

PACCAR AXLES



Operator's Manual

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This manual illustrates and describes the operation of features or equipment which may be either standard or optional on this vehicle. This manual may also include a description of features and equipment which are no longer available or were not ordered on this vehicle. Please disregard any illustrations or descriptions relating to features or equipment which are not on this vehicle. PACCAR reserves the right to discontinue, change specifications, or change the design of its vehicles at any time without notice and without incurring any obligation. The information contained in this manual is proprietary to PACCAR. Reproduction, in whole or in part, by any means is strictly prohibited without prior written authorization from PACCAR Inc.

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Chapter 1 | MAINTENANCE

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What is a Maintenance Program?

Preventive maintenance program begins with the daily checks. Routine vehicle checks can help avoid many large, expensive, and time consuming repairs. The vehicle will operate better, be safer, and last longer. Neglect of recommended maintenance can void your vehicle's warranty. Some maintenance operations demand skills and equipment you may not have. For such situations, please take your vehicle to an authorized Service Center.



WARNING!

Always support the vehicle with appropriate safety stands if it is necessary to work underneath the vehicle. A jack is not adequate for this purpose. Failure to comply may result in death, person-

al injury, equipment or property damage.



WARNING!

When working underneath the vehicle without appropriate safety stands but with the wheels on the ground (not supported), make sure that (1) the vehicle is on hard level ground, (2) the parking brake is applied, (3) all wheels are blocked (front and rear) and (4) remove the ignition key so that the engine cannot be started. Failure to comply may result in death, personal injury, equipment or property damage.

The following pages contain a table of maintenance tasks with the related intervals for each task on the right side of the table. The top of the table displays a guide to a maintenance interval and its schedule. Some tasks are dependent on the vehicle application. These tasks will be shown as separate tasks and will have the words "ON HIGHWAY", "CITY DELIVERY" or "OFF-HIGHWAY" after the description.

These tasks are differentiated because they are dependent on the vehicle's operating environment. On highway is defined for applications where the vehicle is NOT used off of a paved road during normal operation. City Delivery is defined for applications where frequent start and stopping is required during normal operation and the highway is used infrequently and for short periods of time.

Off highway is defined for applications where the vehicle may be driven off the pavement on a regular basis, even if it is an infrequent basis and/or for a brief time period. Please contact an authorized service dealership if there are questions regarding which interval to follow. Consult the supplier for specific recommendations where discrepancies develop between these recommendations in this table and component supplier recommendations.

Preventative Maintenance Intervals

PACCAR 40k Tandem Rear Axle Preventative Maintenance Intervals

I	A	B	C	D	E
At first 15,000 mi/24,000 km or at first PM	15,000 mi/24,000 km/ Monthly	30,000 mi/48,000 km	60,000 mi/96,000 km/ 6 Months	120,000 mi/ 192,000 km/ Annually	240,000 mi/ 384,000 km

Preventative Maintenance Schedule - On Highway / Linehaul Application

PACCAR 40K Tandem Rear Axle On highway / Linehaul preventative maintenance schedule.

Preventative Maintenance Schedule - On Highway / Linehaul Application

System	Component	Task	I	A	B	C	D	E
Drive Axle (PACCAR 40K)	Axle Assembly	Check oil level and inspect for leaks. See Checking Oil Level on page 9.			.			
		Visually inspect for damage or leaks.			.			
		Drain and replace SYNTHETIC BASE lubricant.	500,000 miles / 804,672 km / 4 years					
		Drain and replace MINERAL BASE lubricant.				.		
	Breather	Check the operation. If the cap doesn't rotate freely, replace.			.			
	Axle shaft	Tighten the rear axle flange nuts to the specified torque value.					.	

Preventative Maintenance Schedule - City Delivery Application

PACCAR 40K Tandem Rear Axle City Delivery preventative maintenance schedule.

Preventative Maintenance Schedule - City Delivery Application

System	Component	Task	I	A	B	C	D	E
Drive Axle (PACCAR 40K)	Axle Assembly	Check oil level and inspect for leaks. See Checking Oil Level on page 9.		.				
		Visually inspect for damage or leaks.		.				
		Drain and replace SYNTHETIC BASE lubricant.	250,000 miles / 402,336 km / 3 years					
		Drain and replace MINERAL BASE lubricant.			.			
	Breather	Check the operation. If the cap doesn't rotate freely, replace.		.				
	Axle shaft	Tighten the rear axle flange nuts to the specified torque value.					.	

Checking Oil Level

For oil reservoir with side filler plugs (transmission, axles, steering gear boxes, transfer cases, etc.) the oil must be level with the filler opening. Use care when checking the oil level with a finger. Just because you can reach the oil level with a finger, does not mean the oil level is correct.

Improper Oil Level



Correct Oil Level



Check and Adjust Axle Oil Level

Check axle oil level for a PACCAR 40k tandem rear axle.

Checking the oil level is part of normal maintenance. When checking the oil level, it is recommended that a visual inspection for leaks be performed. Additionally, check condition of the fluid itself. Contact an authorized PACCAR service center if a

leak is found, if the oil appears cloudy or contaminated, or the oil level is abnormally low.

1. Park the vehicle on a level surface and block the wheels to prevent the vehicle from moving.

Wait 5 minutes before checking the oil if the axle is at normal operating temperature. If the vehicle is in colder climates, wait 15 minutes before checking the oil level.

2. Locate and remove the fill plugs on the axle housing. See [Where is the axle fill and drain plug?](#) on page 10.
3. Remove the fill plug and check that the oil is even with the bottom of the fill plug hole.
 - If the oil flows from the hole when the plug is loosened, the oil level is high, let the oil drain to the correct level.
 - If the oil level is below the bottom of the fill plug hole, add the specified oil.
4. Clean, install and tighten the fill plug to 25-50 lb-ft (34-68 Nm).

Rear Axle Oil Fill Volumes

Oil fill volumes for PACCAR 40K tandem rear axle.

PACCAR 40k Tandem Rear Axle

Axle Position	Liters	Quarts	Pints
Forward	11.3	11.9	23.9
Rear	9.3	9.8	19.7



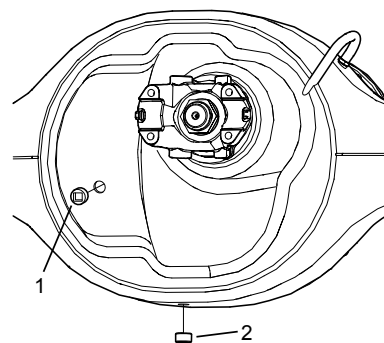
NOTE

The table shows the approximate axle fill volume only (which includes volume required to fill hubs). The actual amount of oil required to get the oil up to the proper level (at the check plug) will vary with pinion angle.

PACCAR approves using 75w90 weight lubricant that meets SAE J2360 Specification.

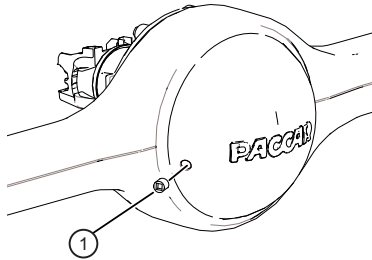
Where is the axle fill and drain plug?

PACCAR 40k tandem drive axle fill and drain locations.
Forward-Rear Axle



1. Fill Plug (Level Checking Plug)
2. Drain Plug

Rear-Rear Axle



1. Fill Plug (Level Checking Plug)

Chapter 2 | INFORMATION

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PACCAR 40k Rear Axle Warranty

Warranty coverage for PACCAR 40,000 lb Rear Axles.

Products Warranted

This warranty applies to new PACCAR tandem rear axles which have been installed by an Original Equipment Manufacturer (OEM) in vehicles sold and used in the United States¹ or Canada and operated in these applications:

On-Highway/ LineHaul	<p>Average annual mileage exceed 60,000 per year</p> <p>Operate primarily on improved driving surfaces such as asphalt or concrete</p> <p>Average 30 miles between start and stop periods</p>
Pick up and Delivery/ Medium Duty	<p>Lower mileage operations (less than 60,000 miles/year)</p> <p>Generally, on-road service (less than 10% off-road)</p>

An average of three (3) miles between starting and stopping

Warranty Coverage – PACCAR 40k Tandem Rear Axle

This warranty covers any failures of the rear axle which result, under normal use and service, from a defect in material or factory workmanship (warrantable failure). This coverage begins on the vehicle's date of delivery and ends at the time and mileage shown, whichever occurs first to the first purchaser or first lessee by PACCAR.

On-Highway/Line Haul 5 years / 750,000 miles
(1,207,008 km)

**Pick up and Delivery/
Medium Duty** 2 years / Unlimited Miles

PACCAR and Owner Responsibilities

Description of responsibilities for PACCAR and the owner of a PACCAR Brand Rear Axles.

PACCAR Responsibilities

PACCAR will pay for all parts and labor needed to repair the damage to the rear axle resulting from a warrantable failure.

PACCAR will pay for the lubricating oil, pinion and through shaft seals, and other maintenance items that are not reusable due to the warrantable failure.

PACCAR will pay for reasonable labor costs for rear axle removal and reinstallation when necessary to repair a warrantable failure.

PACCAR will pay reasonable costs for towing a vehicle disabled by a warrantable failure to the nearest authorized repair location. In lieu of the towing expense and in its sole discretion, PACCAR may pay reasonable costs for a mechanic to travel to and from the location of the vehicle when a repair is performed at the site of the failure.

Owner Responsibilities

The owner is responsible for the operation and maintenance of the axle as specified in

¹ United States includes American Samoa, the Commonwealth of Northern Mariana Islands, Guam, Puerto Rico, and the U.S. Virgin Islands.

the applicable PACCAR Operator's Manual. The owner is also responsible for providing proof that all recommended maintenance has been performed.

Before the expiration of the applicable warranty, the owner must notify a PACCAR authorized dealer of any warrantable failure and make the vehicle available for repair by such facility. The warrantable failure must be brought to the attention of a PACCAR authorized dealer within 30 days of discovery. The owner must also deliver the vehicle to the authorized repair facility during the warranty period unless delivery is impossible because the vehicle has been disabled by a warrantable failure. The owner is responsible for the cost of lubricating oil and other maintenance items provided during warranty repairs unless such items are not reusable due to the warrantable failure. The owner is responsible for communication expenses, meals, lodging and similar costs incurred as a result of a warrantable failure.

The owner is responsible for warrantable repairs unrelated to the rear axle and for "downtime" expenses, cargo damage, fines, all applicable taxes, all business costs and other losses resulting from a warrantable failure.

Warranty Limitations - PACCAR Rear Axle

Limitations of PACCAR rear axle warranty.

Your sole and exclusive remedy against PACCAR and the selling dealer arising from your purchase and use of this rear axle is limited to the repair or replacement of "warrantable failures" at authorized United States and Canadian PACCAR dealers, subject to PACCAR's time and mileage limitations of the warranty. The accrued time and mileage is calculated when the vehicle is brought into an authorized dealer for correction of warrantable failures. Any claim beyond 60 days from date of repair will not be accepted or honored under this warranty program. PACCAR reserves the right to require that all applicable failed materials are available and/or returned to PACCAR for review and evaluation.

Failures, other than those resulting from defects in material or factory workmanship, are not covered by this warranty. PACCAR is not responsible for failures or damage resulting from what PACCAR determines to be abuse or neglect, including, but not limited to: damage due to accident; operation without adequate lubricants or

using incorrect lubricant specifications; lack of maintenance of lubricating oil; improper installation, adjustment, repair or modification (including the use of unauthorized attachments or changes or modification in the vehicle's configuration, usage, or vocation from that which was originally approved by PACCAR); loading beyond the specified maximum vehicle weight or altering engine power settings to exceed the axle and/or driveline capacity; or operating the vehicle in a vocation other than what was determined when the vehicle was put into service. PACCAR is also not responsible for failures caused by water, dirt or other contaminants in the oil. Failure of replacement parts used in repairs due to the above non-warrantable conditions is not warrantable. PACCAR is not responsible for the cost of any repairs, replacements or adjustments to a covered component (1) associated with noise; (2) resulting from the use or installation of non-genuine PACCAR components or materials; (3) due to vibration associated with improper operation or misapplication of drivetrain components; and (4) damage resulting from corrosion.

This warranty does not apply to accessories supplied by the vehicle original equipment manufacturer (OEM) which are

covered by the OEM vehicle warranty. This warranty does not apply to self-contained traction equalizers and oil filters. The use of locking differentials will result in the exclusion of axle shafts from warranty considerations.

PACCAR does not warrant lubricants, pinion and through shaft seals or any other part which is considered a maintenance item.

Parts used to repair a warrantable failure may be new parts, approved rebuilt parts, or repaired parts. PACCAR is not responsible for failures resulting from the use of parts not approved by PACCAR. A new approved or rebuilt part used to repair a warrantable failure assumes the identity of the part it replaced and is entitled to the remaining coverage hereunder.

PACCAR DOES NOT COVER WEAR OR WEAROUT OF COVERED PARTS.

THIS WARRANTY SET FORTH HEREINAFTER ARE THE SOLE WARRANTIES MADE BY PACCAR IN REGARD TO THESE REAR AXLES.

THIS LIMITED WARRANTY IS THE SOLE WARRANTY MADE BY PACCAR AND THE SELLING DEALER. EXCEPT FOR

THE ABOVE LIMITED WARRANTY, PACCAR AND THE SELLING DEALER MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED. PACCAR AND THE SELLING DEALER EXPRESSLY DISCLAIM ANY WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

PACCAR AND THE SELLING DEALER SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO: LOSS OF INCOME OR LOST PROFITS; ENGINE OR VEHICLE DOWNTIME; THIRD PARTY DAMAGE, INCLUDING DAMAGE OR LOSS TO OTHER ENGINES, VEHICLES OR PROPERTY, ATTACHMENTS, TRAILERS AND CARGO; LOSS OR DAMAGE TO PERSONAL CONTENTS; COMMUNICATION EXPENSES; LODGING AND/OR MEAL EXPENSES; FINES; APPLICABLE TAXES OR BUSINESS COSTS OR LOSSES; ATTORNEYS' FEES; AND ANY LIABILITY YOU MAY HAVE IN RESPECT TO ANY OTHER PERSON OR ENTITY.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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