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MAINTENANCE MATTERS

What you need to know about coach oil

Background

All MCI® coaches require heavy-duty lubricating oils. The primary responsibility of lubrication is to create and maintain a hydraulic film between moving parts in order to reduce friction. The oil's viscosity, or resistance to flow, is directly proportional to the shearing protection it provides between moving parts.

Synthetics

Today there are many choices in brands and types of engine oils. The two main categories of oils are petroleum refined and synthetics. Synthetic oil is a man-made version of petroleum refined oil. The more expensive synthetic brands tend to withstand more extreme temperatures ranges than do petroleum refined oils. However, it is recommended to reference your maintenance manual to ensure that synthetic oils can be used for your specific application.

Oil Classifications

Oil is classified according to two systems. The SAE system determines the viscosity and the API classification determines the performance level of the oil. The SAE system classifies viscosity using an increasing numerical designation. The lower the classification number, the better it protects in cold temperatures, while higher numbers indicate better protection at higher temperatures.

The API classification indicates the performance and service category of the oil. For example, CG-4 denotes service typical of high-speed, heavy-duty four stroke diesel engines used for on and off highway applications.

Oils & Cold Weather

—Engine Oil

The most commonly recommended engine oil for MCI coaches is SAE 15W-40 API CG-4. The SAE 15W-40 indicates multi viscosity oil, which meets viscosity requirements of at least two classifications. The 15W indicates that under cold conditions the oil will have the viscosity and characteristics of SAE 15 oil. As the engine reaches operating temperature the oil will heat and take on the characteristics of SAE 40 oil. Using multi viscosity engine oil is especially important during the cold months. Due to its higher viscosity, SAE 40 offers excellent protection by forming a thick layer of protection. However, during cold engine startup, SAE 40's consistency would increase engine cranking resistance and not circulate properly throughout the engine. Acting as an SAE 15 in cold conditions, however, multi viscosity oil allows for less cranking resistance and increased circulation during startup than a single grade SAE 40 would.

Helpful Tip: Most coaches are equipped with an auxiliary engine pre-heater to aid in cold weather startup. Utilizing the pre-heater will warm the engine oil before startup, thus helping to eliminate slow cranking in cold weather. Check your maintenance manual for recommended pre-heating times before starting the coach.

—Gear Oil

The most commonly recommended drive axle gear oils are SAE 75W-140 (natural) and SAE 75-90 (full synthetic). These grades of multi viscosity oils are thin enough for cold startup, yet have enough viscosity to offer protection at higher operational temperatures. Multi viscosity oils should especially be used during cold months because in cold weather higher viscosity gear oil becomes too thick for good protection. Gear oil which is too thick leads to a lack of lubrication, leading to channeling, or grooves caused by wear on components. It can also result in metal to metal wear, given the oil's high resistance to flow into voids created by the rotating gears. Low cost mineral gear oils may seem cost effective, but they are no substitute for the grade of oils recommended by the manufacturer, especially in cold weather. **Please refer to your maintenance manual to determine which types and classifications of gear oil are recommended for your particular coach.**

Filters

Along with ensuring the correct oil is used during cold months, it would also be advantageous to check the condition of all oil/fluid filters. A partially blocked filter could cause major problems when thicker fluid is circulated during cold startup. Because the thicker oil is at a higher viscosity, a small blockage in the filter could cause a large, undesirable pressure drop across the filter, increasing the possibility of a filter failure and reducing the effectiveness of the lubrication system.

Power Steering Fluid

The power steering system utilizes two filters to ensure that foreign particles are not circulated in the system. One filter is located in the reservoir assembly and the other is an in-line filter. These filters should be inspected on regular intervals, especially during the cold months when the fluid is more viscous because of the lower temperatures.

Helpful Tip: When replacing the power steering fluid filters it is also important to drain and replace the power steering fluid with the appropriate fluid. It is always good practice to replace both filters at one time. With the fluid system exposed be sure not to

contaminate the system components with dirt, sludge, or water.

Transmission Fluid

Automatic transmission fluid is used to cool, lubricate, and transmit hydraulic power. It is important to maintain proper fluid levels as well as keeping the filter free of obstructions. As with any oil, the transmission fluid is thicker when it is cold. Therefore, it is important to inspect the filter and filter housing before cold weather.

Helpful Tip: The auxiliary engine pre-heater also pre-heats the transmission fluid. Allow adequate time for the auxiliary heater to pre-heat all necessary coach components before cold startup. See your maintenance manual for details.

Coach Guard

Contact your [MCI Fleet Support Manager](#) or [MCI Customer Service](#) to order your replacement Coach Guard oil and fluid filters and auxiliary heater components to ensure that your winter driving experience will be a warm one.

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