

Driver Cooling System

Setup and Operation

RINI Service Items



Driver Cooling Unit (DRCU)

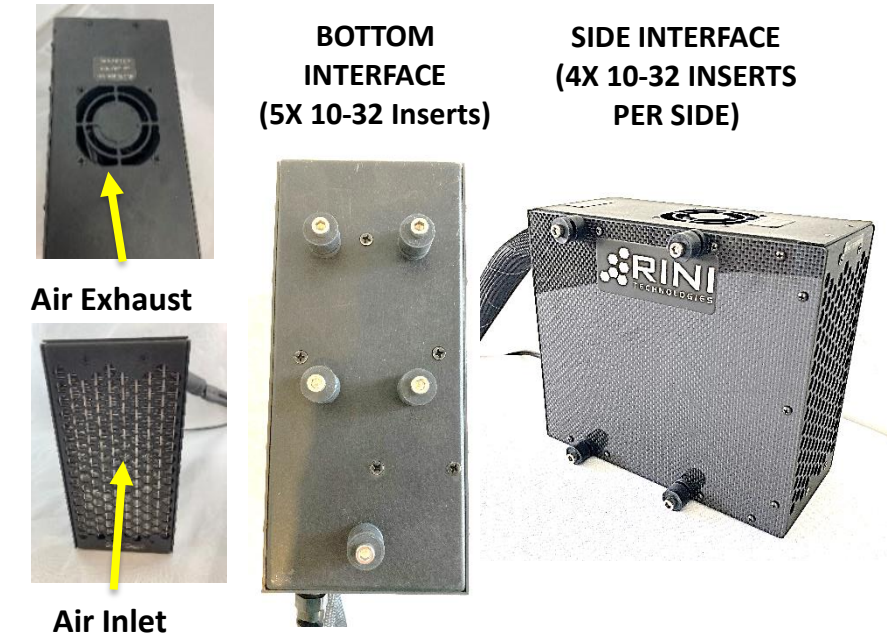
- 4ft FloLok Umbilical
- Power Cable

Water Fill Bottle & Golden Solution

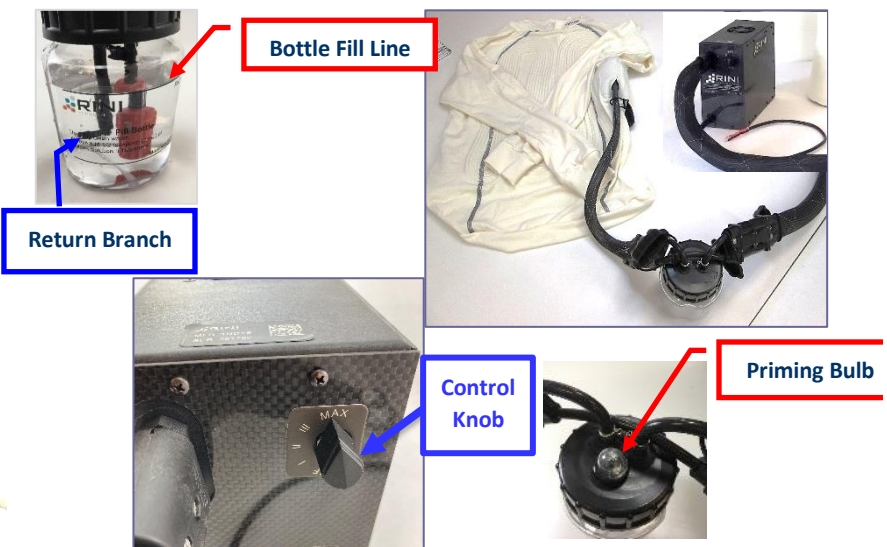
Cooling Shirt

Installation

- Secure bracket to vehicle using 10-32 Threaded Insert Mounting Holes
- Install Cooling Unit level with Fan side Pointing Up
- Provide airflow to Inlet
- Do Not Block Air Inlet or Air Exhaust



- DRCU and Cooling Shirt MUST be primed with water prior to use.
- Add water to the Water Fill Bottle line and add ~ 2mL of golden solution to jar.
- Connect Push/Pull Quick Disconnects from Shirt to Mating Connectors on the Fill Bottle and the Cooling Unit.
- Connect DRCU Power Cable to supply 14 VDC (**RED + / BLACK -**).
- Turn DRCU knob to Level I or II and run for approximately 2 minutes or until no air bubbles are visible in return branch in the Water Fill Bottle.
- If no flow is visible push priming bulb on Water Fill Bottle several times to prime pump.
- Turn system knob to the OFF position
- Disconnect Water Fill Bottle (Bottle should NOT be connected during operation).
- Cooling System is ready for operation.
- If multiple Cooling Shirts are used with one Cooling System repeat the entire process for each Cooling Shirt.



- Wear the Cooling Shirt next to skin Under Fire Suit.
- Connect the Cooling Shirt connector to the DRCU Connectors. (Water Fill Bottle should NOT be connected during operation).
- Turn the Control Knob to the desired Cooling Setting.
- Cold water should be felt in the shirt within a few minutes. If it does not feel cold reference the troubleshooting guide.

ITEM DESCRIPTION	ITEM NUMBER	PRICE (2022)	PHOTO OF ITEM
FloLok, Push Button FloLok, Latch	100727 100924	\$150	
Golden Solution, 2 oz	102174	\$10	
Water Filter Parts	102475	\$18	
Water Filter Replacement Kit	102476	\$65	
Umbilical (4 ft – FloLok) Umbilical (2ft – FloLok)	102534 102739	\$390	
Garment Purge Assy	102922		
Fill Bottle Replacement Filter	103141	\$25	
Umbilical Check Valve Service Kit	103774	\$51	
Cooling Shirt Vest X-Small Small Med Large X-Large	CUSTOM 103507 103508 103509 103510	\$590	
Cooling Vest X-Small Small Med Large X-Large	103456 103457 103458 103459 103460	\$590	
DRCS Male Push/Pull QD Connector Kit	103927	\$25	
DRCS Female Push/Pull QD Connector Kit	103928		

Maintenance

Troubleshooting

MAINTENANCE TASK	RECOMMENDED FREQUENCY
Purge Water from PCU and Garment	Every 2 Weeks or prior to storage
DRCU Water Change	Bi-Weekly
DRCU Umbilical Water Filter Cleaning	Quarterly or if Unit has issue with Water Flow or Cooling
Clean Fill Bottle Red Filter	Semi-Annually or as needed
FloLok O-Ring Replacement	When Damaged or Missing
DRCU Umbilical Replacement	When Damaged
Garment Cleaning	As needed in Mesh Bag in Laundry Machine (Hang to Air Dry)

Purge Water from DRCU and Garment

- Connect DRCU to Fill Bottle and Shirt to Water Fill Bottle
- Invert Fill Bottle and Turn DRCU ON
- Run DRCU for 2 minutes or until liquid stops returning to fill branch in inverted Fill Bottle
- Must repeat step for each Cooling Shirt used with system.

DRCU Umbilical Filter Cleaning

- Unscrew Clamp on Flolok Latch Connector on DRCU
- Push Braided sleeving and Remove insulation cover
- Push pins out with tool to remove filter housing lid. Do NOT remove hose clamps.
- Remove filter screen basket inspect for holes and clean
- Insert filter back in housing, verify O-ring is installed and re-install lid and re-insert pins.
- Return insulation & braid over housing re-assemble Flolok



ISSUE	POSSIBLE CAUSE	SOLUTION
SYSTEM DOES NOT START	Power Cable Interface	a) Check Power Leads are connected to Power Source
	Damage to Power Cable	Replacement Needed
	PCS Control Switch is OFF	Turn knob or switch to the desired setting.
SYSTEM TURNS ON BRIEFLY THEN SHUTS DOWN	No Water Flow	a) Verify water connections between DRCU and garment b) Verify that DRCU and garment were filled with water c) Clean water and filter screen in DRCU Umbilical to ensure not clogged
	Unit not operated in correct orientation	DRCU should be positioned with Fan facing UP
	Electric Safeties were Tripped • High Voltage (> 16.5V) • Low Voltage (<9.3V)	a) Verify that nominal 12 VDC was supplied to the system b) Cycle switch to OFF position c) Disconnect form primary power source
SYSTEM TURNS ON BUT DOES NOT PROVIDE ADEQUATE COOLING	System not adequately primed with water	a) Fill DRCU and Shirt with water using Fill procedure. If not flow is visible in Fill Bottle depress priming bulb on Fill Bottle 20 times or until flow is observed in Fill Bottle return branch b) Check that water fill bottle internal tubes are not detached
	Low Water Flow	a) Check water connections are properly mated with shirt b) Clean water filter screen in DRCU Umbilical c) Clean and purge Shirt / Vest
	Low Airflow	a) Verify fan is not obstructed and spinning freely b) Ensure air flow inlet is not blocked and has adequate air flow c) Ensure that Fan Exhaust is not blocked

Contact RINI's Service Department if additional assistance is required. (407) 359-7138



- ☐ Driver Personal Cooling
- ☐ Cooling Shirt with Tubing Worn Under Fire Suit
- ☐ Runs Continuously
- ☐ Mitigates Heat Stress
- ☐ Enhances Driving Effectiveness

SPECIFICATIONS

- Weight: 7 lbs.
- Size: 3.5" x 7" x 8"
- Nominal Voltage: 12 VDC
- Operating Voltage: 12 to 16 VDC
- Low Voltage Cutoff: 9 VDC
- Power Draw: 10 Amp
- Cooling Levels: 5 Different Settings
- Freeze Protection: 39°F
- Max Operating Air Temperature: 160°F

Operation & Maintenance Video

<https://vimeo.com/200669956>