

MAINTENANCE AND SERVICE PRODUCT RECOMMENDATION 2022

MAN Truck



This publication was issued by:

MAN Truck & Bus SE

Dachauer Straße 667

80995 München

Germany

Telephone +49 89 1580-0

www.mantruckandbus.com

Copy deadline: 09/2021

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MAINTENANCE AND SERVICE PRODUCT RECOMMENDATION 2022



MAN Truck

Edition January 2022

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GENERAL INFORMATION ABOUT SERVICE LITERATURE

MAN service outlets

An MAN service outlet is a specialist workshop belonging to the MAN Truck & Bus SE service network. The workshop works in accordance with MAN Truck & Bus SE specifications and is authorised to carry out warranty work. Information about our MAN service outlets is available on the MAN service portal.
www.asp.mantruckandbus.com

Specialist workshop

A specialist workshop is a workshop qualified to carry out work on vehicles. The workshop must have technically qualified personnel plus the required tools and equipment to be able to perform the maintenance and repair work according to MAN Truck & Bus SE specifications.

Maintenance and Service Product Recommendation

The Maintenance and Service Product Recommendation contains comprehensive information:

- on the maintenance system

- on the service products recommended by MAN Truck & Bus SE
- on maintenance intervals for service products
- on fill quantities

The Maintenance and Service Product Recommendation is not supplied with the vehicle. It is available in the freely accessible area of the MAN service portal under the “Repair and Maintenance” section.
www.asp.mantruckandbus.com

Maintenance checklists

The maintenance checklists describe the scope of the maintenance work that must be performed on the vehicle after a fixed number of kilometres or after a certain time interval. The content of the maintenance checklists is regularly updated according to technical developments. For this reason, you should always use the current maintenance checklists to perform the maintenance work.

The maintenance checklists are not supplied with the vehicle.

These can be viewed and obtained in the MAN service portal under the “Maintenance Checklists” information type in the “Repair and Main-

tenance” section if you have successfully registered and entered the vehicle ID number (VIN).
www.asp.mantruckandbus.com

Maintenance instructions

This describes the maintenance work to be performed on the vehicle. The maintenance instructions are not supplied with the vehicle. These can be viewed and obtained in the MAN service portal under the “Maintenance Instructions” information type in the “Repair and Maintenance” section if you have successfully registered and entered the VIN.

www.asp.mantruckandbus.com

Maintenance record

MAN service outlets or specialist workshops use the maintenance record to confirm that maintenance work has been carried out properly and at the correct intervals by trained and authorised technical personnel. The maintenance record should therefore always be retained in the vehicle.

Introduction

General information about service literature

The maintenance record must be submitted for maintenance and repair works at an MAN service outlet or a specialist workshop. It must also be presented in the event of warranty claims.

In case of an existing repair and maintenance contract, the cost shall only be covered if maintenance and repair work which is part of the MAN Truck & Bus SE service scope is carried out by an MAN service outlet with MAN genuine parts.

The maintenance record contains information:

- on the maintenance system
- on liability for defects
- on the service products recommended by MAN Truck & Bus SE that are necessary for the driver to operate the vehicle
- on maintenance intervals for the units that may be relevant for a workshop appointment prior to the first annual inspection.

Information on other service products for maintenance and repair can be found in this maintenance and service product recommendation.

Further information

The Operator's Manual contains further information on the vehicle.

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You can find a list of registered trademarks used in publications by MAN Truck & Bus SE in the freely accessible area of the MAN service portal.

www.asp.mantruckandbus.com

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MAN service portal

Access to the MAN service portal via

www.asp.mantruckandbus.com



MAINTENANCE WORK

General information on maintenance work

Maintenance work is preventive in character. It does not involve repairs. Repairs must be dealt with separately.

The specified maintenance work must be performed at an MAN service outlet or specialist workshop by qualified specialist personnel. Having maintenance work performed at an MAN service outlet or a specialist workshop is one of the best ways to ensure that the vehicle retains its value.

Properly completed maintenance records and the copies of the maintenance checklists handed over to the customer by the MAN service outlet or specialist workshop detailing the maintenance work that has been carried out and confirmed allow for complete documentation of the maintenance of the vehicle. They are also a prerequisite for all warranty claims to liability for defects.

Validity

The “ProFit-Check II” maintenance system is used for vehicles from the TGA series (not for HX type vehicle and heavy-duty semitrailer tractors) and for vehicle types W until 2009.

The maintenance system from model year 2020 is used for vehicles of the following series:

- TGL and TGM (vehicle types D, N)
- TGS and TGX (vehicle types E, F, J, K, S, W, X)

Vehicle maintenance

To maintain the operational and road safety of the vehicle, it is essential to comply with the maintenance appointments and the statutory inspections prescribed by MAN.

In addition, the maintenance work set out in the Operator’s Manual must also be carried out.

Maintenance system

Scope of maintenance and maintenance intervals with ProFit-Check II

SCOPE OF MAINTENANCE AND MAINTENANCE INTERVALS WITH PROFIT-CHECK II

The "ProFit-Check II" maintenance system is used for vehicles from the TGA series (not for HX type and heavy-duty semitrailer tractors) and for vehicle types TGS WW until 2009.

Scope of maintenance and maintenance intervals are specified in the maintenance checklists.

Information about change intervals for the service products can be found in the chapter "Maintenance intervals" (see "General information about maintenance intervals", Page 49).

Maintenance checklists

Acceptance and oil change sheet

The Acceptance and Oil Change Sheet contains information on:

- Oil-change intervals for all units
- Additional work in conjunction with the respective oil change
- Additional maintenance work, as due
- Maintenance intervals for steering

First service

The first service must be performed between 1,000 km and 5,000 km.

S12 service

The S12 service must be carried out in each operating year (after 12 months in each case).

The S12 service is independent of the service with engine oil change.

Service with engine oil change

This service covers all maintenance work that has to be carried out after a certain mileage.

The reference variable for this service is the maximum engine oil-change interval.

Service with engine oil change + S12

The work for the service with engine oil change and for the S12 service is carried out simultaneously during a single workshop visit, after 12 months when the engine oil change is due.

Reconditioned engine service

This maintenance work is performed once after installation of a replacement engine. The normal maintenance work cycles of the vehicle apply.

Winter service

To maintain operational and vehicle safety, the winter service is to be performed before the start of the cold season.

NEW STRUCTURE AND NEW DESIGNATION OF THE MAINTENANCE CHECKLISTS

Scope of maintenance and maintenance intervals are specified in the maintenance checklists.

All information on replacement intervals for operating media can be found in the chapter “maintenance intervals” (see “General information about maintenance intervals”, Page 49).

During the course of 2020, the contents of the maintenance checklists have been rewritten and the maintenance checklists were renamed.

Previously	New
Check	Initial inspection
Inspection I	Annual inspection
Inspection II	Maintenance work dependent on time intervals or mileage
Inspection III	
Oil change sheet	

Initial inspection

The initial inspection must be performed after between 4000 km and 5000 km. Information on the necessity of the initial inspection can be found on page 5 of the maintenance record. In addition, the due date of the next service is first entered in the maintenance record during the initial inspection.

Annual inspection

The annual inspection must be performed at least every 12 months.

Maintenance work dependent on time-intervals or mileage

Maintenance work dependent on time-intervals is performed at the same time as the annual inspection.

Maintenance work dependent on mileage may be due at the same time as the annual inspection or at another time.

Maintenance checklists

Acceptance sheet

The acceptance sheet test contains information regarding:

- Customer
- Tractor vehicle
- Maintenance order

Maintenance system

Maintenance interval calculator

MAINTENANCE INTERVAL CALCULATOR

Maintenance interval calculator switched on

The next service due is determined by a maintenance interval calculator in the vehicle and appears on the driver's display. It is possible to have statutory inspections displayed.

Exclusively the currently applicable maintenance checklists are to be used to carry out the maintenance work.

The completion of a service must be entered in the vehicle's maintenance interval calculator.

An entry is made on the relevant verification page in the maintenance record that the time of the next service is indicated on the driver's display.

Maintenance interval calculator switched off

Exclusively the currently applicable maintenance checklists are to be used to carry out the maintenance work.

The time of the next service (mileage, date) is indicated on the relevant verification page in the maintenance record.

FUELS

Approval of fuels and fuel additives Engine starting aid



Note

Information on the labelling of approved fuels can be found in the operator's manual.

Information on permissible fuels for MAN engines is available in the freely accessible area of the MAN service portal.

www.asp.mantruckandbus.com



WARNING

Danger of engine damage

Engine starting aids of any kind can cause engine damage.

Therefore:

- Do not use engine starting aids.

MAN Truck & Bus SE does not accept warranty claims for damage resulting from additives and starting aids.

Fuel additives



WARNING

Danger of engine damage

Fuel additives are permissible if the fuels remain compliant with the standards EN 590, EN 14214 or EN 15940 when used. Fuel additives that do not guarantee this may cause engine damage.

Therefore:

- Do not use fuel additives that change the quality of the approved fuels in such a way that they no longer comply with the respective standard.

There shall be no warranty claim against MAN Truck & Bus SE for any damage caused as a result.

Service products

Mineral diesel fuel

Mineral diesel fuel

Diesel fuel quality requirements

In all countries of the European Union, the diesel fuel must comply with the standard EN 590.

All vehicles can be operated without restrictions using the mixtures of 7% FAME by vol. and diesel fuel currently legally permitted in the EU. In the case of other mixtures, the restrictions and maintenance instructions are the same as those that apply to operation with pure FAME fuel.

From the Euro 6 emission standard onwards, the diesel fuel must comply with the standard EN 590.

Outside the European Union, for the emission standards up to and including Euro 5 and EEV, the country-specific regulations must be observed.

If the sulphur content in the diesel fuel exceeds 50 ppm, the engine oil change interval must be shortened. Information on increased sulphur content in the diesel fuel can be found in the chapter "Maintenance intervals" (see "General information about maintenance intervals", Page 49).

The maximum permissible sulphur content in the diesel fuel for vehicle configurations up to and including Euro 5 and EEV can be found in the following table:

This is merely technical approval.

However, MAN Truck & Bus SE offers no assurance that the certified emission values of the respective emission standard are complied with when using fuels with a higher sulphur content than in EN 590.

The use of such fuels is only permissible in countries where such use complies with the respective country-specific regulations.

Emission standard	EGR	AGN	Sulphur content in diesel fuel (ppm)
Euro 2	No	No	Not limited
Euro 3	No	No	Not limited
	Yes	No	Up to 500
Euro 4 (without D08 SCR)	Yes	PM-KAT	Up to 50
	Yes	CRT	Up to 10
	No	SCR	Not limited
Euro 4 D08 with SCR	No	SCR	Up to 2,000
Euro 5 (without D08 SCR)	Yes	PM-KAT	Up to 50
	Yes	DOC	Up to 50
	No	SCR	Not limited
Euro 5 D08 with SCR	No	SCR	Up to 2,000
EEV	Yes	PM-KAT	Up to 50
	Yes	CRT	Up to 10
	No	SCR	Not limited

Water content and total contamination

The permitted water content in the diesel fuel is at most 200 ppm. If this limit is exceeded, a water trap must be installed. The permitted total contamination of the diesel fuel must not exceed 24 ppm.

Fuel recommendation for winter operation

At ambient temperatures of below 0°C, diesel fuel deposits paraffin crystals which increase the flow resistance in the fuel filter so much that an adequate fuel supply is no longer guaranteed.

To ensure trouble-free operation during winter, you must use winter diesel fuel for which the fuel manufacturer guarantees operational reliability in addition to compliance with the EN standard.



WARNING

Danger of engine damage

Mixing petrol with diesel fuel can lead to engine damage.

Therefore:

- Do not add petrol to the diesel fuel.

Drain the fuel pre-filter and fuel tank as necessary before the onset of winter.

Up to Euro 6c

At ambient temperatures below -10 °C, MAN Truck & Bus SE recommends installing fuel fil-

ter heating for vehicles up to emission standard Euro 6c.

Ambient temperature up to (°C)	Fuel recommendation
0	Summer diesel fuel
-10	Winter diesel fuel
-20	Winter diesel fuel and fuel filter heating
-30	Arctic-quality winter diesel fuel and fuel filter heating

From Euro 6d

In the case of vehicles from emission standard Euro 6d, the fuel is pre-heated via a mixer valve in the fuel pre-filter. This secures the fuel supply down to an ambient temperature of -20°C. For lower ambient temperatures, the fuel filter must be equipped with an electric heater.

Hazard classes



WARNING

Risks to humans and the environment

Diesel fuel can be a risk to humans and the environment.

Therefore:

- Comply with the country-specific statutory and internal provisions regarding occupational and environmental protection.

Service products

FAME fuel (biodiesel)

FAME fuel (biodiesel)

FAME fuel in accordance with EN 14214

Fatty Acid Methyl Ester (FAME) is fuel derived from plants. It is also referred to as biodiesel. The best known example is Rapeseed oil Methyl Ester (RME).

The FAME fuel must comply with the European standard EN 14214.

Note the following requirements and restrictions when using FAME.

Possible uses and miscibility

Vehicles that are approved for use with FAME fuel according to EN 14214 may also be operated with diesel fuel according to EN 590.

Vehicles that are approved for use with FAME fuel according to EN 14214 must not be operated using paraffinic diesel fuel according to EN 15940.

Vehicle operation with FAME up to and including emission standard Euro 5 and EEV

If a vehicle is subsequently converted to FAME operation, a function parameter (FUP) must be applied for and installed.

If the vehicle is no longer operated with FAME, the FUP must be removed again.

Vehicle operation with FAME as of emission standard Euro 6

Vehicles that are to be operated with FAME must be ordered with the “operation with biodiesel” equipment.

The vehicles for which the “operation with biodiesel” equipment is available can be found in the information available to the sales organizations in the individual countries.

A subsequent conversion from operation with diesel fuel to operation with FAME is not possible.

With respect to the FAME quality, these regulations for the operation of auxiliary heaters and the general instructions for the operation of vehicles with FAME also apply to Euro 6 vehicles.

Not approved for operation with FAME

- All vehicles with CRT up to and including the Euro 5 emission standard and EEV (individual approvals can be obtained from MAN Truck & Bus SE)
- All horizontal common-rail engines up to and including the Euro 5 emission standard and EEV
- All Euro 6 engines that were purchased without the “operation with biodiesel” feature

Vehicles with CRT filter only upon approval

In the case of vehicles equipped with a CRT filter, the decision as to whether use with FAME

is possible or not depends heavily on the phosphorous and alkali content of the FAME fuel used as well as on the operating conditions.

This may result in “contamination” of the catalytic converter from sulphur due to the chemicals involved.

Physically, it may result in “blockages” (due to the pores becoming blocked with soot). This problem depends on the engine type and engine/vehicle manufacturer.

Close examination of the operating conditions is therefore required to determine whether and, if applicable, under which circumstances / restrictions it is possible to use FAME fuel.

Vehicles equipped with a CRT filter are only allowed to be operated using FAME following individual approval from MAN Truck & Bus SE. Further information is available from the MAN service outlets.

If vehicles are operated without approval from MAN Truck & Bus SE, the liability for defects shall not apply to any resulting damage.

Alternating operation with FAME fuel in compliance with EN 14214 and with EN 590 diesel fuel

The same restrictions and maintenance instructions apply as for continuous operation with FAME fuel.

Shortened oil-change interval when operating with FAME fuel

For engine oil, engine oil filter and fuel filter, shortened change intervals apply. Information about this can be found in the chapter “Maintenance intervals” (see “General information about maintenance intervals”, Page 49).

Temperature, oxygen and water cause quicker ageing of the FAME fuel. The developing oxidation products may cause the fuel filter to block. Especially when converting from diesel fuel to FAME operation, blocked fuel filters are initially highly likely because FAME loosens any residues in the fuel system.

Fuel filters are wearing parts; therefore, they can not be replaced under warranty. Fuel filters must be replaced at every engine oil change at the latest.

Depending on the fuel quality, it is possible that fuel filters must be replaced between change intervals because they are blocked. For such cases, there are larger fuel filters for engines D20 and D26. If required, these fuel filters can be retrofitted in MAN service outlets.

Injectors

Some FAME fuels may cause injectors to become clogged. Do not replace the injectors straight away in this case, but run two tankfuls of approved mineral diesel fuel.

Decommissioning

Before decommissioning for longer than four weeks, the entire fuel system must be flushed by running with at least two tankfuls of approved diesel fuel.

Auxiliary heater

The following auxiliary heaters are approved for FAME operation:

- Airtronic D4S
- Hydronic D5WSC
- D1LCC
- D3LCC

Warranty

The usual warranty applies to all engines approved for operation with FAME, except vehicles with CRT filter.

The agreements reached on a case-by-case basis apply to vehicles equipped with a CRT filter.

In case of damages to the injection system (high-pressure pump, common-rail injection system, injectors, injection pump, injection nozzles), a fuel sample (about 0.5 litres from the middle of the fuel content) must be ensured. If required, the sample will be requested by the department in the plant that is inspecting the case. Information on clogged injectors can be found in this chapter (see “FAME fuel (biodiesel)”, Page 16).

Fuel recommendation for winter operation



WARNING

Danger of engine damage

Mixing petrol with FAME fuel can lead to engine damage.

Therefore:

- Do not add petrol to the FAME fuel.

Drain the fuel pre-filter and fuel tank as necessary before the onset of winter.

In case of starting problems in winter, use approved mineral diesel fuel.

Service products

Paraffinic diesel fuels

Paraffinic diesel fuels

Paraffinic diesel fuels in accordance with EN 15940

Paraffinic diesel fuels must comply with the standard EN 15940. This standard specifies the quality requirements for paraffinic diesel fuels.

Examples of paraffinic diesel fuels:

- HVO: **H**ydrotreated **V**egetable **O**ils
- GTL: **G**as to **L**iquid

Possible uses and miscibility

Vehicles that are approved for use with paraffinic diesel fuel in compliance with EN 15940 may also be operated using diesel fuel in compliance with EN 590.

Vehicles that are approved for use with paraffinic diesel fuel according to EN 15940 must not be operated using FAME fuel according to EN 14214.

Oil change intervals for operation with paraffinic diesel fuels

Engine oil, engine oil filters and fuel filters are subject to the same change intervals as diesel fuel in compliance with EN 590 apply.

Information about this can be found in the chapter “Maintenance intervals” (see “General information about maintenance intervals”, Page 49).

Fuel recommendation for winter operation

The same fuel recommendations as for operation with diesel fuel in compliance with EN 590 apply. Information about this can be found in the chapter (see “Mineral diesel fuel”, Page 14).

Micro-organisms in the fuel system

Diesel fuels and FAME fuels may be contaminated with micro-organisms, which could multiply under unfavourable circumstances. These micro-organisms may multiply when exposed to condensation water, sulphur, phosphorus, nitrogen, oxygen, trace elements and fuel additives. Depending on the temperature conditions, the micro-organisms may multiply to various extents. This leads to the formation of fibrous fungal braids and sludge, leading to microbial corrosion in the fuel tank and fuel lines. The fuel filters then become blocked with rust particles and biomass. The result is a reduction in engine performance, ultimately ending in the vehicle becoming immobilised. The fuel filters then have to be replaced at relatively short intervals.

Preventive measures

To prevent the formation of microorganisms in the fuel system:

- Keep storage tanks clean
- Only park the vehicle for extended periods when the fuel tank is full

Remedies

If fuel system or storage tanks have already been affected by microorganisms, MAN Truck & Bus SE recommends using the following disinfectant:

– Bakzid

Please note that the fuel tanks or storage tanks need to be drained prior to the application of disinfectants because the disinfectant binds with water. Water bound in the fuel can damage the injection system.



Note

Always refer to the current safety and technical data sheets before using the specified disinfectant.

ADBLUE

Effect of AdBlue

By adding a reducing agent (trade name AdBlue) in the exhaust gas treatment system, pollutants in the exhaust gas (nitrogen oxide NO_x) are turned into eco-friendly substances (nitrogen and water vapour).



Note

If a vehicle is equipped with an AdBlue system, operation of this vehicle with a reducing agent is necessary in order to comply with emissions standards, and is therefore a condition for type approval within the EU.



WARNING

Danger of engine damage

AdBlue is not an additive and can lead to engine damage in combination with diesel fuel.

Therefore:

- Do not mix AdBlue with diesel fuel.
- Only use AdBlue **without additives/auxiliary agents** in accordance with the following standards:
- ISO 22241

- DIN 70070

- Only use suitable storage and filling systems in order to avoid loss of quality.

Environmental note

AdBlue is easily decomposed by microbes. It is therefore readily biodegradable. This means that AdBlue presents very little danger to the environment.

Therefore, in Germany, AdBlue has been placed in the lowest water hazard class WHC 1. AdBlue is an aqueous solution which poses no significant risks according to the applicable EU chemical laws.

SERVICE PRODUCTS IN ACCORDANCE WITH MAN COMPANY STANDARD

Use of service products

MAN recommends using MAN Genuine service products. MAN reserves the right to refuse any material defects or warranty claims if the fault for which such claims are made by the customer originates from the use of a specific service product from another supplier.

If several specifications are permissible, **the specifications written in bold** in this maintenance and service product recommendation and in the maintenance checklist denote the initial fill.



Note

Further information on service products can be found in the service product database or is available from the MAN service outlets.

www.asp.mantruckandbus.com

Service products

Service products in accordance with MAN company standard

MAN Genuine Oil

MAN Genuine Oil – less friction, more efficiency.
Engine oil, gearbox oil, axle oil.



The most important thing when it comes to motorisation and technology is without a doubt the optimum coordination of all components. MAN Genuine Parts fulfil this prerequisite. MAN Genuine Oil is the perfect supplement for the core components of an MAN vehicle, for engines, gearboxes, driven axles and transfer cases. MAN Genuine Oils are proven to provide optimum protection against wear, and thus contribute to a longer lifespan and reduce overall operating costs (TCO).

Only the best MAN oil is good enough for MAN vehicles. MAN Genuine Oil.

MAN Genuine Oil: Our favourites

MAN Genuine Oil is always the right choice. We recommend these favourites.



Paragon MAN 3977 5W-20

MAN Genuine Engine Oil

- Increased fuel savings compared to Excellence MAN 3677 with identical performance characteristics
- Maintenance intervals up to 140,000 km (for MAN engines from Euro 6d)
- Maintenance intervals for diesel particulate filters of up to 850,000 km
- Low-viscosity Fuel Economy oil in accordance with the state-of-the-art



Excellence MAN 3677 5W-30

MAN Genuine Engine Oil

- Maintenance intervals of up to 140,000 km
- Maintenance intervals for diesel particulate filters of up to 850,000 km
- Longer service life, even under extreme loads
- High efficiency and performance with minimal oil consumption



Flexor MAN 341 Z5 75W-80

MAN Genuine gearbox oil

- High oxidation resistance and thermal stability, even with long oil-change intervals
- Optimum viscosity for unproblematic cold starts and smooth shifting at low temperatures
- Long service life of the gearbox, even under extreme operating conditions and ambient temperatures
- High efficiency and performance



Note: Specific information on service products and other regulations in this Maintenance and Service Product Recommendation must be observed!

Service products

Service products in accordance with MAN company standard



Nexus MAN 342 S1 75W-90

MAN Genuine axle oil

- High oxidation resistance and thermal stability, even with long oil-change intervals
- Prevention of oil sludge formation thanks to cleaning effect
- Long service life of driven axles and transfer cases, even under extreme operating conditions and ambient temperatures
- High efficiency and performance



Note: Specific information on service products and other regulations in this Maintenance and Service Product Recommendation must be observed!

ENGINE OILS

Engine oils for diesel engines

Diesel engines	Sulphur content in the fuel (ppm)	Approved engine oil in accordance with MAN company standard						
		M 3275	M 3277	M 3377	M 3477	M 3677	M 3977	
Euro 0 Euro 1	Not limited	Yes	Yes	Yes	No	No	No	
Euro 2	D08 and D28	Yes	Yes	Yes	No	No	No	
	D20 and D26	Up to 50	Yes	Yes	Yes	Yes	Yes	No
		Over 50	Yes	Yes	Yes	No	No	No
Euro 3	without/with EGR	Up to 50	No	Yes	Yes	Yes	Yes	No
	without EGR	Over 50	No	Yes	Yes	No	No	No
	with EGR	51 to 500	No	Yes	Yes	No	No	No
	without/with EGR, with CRT filter	Up to 10	No	No	No	Yes	Yes	No
	with EGR, with PM-KAT	Up to 50	No	No	No	Yes	Yes	No
Euro 4	with EGR, with CRT filter	Up to 10	No	No	No	Yes	Yes	No
	without EGR, with SCR	Up to 50	No	Yes	Yes	Yes	Yes	No
	without EGR, with SCR	Over 50	No	Yes	Yes	No	No	No
	D08 without EGR, with SCR	Up to 50	No	Yes	Yes	No	Yes	No
		51 to 2,000	No	Yes	Yes	No	No	No

Service products

Engine oils for diesel engines

Diesel engines		Sulphur content in the fuel (ppm)	Approved engine oil in accordance with MAN company standard					
			M 3275	M 3277	M 3377	M 3477	M 3677	M 3977
Euro 5	D08 with EGR with DOC	Up to 50	No	Yes	Yes	Yes	Yes	No
	D08 without EGR, with SCR	Up to 50	No	Yes	Yes	No	Yes	No
		51 to 2,000	No	Yes	Yes	No	No	No
	D20, D26 with EGR, with DOC	Up to 50	No	Yes	Yes	No	No	No
	with EGR, with PM-KAT	Up to 50	No	No	No	Yes	Yes	No
	without EGR, with SCR	Up to 50	No	Yes	Yes	Yes	Yes	No
	without EGR, with SCR	Over 50	No	Yes	Yes	No	No	No
EEV	with EGR, with PM-KAT	Up to 50	No	No	No	Yes	Yes	No
	with EGR, with CRT filter	Up to 10	No	No	No	Yes	Yes	No
	without EGR, with SCR	Up to 50	No	Yes	Yes	Yes	Yes	No
	without EGR, with SCR	Over 50	No	Yes	Yes	No	No	No
Euro 6a	D20, D26 with EGR, with SCR + CRT	Up to 10	No	No	Yes	No	Yes	No
Euro 6b	D20, D26, D38 with EGR, with SCR + CRT	Up to 10	No	No	Yes	No	Yes	No
Euro 6b,c	D08 with EGR, with SCR + CRT	Up to 10	No	No	Yes	No	Yes	No
Euro 6c	D08 without EGR, with SCR + CRT	Up to 10	No	No	No	No	Yes	No
	D20, D26, D38 with EGR, with SCR + CRT		No	No	No	No	Yes	No

Service products
Engine oils for diesel engines

Diesel engines		Sulphur content in the fuel (ppm)	Approved engine oil in accordance with MAN company standard					
			M 3275	M 3277	M 3377	M 3477	M 3677	M 3977
Euro 6d	D0834LFLAF/AG/AH/AI/AJ/AK without EGR, with SCR + CRT	Up to 10	No	No	No	No	Yes	No
	D0836LFLAN/AO/AP/AQ/AR/AS without EGR, with SCR + CRT		No	No	No	No	Yes	No
	D1556LF07/08/09/10/11/12 without EGR, with SCR + CRT		No	No	No	No	Yes	No
	D2676LF78/79/80/84/85/86/AB/AE with EGR, with SCR + CRT		No	No	No	No	Yes	Yes ¹⁾
	D3876LF10/11/12 with EGR, with SCR + CRT		No	No	No	No	Yes	Yes ¹⁾
	D2676LF81/82/83 with EGR, with SCR + CRT		No	No	No	No	Yes	No
Euro 6e	D0834LFLAQ/AR/AS/AT/AU without EGR, with SCR + CRT	Up to 10	No	No	No	No	Yes	No
	D0836LFLBI/BJ/BK/BL/BM/BN without EGR, with SCR + CRT		No	No	No	No	Yes	No
	D1556LF17/18/19/20/21/22 without EGR, with SCR + CRT		No	No	No	No	Yes	No
	D2676LFAF/AI/AJ/AK/AL/APAQ/AS with EGR, with SCR + CRT		No	No	No	No	Yes	Yes ¹⁾
	D3876LF16/17/18 with EGR, with SCR + CRT		No	No	No	No	Yes	Yes ¹⁾
	D2676LFAM/AN/AO with EGR, with SCR + CRT		No	No	No	No	Yes	No

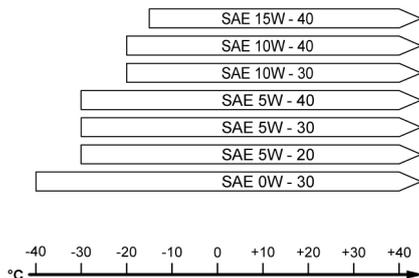
¹⁾ M 3977 not for vehicle types S, X, W; not for heavy-duty semitrailer tractors

Service products

Further requirements for engine oils

Further requirements for engine oils

Low-temperature limits



Engine oil additives



WARNING

Danger of engine damage

Engine oil additives can lead to engine damage.

Therefore:

- Do not use engine oil additives.

MAN Truck & Bus SE does not accept warranty claims for damage resulting from engine oil additives.

Mixing engine oils

Engine oils from different manufacturers, but in accordance with the same specifications, can be mixed.

Mixing oils of different specifications is not permissible.

Exception up to and including emission standard Euro 5 and EEV:

- M 3677 and M 3477 may be mixed.
- M 3377 and M 3277 may be mixed.

Exception from Euro 6d emission standard:

- M 3977 and M 3677 may be mixed

Shortened engine oil change intervals depending on the sulphur content in the diesel fuel

Engine oil change intervals may be reduced depending on the sulphur content in the diesel fuel.

Information about calculating the shortened oil-change intervals can be found in the chapter "Maintenance intervals" (see "General information about maintenance intervals", Page 49).

COOLANTS

Anti-freeze and anti-corrosion agent

Use and properties of anti-freeze and anti-corrosion agent in accordance with Company standard MAN 324	MAN 324 Type Si-OAT plus, MAN 324 Type Si-OAT	MAN 324 Type NF
Colour	Pink	Not prescribed
Application	for all emission standards and engines with PriTarder Obligatory as of Euro 6	up to and including Euro 5, EEV solely for vehicles with Euro 5 D08 engines, and engines with PriTarder
Utilisation forbidden	—	From Euro 6
No mixing	With types SNF and N-Arctic, N	With types SNF and N-Arctic
Permissible coolant hoses	Without restriction	Without restriction
Standard mixing ratio antifreeze/water	50% by vol. antifreeze/ 50% by vol. water	50% by vol. antifreeze/ 50% by vol. water
Antifreeze	Below -37 °C	Below -37 °C
Mixing ratio for antifreeze/water at low temperatures (cold climate package):	60% by vol. antifreeze/ 40% by vol. water (if temperatures remain higher than -37 °C, change to standard mixing ratio)	60% by vol. antifreeze/ 40% by vol. water (if temperatures remain higher than -37 °C, change to standard mixing ratio)
Antifreeze	Below -50 °C	Below -50 °C

Service products

Coolants

Use and properties of anti-freeze and anti-corrosion agent in accordance with Company standard MAN 324	MAN 324 type SNF	MAN 324 type N-Arctic
Colour	Not prescribed	Not prescribed
Application	up to and including Euro 4	up to and including Euro 4
Utilisation forbidden	as of Euro 5, EEV and engines with PriTarder	as of Euro 5, EEV and engines with PriTarder
No mixing	Mixing with other types not permissible	Mixing with other types not permissible
Permissible coolant hoses	Only EPDM hoses (black) No silicon hoses (blue)	Without restriction
Standard mixing ratio antifreeze/water	40% by vol. antifreeze/ 60% by vol. water	50% by vol. antifreeze/ 50% by vol. water
Antifreeze	Below -27 °C	Below -37 °C
Mixing ratio for antifreeze/water at low temperatures (cold climate package):	—	65% by vol. antifreeze/ 40% by vol. water (if temperatures remain higher than -37 °C, change to standard mixing ratio)
Antifreeze	—	Below -65 °C



WARNING

Danger of engine damage

The ability of the coolant to protect against corrosion may decrease over the course of the service life, which can lead to engine damage.

Therefore:

- Replace coolant when it turns brown or becomes cloudy.

Anti-corrosion agent without anti-freeze according to company standard MAN 248

If the use of anti-freeze is not necessary for certain utilisation cases, anti-corrosion agents according to company standard MAN 248 are to be used.

Use of anti-corrosion agents without anti-freeze is not permissible in Euro 5, EEV, Euro 6 engines, and in engines with PriTarder.

Do not mix anti-freeze and anti-corrosion agent according to company standard MAN 248 with anti-freeze and anti-corrosion agent according to company standard MAN 324.



Note

Further information is available from the MAN service outlets.

Service products

Coolants

Water quality

To ensure reliable vehicle operation, the coolant must meet the following minimum requirements:

- Information on anti-freeze and anti-corrosion agents can be found in this chapter (see “Coolants”, Page 29).
- Analysis values of water, see table

Analysis values of water

Appearance	Colourless, clear, free from contamination
Total hardness	German hardness: max. 20 °dH
	French hardness: max. 35.6 °fH
	British hardness: max. 25 °e
Chlorides	maximum 100 mg/l
Sulphates	maximum 150 mg/l
pH value at 20 °C	6.5 to 8.5

If tap water with these values is not available, use fully desalinated, distilled or condensed water.

Changing coolant

Information about the intervals specified for changing the coolant can be found in the chapter “Maintenance intervals” (see “Cooling system”, Page 79).

(mixture of antifreeze or anti-corrosion agent with mains water).

There are disposal companies that specialise in the recycling of coolants containing antifreeze and antifreeze concentrates. If you decide to use these companies, you must collect the product groups separately and not mix them with different types of service products (oils, solvents, fuels).

Disposing of coolant

Treat undiluted anti-freeze and anti-corrosion agents as hazardous waste.

Follow the instructions issued by the relevant local authority when disposing of used coolants

GEARBOX OILS

Gearbox and axle oils

Oil type designation and application

After the MAN company standard, the oil type designations are specified which are generally

composed of a letter and a number and provide the user with information about a suitable unit, oil quality and performance level of the oil. Within an oil type, the lowest number (e. g. Z2) always signifies the lowest oil-change interval and oil performance level, while the highest

number (e. g. Z5) signifies the highest oil performance level. Currently, there are the following oil types:

Oil spec. acc. to MAN company std.	Oil type	Application
MAN 339	Z2, Z3, Z4	Automatic gearbox oils for hydraulic Ecomat gearboxes, retarders and converters
MAN 341	Z2, Z4, Z5	High-pressure gearbox oils for Ecosplit, Ecomid, Ecolite and automated manually operated gearboxes MAN TipMatic AS/TX/TC, MAN TipMatic Mid/Lite
	GA1, GA2	High-pressure gearbox oils for MAN TipMatic 14
MAN 342	M2, M3	Highest-pressure gearbox oils for axles and transfer cases; mineral base oil
	S1, S2	Highest-pressure gearbox oils for axles and transfer cases; synthetic base oil MAN 342 S2 factory filling only, not available from Sales.

Further information about oil specifications and oil-change intervals for gearboxes, transfer cases and axles can be found in the chapter “Maintenance intervals” (see “General information about maintenance intervals”, Page 49), (see “Gearbox”, Page 80), (see “Transfer case”, Page 90), (see “Axles”, Page 93).

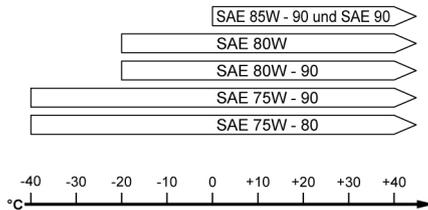
Service products

Further requirements for gearbox oils

Further requirements for gearbox oils

oils

Low-temperature limits



Miscibility

Oils that correspond to the same specifications can be mixed (for example, MAN 342 type M3 and MAN 342 type S1). When mixing various oil types (e.g. MAN 342 type M3 and MAN 342 type S1), the shortest oil-change interval applies.

It is not permitted to mix oils of different specifications (for example, MAN 342 and MAN 341).

HYDRAULIC OILS**Steering system**

Steering system	Oil spec. acc. to MAN company std.
All steering systems	MAN 339 L1

Service products

Clutch

Clutch

Clutch unit	Ambient temperature (°C)	Specification
Shift clutch and hydraulic shift system (TGA)	-35 to +75	Hydraulic oil M 3289
Clutch actuator for MAN TipMatic 14	—	Brake fluid DOT 4 FMVSS 116, SAE J 1703



WARNING

Risk of damage to the clutch

Mixing or refilling with brake fluids causes significant damage to seals and hoses, which can lead to clutch unit failure.

Therefore:

- Hydraulic oil as per MAN company standard M 3289, do not mix hydraulic oils with brake fluid.

Hydrostatic fan drive and semi-trailer hydraulics for Euro 5 and Euro 6 heavy-duty semitrailer tractors

Hydrostatic fan drive, semitrailer hydraulics	Ambient temperature (°C)	Oil spec.
Hydrostatic fan drive Semitrailer hydraulics	-20 to +80	ISO VG 32 in accordance with: DIN 51524-3 (HVLP), ISO 6743-4 (HV)
	-15 to +70	ISO VG 32 in accordance with: DIN 51524-2 (HLP), ISO 6743-4 (HM)

Service products

Cab tilt mechanism

Cab tilt mechanism

Cab tilt mechanisms	Ambient temperature (°C)	Oil spec.
Mechanical cab tilt mechanism	-25 to +80	BP Energol HLP HM 15 Gulf Harmony HVI Plus 15 Total Elfmatic G2
Electric cab tilt mechanism	-30 to +80	Chevron Rando HDZ 15 Mobil Unavis HVI 26 Shell Tellus S2 V15
	-40 to +80	Chevron Hydraulic Oil 5606A Shell Aeroshell Fluid 41

HydroDrive, vehicle types S, X

Hydraulic system	Oil spec.
MAN HydroDrive	ISO VG 46 in accordance with: DIN 51524-3 (HVLP), ISO 6743-4 (HV) ISO VG 46 in accordance with: DIN 51524-2 (HLP), ISO 6743-4 (HM)
MAN HydroDrive PTO on synchromesh gearbox	MAN 341 Z5

Service products

Other hydraulic systems

Other hydraulic systems

Tipper hydraulics (not for heavy-duty semitrailer tractors), refuse vehicle hydraulics, crane, cable winch

Hydraulic systems	Ambient temperature (°C)	Oil spec.	Alternative oil specification
Tipper hydraulics, refuse vehicle hydraulics	-10 to +80	MAN 339 L1	ATF Dexron II ATF Dexron III
Crane, winch (same oil circuit)	-15 to +80	Hydraulic oil HLP22 in accordance with DIN 51524	—



WARNING

Risk of damage to the hydraulic system

When using the hydraulic system below the above-mentioned ambient temperature, there is a risk that parts of it may be damaged.

Therefore:

- Before setting off, allow the hydraulic system to warm up/operate at idling speed.

REFRIGERANTS AND REFRIGERATOR OILS

Refrigerant

Air-conditioning system	Specification
Auxiliary air-conditioning system, air-conditioning system	R134a

Refrigerator oils

Refrigerant compressor	Oil spec.	Alternative oil specification
Kiki	Fuchs DEA Reniso PAG 46	Zexel 100 PG PAG oil
Nippondenso	ND 8 PAG oil	—
Sanden SD H 15 7982	Sanden SP 20 PAG oil	—
Sanden SD H 15 8117, 8157, 8162, 8164, 8171	Sanden SP 10 PAG oil	—
Unicla	Unidap 7 PAG oil	—
Zexel	Zexel ZXL 100 PG PAG oil	Fuchs DEA Reniso PAG 46



WARNING

Risk of damage to the air-conditioning system

Mixing refrigerator oils or using additives leads to damage to the refrigerant compressor and the air-conditioning system.

Therefore:

- Do not mix refrigerator oils with each other.

- No additives should be mixed into the refrigerator oil or the refrigerant.
- Do not use additives such as fluorescing agents or contrasting agents for leakage checks or leak tests.

Service products

Solid lubricants

SOLID LUBRICANTS

Periodic lubrication: Use up to 130 °C

Component	Specification	Alternative specification
All nipple-type and loose-type greasing points such as: Linkages and cables, engine control, clutch and gearshift, tipper pins, spare wheel hoist, locking mechanism for cab tilt mechanism, pivot thread and mounts for centring rollers on carrier frame for interchangeable body, brake camshaft bearings on the rear axle, linkage adjuster, spring bolts, ball joints, bolts of the axle load equalisation rocker arm, etc.	MAN 283 Li-P 2 multi-purpose grease	Multi-purpose grease (lithium-12-hydroxystearate type) + EP additives, NLGI Class 2, drop point at least 180 °C without solid lubricants (e.g. graphite, MoS ₂)
Annular spring trailer coupling: – Contact surface of the drawbar eye on the coupling jaw and on the coupling pin – Grease nipple	Penetrating oil with corrosion protection (e.g. WD-40) MAN 283 Li-P 2	—
Rockinger trailer coupling: – Contact surface of the drawbar eye on the coupling jaw and on the coupling pin – Grease nipple	Castrol Olista Longtime 3 EP MAN 283 Li-P 2	—
Lubrication of vehicle door locks, outside handle (locking cylinder grease)	Fuchs Renocal FN 745/94 Castrol Optitemp TT1, Spray	Water-resistant lubricating grease, NLGI Class 1/2, drop point at least 120 °C
Grease nipple on the slide and on the propshaft joints	Fuchs Renolit LX-PEP 1/2 Shell Retinax LX2 Shell Gadus S3 V220C 2 Fuchs Service Free 2 GWB Chevron Ultra-Duty Greases EP	—

Periodic lubrication: Use up to 150 °C

Component	Specification	Alternative specification
Gearbox input shaft keyway toothing (repair) Drive toothing of the hydraulic/tandem pump (Euro 6 heavy-duty semitrailer tractor)	Long-term lubricating grease Olista Longtime 3EP	—
Twin propshafts, eccentric shaft bearing on fan tensioning roller Long-life lubrication: Mount for brake camshaft bearings on the rear axle, brake shoe pins, steering knuckle	MAN 284 Li-H 2 high-temperature grease	Lithium complex grease with mineral oil, NLGI Class 2, drop point at least 230°C
Low-maintenance brake camshaft	Fuchs Renolit LX-NHU 2 in accordance with MAN 284 Li-H 2	—
Fifth-wheel coupling: Fifth-wheel pick-up plate, locking hook, sliding device on the tractor vehicle if necessary, plate and kingpin on the semitrailer (if without central lubrication system or maintenance-free) Sliding device on the fifth-wheel coupling (heavy-duty semitrailer tractor, E types)	MAN 284 Li-H 2	Multi-purpose grease (lithium-12-hydroxystearate type) + EP additives + MoS ₂ , NLGI class 2, drop point at least 180°C

Periodic lubrication: Use from -50 °C

Specification	Alternative specification
Fuchs Renolit W2	Lithium complex grease with synthetic base oil, NLGI Class 2, drop point at least 230°C

Service products

Solid lubricants

Lifetime lubrication: Use up to 200 °C

Component	Specification	Alternative specification
Brake shoe pins, brake shoe rollers, nozzle holders (pressure screw contact point), exhaust system (mounting bolts)	High-temperature lubricant TC 13-047	Heat-resistant paste with Cu solid lubricant
Constant-velocity shafts	Castrol molub-alloy paste MP 3	—

Lifetime lubrication

Component	Specification
Steering knuckle bearing	Fuchs Renolit LX-OTP 2

Integrated lubrication system for fifth-wheel couplings: Lubricating grease

Fifth-wheel coupling	Specification
Jost JSK 37, 38, 42	Fifth-wheel coupling grease Jost NBC 300 Lubcon Turmogrease NBC 300
SAF-HOLLAND SK-S 36-20 SK-HD 38.36	HOLLAND Reolube Power SKX 372 high-performance grease

Central lubrication systems: Oil

Central lubrication system	Oil spec. acc. to MAN company std.	Alternative oil specification
Vogel	MAN 341 Z2 high-pressure gearbox oil	Same engine oil as diesel en- gine

Service products

Corrosion protection

CORROSION PROTECTION

Component	Specification acc. to MAN company std.
Destination indicators, (interior), painted outside surfaces	M 3082-A paint-protecting wax
Cab cavities Initial treatment Subsequent treatment Wheel arches, underbody, cab underside, front panel	M 3082-B1 cavity wax M 3082-B3 cavity wax M 3082- C underbody wax or M 3082-Z two-coat wax

BATTERY, WIPER SYSTEM, TYRES AND RIMS

Battery	Specification
Acid density with fully-charged battery	1.28 g/cm ³ at 20 °C
Battery fluid	Distilled water
Terminal grease	Technical Vaseline S-743 or TL 9150-0042

Top up windscreen washers and headlight cleaning system

Only use windscreen wiper water with a suitable cleaning additive.

Do not add detergent to the windscreen wiper water, since it

- has hardly any effect against diesel soot and contamination by insects,
- is only effective at temperatures that are not normally attained in the windscreen washer water and
- can cause damage to paintwork, plastic and rubber parts under certain circumstances.

At low ambient temperatures use antifreeze and observe temperature information from the manufacturer.

When using concentrates, observe the information about the mixing ratio with tap water.

Tyres and rims	Specification
Assembly product, slip additive	M 3224

Service products

Battery, wiper system, tyres and rims

GENERAL INFORMATION ABOUT MAINTENANCE INTERVALS

Vehicle-specific units

Information on the units installed in the vehicle is available in the vehicle data in the MAN service portal.

Each unit in a vehicle has a model plate. This can also be used to identify the unit.

Specifications

Information on the operating media recommended for a specific unit by MAN Truck & Bus can be found in the column titled "Oil specification in accordance with MAN company standard" in the following tables.

If several specifications are permissible, the **respective specification written in bold** denotes the initial fill.

The assignment of engine oil to the emission standard, exhaust system and the sulphur content in the diesel fuel can be found in the chapter "Service products" (see "Engine oils", Page 25).

Oil change and maintenance intervals

The maintenance work is carried out after a specified time interval or mileage, depending on which event occurs first.

The listed values are maximum values. They depend on the quality of the oil used, on the type of unit installed and on the vehicle application.

It is also relevant whether the maintenance interval calculator is switched on or switched off.

In the case of vehicles which have their service interval calculator switched on, the oil-change interval depends on the operating conditions. The indicated maximum mileage may be reduced. The relevant indication is the message in the driver's display that a maintenance service is necessary.

The currently applicable maintenance checklists must be used to carry out the maintenance work.



Note

In vehicles from emission standard Euro 6c, it is not permitted to deactivate the service interval calculator (maintenance system in vehicle).

Shortened oil-change intervals for diesel engines

High sulphur content in diesel fuel

The oil-change intervals are shortened when operating the vehicle with a high sulphur content in the diesel fuel.

Information on the permissible sulphur content in the diesel fuel can be found in the chapter "Service products" (see "Mineral diesel fuel", Page 14)

Sulphur content S in diesel fuel (ppm)	Correction factor oil-change interval
S < 50	1
50 < S < 1,000	0.5
S > 1,000	0.3

Information on shortened oil-change intervals can be found in this chapter.

Diesel engines approved for FAME fuel and diesel fuel

The oil-change intervals are shortened for diesel engines that are approved for FAME fuel and diesel fuel.

Information on the conditions for the use of FAME fuel is contained in the chapter "Service products" (see "FAME fuel (biodiesel)", Page 16).

Maintenance intervals

General information about maintenance intervals

Information on shortened oil-change intervals can be found in this chapter.

up to Annual mileage (km)	Euro 5 Maximum mileage Maintenance interv. calc. off (km)	(months)
Up to 45,000	20,000	12
Over 45,000	30,000	

from Maximum mileage (km)	Euro 6 mileage (months)
30,000	12

Low temperatures

Oil-change intervals are shortened when operating the vehicle at low temperatures.

Calculation:

The shortened oil-change intervals are determined based on the correction factor from the following table:

Ambient temperature for at least 3 months per year (°C)	Correction factor oil-change interval
less than -20	0.7

The oil-change interval is limited to 12 months.

Switched off maintenance interval calculator

The oil-change intervals are reduced when the service interval calculator is switched off. The application (light, medium, heavy) is decisive for adjusting oil-change intervals.

A fuel consumption is specified for each application and every engine type.

Engine	Usage	Fuel consumption (litres per 100 km)
D0834	light	Up to 15
	medium	16 to 25
	heavy	over 25
D0836	light	Up to 23
	medium	24 to 33
	heavy	Over 33
D20, D26, D28, D38	light	Up to 30
	medium	31 to 50
	heavy	over 50

These adjusted mileages are listed in the column "Maintenance interval calculator off" in the following tables.

Several correction factors for the engine oil change

When several correction factors coincide, they must be multiplied together.

Example:

D26 engine, Euro 2

Sulphur content in diesel fuel: 51 to 1,000

Oil specification M 3277

Maintenance interval calculator off, medium use

Oil-change interval: 35,000 km

Operation at low temperatures: Correction factor 0.7

Results in a reduced oil-change interval of 24,500 km.

Shortened oil-change intervals for gearbox, transfer case, axles, MAN HydroDrive

High temperatures

The oil-change intervals for gearboxes, transfer case gearboxes, axles and the HydroDrive are shortened when operating the vehicle at high temperatures. The following is classed as operation at high temperatures:

- if the average monthly temperature in more than 2 months per year is higher than 25°C
- or if temperatures higher than 40°C occur on more than 7 days per year

Heavy-duty operation

Heavy duty operation exists for the following engines if the fuel consumption exceeds the specified values:

Engine	Fuel consumption (litres per 100 km)
D0834	25
D0836	33
D15, D20, D26, D28, D38	50

The shortened oil-change intervals for the manually operated gearbox apply in case of operation at high temperatures and/or in heavy-duty operation.

The gearbox oil type MAN 341 Z2 is not permissible for operation at high temperatures and in heavy-duty operation.

Information on shortened oil-change intervals for manually operated gearboxes can be found in this chapter.

Maintenance intervals

General information about maintenance intervals

D26, D38 engine oil initial fill

Engines D26 Euro 6d and D38 Euro 6d of the TGS and TGX version (vehicle types S, X, W)

are initially filled with engine oil in accordance with M 3677.

Engines D26 Euro 6d,e and D38 Euro 6d,e of the TGS and TGX series (vehicle types E, F,

J, K) may be initially filled with engine oil in accordance with M 3677 or M 3977. Information on which oil the engine is initially filled with can be found on page 5 of the maintenance record.

Diesel engine Euro 6d,e	Vehicle types	Oil specification in accordance with MAN company standard, initial fill
D2676LF78/79/80/81/82/83/84/85/86/AB/AE	S, X, W	M 3677
D2676LF78/79/80/84/85/86/AB/AE/AF/AI/AJ/AK/AL/AP/AQ/AS	E, F, J, K	M 3677, M 3977 ¹⁾
D2676LF81/82/83/AM/AN/AO	E, F, J, K, S, X, W	M 3677
D3876LF10/11/12	X	M 3677
D3876LF10/11/12/16/17/18	E, F, J, K	M 3677, M 3977 ¹⁾

¹⁾ M 3977 not for vehicle types S, X, W; not for heavy-duty semitrailer tractors

DIESEL ENGINES APPROVED FOR DIESEL FUEL**Note**

M 3377: Longlife oil upon special customer request for shortened standstill times of the diesel particulate filter and extended oil change intervals — not permissible for vehicles with maintenance and FullService contracts.

Maintenance intervals

Engine D0834LFL, vehicle type D

Engine D0834LFL, vehicle type D

Note

Approvals for paraffinic diesel fuel in compliance with EN 15940 are available for D08 engines without EGR, with SCR in compliance with Euro 4 and Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel		Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage				(months)
				Maintenance interv. calc. on (km)	Maintenance interv. calc. off Usage			
					light (km)	medium (km)	heavy (km)	
Euro 3	—	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	12
		51 to 1,000	M 3277 , M 3377	—	30,000	21,000	12,000	
		Over 1,000	M 3277 , M 3377	—	18,000	12,600	7,200	
Euro 4	with EGR, with PM-KAT	Up to 50	M 3677 , M 3477	80,000	60,000	42,000	24,000	
Euro 4, Euro 5	D0834LFL83/84/85/86/87/88 /89/90/91/92/93/94 without EGR, with SCR	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	18
		51 to 1,000	M 3277 , M 3377	—	30,000	21,000	12,000	
		1,001 to 2,000	M 3277 , M 3377	—	18,000	12,600	7,200	
Euro 5	with EGR, with DOC	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	12
EEV	with EGR, with PM-KAT	Up to 50	M 3677 , M 3477	80,000	60,000	42,000	24,000	

Maintenance intervals
Engine D0834LFL, vehicle type D

Diesel engine, approved for diesel fuel in accordance with EN 590	Sulphur con- tent in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage				
			Maintenance interv. calc. on (km)	Maintenance interv. calc. off Usage			(mont- hs)
				light (km)	medium (km)	heavy (km)	
Euro 6b D0834LFL66/67/68/75/76 with EGR, with SCR + CRT	Up to 10	M 3677 M 3377	60,000	45,000	32,000	18,000	12
			80,000	60,000	42,000	24,000	

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur con- tent in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	Maintenance interv. calc. off (months)
Euro 6c D0834LFLAA/AB/AC/AD/AE with EGR, with SCR + CRT	Up to 10	M 3677 M 3377	60,000	12
			80,000	
D0834LFL77/78/79/80/81/82 without EGR, with SCR + CRT	Up to 10	M 3677	80,000	18
Euro 6d D0834LFLAF/AG/AH/AI/AJ/AK without EGR, with SCR + CRT	Up to 10	M 3677	80,000	18

Maintenance intervals

Engine D0836LFL, vehicle type D

Engine D0836LFL, vehicle type D

Note

Approvals for paraffinic diesel fuel in compliance with EN 15940 are available for D08 engines without EGR, with SCR in compliance with Euro 4 and Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(months)
				light (km)	medium (km)	heavy (km)	
Euro 3 —	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	12
	51 to 1,000	M 3277 , M 3377	—	30,000	21,000	12,000	
	Over 1,000	M 3277 , M 3377	—	18,000	12,600	7,200	
Euro 4 with EGR, with PM-KAT	Up to 50	M 3677 , M 3477	80,000	60,000	42,000	24,000	
Euro 4, Euro 5 D0836LFL86/87/88/89/90/91/92 /93/94/95/96/97 without EGR, with SCR	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	18
	51 to 1,000	M 3277 , M 3377	—	30,000	21,000	12,000	
	1,001 to 2,000	M 3277 , M 3377	—	18,000	12,600	7,200	
Euro 5 with EGR, with DOC	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	12
EEV with EGR, with PM-KAT	Up to 50	M 3677 , M 3477	80,000	60,000	42,000	24,000	

Maintenance intervals
Engine D0836LFL, vehicle type D

Diesel engine, approved for diesel fuel in accordance with EN 590	Sulphur con- tent in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage			(mont- hs)
				Maintenance interv. calc. off Usage			
				light (km)	medium (km)	heavy (km)	
Euro 6b D0836LFL66/67/68/75/76/77 with EGR, with SCR + CRT	Up to 10	M 3677	60,000	45,000	32,000	18,000	12
		M 3377	80,000	60,000	42,000	24,000	

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	interv. calc. on (months)
Euro 6c D0836LFLAA/AB/AC/AD/AE /AF with EGR, with SCR + CRT	Up to 10	M 3677	60,000	12
		M 3377	80,000	
D0836LFL79/80/81/83/84/85 without EGR, with SCR + CRT	Up to 10	M 3677	80,000	18
Euro 6d D0836LFLAN/AO/AP/AQ/AR /AS without EGR, with SCR + CRT	Up to 10	M 3677	80,000	18

Maintenance intervals

Engine D0834LFL, vehicle type N

Engine D0834LFL, vehicle type N

Note

Approvals for paraffinic diesel fuel in compliance with EN 15940 are available for D08 engines without EGR, with SCR in compliance with Euro 4 and Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage				
			Maintenance interv. calc. on (km)	Maintenance interv. calc. off Usage			(months)
				light (km)	medium (km)	heavy (km)	
Euro 4 with EGR, with PM-KAT	Up to 50	M 3677 , M 3477	80,000	60,000	42,000	24,000	12
Euro 4, D0834LFL83/84/85/86/87/88 Euro 5 /89/90/91/92/93/94 without EGR, with SCR	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	18
	51 to 1,000	M 3277 , M 3377	—	30,000	21,000	12,000	
	1,001 to 2,000	M 3277 , M 3377	—	18,000	12,600	7,200	
Euro 5 with EGR, with DOC	Up to 50	M 3277 , M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	12

Maintenance intervals
Engine D0834LFL, vehicle type N

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur con- tent in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. (km)	calc. on (months)
D0834LFLAF/AG/AH/AI/AJ/AK Euro 6d,e /AQ/AR/AS/AT/AU without EGR, with SCR + CRT	Up to 10	M 3677	80,000	18

Maintenance intervals

Engine D0836LFL, vehicle type N

Engine D0836LFL, vehicle type N

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage			(months)
				Maintenance interv. calc. off Usage light (km)	medium (km)	heavy (km)	
Euro 4 with EGR, with PM-KAT	Up to 50	M 3677, M 3477	80,000	60,000	42,000	24,000	12
Euro 4, D0836LFL86/87/88/89/90/91/92 Euro 5 /93/94/95/96/97 without EGR, with SCR	Up to 50	M 3277, M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	18
	51 to 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
	1,001 to 2,000	M 3277, M 3377	—	18,000	12,600	7,200	
Euro 5 with EGR, with DOC	Up to 50	M 3277, M 3377, M 3477, M 3677	80,000	60,000	42,000	24,000	12

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	on (months)
Euro 6d,e D0836LFLAN/AO/AP/AQ/AR /AS/BI/BJ/BK/BL/BM/BN without EGR, with SCR + CRT	Up to 10	M 3677	80,000	18

**Engine D1556,
vehicle types S, X**

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940		Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
				Maintenance interv. (km)	calc. on on (months)
Euro 6d	D1556LF07/08/09/10/11/12 without EGR, with SCR + CRT	Up to 10	M 3677	120,000	18

Maintenance intervals

Engine D1556LF, vehicle types E, F, J, K

Engine D1556LF, vehicle types E, F, J, K

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	on (months)
D1556LF07/08/09/10/11/12/17 Euro 6d,e /18/19/20/21/22 without EGR, with SCR + CRT	Up to 10	M 3677	120,000	18

**Engine D2066LF,
vehicle types S, X, W**

Note

Approvals for paraffinic diesel fuel in accordance with EN 15940 are available for D20 engines in accordance with emission standards Euro 2 to Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940			Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage			(mont- hs)
						Maintenance interv. calc. off Usage			
					light (km)	medium (km)	heavy (km)		
Euro 2	—		Up to 50	M 3275	55,000	50,000	35,000	20,000	12
			51 to 1,000		—	25,000	17,500	10,000	
			Over 1,000		—	15,000	10,500	6,000	
			Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	
			51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
			Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 3	—		Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
			51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
			Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 4	with EGR, with PM-KAT	without OBD	Up to 50	M 3677, M 3477	90,000	70,000	50,000	30,000	
		with OBD		M 3677, M 3477	120,000	100,000	70,000	40,000	
Euro 4, Euro 5	without EGR, with SCR		Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
			51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
			Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	

Maintenance intervals

Engine D2066LF, vehicle types S, X, W

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
				light (km)	medium (km)	heavy (km)	
Euro 5 with EGR, with DOC with EGR, with PM-KAT with EGR, with CRT EEV without EGR, with SCR	Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	12
	Up to 50	M 3677, M 3477	120,000	100,000	70,000	40,000	
	Up to 10		120,000	100,000	70,000	40,000	
	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000		

Diesel engine, approved for diesel fuel in accordance with EN 590	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
				light (km)	medium (km)	heavy (km)	
Euro 6a D2066LF80/81/83/84 with EGR, with SCR + CRT	Up to 10	M 3677	100,000	80,000	55,000	30,000	12
		M 3377	140,000	100,000	70,000	40,000	
Euro 6b D2066LF61/67/68/76/77/78 with EGR, with SCR + CRT		M 3677	100,000	80,000	55,000	30,000	
		M 3377	140,000	100,000	70,000	40,000	

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage Maintenance interv. calc. on	
			(km)	(months)
Euro 6c D2066LF85/86/92/93 with EGR, with SCR + CRT	Up to 10	M 3677	140,000	18

**Engine D2066LF,
vehicle types E, F, J, K**

Note

Approvals for paraffinic diesel fuel in accordance with EN 15940 are available for D20 engines in accordance with emission standards Euro 2 to Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940		Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
					light (km)	medium (km)	heavy (km)	
Euro 2	—	Up to 50	M 3275	55,000	50,000	35,000	20,000	12
		51 to 1,000		—	25,000	17,500	10,000	
		Over 1,000		—	15,000	10,500	6,000	
		Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	
		51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
		Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 5	without EGR, with SCR	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
		51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
		Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 5	with EGR, with DOC	Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	

Maintenance intervals

Engine D2676LF, vehicle types S, X, W

Engine D2676LF, vehicle types S, X, W

Note

Approvals for paraffinic diesel fuel in compliance with EN 15940 are available for D26 engines in accordance with emission standards Euro 2 to Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage			(mont- hs)
				Maintenance interv. calc. off Usage light (km)	medium (km)	heavy (km)	
Euro 2	Up to 50	M 3275	55,000	50,000	35,000	20,000	12
	51 to 1,000		—	25,000	17,500	10,000	
	Over 1,000		—	15,000	10,500	6,000	
	Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
	Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 3	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
	Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 4 with EGR, with PM-KAT	Up to 50	M 3677, M 3477	120,000	100,000	70,000	40,000	
Euro 4, Euro 5 without EGR, with SCR	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
	Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	

Maintenance intervals

Engine D2676LF, vehicle types S, X, W

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940		Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
					light (km)	medium (km)	heavy (km)	
Euro 5	with EGR, with DOC	Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	12
	with EGR, with PM-KAT	Up to 50	M 3677, M 3477	120,000	100,000	70,000	40,000	
	with EGR, with CRT	Up to 10		120,000	100,000	70,000	40,000	
	EEV without EGR, with SCR	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
		51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000			

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940		Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
					light (km)	medium (km)	heavy (km)	
Euro 6a	D2676LF45/46/47/48/49/50 with EGR, with SCR + CRT	Up to 10	M 3677	100,000	80,000	55,000	30,000	12
			M 3377	140,000	100,000	70,000	40,000	
			M 3677	100,000	80,000	55,000	30,000	
			M 3377	140,000	100,000	70,000	40,000	

Maintenance intervals

Engine D2676LF, vehicle types S, X, W

Diesel engine, approved for diesel fuel in accordance with EN 590	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage			(mont- hs)
				Maintenance interv. calc. off Usage light (km)	medium (km)	heavy (km)	
Euro 6b D2676LF25/26/35/36 with EGR, with SCR + CRT	Up to 10	M 3677	100,000	80,000	55,000	30,000	12
		M 3377	140,000	100,000	70,000	40,000	
		M 3677	100,000	80,000	55,000	30,000	
		M 3377	140,000	100,000	70,000	40,000	
Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. on (months)			
Euro 6c D2676LF51/52/53/63/64/65/66 /67/68 with EGR, with SCR + CRT	Up to 10	M 3677	140,000			18	
Euro 6d D2676LF78/79/80/84/85/86/AB /AE with EGR, with SCR + CRT							

**Engine D2676LF,
vehicle types E, F, J, K**

Note

Approvals for paraffinic diesel fuel in compliance with EN 15940 are available for D26 engines in accordance with emission standards Euro 2 to Euro 5.

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
				light (km)	medium (km)	heavy (km)	
Euro 2	Up to 50	M 3275	55,000	50,000	35,000	20,000	12
	51 to 1,000		—	25,000	17,500	10,000	
	Over 1,000		—	15,000	10,500	6,000	
	Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
	Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 5 without EGR, with SCR	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277, M 3377	—	50,000	35,000	20,000	
	Over 1,000	M 3277, M 3377	—	30,000	21,000	12,000	
Euro 5 with EGR, with DOC	Up to 50	M 3277, M 3377	120,000	100,000	70,000	40,000	

Maintenance intervals

Engine D2676LF, vehicle types E, F, J, K

Engine D2676LF, vehicle types E, F, J, K

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compli- ance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage Maintenance interv. calc. on	
			(km)	(months)
Euro 6d,e D2676LF78/79/80/84/85/86 /AB/AE/AF/AI/AJ/AK/AL/AP /AQ/AS with EGR, with SCR + CRT	Up to 10	M 3677, M 3977	140,000	18

**Engine D2868LF,
vehicle type X**

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
				light (km)	medium (km)	heavy (km)	
Euro 5 with SCR, with DOC	Up to 50	M 3277, M 3377, M 3477, M 3677	120,000	80,000	55,000	30,000	12

Maintenance intervals

Engines D2866LF, D2876LF, vehicle types S, X, W

Engines D2866LF, D2876LF, vehicle types S, X, W

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel	Sulphur content in diesel fuel	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
				light	medium	heavy	
	(ppm)		(km)	(km)	(km)	(km)	
Euro 2 —	not limited	M 3277 , M 3377	100,000	80,000	55,000	30,000	12
with green oil dipstick	Up to 50	M 3277 , M 3377, M 3477, M 3677	100,000	80,000	55,000	30,000	
	51 to 1,000	M 3277 , M 3377	—	40,000	27,500	15,000	
	Over 1,000	M 3277 , M 3377	—	24,000	16,500	10,000	
Euro 3 —							
with red oil dipstick	Up to 50	M 3277 , M 3377, M 3477, M 3677	75,000	60,000	45,000	25,000	
	51 to 1,000	M 3277 , M 3377	—	30,000	22,500	12,500	
	Over 1,000	M 3277 , M 3377	—	20,000	15,000	7,500	
with EGR, with PM-KAT with green oil dipstick	Up to 50	M 3477	90,000	70,000	50,000	30,000	
		M 3677	120,000	100,000	70,000	40,000	
with SCR with green oil dipstick	Up to 50	M 3477 , M 3277, M 3377, M 3677	120,000	100,000	70,000	40,000	
	51 to 1,000	M 3277 , M 3377	—	50,000	35,000	20,000	
	Over 1,000		—	30,000	21,000	12,000	
Euro 4 —							
with EGR, with PM-KAT with red oil dipstick	Up to 50	M 3477 , M 3677	90,000	70,000	50,000	30,000	
	Up to 50	M 3477 , M 3277, M 3377, M 3677	90,000	70,000	50,000	30,000	
with SCR with red oil dipstick	51 to 1,000	M 3277 , M 3377	—	45,000	25,000	15,000	
	Over 1,000		—	21,000	15,000	9,000	

**Engine D3876LF,
vehicle type X**

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel in accordance with EN 590	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maintenance interv. calc. on (km)	Maximum mileage Maintenance interv. calc. off Usage			(mont- hs)
				light (km)	medium (km)	heavy (km)	
Euro 6b D3876LF01/02/03/04/05/06 with EGR, with SCR + CRT	Up to 10	M 3677 M 3377	100,000	80,000	55,000	30,000	12
			140,000	100,000	70,000	40,000	
Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage Maintenance interv. calc. on (km)		mileage calc. on (months)		
Euro 6c D3876LF07/08/09 with EGR, with SCR + CRT	Up to 10	M 3677	100,000		18		
Euro 6d D3876LF10/11/12 with EGR, with SCR + CRT			140,000				

Maintenance intervals

Engine D3876LF, vehicle type X

D3876 engine for heavy-duty semitrailer tractor, vehicle type X

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuel in accordance with EN 590	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage				
			Maintenance interv. calc. on (km)	Maintenance interv. calc. off		(months)	(h)
				medium (km)	heavy (km)		
Euro 6b D3876LF01/02/03/04/05/06 with EGR, with SCR + CRT	Up to 10	M 3677	100,000	55,000	30,000	12	600
		M 3377	140,000	70,000	40,000		

Diesel engine, approved for diesel fuels in compliance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	on (months)
Euro 6c D3876LF07/08/09 with EGR, with SCR + CRT	Up to 10	M 3677	100,000	18
Euro 6d D3876LF10/11/12 with EGR, with SCR + CRT			140,000	

**Engine D3876LF,
vehicle types E, F, J, K**

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compli- ance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	calc. on (months)
Euro D3876LF10/11/12/16/17/18 6d,e with EGR, with SCR + CRT	Up to 10	M 3677, M 3977	140,000	18

**Engine D3876LF for heavy-duty semitrailer
combination tractor, vehicle type K**

Oil specifications and oil-change intervals

Diesel engine, approved for diesel fuels in compli- ance with EN 590 and EN 15940	Sulphur content in diesel fuel (ppm)	Oil spec. acc. to MAN company std.	Maximum mileage	
			Maintenance interv. calc. on (km)	calc. on (months)
D3876LF10/11/12/16/17 Euro 6d,e /18 with EGR, with SCR + CRT	Up to 10	M 3677	140,000	18

Maintenance intervals

Engines D2066LF, D2676LF, D2866LF, D2876LF, vehicle types S, X, W

DIESEL ENGINES OPERATED WITH FAME FUEL

**Engines D2066LF, D2676LF,
D2866LF, D2876LF,
vehicle types S, X, W**

Engines D2066LF, D2676LF, D2866LF,
D2876LF to Euro 5

Oil specifications and oil-change intervals

Diesel engine, approved for FAME fuel	Annual mileage (km)	Oil spec. acc. to MAN company std.	Maximum mileage Maintenance interv. calc. off	
			(km)	(mont- hs)
Euro 2 —	Up to 45,000	M 3277 , M 3377	20,000	12
	Over 45,000		30,000	
Euro 3 —	Up to 45,000	M 3277 , M 3377	20,000	
	Over 45,000		30,000	
Euro 4 — with EGR, with PM-KAT	Up to 45,000	M 3677 , M 3477	20,000	
	Over 45,000		30,000	
Euro 4 — without EGR, with SCR	Up to 45,000	M 3277 , M 3377, M 3477, M 3677	20,000	
	Over 45,000		30,000	
Euro 5 — with EGR, with DOC without EGR, with SCR	Up to 45,000	M 3277 , M 3377	20,000	
	Over 45,000		30,000	

Engine D2676LF Euro 6, vehicle types S, X, W

Oil specifications and oil-change intervals

Diesel engine, approved for fuels according to EN 14214 and EN 590		Oil spec. acc. to MAN company std.	Maximum mileage Maintenance interv. calc. on		Maximum mileage Maintenance interv. calc. off	
			(km)	(months)	(km)	(months)
Euro 6a	D2676LF54/55/56/57/58 with EGR, with SCR + CRT	M 3677 , M 3377	—	—	30,000	12
Euro 6c	D2676LF63/64/65 with EGR, with SCR + CRT		30,000	12	30,000	
Euro 6d	D2676LF81/82/83 with EGR, with SCR, with CRT	M 3677			—	

Maintenance intervals

Engine D2676LF, vehicle types E, F, J, K

Engine D2676LF, vehicle types E, F, J, K

Oil specifications and oil-change intervals

Diesel engine, approved for fuels according to EN 14214 and EN 590	Oil spec. acc. to MAN company std.	Maximum mileage	
		Maintenance interv. calc. on (km)	calc. on (months)
Euro 6d,e D2676LF 81/82/83/AM/AN/AO with EGR, with SCR, with CRT	M 3677	30,000	12

COOLING SYSTEM

Corresponding information on the miscibility of coolants can be found in the chapter “Service products” (see “Coolants”, Page 29).

Emission standard	Specification in accordance with MAN company standard	Maximum mileage	
		(km)	(years)
Euro 3, Euro 4	MAN 324 Type Si-OAT plus, MAN 324 Type Si-OAT, MAN 324 Type NF, MAN 324 Type N-Arctic, MAN 324 Type SNF	500,000	4
Euro 5, EEV	MAN 324 Type Si-OAT plus, MAN 324 Type Si-OAT, MAN 324 Type NF		
Euro 6	MAN 324 Type Si-OAT plus, MAN 324 Type Si-OAT		

**WARNING****Danger of engine damage**

The ability of the coolant to protect against corrosion may decrease over the course of the service life, which can lead to engine damage.

Therefore:

- Replace coolant when it turns brown or becomes cloudy.

Maintenance intervals

Hydraulic gearbox (automatic gearbox) for TGA

GEARBOX

Hydraulic gearbox (automatic gearbox) for TGA

Ecomat

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage					
		Normal use			Operation at high temperatures and heavy-duty operation		
		(km)	(months)	(h)	(km)	(months)	(h)
Ecomat	MAN 339 Z4	150,000	24	2,000	75,000	12	1,500
	MAN 339 Z3	120,000	12	1,500	60,000	12	1,000
	MAN 339 Z2	60,000	12	750	30,000	12	500

**Manually operated gearbox (manual gearbox),
vehicle types N, S, X, W**

Ecolite, Ecomid

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage			
		Normal use		Operation at high temperatures and heavy-duty operation	
		(km)	(months)	(km)	(months)
Ecolite S5-42, 6S-850 TO	MAN 341 Z2	120,000	12	—	—
	MAN 341 Z5	360,000	36	240,000	36
	MAN 341 Z4	240,000	24	160,000	24
Ecolite 6S-800 TO, 6S-1000 TO Ecomid 9S-1110 TD, 9S-1310 TO	MAN 341 Z5	360,000	36	240,000	36
	MAN 341 Z4	240,000	24	160,000	24
	MAN 341 Z2	120,000	12	—	—

Maintenance intervals

Manually operated gearbox (manual gearbox), vehicle types N, S, X, W

Ecosplit

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage				
		Normal use		Operation at high temperatures and heavy-duty operation		
		(km)	(months)	(km)	(months)	(h)
Ecosplit 16S	MAN 341 Z5	500,000	36	360,000	36	—
	MAN 341 Z4	320,000	24	210,000	24	—
Ecosplit 16S-2522 with engine-dependent PTO 221	MAN 341 Z5	—	—	200,000	24	10,000
	MAN 341 Z4	—	—	100,000	12	5,000

**Manually operated gearbox (manual gearbox),
vehicle types D, E, F, J, K**

Ecosplit

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage				
		Normal use		Operation at high temperatures and heavy-duty operation		
		(km)	(months)	(km)	(months)	(h)
Ecosplit 16S	MAN 341 Z5	540,000	36	360,000	36	—
	MAN 341 Z4	360,000	24	240,000	24	—

Maintenance intervals

MAN TipMatic (semi-automatic gearbox), vehicle types N, S, X, W

MAN TipMatic (semi-automatic gearbox), vehicle types N, S, X, W

MAN TipMatic Lite, MAN TipMatic Mid

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage			
		Normal use		Operation at high temperatures and heavy-duty operation	
		(km)	(months)	(km)	(months)
MAN TipMatic Lite 6AS850	MAN 341 Z2	120,000	12	—	—
	MAN 341 Z4	240,000	24	160,000	24
	MAN 341 Z5	360,000	36	240,000	36
MAN TipMatic Lite 6AS800, 6AS1000 MAN TipMatic Mid 12AS1210	MAN 341 Z5	360,000	36	240,000	36
	MAN 341 Z4	240,000	24	160,000	24
	MAN 341 Z2	120,000	12	—	—

MAN TipMatic 12AS, 12TX

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage			
		Normal use		Operation at high temperatures and heavy-duty operation	
		(km)	(months)	(km)	(months)
MAN TipMatic 12AS without intarder	MAN 341 Z5	500,000	36	360,000	36
	MAN 341 Z4	320,000	24	210,000	24
	MAN 341 Z2	160,000	12	—	—
MAN TipMatic 12AS with intarder	MAN 341 Z5	500,000	36	360,000	36
	MAN 341 Z4	320,000	24	210,000	24
MAN TipMatic 12TX	MAN 341 Z5	500,000	36	360,000	36
	MAN 341 Z4	320,000	24	210,000	24

Maintenance intervals

MAN TipMatic (semi-automatic gearbox), vehicle types N, S, X, W

MAN TipMatic 14

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage	
		(km)	(months)
MAN TipMatic 14 with retarder	MAN 341 GA2	360,000	36
Retarder (R3500, R4100)	Shell Rimula R5 LE 10W-30 (until 30.09.2018) Total Rubia Tir 7900 FE 10W-30 (from 01.10.2018) MAN 339 Z2	Same time as the gearbox oil change	
Clutch actuator	Brake fluid DOT 4, FMVSS 116, SAE J 1703	24 months	
Shifting device	Shell Spirax S2 ATF AX MAN 339 Z1, Z2, Z3, Z4	Check the fill level when changing the gearbox oil	

MAN TipMatic 14

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage	
		(km)	(months)
MAN TipMatic 14 without retarder	MAN 341 GA2	360,000	36
	MAN 341 GA1	240,000	24
Clutch actuator	Brake fluid DOT 4, FMVSS 116, SAE J 1703	24 months	
Shifting device	Shell Spirax S2 ATF AX MAN 339 Z1, Z2, Z3, Z4	Check the fill level when changing the gear-box oil	

Maintenance intervals

MAN TipMatic (semi-automatic gearbox), vehicle types N, S, X, W

TipMatic 12TC with converter-clutch unit

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage				
		Normal use		Operation at high temperatures and heavy-duty operation		
		(km)	(months)	(km)	(months)	(h)
Manually operated gearbox with converter-clutch unit for Euro 5 heavy-duty semitrailer tractor and other applications MAN TipMatic 12TC2540, 12TC2740	MAN 341 Z5	300,000	36	200,000	24	10,000
	MAN 341 Z4	200,000	24	100,000	12	5,000
TC2 converter-clutch unit	MAN 339 Z4	120,000	12	120,000	12	—
	MAN 339 Z3					
	MAN 339 Z2					
Manually operated gearbox with converter-clutch unit for Euro 6 heavy-duty semitrailer tractor MAN TipMatic 12TCHD3041	MAN 341 Z5	300,000	36	200,000	24	10,000
Converter-clutch unit TCHD	MAN 341 Z5	300,000	36	200,000	24	10,000

Initial fill Ecolite, Ecomid, Ecosplit, MAN TipMatic Lite, MAN TipMatic Mid, MAN TipMatic AS/TC/TX

Ecolite, Ecomid, Ecosplit, MAN TipMatic Lite, MAN TipMatic Mid, MAN TipMatic AS/TC/TX gearboxes are initially filled with gearbox oil in accordance with MAN 341 Z5. During the first two years after first registration, the oil for these gearboxes may only be changed if the upper mileage limit has already been reached.

Only oils in compliance with MAN 341 Z5 may be used when topping up the gearbox oil (retrofit, repair, etc.) within the first two years.

Topping up hydraulic oil for shift unit in TipMatic Lite 6AS800, 6AS850, 6AS1000

The shift unit (power pack) in the MAN TipMatic Lite 6AS800, 6AS850 and 6AS1000 is permanently filled with Pentosin CHF 11 S hydraulic oil in accordance with M 3289 ZHF. In the event of repairs, only Pentosin CHF 11 S is allowed to be used as hydraulic oil. Information on checking the oil level and filling the shift unit can be found in the corresponding maintenance instructions.

**MAN TipMatic (semi-automatic gearbox),
vehicle types D, E, F, J, K**

MAN TipMatic 12TX

Oil specifications and oil-change intervals

Gearbox	Oil spec. acc. to MAN company std.	Maximum mileage			
		Normal use		Operation at high temperatures and heavy-duty operation	
		(km)	(months)	(km)	(months)
MAN TipMatic 12TX	MAN 341 Z5	540,000	36	360,000	36
	MAN 341 Z4	360,000	24	240,000	24

Maintenance intervals

Change-over, initial fill of transfer case oil

TRANSFER CASE

Change-over, initial fill of transfer case oil

Transfer case	Date	Oil specification in accordance with MAN Company standard, initial fill
G102, G103	Until 31.10.2016	MAN 342 M1
	From 01.11.2016	MAN 342 M3
G172, G173	Until 31.10.2016	MAN 342 S1
	From 01.11.2016	MAN 342 S2

**G102, G103,
vehicle types D, N**

Oil specifications and oil-change intervals

Transfer case	Oil spec. acc. to MAN company std.	Maximum mileage			
		Normal use		Operation at high temperatures	
		(km)	(months)	(km)	(months)
G102P26, G102Z, G103P26, G103Z	MAN 342 M3	200,000	24	130,000	24
	MAN 342 S1	200,000	36	130,000	36
	MAN 342 M2	125,000	24	80,000	24

Maintenance intervals

G172, G173, G252, G253, vehicle types E, F, J, K, S, X, W

G172, G173, G252, G253, vehicle types E, F, J, K, S, X, W

Oil specifications and oil-change intervals

Transfer case	Oil spec. acc. to MAN company std.	Maximum mileage			
		Normal use		Operation at high temperatures	
		(km)	(months)	(km)	(months)
G172P22, G172P22-L, G172P32, G172P32-L, G172Z, G172Z-L, G173P22, G173P22-L, G173P32, G173P32-L, G173Z, G173Z-L	MAN 342 S2 , MAN 342 S1	180,000	36	120,000	36
	MAN 342 M3	180,000	24	120,000	24
	MAN 342 M2	90,000	24	60,000	24
G173P22-N, G173P22-LN, G173P32-N, G173P32-LN, G173Z-N, G173Z-LN	MAN 342 S2 , MAN 342 S1	180,000	12	120,000	12
G252Z-L, G252P22-L, G252P32-L, G252Z-L, G253P22-L, G253P32-L, G253Z-L	MAN 341 Z5 , MAN 342 S1	180,000	24	120,000	24
G253P22-LN, G253P32-LN, G253Z-LN	MAN 341 Z5 , MAN 342 S1	180,000	12	120,000	12
G253P22-L-H	MAN 341 Z5	180,000	24	120,000	24

AXLES

Change-over, initial fill of axle

The driven axles are initially filled with axle oil in accordance with MAN 342 M3 as standard.

At the request of the customer, the driven axles are filled with axle oil in accordance with MAN 342 S2 where possible. Information on which

oil the axle is initially filled with can be found on page 5 of the maintenance record.
MAN 342 S2 factory filling only, not available from Sales.

Shaft	Period	Oil specification in accordance with MAN company standard, initial fill
Planetary axles	Until 31.10.2016	MAN 342 M1
	From 01.11.2016	MAN 342 M3, MAN 342 S2
Hypoid rear axles	Until 31.10.2016	MAN 342 S1
	From 01.11.2016	MAN 342 M3, MAN 342 S2

Maintenance intervals

Hypoid axles TGL, TGM, vehicle types D, N

Hypoid axles TGL, TGM, vehicle types D, N

Oil specifications and oil-change intervals

Hypoid rear axles	Oil spec. acc. to MAN company std.	Maximum mileage		
		Normal use (km)	Operation at high temper- atures (km)	(months)
Up to 15 t total weight: HY-0718, HY-0925, HY-1130	MAN 342 M3	200,000	130,000	24
	MAN 342 S1	300,000	200,000	36
	MAN 342 M2	125,000	80,000	24
Over 15 t total weight: HY-1133, HYD-1160, HY-1350, HYD-1370	MAN 342 S2 , MAN 342 S1	300,000	200,000	36
	MAN 342 M3	200,000	130,000	24
	MAN 342 M2	125,000	80,000	24

**Hypoid axles TGA,TGS, TGX,
vehicle types E, F, J, K, S, X, W**

Oil specifications and oil-change intervals

Hypoid rear axles	Oil spec. acc. to MAN company std.	Maximum mileage		
		Normal Usage (km)	Operation at high temper- atures (km)	(months)
As a single axle: HY-1344, HY-1350	MAN 342 M3	320,000	210,000	24
	MAN 342 M2	160,000	110,000	24
	MAN 342 S2	750,000	540,000	60
	MAN 342 S1	500,000	360,000	36
As a twin axle: HY-1133-02/-03, HY-1344, HY-1350, HYD-1160, HYD-1370	MAN 342 M3	320,000	210,000	24
	MAN 342 M2	160,000	110,000	24
	MAN 342 S2 , MAN 342 S1	500,000	360,000	36

The wheel hubs of the hypoid rear axles are maintenance-free.

Maintenance intervals

Planetary axles TGL, TGM, vehicle types D, N

Planetary axles TGL, TGM, vehicle types D, N

Oil specifications and oil-change intervals

Planetary front axles, planetary rear axles	Oil spec. acc. to MAN company std.	Maximum mileage		
		Normal use (km)	Operation at high temper- atures (km)	(months)
VP 06, VP 09 HP-0728-E, HP-0928, HP-1333	MAN 342 M3	200,000	130,000	24
	MAN 342 S1	200,000	130,000	36
	MAN 342 M2	125,000	80,000	24

**Planetary axles TGA, TGS, TGX,
vehicle types E, F, J, K, S, X, W**

Oil specifications and oil-change intervals

Planetary front axles, planetary rear axles	Oil spec. acc. to MAN company std.	Maximum mileage		
		Normal Usage (km)	Operation at high temper- atures (km)	(months)
VP 09, VPD 09, VP 11, VPD 11 HP-1333(-E), HP 1342-E, HP-1352, HP-1652, HPD-1353(-E), HPD 1372-E, HPD-1382, HPD-1682 HP-1352, HP-1652, HPD-1382, HPD-1682	MAN 342 M3	180,000	120,000	24
	MAN 342 S2, MAN 342 S1	180,000	120,000	36
	MAN 342 M2	160,000	110,000	24

Maintenance intervals

Non-driven front axle TGS, TGX, vehicle types S, X, W

Non-driven front axle TGS, TGX, vehicle types S, X, W

VOG 09

Oil specifications and oil-change intervals

Non-driven front axle	Oil spec. acc. to MAN company std.	Maximum mileage	
		(km)	(months)
VOG 09	MAN 342 M3	180,000	24
	MAN 342 M2	160,000	24
	MAN 342 S2 , MAN 342 S1	180,000	36

HYDRAULIC SYSTEMS

Lifetime fillings

The following hydraulic systems are filled with hydraulic oil for their lifetime, an oil change only takes place in the event of a repair:

- Steering systems, refill oil upon replacement of the oil filter if required
- Cab tilt mechanism
- Clutch unit
- Tipper hydraulics
- Crane, cable winch

Maintenance intervals

Hydrostatic fan drive and semitrailer hydraulics for Euro 5 and Euro 6 heavy-duty semitrailer tractor

Hydrostatic fan drive and semi-trailer hydraulics for Euro 5 and Euro 6 heavy-duty semitrailer tractor

Oil specifications and oil-change intervals

Hydrostatic fan drive, semitrailer hydraulics	Oil spec.	Maximum (km)	mileage (months)
Hydrostatic fan drive Semitrailer hydraulics	ISO VG 32 in accordance with: DIN 51524-3 (HVL), ISO 6743-4 (HV) ISO VG 32 in accordance with: DIN 51524-2 (HLP), ISO 6743-4 (HM)	—	36

MAN HydroDrive

Oil specifications and oil-change intervals

Hydraulically driven front axle	Oil spec.	Maximum mileage		
		Normal use (km)	Operation at high tem- peratures (km)	(months)
Hydraulic system	ISO VG 46 in accordance with: DIN 51524-3 (HVLP), ISO 6743-4 (HV) ISO VG 46 in accordance with: DIN 51524-2 (HLP), ISO 6743-4 (HM)	(60,000 first time) 120,000	(40,000 first time) 80,000	(12 first time) 24
PTO on synchromesh gearbox	MAN 341 Z5	60,000	40,000	12

Maintenance intervals

Air-conditioning systems

AIR-CONDITIONING SYSTEMS

Lifetime fill

The air-conditioning systems are filled with refrigerant for their lifetime, a refrigerant change only takes place in the event of a repair. The following refrigerant compressors are filled with refrigerator oil for their lifetime, an oil change only takes place in the event of a repair:

- Kiki
- Nippondenso
- Sanden SD H 15 7982, 8117, 8157, 8162, 8164, 8171
- Unicla
- Zexel

GREASING POINTS

Periodic lubrication

Information about the intervals for periodic lubrication can be found in the Operator's Manual.

Lifetime lubrication

The following components are equipped with lifetime lubrication:

- Brake shoe bolt
- Brake shoe roller
- Nozzle holders (installation of pressure screw)
- Exhaust system (mounting bolts)
- Constant-velocity shafts
- Steering knuckle bearing

For components with lifetime lubrication, the specifications are shown for greasing and lubricating in the event of repairs.

Maintenance intervals

Greasing points

GENERAL INFORMATION ABOUT FILL QUANTITIES

Engine oils

The specified fill quantity is the fill quantity in litres required for oil change. The decisive factor in obtaining the precise fill quantity is to check the oil level on the oil dipstick. Information on checking the oil level can be found in the Operator's Manual. Information on how to change the oil can be found in the Maintenance Instructions.

The top-up quantity is the quantity between MIN and MAX on the oil dipstick.

Coolants

The specified fill quantities apply for a standard mixing ratio of 50 vol. % anti-freeze and anti-corrosion agent and 50 vol. % water. Filling of the coolant expansion tank up to the MAX marking is essential. Information on checking the coolant level can be found in the Operator's Manual. Information on how to change the coolant can be found in the Maintenance Instructions.

Gearbox oils

The fill quantities indicated are fill quantities for the dry unit's initial fill. When changing the oil, the fill quantity can be a few litres lower, max.

1.5 litres for gearboxes without interarder, up to 5 litres less for gearboxes with interarder, up to 15 litres less with Ecomat.

The decisive factor in obtaining the precise fill quantity is to check the oil level. Information on checking the oil level and how to change the oil can be found in the Maintenance Instructions. The tables on the following pages indicate the fill quantities for manually operated gearboxes without PTO.

Power take-offs (PTO)

Clutch-dependent PTO:

- in conjunction with Ecosplit 16S2522 = 2 litres
- N1 = 0.2 litres
- N2/4/5/6 = 0.5 litres
- N10 = 1 litre, also for semi-automatic gearboxes (MAN TipMatic), not for hydraulic gearboxes with converter (automatic gearbox), e.g. Ecomat

PTOs for MAN TipMatic 14:

- single PTO without gear reduction = 0 litres
- single PTO with gear reduction = 0.4 litres
- double PTO with gear reduction = 0.7 litres

MAN HydroDrive PTO:

- for Ecosplit and TipMatic 12TX = 3 litres

Transfer case oils

The specified fill quantities are fill quantities for the dry unit. The decisive factor in obtaining the precise fill quantity is to check the oil level on the filler opening. Information on checking the oil level and how to change the oil can be found in the Maintenance Instructions.

Axle oils

Especially for axles, the installation position in the vehicle must be taken into account to determine the correct oil level. The specified fill quantities are fill quantities for the dry unit. The decisive factor in obtaining the precise fill quantity is to check the oil level. Information on checking the oil level and how to change the oil can be found in the Maintenance Instructions.

Hydraulic oils, refrigerator oils

The decisive factor in obtaining the precise fill quantity is to check the oil level. Information on

Fill quantities

General information about fill quantities

checking the oil level and how to change the oil can be found in the Maintenance Instructions.

Refrigerant

The fill quantities for the refrigerant are specified for each model series.

ENGINE OILS

Engine	Fill quantity (Litres)	Refill quantity (Litres)
D0834 with EGR	15	4
D0834 with SCR	17	4
D0836 with EGR (240/250 hp)	20	4
D0836 with EGR (280/290/320/340 hp)	26	5
D0836 with SCR (road vehicles)	26	5
D0836 with SCR (off-road vehicles)	20	4
D1556	39	5
D2066, D2676, D2868, D2876	40	6
D3876	45	6

Fill quantities

Coolants

COOLANTS

Engine	Fill quantity (Litres)	
D0834	For all emissions standards and output stages	23
D0836	240 hp (176 kW), 250 hp (184 kW), 280 hp (206 kW)	25
	290 hp (213 kW), 320 hp (235 kW), 340 hp (250 kW)	30
D1556	Without Intarder	45
	With Intarder	57
D2066, D2676	Euro 2 to 5, without intarder	47
	Euro 2 to 5, with intarder	59
	Euro 2 to 5, with PriTarder	50.5
	Euro 6a,b,c without intarder	64
	Euro 6a,b,c with intarder	76
	Euro 6a,b,c with PriTarder	67.5
D2676 Euro 6d	Without Intarder	47
	With Intarder	59
D2676	Heavy-duty semitrailer tractor with rear cooling tower	75
D2868	With Intarder	57
	Heavy-duty semitrailer tractor	80
D2876	Without Intarder	42.5
	With Intarder	54

Fill quantities
Coolants

Engine	Fill quantity (Litres)
Without intarder	68
With intarder	80
D3876 Heavy-duty semitrailer tractor with TipMatic 12TC HD-3041 SO	85
D3876 Heavy-duty semitrailer tractor with TipMatic 12TC HD-3041 SO and auxiliary cooling	99

Fill quantities

Hydraulic gearbox (automatic gearbox)

GEARBOX OILS

Hydraulic gearbox (automatic gearbox)

Hydraulic gearbox	Fill quantity (Litres)
Ecomat	30

**Manually operated gearboxes
(manual gearboxes)**

Manually operated gearboxes	Fill quantity (Litres)
Ecolite, S5-42	3.2
Ecolite, 6S800 TO, 6S850	9.8
Ecolite, 6S1000 TO	9.3
Ecomid, 9S1110 TO, 9S1310 TO	8.8
Ecosplit 16S1820 without intarder	11
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Ecosplit 16S2533 for MAN HydroDrive (fill volume without PTO)	15.5
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Fill quantities

MAN TipMatic (semi-automatic gearboxes)

MAN TipMatic (semi-automatic gearboxes)

MAN TipMatic	Fill quantity (Litres)
MAN TipMatic Lite, 6AS800 TO, 6AS850 TO	9.8
MAN TipMatic Lite, 6AS1000 TO	9.3
MAN TipMatic Mid 12AS1210	7.8
MAN TipMatic 12AS without intarder	12
MAN TipMatic 12AS2131, 12AS2331, 12AS2531 with intarder 2/3	22
MAN TipMatic 12AS2741 12AS3041, 12AS3141 with intarder 2	23.5
MAN TipMatic 12AS2741 12AS3041, 12AS3141 with intarder 3	23
MAN TipMatic 12TX2210, 12TX2610 without intarder	12.5
MAN TipMatic 12TX2416 for MAN HydroDrive (fill volume without PTO)	15.5
MAN TipMatic 12TX2826 for MAN HydroDrive (fill volume without PTO)	16.5
MAN TipMatic 12TX2620, 12TX2820, 12TX3020	13.5
MAN TipMatic 12TX2211, 12TX2416, 12TX2611 with intarder	22.5
MAN TipMatic 12TX2621, 12TX2821, 12TX3021	23.5
MAN TipMatic 14	14.5
Retarder (R3500, R4100D)	7.9
Clutch actuator	0.3
Shifting device	0.2

Fill quantities
MAN TipMatic (semi-automatic gearboxes)

MAN TipMatic	Fill quantity (Litres)
MAN TipMatic 12TC–2540, 12TC–2740	12.5
TC2 converter-clutch unit	18.5
MAN TipMatic 12TC HD–3041 SO	23
Converter-clutch unit TCHD	26.5

Fill quantities

G102, G103

TRANSFER CASE OILS

G102, G103

Transfer case	Fill quantity (Litres)
G102Z, G103Z	5.5
G102P26, G103P26	5.2

G172, G173, G252, G253

Transfer case	Fill quantity (Litres)
G172Z, G172Z-L, G173Z, G173Z-L	7.0
G172P22, G172P22-L, G172P32, G172P32-L	5.8
G173Z-N, G173Z-LN	7.2
G173P22-N, G173P22-LN, G173P32-N, G173P232-LN	6.0
G252Z-L, G253Z-L	9.3
G252P22-L, G252P32-L, G253P22-L, G253P32-L, G253P22-L-H	8.5
G253Z-LN	9.5
G253P22-LN, G253P32-LN	8.7

Fill quantities

Hypoid axles

AXLE OILS

Hypoid axles

Hypoid axle	Fill quantity (Litres)
HY-0512, HY-0718	5.25
HY-0925, HY-1130	10
HY-1133	10
HYD-1160	14
HY-1344	10.5
HY-1350	14.5
HYD-1370	18

Planetary axles

Planetary front axles	Fill quantity (Litres)			
	total	Final drive	Planetary drive	Steering knuckle (each side)
VP 06	8.2	6.0	2 x 1.0	2 x 0.05
VP 09	9.2	6	2 x 1.5	2 x 0.05
VPD 09	10.7	5 (drive shaft 2.5)	2 x 1.5	2 x 0.05
VP 11	8.7	5.5	2 x 1.5	2 x 0.05
VPD 11	10.2	4.5 (drive shaft 2.5)	2 x 1.5	2 x 0.05

Planetary rear axles	Fill quantity (Litres)		
	total	Final drive	Planetary drive
HP-0728-E	12.5	10.5	2 x 1.0
HP-0928	12.0	9.0	2 x 1.5
HP-1333	12.7	8.5	2 x 2.1
HP-1342-E	15.0	12.0	2 x 1.5
HP-1352	16.2	12.0	2 x 2.1
HP-1652	17.7	12.1	2 x 2.8
HPD-1353(-E)	14.7	10.5	2 x 2.1
HPD-1372-E	16.5	13.5	2 x 1.5
HPD-1382	17.7	13.5	2 x 2.1
HPD-1682	19.1	13.5	2 x 2.8

Fill quantities

Planetary axles

Planetary rear axles for Heavy-duty semitrailer tractor	Fill quantity (Litres)		
	total	Final drive	Planetary drive
HP-1352	16.2	12	2 x 2.1
HP-1652	17.7	12.1	2 x 2.8
HPD-1382	17.7	13.5	2 x 2.1
HPD-1682	19.1	13.5	2 x 2.8

Non-driven front axle

Non-driven front axle	Fill quantity (Litres)			
	total	Final drive	Planetary drive	Steering knuckle (each side)
VOG 09	3.2	–	2 x 1.5	2 x 0.05

Fill quantities

Steering system

HYDRAULIC OILS

Steering system

Steering system	Fill quantity (Litres)
Single-circuit steering TGA, TGS, TGX, vehicle types S, X, E, F, J, K TGL, TGM, vehicle types D, N	6 to 7 3 to 4
Dual-circuit steering system	15 to 16
electronically-steered leading or trailing axle	4
mechanically-steered leading or trailing axle	5

Clutch

Clutch unit	Fill quantity (Litres)
Clutch unit	0.6
Shift clutch and hydraulic shift system (TGA)	2.8
Clutch actuator for MAN TipMatic 14	0.3

Fill quantities

Hydrostatic fan drive and semitrailer hydraulics for Euro 6 heavy-duty semitrailer tractors

Hydrostatic fan drive and semi-trailer hydraulics for Euro 6 heavy-duty semitrailer tractors

Hydrostatic fan drive, semitrailer hydraulics	Fill quantity (Litres)
Hydrostatic fan drive	33
Semitrailer hydraulics	145 (3-stage system) 100 (1-stage system)

Cab tilt mechanism

Cab tilt mechanism	Fill quantity (Litres)
Mechanical cab tilt mechanism	0.5
Electric cab tilt mechanism	0.8

Fill quantities

HydroDrive, vehicle types S, X

HydroDrive, vehicle types S, X

MAN HydroDrive	Fill quantity (Litres)
Hydraulic system	17 (reservoir) 33 (total)
PTO on synchromesh gearbox	1.5

REFRIGERANTS AND REFRIGERATOR OILS

Vehicle series	R134a refrigerant fill quantity (kg)
TGA	0.95
TGL and TGM Vehicle types: N, D (also with crew cab)	0.75
TGS and TGX Euro 2 to 4 Vehicle types: S, X	0.95
TGS and TGX Euro 5 without AdBlue Vehicle types: S, X	0.80
TGS and TGX Euro 5 with AdBlue Vehicle types: S, X	0.95
TGS and TGX Euro 6 Vehicle types: S, X	0.80
TGS with crew cab Vehicle type: S	0.95
TGX with Euro 6d engine and auxiliary air-conditioning system Vehicle type: X	0.80
TGX with auxiliary air-conditioning system Vehicle type: X	1.15
CC, NN, DN cab (small and medium cab, crew cab) Vehicle types: E, F, J, K	0.60
GM, GN, GX, TM, TN cab Vehicle types: E, F, J, K	0.65
GM, GN-, GX-, TM-, TN cab with auxiliary air-conditioning system Vehicle types: E, F, J, K	0.70

Fill quantities

Refrigerants and refrigerator oils

Topping up refrigerator oil when repairing a component

Component designation	Refrigerator oil top-up quantity (cm ³)
Refrigerant compressor	No top-up required
Condenser	20
Refrigerant tank	10
Evaporator	30
Refrigerant hose	10 per m hose

If the system drains suddenly (e.g. due to a burst hose), top up with 50 cm³ refrigerator oil.

If the refrigerant compressor is replaced, the air-conditioning system must be completely emptied. Subsequently, no refrigerator oil needs to be replenished, since the new refrigerant compressor is already filled with the quantity of oil for the entire air-conditioning system.

Exception: For TGX with auxiliary air-conditioning system and evaporator, 100 cm³ of refrigerator oil must be added.

LIST OF ABBREVIATIONS AND INDEX
ABBREVIATIONS

Abbreviation	Meaning of abbreviation	
AGN	Exhaust gas aftertreatment	—
EGR	Exhaust Gas Recirculation (EGR)	—
ATF	Automatic Transmission Fluid	Hydraulic oil for use in hydraulic gearboxes
CRT	Continuously Regenerating Trap	Diesel oxidising catalytic converter and diesel particulate filter
DIN	German institute for standards	—
DOC	Diesel Oxidation Catalytic Converter	Diesel oxidising catalytic converter
EEV	Enhanced Environmentally Friendly Vehicle	Emission standard for particularly environmentally friendly vehicles
EN	European standard	—
FAME	Fatty Acid Methyl Ester	Fuel made from plants
VIN	Vehicle Ident. Number	—
GTL	Gas To Liquid	synthetic fuel made from natural gas
HP	Planetary rear axle	—
HPD	Planetary rear axle	—
HVO	Hydrogenated Vegetable Oil	Hydrated vegetable oils
HY	Hypoid rear axle	—
HYD	Hypoid rear axle with drive shaft	—

Indexes

List of abbreviations and index

Abbreviation	Meaning of abbreviation	
ISO	International Organization for Standardization	International Organisation for Standardisation
NMV	Engine-dependent PTO installed upstream of the gearbox	—
OBD	On Board Diagnostics	—
PM-KAT	Particulate Matter Catalytic converter	Diesel particulate filter with catalytic converter
ppm	parts per million	Ratio 1/1,000,000
RME	Rapeseed oil	Biodiesel fuel made from rapeseed oil
S	Sulphur	Chemical symbol for sulphur
SAE	Society of Automotive Engineers	American organisation for the definition of industry standards
SCR	Selective Catalytic Reduction	Exhaust gas aftertreatment system with AdBlue
VP	Planetary front axle	—
VPD	Planetary front axle with drive shaft	—
VP 44	Distributor injection pump 44	—

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MAN Truck & Bus SE

Dachauer Straße 667

80995 München, Germany

Telephone +49 89 1580-0, www.mantruckandbus.com

Edition January 2022

MAN Truck & Bus is a member of the TRATON GROUP