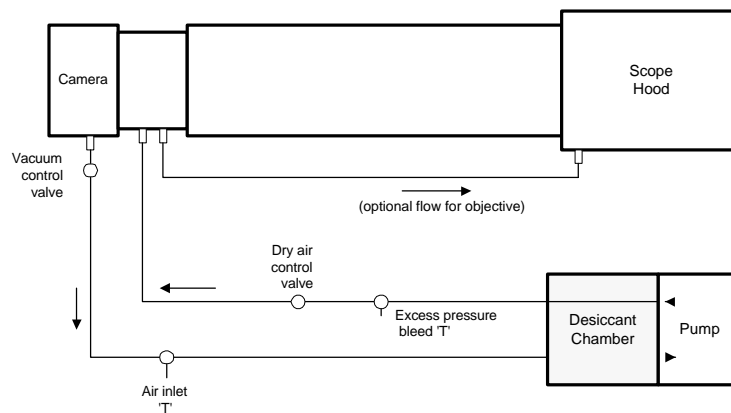


CM50FS sample configuration (simple dry air flow only)

While the CM50FS may be immediately used by attaching its output to the camera or telescope system air intake, it is best to first route the air hoses properly along the telescope mount and tube. Take care to insure that an adequate length is provided and that the tubing is not kinked and will not be snagging on anything no matter how the mount is positioned.

If the vacuum side of the system will be used, insert the second hose into the intake (lower hole) and route it up to the camera, again taking care to avoid kinks and loops which may snag on the mount.

Once the tubing is cut to the proper length and attached to the camera, on the vacuum side, if the flow is too great, adjust the recirculation flow valve inside the pump box. This may be done with the cover off the pump box. If further control is desired, insert "T" sections to divide the flow between the camera system and the open air. An external valve in the line on the camera/scope side as shown in the diagram at right can be used to further adjust the flow until it is at the desired rate.



CM50FS sample configuration with vacuum camera

Couplers and hose sections are compatible with aquarium air supply parts and can be commonly found at pet stores.

Using the CM50FS

In normal operation, simply attach the hoses to the appropriate camera connections and turn on the pump. In a very humid climate, allow a few minutes for the dry air to fill the camera system before starting exposures. In drier climates, it may not be necessary to continuously run the dry air system.

When using the vacuum side of the system, be sure to turn off the pump and bleed air into the camera before advancing the film. Simply turning off the pump may not be adequate when advancing the film as the vacuum hold system may maintain the pull on the film for several minutes. If a 'T' section has been installed as shown in the sample configuration above, simply turning the pump off will be adequate as the 'T' allows air to enter and release the film hold.

Recharging the Desiccant

Periodically (depending on your climate), the silica gel desiccant will need to be “recharged,” as indicated by a humidity indicating card. This is placed inside the CM50FS enclosure where it can be seen without opening the unit.

Recharging the desiccant is accomplished by placing the silica gel packets in low heat (~245 F) on a tray in an oven. For full recharging, 16 hours is recommended, but it is not necessary to strictly follow this as a rule. Note that when removing the desiccant packets, the enclosure must not be turned upside down as the pump is not tightly fastened to the enclosure (to minimize vibration coupling).

To reset the indicator card, place the card in an oven for less than 1 minute. When placing the card back in the CM50FS enclosure, place it where it will be visible from the outside, and insure that its rear is exposed to the air inside the enclosure. Replace the cover on the enclosure as soon as possible after recharging to minimize exposure to outside humidity.

Notes:

1. Enclosure power connector specification:
 - ◆ 12VDC (unregulated), center positive
 - ◆ 5.5mm OD
 - ◆ 2.1mm ID

