

RIDE THE DUCKS INTERNATIONAL
Fleet Operations & Safety
2320 West Highway 76
Branson MO 65616

Bulletin No. SB-00-01-15

Release Date: 2/4/15

Effective Date: 2/4/15

Supersedes: N/A

Applicable to: All Ducks that utilize
electric auxiliary coolant pumps

Total Pages: 1

SERVICE BULLETIN

REASON FOR RELEASE: The existing keel cooler pump ProAir model (05-00-658) is an auxiliary coolant circulation pump which supplements the onboard engine (water) pump. This pump has recently experienced a higher than expected failure rate which resulted in the activation of the overcurrent protection (fuse). Subsequently, with a failed pump, fractures and/or ruptures and signs of over pressurization of the radiators top plastic tank have also been observed. Because the (05-00-658) pumps manufacturer provides insufficient data, a conclusive reason as to why these pumps began to fail remains open. However, the engines thermostats was found to be of the incorrect design for the engines water pump (205 degree short stem vs. 195 degree long stem) which is believed to be a primary contributing factor. With a short stemmed thermostat, the water pumps, bypass port will remain open, not allowing for designed coolant flow. System hose & flow: Drawing [Keel Cooler Circulation Pump](#)

CAUSATIVE FACTORS :

Circulating Pump Failures

1. Due to the irregular flow of coolant, with the short stemmed thermostat installed; the coolant temperature increased above normal, causing the premature failure of the circulating pumps. NOTE: Because the manufacturer of the existing pump does not provide sufficient service life data, the ProAir (05-00-658) pumps are required to be replaced with one that provides sufficient data.

Top Radiator Tank Ruptures

2. The irregular coolant flow, can be coupled with over-pressure, which could introduce a release of hot coolant/steam mixture into the radiators top tank quicker than the pressure release cap could immediately vent. This over-pressured coolant and steam mixture could cause a catastrophic failure of the plastic tank.

SURVEY, TESTING AND RESULTS: After the causative factors were determined, a duck was retroed with a proper thermostat and new pump. The duck was then subject to stringent sea trials. After witnessing satisfactory testing and agreeing with the causative report, the USCG approved the modifications.

MODS/REPLACEMENTS AND MAINTENANCE: Based on satisfactory testing and USCG approval, the following recommendations apply:

1. Ensure long stem 192 degree thermostats are installed in all Truck Duck diesel engines.
 - Thermostat info : [Ford Parts.com #F6TZ*8575*EA](#) copy and paste part # (Add To Cart)
2. Replace existing coolant pump with MEZIERE Centrifugal pump. New Pump info: [MEZIERE #WPX750](#)
 - The MEZIERE pump DOES NOT fit the existing bracket. The pump adapter bracket (upon request) can be provided by RTD Fleet Operations or can be manufactured locally. Pump adaptor Bracket info: [RTD Pump Adapter Bracket Drawing](#)
 - Install pump in accordance with manufacturer's recommendations with regard to orientation, wiring and plumbing. NOTE: based on amp draw readings taken during testing, it is recommended to replace existing pump 10 amp fuse with a 15 amp.
 - Recommended but not required: Install an indicator light to notify the operator in the event the keel coolant pump is not operating due to a loss of power (such as a blown fuse) Electrical Installation info: [Wiring Diagram](#) and [Light](#)
 - Place emphasis on the keel cooler pump inspection during annual and routine maintenance including but not limited to: cycling the pump with engine off to listen for abnormal noise in the pumps housing which could indicate impending failure.
3. Upgrade the existing 5/8" flexible keel cooler hose to 3/4" to match the pumps inlet/outlets and reduce the line restrictions at the pumps connections. Ensure no kinks in the line when installing and add chafe protection where needed. Recommended hose: [28434](#) & [5346K28](#)
4. Ensure radiator fins are kept clean; Oils and debris clogging the radiators fins reduces the cooling efficiency of the radiator.
5. Thoroughly inspect the top radiator tanks for any deformities. Replace if necessary.
6. Duck engine hood designs (*that are hinged at the front and draw air through a vent just below the drivers windshield*) should be modified to remain normally open. The vent must also provide for manual closure for fire deprivation purposes.

DIRECTIONS: Prior to implementing the recommendations above, seek local approval through your local OCMI. Should your local OCMI require further information beyond what is provided within this bulletin; contact RTDI Fleet Operations.

NOTE: All work must be performed by qualified personnel. Use only authorized components, specified or provided by Ride The Ducks. All applicable OSHA safety standards and safe industry practices must be observed. Observe all safety information contained in the manufacturers manuals. Make available this bulletin and all related technical information to personnel using the equipment.

[CONTACT US VIA EMAIL](#)

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