



July/August 2020

ACTION

Total Vehicle Climate and Thermal Management™

**A/C service challenges
in the mining industry**

www.macsw.org

Over the road: Auxiliary power unit engine cooling systems

By: Joey Rosato, Director of Marketing at Texas Truck A/C, Inc.

As time goes on, Auxiliary Power Units (APUs) continue to play a larger role in the over the road trucking industry. Idle laws that vary state by state are placing restrictions on drivers across the nation. Because overnight idling to run the OEM AC system is now illegal in many places, the installation of an APU is required. Diesel APUs are the most popular solution to these restrictions, as they can provide heat, air conditioning, battery charging, coolant warming, and electrical power capabilities to drivers. These units are powered by small diesel engines, which can be run for extended periods of time while drivers are resting.

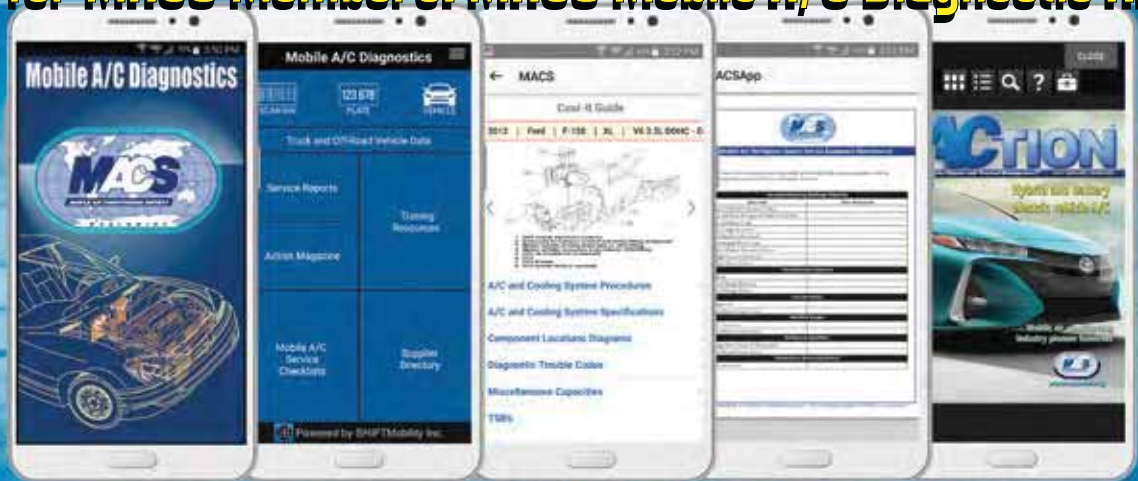
Extended run times create a unique challenge in keeping these diesel engines cool. APU engine cooling systems

are not as complex as their automotive counterparts, but they operate in nearly identical fashions through the use of water pumps, cooling fans, thermostats, and various sensors/switches that collect data for the control module. The control module then uses the collected data to shut the engine down in low coolant, or high coolant-temperature conditions. Most APUs have fault code storage capabilities, and will display a fault code when these issues arise.



Joey Rosato,
Texas Truck A/C, Inc.

Exclusively for MACS Members! MACS Mobile A/C Diagnostic APP



The best of MACS now fits in the palm of your hand!

MACS App 2.0
Now Available!



www.macsw.org
215/631-7020 x 0

Cooling Corner

Without the proper function of these cooling systems, APUs are known to fail while displaying overheat codes, which render entire systems useless. A problematic component that often contributes to cooling system failure is the electric radiator/exhaust fan, which is known to succumb to wear and tear over time. Extreme vibrations and extended run times assemble to create a reduced life for components of this sort. One of the most common, but often overlooked signs that an electric fan is going bad is a reduction in RPMs. This can be caused by overheated/corroded wiring, faulty relay contacts, or simply a fan that is on its way out. The best course of action once an issue of this sort arises is to ensure that the fan has solid power and ground, all blades are intact, and a direction of rotation aligns with OEM unit specifications. If an electric fan checks all of these boxes, but doesn't function properly, it's likely time for replacement.

When changing this component, it is important to carefully select the proper OEM replacement, or equivalent to ensure component specifications are satisfactory.

If the rotation of the replacement fan is not correct, the unit will overheat. Attempting to turn a "pusher" fan into a "puller" fan, or vice versa, by reversing the component polarity is a faulty practice, as the fan blades are designed to turn a specific direction for maximum output. This error commonly results in reduced airflow and component life. Best practices while installing the appropriate replacement part include the replacement of the fan relay, and any corroded electrical connections.

After necessary repairs and part installations are complete on the new electronic fan, it is important to check for possible secondary problems caused by the previous, faulty component. Issues to check for include coolant leaks, the necessity of a flush or refill, water pump belt/radiator cap condition, radiator/condenser cleanliness, and well-maintained electrical circuitry across the system. Making these checks after completing necessary repairs will help safeguard the proper function of the APU engine cooling system, and ultimately the entire unit, ensuring that over the road drivers can rest comfortably. ❄



LILAND GLOBAL
EAST SYRACUSE, NY

Contact us to find our nearest distributor or to see if there is a distributorship available.

info@lilandglobal.com
www.lilandglobal.com

FUEL SYSTEMS

FUEL TANKS
800+ MODELS

OIL PANS
250+ MODELS

FILLER NECKS
475+ MODELS

SENDING UNITS
100+ MODELS

STRAPS
475+ MODELS

STAINLESS STEEL FUEL TANKS
NO INTERNAL RUST

100+ MODELS

FOR-02-A/SS 1999-2010 FORD F SERIES SUPER DUTY REAR GAS / DIESEL	
FOR-07-A/SS 2011-2017 FORD F SERIES SUPER DUTY REAR 40 GALLON BIO-DIESEL / DIESEL	
CGT-01 1949-1952 CHEVROLET STYLELINE 1949-1952 FLEETLINE	
FDGT-02 1948-1952 FORD PICKUP	
ICR9A/SS 1968-1970 DODGE CHARGER	
ICR11E/SS 1971-1976 DODGE DART PLYM 1971-76 DUSTER, VALAINT, SCAMP	
IF28A-SS FORD MUSTANG 1964-68 MERCURY COUGAR 1967-68	
CPU-50 2004-2017 GMC SAVANA 1500,2500,3500 CHEVY EXPRESS 1500, 2500, 3500	
IST5067 1973-1987 CHEVROLET, GMC PICK UP, FRONT	

ICRP06C 1999-2004 JEEP GRAND CHEROKEE 2000-2006 JP 2000-2006 WRANGLER	
ICRP33A 2004-2005 DODGE DAKOTA 2007-2012 DODGE NITRO 2002-2012 DODGE PICKUP RAM 1500/2500/3500 2002-2012 JEEP LIBERTY	
IFP02A 83-96 FORD PICKUP F-SERIES 83-96 FORD VAN E-SERIES	
IGMP08A 1963-1992 BUICK, CHEVROLET, GMC, OLDMOBILE, PONTIAC	

RADIATORS

POLISHED ALL ALUMINUM
250+ MODELS

FORKLIFT
30+ MODELS

OEM TITAN-X TRUCK RADIATORS & CAC UNITS
350+ MODELS



MADE IN THE USA

4AA 1940-41 FORD PICKUP	
583AA3R 1973-86 JEEP CJ SERIES	
1463AA3R FORD 1960-65 COMET 1965-66 MUSTANG	
2171AA FORD 2000-05 EXCURSION 1999-04 F SERIES	