



Mack Chassis - Equipped With An Automated Manual Transmission (mDrive, AMT) AMT-C, AMT-D Or AMT-F - Transmission Oil Specifications - Model Years 2010 To 2020



> Internal Content

See below for the recommended transmission oil quality by manufactured year.



WARNING

Use of incorrect transmission oil quality can lead to premature wear and possible component failure.

Manufactured Year 2010 Through 2016:

- Oil cooler integrated into the radiator (commonly manufactured 2010-2014): 97318
- Transmission-mounted oil cooler (commonly manufactured 2015-2016): 97319

Manufactured Year 2017 GHG And Newer:

- Transmission-mounted oil cooler: 97319

For more information regarding Transmission Oil Quality, including oil weights, please refer to [Impact - Function Group 175 - Transmission, Lubrication](#).

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Transmission, Lubrication

Manual Transmission Oil



Caution

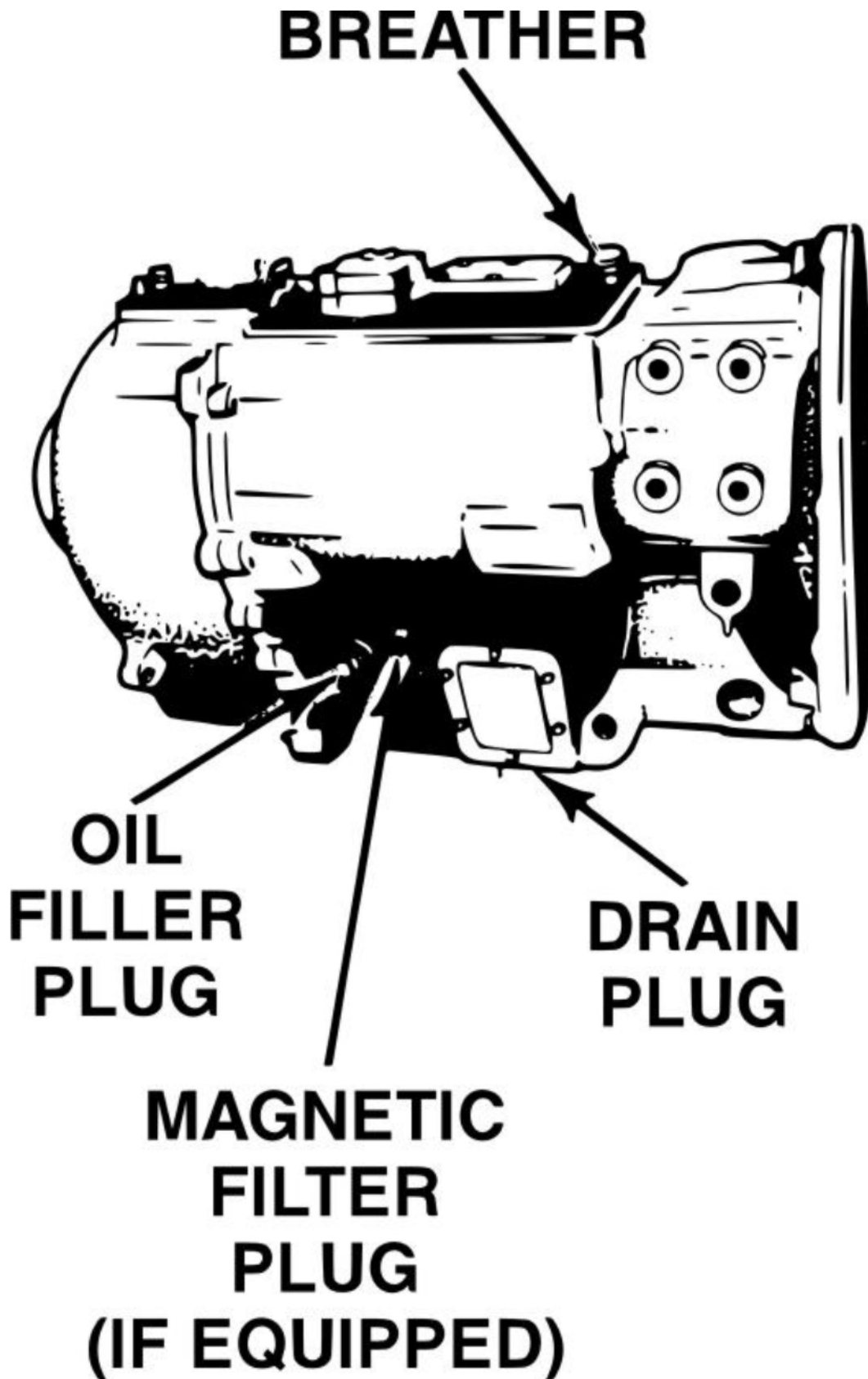
Drained manual transmission oil must NEVER BE REUSED and must be replaced along with the transmission oil filter.

Use only mineral or synthetic transmission oil approved by MACK Trucks in the T300 series of manual transmissions. The capacity of the transmission ranges from 9.5 liters (20 US qts.) to 14.2 liters (30 US qts.), depending on the specific T300 transmission model and the number of gears used. At this time, GO-J, GO-J Plus and TO-A Plus specification oils are acceptable transmission oil types. However, either GO-J Plus or TO-A Plus Synthetic is required for extended oil change intervals.

Recommended SAE Grades (All Temperatures, All Manual Transmissions)		
GO-J and GO-J Plus – Mineral Base	GO-J and GO-J Plus – Synthetic Base	TO-A Plus – Mineral or Synthetic Base
SAE 80W-90, 80W-140, 85W-140	SAE 75W-85, 75W-90, 75W-110, 75W-140, 80W-140	SAE 50

Check Manual Transmission Oil Level

Check the oil level in a manual transmission at each service interval. To do so, park the vehicle on a level surface and check the manual transmission oil level by removing the transmission fill plug. The oil level is correct when it can be seen as even with the bottom of the fill plug hole. If oil level is below the fill hole, the oil level is insufficient.



Manual Transmission Oil Change Interval

The length of time a manual transmission can operate before a transmission oil change is required depends on the quality of the oil used, the vehicle usage, and engine size. For severe service or off-highway applications, more frequent oil changes may be necessary.

Powertrain Operating Conditions (POC)

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Transport Cycle	Long Distance							Distribution			Construction ¹				
	≤44		45-70		71-80		≥80	Regional		City					
GCW	≤44		45-70		71-80		≥80	≤32	33-44	45-70	≤32	≤32	33-34	45- 80	>80
Topography	PF	H	PF	H	PF	H						H	H	H	VH
POC	L	M	H	S	S	VS	VS	M	H	S	S	H	S	VS	

¹ Examples include sugar cane, tipper, dumper, swap carrier, concrete mixer and refuse bodies.

Note: If vehicle speed frequently exceeds 90 km/hour, move to the next higher POC.

Note: If the combined PTO (vehicle stationary) and idle time exceeds 25% of total operating time, move to the next higher POC.

Note: In some regions (Brazil), B-double or B-train applications with GCW > 55 ton shall be classified as POC S.

Note: The POC determined for a particular application shall be used for all components to which POC is applied. If there is a conflict with the fuel consumption interval for the determined POC and the actual fuel consumption (if known), then the actual fuel consumption shall decide the POC for the vehicle.

The following table shows recommended manual transmission oil change intervals:

Powertrain Operating Conditions	Light	Medium (Long Haul)	Heavy (Regional)	Severe (Heavy Haul)	Very Severe	Very Severe +
Maximum Fuel Consumption (litres/100 km)	≥33	≥39	≥50	≥64	≥120	N/A
Maximum Fuel Consumption (mpg)	>7.1	7.0 – 6.1	6.0 – 4.8	4.7 – 3.8	3.7 – 2.0	N/A
Oil Quality	Driving Distance km (miles) / time (hours)					
GO-J Plus, TO-A Plus	800 000 (500,000) / 3 years	800 000 (500,000) / 3 years	800 000 (500,000) / 3 years	125 000 (80,000) / 1 year / 1200 hours	125 000 (80,000) / 1 year / 1200 hours	6 months
GO-J	400 000 (250,000) / 2 years	400 000 (250,000) / 2 years	400 000 (250,000) / 2 years	65 000 (40,000) / 1 year / 1200 hours	65 000 (40,000) / 1 year / 1200 hours	6 months

For waste collection, mine operation, airport services, etc., engine hours can be used instead of fuel consumption

Note: Extended change intervals require the use of either GO-J Plus or TO-A Plus Synthetic.

Manual Transmission Oil Change

 **Warning**

Hot transmission oil can cause burns. DO NOT allow hot transmission oil to contact the skin. When changing transmission oil, wear protective gloves.

 **Caution**

Always dispose of lubricants (engine oil, coolant, transmission oil, etc.) and filters according to Federal or local regulations. Dumping used oil or coolant on the ground or in waterways can contaminate our drinking water and kill wildlife.

To change the transmission oil, remove and clean the magnetic drain plug and magnetic oil filter plug (if equipped). Also, clean the trough located inside the area from where the magnetic drain plug was removed. After all the oil drains, reinstall the drain plugs. Remove the fill plug and fill the transmission with enough approved transmission oil to bring the level to the bottom of the fill plug hole. Reinstall the fill plug. Next, remove the breather(s) and clean them with suitable, nonflammable solvent. Check for obstructions and reinstall the breathers.

mDRIVE Transmission Oil

 **Caution**

Using non-approved oil can result in damage to transmission components.

 **Caution**

Never reuse drained mDRIVE transmission oil. The oil must be replaced along with the oil filter. Reusing drained oil can result in damage to transmission components.

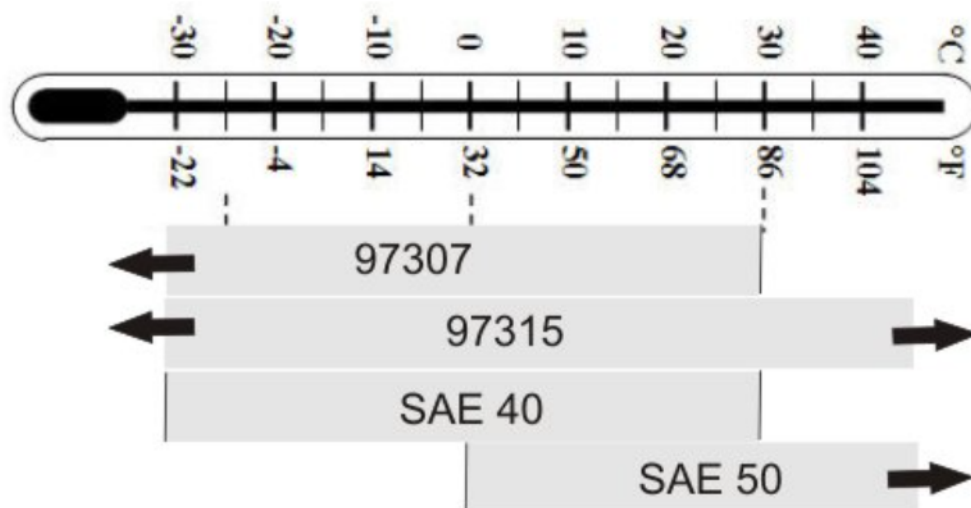
Keep the transmission oil at the proper level and change it at the intervals recommended by MACK Trucks. Always replace the transmission oil filter when the transmission oil is changed, and always use the oil approved by MACK Trucks whenever adding or changing the transmission oil.

For a complete list of approved oils, contact your MACK Truck dealer. Also, refer to SB 175-61, Approved Oils, MACK Components.

Note: Drain the moisture from the transmission air reservoir daily.

mDRIVE Transmission Oil Viscosity

Select the appropriate oil viscosity (mDRIVE transmission oil or engine oil) in accordance with the following diagram.



Temperature values refer to constant air temperatures.

1. For vehicles equipped with a TC-MAOH/-MAOH2 or TC-RAO transmission oil cooler, oils that comply with the grade requirements for 97315 transmission oil specification or SAE 50 engine oil must be used
2. Vehicles equipped with TC-MWO, TC-RWO, TC-MWOH, TC-MWOH2 or TC-MWOR oil coolers can run in ambient temperatures higher than +30° C (86° F) when using 97307 or SAE 40 engine oil.
3. The normal mDRIVE transmission oil capacity is 16 liters. However, if oil cooler TC-MWOR is used, an additional 1.0 liter of oil is needed. If oil cooler TC-MOAH2 is used, an additional 0.8 liter of oil is used.

mDRIVE Transmission Oil Change Intervals

The length of time an mDRIVE transmission can operate before a transmission oil change is required depends on the quality of the oil used and the vehicle application.

The mDRIVE transmission oil change interval depends on the service severity. Always replace the transmission oil filter when the transmission oil is changed and always use MACK-approved synthetic transmission oil when changing the transmission oil.

Powertrain Operating Conditions (POC)														
Transport Cycle	Long Distance							Distribution			Construction ¹			
	Regional		City											
GCW	≤44	45-70	71-80	≥80	≤32	33-44	45-70	≤32	≤32	33-34	45- 80	>80		
Topography	PF	H	PF	H	PF	H				H	H	H	VH	
POC	L	M	H	S	S	VS	VS	M	H	S	S	H	S	VS

¹ Examples include sugar cane, tipper, dumper, swap carrier, concrete mixer and refuse bodies.

Note: If vehicle speed frequently exceeds 90 km/hour, move to the next higher POC.

Note: If the combined PTO (vehicle stationary) and idle time exceeds 25% of total operating time, move to the next higher POC.

Note: In some regions (Brazil), B-double or B-train applications with GCW > 55 ton shall be classified as POC S.

Note: The POC determined for a particular application shall be used for all components to which POC is applied. If there is a conflict with the fuel consumption interval for the determined POC and the actual fuel consumption (if known), then the actual fuel consumption shall decide the POC for the vehicle.

Powertrain Operating Conditions	Light	Medium (Long Haul)	Heavy (Regional)	Severe (Heavy Haul)	Very Severe	Very Severe +
Maximum Fuel Consumption (litres/100 km)	≤33	≤39	≤50	≤64	≤120	N/A
Maximum Fuel Consumption (mpg)	≥7.1	7.0 – 6.1	6.0 – 4.8	4.7 – 3.8	3.7 – 2.0	N/A
Oil Quality		Driving Distance km (miles) or Time (years/hours) whichever comes first				
97307		450 000 (280,000) or 3 years			200 000 (125,000) or 3 years	N/A
97315		450 000 (280,000) or 3 years			200 000 (125,000) or 3 years	2500 hours
SAE 40		120 000 (75,000) or 1 year			60 000 (37,000) or 1 year	N/A
SAE 50		120 000 (75,000) or 1 year			60 000 (37,000) or 1 year	600 hours

For a complete list of approved oils, contact your MACK Truck dealer. Also, refer to SB 175-61, Approved Oils, MACK Components.

Note: No sampling is allowed. System must be undisturbed until oil and filter are replaced.

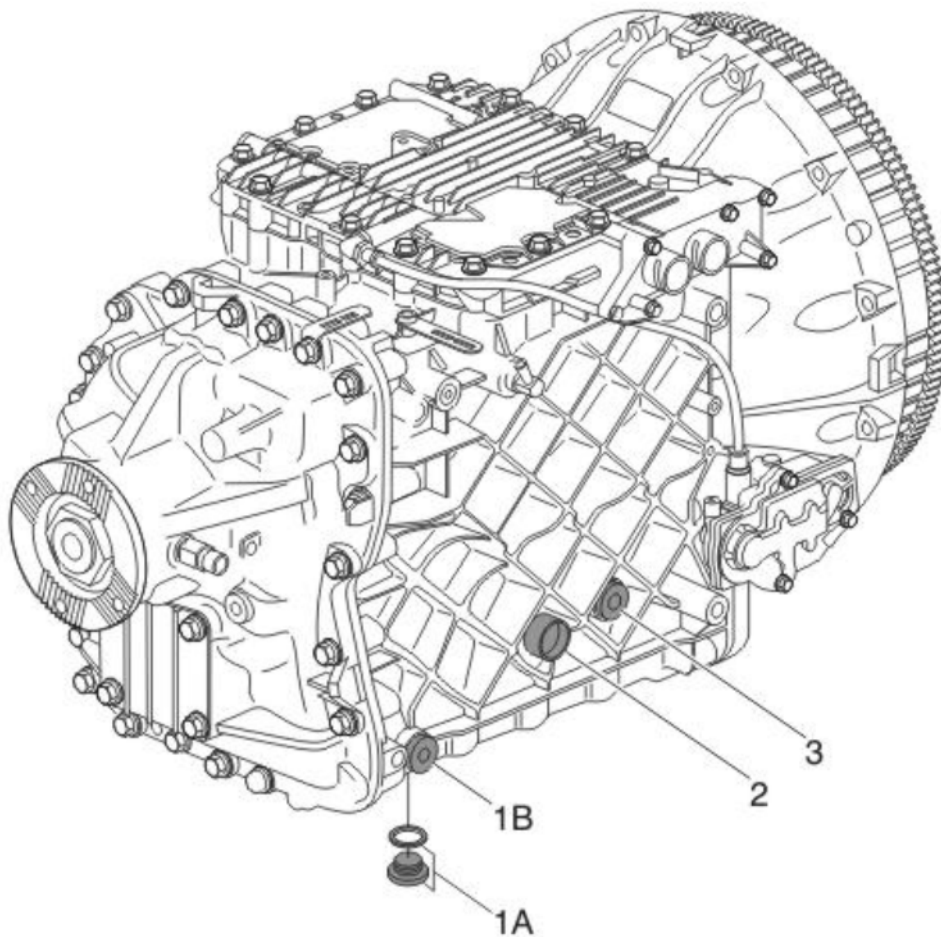
Note: Always use Volvo 97315 or SAE 50 in Very Severe applications.

Note: If gearbox mounted PTO or splitbox are used more than 50% of the driving time, oil drain intervals and filter change according to POC VS+ must be used.

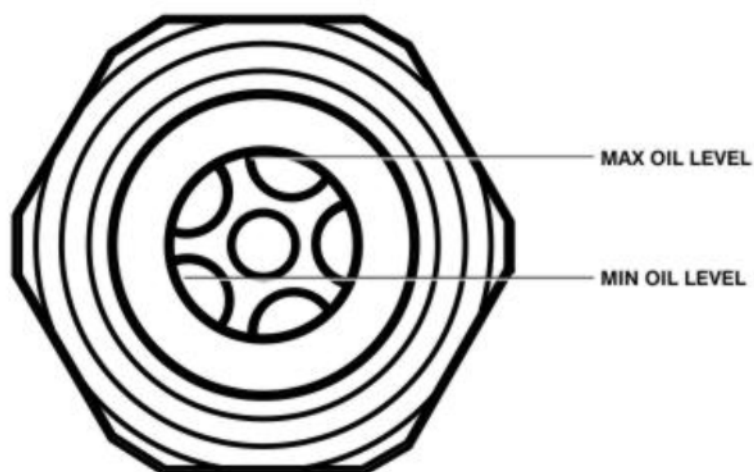
Checking mDRIVE Transmission Oil Level

Check the mDRIVE transmission oil level at each service interval. Park the vehicle on a level surface and visually check the transmission oil level through the sight glass on the side of the transmission. Add transmission oil approved by MACK Trucks as needed.

Note: Drain the moisture from the transmission air reservoir daily.



1. Drain Plug
2. Sight Glass
3. Fill Plug and Oil Level



Sight Glass for Checking Transmission Oil Level

mDRIVE Transmission Oil Change

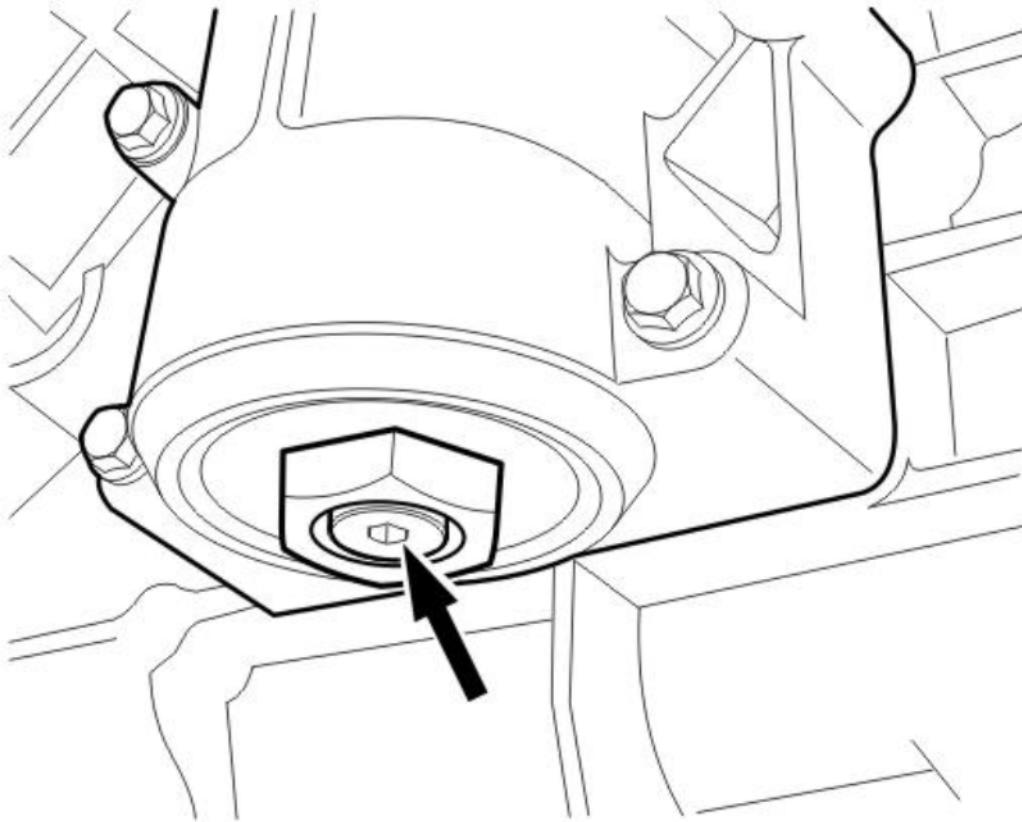
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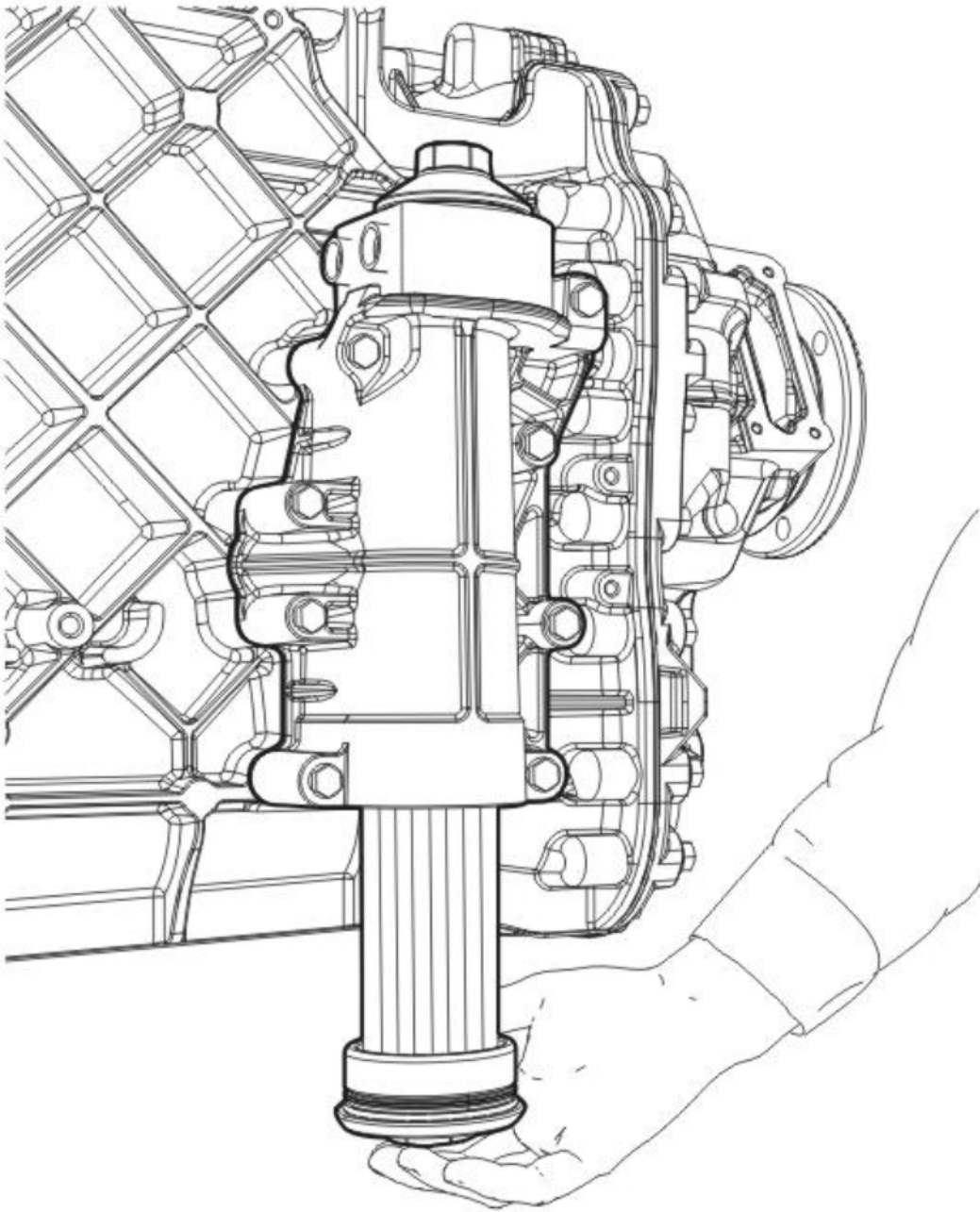
 **Caution**

Always dispose of lubricants (engine oil, coolant, transmission oil, etc.) and filters according to Federal or local regulations. Dumping used oil or coolant on the ground or in waterways can contaminate our drinking water and kill wildlife.

Change the transmission oil filter at every transmission oil change. Drain the transmission oil filter housing before you remove the filter.



mDRIVE Transmission Oil Filter Housing Drain Plug



mDRIVE Transmission Oil Filter