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Malabar Coolant Service Cart Training

Start-Up:

-Set control switches as follows,

- Master off
- Vacuum pump off
- Emergency stop button, not engaged

Once this is set, turn the Disconnect/Power Selector on. If ambient temperature inside the power box is below 35°F (1.6°C), the green light on the power box will be on and stay on until the heater warms up the enclosure.

Cart Functions:

- Preheat: Recirculates fluid with RV3 set at 270 PSI. Note: Range of flow 15 – 30 GPM, default: 20 GPM.

- Recirculate: Recirculates fluid within the CSC. LV8 & LV3 opens to loop the flow between the pump output through the F1 & F2 Filters to the reservoir through the return flow sight. Note: Range of flow 10 to 32 GPM, default: 30 GPM. This mode is used for fluid maintenance and fluid monitoring.

- Runaround: Connect the supply and return QD's together. Fluid recirculates through both hoses to the clean reservoir with LV2, LV3 and LV5 open if the "Clean" button is selected. This mode is used for conditioning the fluid hoses prior to aircraft connection. Note: Range of flow 10 to 32 GPM, default: 30 GPM.

(Optionally the fluid may be directed to the Waste reservoir through LV4 if the "Waste" button is selected. This however is not a normal selection since it will waste the fluid.)

Aircraft Functions:

- LRU Fill: This mode is used to fill a line replaceable unit; i.e. PECS pump, SCU, heat exchanger, etc., through LV 3 and LV9 and the LRU hoses. Select flow path for return

fluid to the clean or waste reservoir. Note: Range of flow 1 to 3 GPM, default: 2 GPM.

- **System Fill**: This mode is to fill one of the aircraft systems (PECS, ICS or FCAC) with the coolant. Fluid flows through LV2, LV3 and LV5 with the “Clean” button selected.

Note: Range of flow 1 to 15 GPM, default: 7 GPM. We recommend the default setting or lower to avoid “water hammering” the aircraft system if the system is initially dry.

(Optionally the fluid may be directed to the Waste reservoir through LV4 is the ‘Waste’ button is selected. This however is not a normal selection since it will waste the fluid.)

- **System Clean**: This mode is to filter and deaerate one of the aircraft systems (PECS, ICS or FCAC) with a high flow rate. Fluid flows through LV2, LV3 and LV5 back to the Clean reservoir only. Note: Range of flow 5 to 32 GPM, default: 30 GPM.

(Optionally the fluid may be directed to the Waste reservoir through LV4 but “Jumper #2 must be removed in the control box. This however is not a normal selection since it will waste the fluid.)

- **N2 Purge Supply**: This mode is used to drain the coolant from one of the aircraft systems using the dry nitrogen connection and regulator. Nitrogen forces the fluid through the supply and return hoses through LV4, LV5 and LV7 back to the Waste reservoir.

(Optionally the fluid may be directed to the Clean reservoir through LV3 but “Jumper #1 must be removed in the control box. This however is not a normal selection as this may contaminate the clean reservoir.

- **N2 Purge LRU**: This mode is used to drain the coolant from an LRU using the dry nitrogen connection and regulator. Nitrogen forces the fluid through the LRU supply and return hoses through LV4 and LV6 back to the Waste reservoir.

(Optionally the fluid may be directed to the Clean reservoir through LV3 but “Jumper #1 must be removed in the control box. This however is not a normal selection as this may contaminate the clean reservoir.

Alarms:

- **High Level Waste Tank:** LSH1 detects a high fluid level in the waste tank (more than 50 gallons). Note: Alarm will sound and CSC will shutdown to prevent an overflow from the waste tank.

- **Low Level Clean Tank:** LSL1 detects a low fluid level in the clean tank (less than 5 gallons). Note: Alarm will sound and CSC will shutdown to prevent coolant pump from cavitation and possible damage.

- **High Supply or Return Filter Differential Pressure:** Alarm will activate if either filter has more than 25 PSID diff. pressure thus indicating a filter change is necessary. The CSC will not shutdown allowing the aircraft service procedure to continue. The filter(s) should be changed as soon as the service operation is completed. Note: The filters are not cleanable.

- **High Temperature:** TS1 will trip and activate the alarm if fluid temperature exceeds 140°F (60°). A high temperature alarm will not shutdown the CSC. The cause for the alarm should be investigated as soon as possible.

- **High Pressure:** PSI will trip, activate the alarm and shutdown the CSC to prevent over pressurizing the aircraft system. The cause for the alarm should be investigated as soon as possible.

- **Low Fuel, Model 1011A only):** LSL2 will trip and activate the alarm if there is less than 1 gallon in the fuel tank. A Low Fuel alarm will not shutdown the CSC.