



Car Powertrain Technology

Manual transmissions, double-clutch transmissions and automatic transmissions for cars

List of lubricants TE-ML 11

| Table of contents | Page |
|---|------|
| 1. Manual transmissions | 2 |
| 2. Double-clutch transmissions | 3 |
| 3. Automatic transmissions | 4 |
| 4. Explanation of footnotes and comments | 5 |
| 5. Maintenance recommendations ZF automatic transmissions | 5 |
| 6. Lubricant classes and approved trade products | 6 |

The list of lubricants TE-ML 11, **edition 01.01.2017** replaces all previous editions. The current list can be requested from any ZF after-sales service center or accessed on the Internet under www.zf.com/lubricants.

ZF Friedrichshafen AG
D-88038 Friedrichshafen
www.zf.com/contact

1. Manual transmissions

| Product groups | Approved lubricants for service fills |
|---|---|
| S5-31 S5-39 | According to spare part number of vehicle manufacturer: - BP Castrol BOT 338 => BMW Oil No. 2300 7533 513 => Castrol Syntrans B 75W |
| S6-37 | According to spare part number of vehicle manufacturer: - Esso Gear Oil 304 / BMW Oil No. 2300 1434 404 (clutch bell housing label MTF-LT1) no longer available => replaced by BP Castrol BOT 338 - BP Castrol BOT 338 => BMW Oil No. 2300 7533 513 (clutch bell housing label MTF-LT2) => Castrol Syntrans B 75W - BP Castrol BOT 207 => BMW Oil No. 2300 7533 818 (clutch bell housing label MTF-LT3) Warning: use of incorrect lubricant can cause transmission failure |
| S6-35 S6-45 | According to spare part number of vehicle manufacturer: - Pentosin FFL-3 => BMW Oil No. 8322 2167 666 (MTF-LT-5) => Daimler Oil No. A 002 989 04 03 (Getriebeöl ET) => JLR Oil No. GX73-M1R564-AA |
| S6-53 | According to spare part number of vehicle manufacturer: - Esso Gear Oil 304 / BMW Oil No. 2300 1434 404 (clutch bell housing label MTF-LT1) no longer available => replaced by BP Castrol BOT 338 - BP Castrol BOT 338 => BMW Oil No. 2300 7533 513 (clutch bell housing label MTF-LT2) => VW Oil No. N 05279800 => Castrol Syntrans B 75W - BP Castrol BOT 207 => BMW Oil No. 2300 7533 818 (clutch bell housing label MTF-LT3) Warning: use of incorrect lubricant can cause transmission failure |
| 6S530 | According to spare part number of vehicle manufacturer: - BP Castrol BOT 338 => Nissan Oil No. 32001 1BY0A => Castrol Syntrans B 75W |
| S7-45HL, S7-45HLA S7-47HL S7-55HL, S7-55HLA | According to spare part number of vehicle manufacturer: - ExxonMobil Mobilube PTX 75W-90 => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00 |

2. Double-clutch transmissions

| Product groups | Approved lubricants for service fills |
|---|---|
| 7DT45HL, 7DT45HLA, 7DT45FL 7DT46HL, 7DT46HLA, 7DT46FL 7DT47HL 7DT55HL, 7DT55HLA, 7DT55FL 7DT70HLA 7DT71HLA 7DT72HLA | According to spare part number of vehicle manufacturer: 1. Clutch section Pentosin FFL-3 => Porsche Oil No. 999.917.080.00 2. Transmission section ExxonMobil Mobilube PTX 75W-90 => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00 |
| 7DT71HL | According to spare part number of vehicle manufacturer: 1. Clutch section => Porsche Oil No. 999.917.080.01 2. Transmission section ExxonMobil Mobilube PTX 75W-90 => Porsche Oil No. 999.917.067.00 or => Porsche Oil No. 999.917.090.00 |
| 7DT75, 7DT75A 7DT76, 7DT76A | According to spare part number of vehicle manufacturer: Pentosin FFL-3 => Porsche Oil No. 999.917.080.00 |
| 8DT80, 8DT80A, 8DT80APH | According to spare part number of vehicle manufacturer: - Pentosin EG FFL-8 => Porsche Oil No. 971.094.307.02A (test number) |

3. Automatic transmissions

| Product groups | Approved lubricants for service fills |
|--|---|
| 3HP22, 3HP22Q, 4HP14Q, 4HP18FL ⁽¹⁾ , 4HP18FLA ⁽²⁾ , 4HP18FLE ⁽¹⁾ , 4HP18Q, 4HP18QE, 4HP22, 4HP22EH, 4HP22HL ⁽³⁾ , 4HP24, 4HP24A ⁽²⁾ | Automatic Transmission Fluid (ATF) according to lubricant classes 11A / 11B => Refer to the following pages for approved commercial products or Automatic Transmission Fluid (ATF) based on mineral base fluids according to former Dexron-II / Dexron-III specification by General Motors. => without listing |
| 5HP18 | According to marking: - Transmissions with black type plate Automatic Transmission Fluid (ATF) according to lubricant class 11B => Refer to the following pages for approved commercial products - Transmissions with green type plate or with green label on the oil pan. ZF-LIFEGUARDFLUID 5 (ZF No. S671 090 170) => BMW Oil No. 8322 9407807 ATF according to lubricant class 11B are not permitted (exception: ZF-LIFEGUARDFLUID 5) Warning: use of incorrect lubricant can cause transmission failure |
| 5HP30 | According to spare part number of vehicle manufacturer: - Shell ATF LA-2634 / BMW Oil No. 8322 9407765 (Marking of filling port of oil pan) no longer available => replaced by ZF-LIFEGUARDFLUID 5 - ZF-LIFEGUARDFLUID 5 (ZF No. S671 090 170) => BMW Oil No. 8322 9407807 (Marking of filling port of oil pan) => Rolls Royce Oil No. PL 31493PA |
| 4HP20, 5HP19, 5HP19FL ⁽¹⁾ , 5HP19FLA ⁽²⁾ , 5HP19HL ⁽¹⁾ , 5HP19HLA ⁽²⁾ , 5HP24, 5HP24A ⁽²⁾ | According to spare part number of vehicle manufacturer: ZF-LIFEGUARDFLUID 5 (ZF No. S671 090 170) => Audi / VW Oil No. G 052162 A1 / A2 / A6 => BMW Oil No. 8322 9407807 => Citroen Oil No. Z 000169756 => Jaguar Oil No. JLM 20238 => Mercedes Benz Oil No. A 0019892203 => Peugeot Oil No. Z 000169756 => Porsche Oil No. 999.917.547.00 |
| 6HP19, 6HP19A ⁽²⁾ - MPL-dependent (main parts list) 6HP19X - not for Audi Q7, 6HP21, 6HP21X, 6HP26, 6HP26X, 6HP26A61 - not for vehicles equipped with Audi W12-engine ⁽²⁾ , 6HP28, 6HP28X, 6HP28A61, 6HP32, 6HP32A ⁽²⁾ , 6HP32X | According to spare part number of vehicle manufacturer: ZF-LIFEGUARDFLUID 6 (ZF No. S671 090 255) => AML Oil No. 4G4319A509/AA/S => Audi / VW Oil No. G 055005 A1 / A2 / A6 => Bentley Oil No. PY112995PA => BMW Oil No. 8322 0142516 => Hyundai Oil No. 040000C90SG => Jaguar Oil No. Jaguar Fluid 8432 => Land Rover Oil No. TYK500050 => Maserati Oil No. 231603 |
| 6HP19A ⁽²⁾ - HSL abhängig (Hauptstückliste) 6HP19X - für Audi Q7, 6HP26A61 - für Fahrzeuge mit Audi W12-Motor ⁽²⁾ 6HP28AF ⁽²⁾ 8HP45, 8HP45X, 8HP45HIS, 8HP45XHIS 8HP50, 8HP50HIS, 8HP50X, 8HP50XHIS; 8HP55A ⁽²⁾ , 8HP55AHIS ⁽²⁾ , 8HP55FL, 8HP55FLHIS, 8P55AH ⁽²⁾ , 8P55FLH, 8HP65A ⁽²⁾ , 8HP70, 8HP70HIS, 8HP70XHIS, 8HP70L, 8HP70X, 8HP75, 8HP75X, 8HP75XHIS, 8HP90, 8HP90A ⁽²⁾ , 8HP90X, 8HP90AHIS ⁽²⁾ , 8HP90A74 ⁽²⁾ | According to spare part number of vehicle manufacturer: ZF-LIFEGUARDFLUID 8 (ZF No. S671 090 312) => Audi / VW Oil No. G 060162 A1 / A2 / A6 ATF => BMW ATF 3+, Oil No. 83 22 2 289 720 => Jaguar Oil No. 02JDE 26444 => Land Rover Oil No. LR023288 => Chrysler Oil No. 68157995AA => Petronas Tutela Transmission AS8 |
| 8HP65APH, 8P75PH, 8P75XPH, 9HP48QXR, 9HP48QXO, 9HP48QX, 9HP48Q | According to spare part number of vehicle manufacturer: ZF LIFEGUARDFLUID 9 (ZF No. AA01.500.001) => BMW ATF 3+, Oil No. 83 22 2 289 720 => Honda ATF-Type 3.1.: 08263-999-01HE (EU), 08200-9017 (USA) |

4. Explanation of footnotes and comments

Footnotes

- (1) Filling differential with transmission oil Castrol SAF-AG4 => Audi / VW Oil No. N 052145000, Porsche Oil No. 999.917.545.00)
- (2) Split oil supply front / rear axle differential:
 - Filling front axle differential with transmission oil Castrol SAF-AG4
=> Audi / VW Oil No. N 052145000, Porsche Oil No. 999.917.545.00)
 - Filling rear axle differential with transmission oil Castrol SAF-AG4 + 4% Sturaco FM 1992 KS
=> Audi / VW Oil No. G 055145 A2)
 Common oil supply front /rear axle differential:
 - Filling with transmission oil Castrol SAF-AG4 + 4% Sturaco FM 1992 KS
=> Audi / VW Oil No. G 055145 A2
- (3) Filling differential with transmission oil API GL-5, MIL-L-2105D, MIL-PRF-2105E, SAE J 3260, viscosity class SAE 75W-90 or SAE 90.

Comments

Additives of any kind added **later** to the oil change the oil in a manner that is unpredictable, and they are therefore not permitted. No liability of any kind will be accepted by ZF for any damage resulting from the use of such additives.

5. Maintenance recommendations ZF automatic transmissions

3/4-speed automatic transmissions:

ZF 3 and 4-speed automatic transmissions must be filled with approved ATF oils according to ZF list of lubricants TE-ML 11, lubricant class 11A / 11B or with mineral ATF oils according to the former Specification Dexron II / Dexron III by General Motors. For oil-change intervals consult the vehicle manufacturer's specifications.

5-, 6-, 8- and 9-speed as well as 4HP20 automatic transmissions:

ZF 5-, 6-, 8- and 9-speed as well as the ZF 4HP20 automatic transmissions are filled maintenance-free with specially developed partially synthetic ATF oils. Maintenance-free fills are intended for normal operating conditions. Especially driving at very high operating temperatures can result in accelerated aging or increased wear of ATF oils. It is recommended, in the event of severe operating conditions, such as:

- frequent highway driving in top speed range,
- offensive, sporty driving style,
- frequent trailer operation,

being above average, oil purification (oil change) on automatic transmissions is recommended between 80,000 km and 120,000 km, or 8 years, depending on the load.

In each case, only released ATF oil may be used for oil changes. And oil changes must be performed in accordance with the relevant specifications.

The exception is the ZF 5HP18 automatic transmission which must be filled differently depending on the version.

The released ATF oils in each case are specified in the ZF Lubricants List TE-ML 11.

6. Lubricant classes and approved trade products

Lubricant class 11A

Automatic Transmission Fluid (ATF)

| Manufacturer (11A) | Trade name (11A) | ZF approval number |
|---|-------------------------------------|--------------------|
| ALEXANDRIA MINERAL OILS COMPANY, ALEXANDRIA/EG | AMOC POWER | ZF001702 |
| AMALIE PETROQUIMICA, MADRID/ES | ATF DEXRON II | ZF001128 |
| ARAL AG, BOCHUM/DE | ARAL GETRIEBEÖL ATF 22 | ZF000147 |
| BP PLC., LONDON/GB | BP AUTRAN MBX | ZF000196 |
| BUCHER AG LANGENTHAL, LANGENTHAL/CH | ATF SUPER | ZF000593 |
| CASTROL LTD, LONDON/GB | CASTROL ATF DEX II MULTIVEHICLE | ZF000223 |
| CHEVRON LUBRICANTS, SAN RAMON, CA/US | TEXAMATIC B | ZF001202 |
| CHEVRON LUBRICANTS, SAN RAMON, CA/US | TEXAMATIC 4291 | ZF001574 |
| ENI S.P.A., ROME/IT | AGIP ATF II D | ZF000925 |
| EXXONMOBIL CORPORATION, HOUSTON, TX/US | MOBIL ATF 220 | ZF000033 |
| FABRIKA MAZIVA FAM AD, KRUSĚVAC/RS | ATF DII | ZF001187 |
| INA MAZIVA LTD., ZAGREB/HR | INA ATF SUPER | ZF000248 |
| KOCAK PETROL URUNLERI SAN.VE TIC.LTD.STI, KOCAELI/TR | SPEEDOL ATF DEXRON II | ZF000979 |
| MEGUIN GMBH & CO. KG, SAARLOUIS/DE | MEGOL HYDRAULIKOEL ATF DEXRON II D | ZF001992 |
| MOTUL SA, AUBERVILLIERS/FR | MOTUL DEXRON II D | ZF001104 |
| OOO "LLK-INTERNATIONAL", MOSCOW/RU | LUKOIL ATF IID | ZF001759 |
| ORLEN OIL SP. Z O.O., KRAKOW/PL | HIPOL ATF II D | ZF000081 |
| PETRONAS LUBRICANTS INTERNATIONAL SDN BH, KUALA LUMPUR/MY | TUTELA TRANSMISSION STARFLUID HD-ED | ZF000992 |
| PRISTA OIL HOLDING EAD, RUSE/BG | PRISTA ATF | ZF000355 |
| SHELL INTERNATIONAL PETROLEUM COMP. LTD, LONDON/GB | SHELL SPIRAX S2 ATF AX | ZF000374 |
| UNIL OPAL, SAUMUR/FR | MATIC D | ZF001071 |

Lubricant class 11B**Automatic Transmission Fluid (ATF)****Manufacturer (11B)**

AMALIE PETROQUIMICA, MADRID/ES
 ARAL AG, BOCHUM/DE
 BP PLC., LONDON/GB
 CASTROL LTD, LONDON/GB
 CASTROL LTD, LONDON/GB
 ENI S.P.A., ROME/IT
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 EXXONMOBIL CORPORATION, HOUSTON, TX/US
 FUCHS PETROLUB SE, MANNHEIM/DE
 KUWAIT PETROLEUM INTERNATIONAL LUBRICANT, ANTWERP/NL
 TOTAL LUBRIFIANTS S.A., NANTERRE/FR
 YACCO SAS, ST PIERRE LES ELBEUF/FR
 ZF FRIEDRICHSHAFEN AG, FRIEDRICHSHAFEN/DE

Trade name (11B)

ATF DEXRON III
 ARAL GETRIEBEÖL ATF LD
 BP AUTRAN LTF
 CASTROL TRANSMAX Z
 CASTROL TRANSMAX ATF Z
 AGIP DEXRON III
 MOBIL ATF D 21065
 MOBIL ATF LT 71141
 PENTOSIN ATF 1
 Q8 AUTO 15
 TOTAL FLUIDE AT 42
 ATF III
 ZF-LIFEGUARDFLUID 5

ZF approval number

ZF001121
 ZF000144
 ZF000195
 ZF000221
 ZF002158
 ZF000927
 ZF000038
 ZF000044
 ZF000734
 ZF000082
 ZF001581
 ZF001610
 ZF001363