

This manual provides detailed descriptions of maintenance jobs, testing and adjustment data, filling capacities, torque specifications, and special tools.

Each individual maintenance job is identified by a job number located at right or left heading of each page. The job numbers in the Maintenance Manual are identical with those on the Maintenance System Sheets and the Maintenance Booklets, so that the respective texts and data can be quickly located when performing maintenance work.

The first two digits of the 4-digit job number are the group numbers as used in the workshop literature. In this manner, each maintenance job is associated with the appropriate group.

The models and/or engines to which the jobs apply are listed below the job numbers.

Particularly extensive job numbers are subdivided according to models or engines.

Mercedes Benz of North America  
Service and Parts Literature

March 1993

# Preface

This Maintenance Manual applies to vehicles starting model year 1981 and covers all maintenance jobs for the following models:

Sales Designation	Model	Engine	1981	1982/83	1984/85	1986	1987	1988	1989	1990	1991	1992	1993
<b>107</b>													
380 SL	107.045	116.960	●										
380 SL	107.045	116.962		●	●								
380SLC	107.025	116.960	●										
560 SL	107.048	117.967				●	●	●	●				
<b>123</b>													
240 D	123.123	616.912	●	●									
300 D	123.130	617.912	●										
300 D Turbo	123.133	617.952		●	●								
300 CD	123.150	617.912	●										
300 CD Turbo	123.153	617.952		●	●								
300 TD Turbo	123.193	617.952	●	●	●								
280 E	123.033	110.984	●										
280 CE	123.053	110.984	●										
<b>124</b>													
300 D 2.5 Turbo	124.128	602.962								●	●	●	●
300 D Turbo	124.133	603.960				●	●						
300 TD Turbo	124.193	603.960				●	●						
260 E	124.026	103.940					●	●	●				
300 E 2.6	124.026	103.940								●	●	●	
300 E 2.8	124.028	104.942											●
300 E	124.030	103.980				●	●	●	●	●	●	●	
300 E	124.032	104.992											●
300 E 4MATIC	124.230	103.980								●	●	●	●

Sales Designation	Model	Engine	1981	1982/83	1984/85	1986	1987	1988	1989	1990	1991	1992	1993
<b>124</b>													
<b>continued</b>													
300 CE	124.050	103.980						●	●				
300 CE	124.051	104.980								●	●	●	
300 CE	124.052	104.992											●
300 CE Cabriolet	124.066	104.992											●
300 TE	124.090	103.983						●	●	●	●	●	
300 TE	124.092	104.992											●
300 TE 4MATIC	124.290	103.983								●	●	●	●
400 E	124.034	119.975										●	●
500 E	124.036	119.974										●	●
<b>126</b>													
300 SD Turbo	126.120	617.951	●	●	●								
300 SDL Turbo	126.125	603.961				●	●						
350 SD Turbo	126.134	603.970									●		
350 SDL Turbo	126.135	603.970								●	●		
300 SE	126.024	103.981						●	●	●	●		
300 SEL	126.025	103.981						●	●	●	●		
380 SE	126.032	116.963			●								
380 SEL	126.033	116.961	●	●									
380 SEC	126.043	116.963		●									
420 SEL	126.035	116.965				●	●	●	●	●	●		
500 SEL	126.037	117.963			●								
500 SEC	126.044	117.963			●								
560 SEL	126.039	117.968				●	●	●	●	●	●		
560 SEC	126.045	117.968				●	●	●	●	●	●		

# Preface

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Sales Designation	Model	Engine	1981	1982/83	1984/85	1986	1987	1988	1989	1990	1991	1992	1993
<b>129</b>													
300 SL	129.061	104.981								●	●	●	●
500 SL	129.066	119.960								●	●	●	
500 SL	129.067	119.972											●
600 SL	129.076	119.960											●
<b>140</b>													
300 SD	140.134	603.971										●	●
300 SE	104.032	104.990										●	●
400 SE	140.042	119.971										●	
400 SEL	140.043	119.971											●
500 SEL	140.051	119.970										●	●
600 SEL	140.057	120.980										●	●
500 SEC	140.070	119.970											●
600 SEC	140.076	120.980											●
<b>201</b>													
190 D 2.2	201.122	601.921			●								
190 D 2.5	201.126	602.911				●	●	●	●				
190 D 2.5 Turbo	201.128	602.961					●						
190 E 2.3	201.024	102.961/ 985			●	●							
190 E 2.3	201.028	102.985					●	●			●	●	●
190 E 2.6	201.029	103.942					●	●	●	●	●	●	●
190 E 2.3-16	201.034	102.983				●	●						

We want you to enjoy your MERCEDES-BENZ car for a long time to come. Vehicle safety and operational reliability are two very important factors, and in order to maintain them, a certain amount of maintenance and service work is necessary.

The MERCEDES-BENZ maintenance system includes all the necessary maintenance work which should be carried out at regular intervals if the vehicle is used under normal operating conditions.

## Routine Maintenance

- Inspection service  
Up through model year 1991,  
once at 800-1000 miles/1300-1600 km  
As of model year 1992,  
once at 800-3000 miles/1300-5000 km
- Lubrication service  
All Diesel models except 140.134  
every 5,000 miles/8,000 km  
All Gasoline models and model 140.134  
every 7,500 miles/12,000 km
- Maintenance service  
every 15,000 miles/24,000 km
- Additional work  
every 30,000 miles/48,000 km

In the case of **low mileage operation** (vehicle is driven infrequently), the maintenance service must be carried out at least once every 2 years.

## Engine oil and filter change

Required at specified mileage interval, or at least once a year when using year-round multigrade oil; otherwise twice a year (spring and fall). A detailed list of maintenance jobs is contained in the maintenance booklet following the maintenance vouchers.

Vehicle and engine models are indicated on the vehicle data card.

## Severe operating conditions

### Starting model year 1992

As a result of technical product enhancements, improved engine management systems, upgraded fuels and lubrication products, true cases of severe operating conditions will rarely exist in non-commercial passenger car applications. For a vehicle to qualify for severe operating conditions the following criteria must be met:

1. More than 50% short distance driving (less than 5 miles per trip) combined with engine operating at a temperature of less than 80°C (176°F), especially at low outside temperatures.
2. More than 50% operation in lower gears combined with high engine load (mountain driving, poor roads, etc.)

If these requirements are met, it is recommended that an additional oil change (without oil filter change) be performed between the scheduled engine oil change intervals, i. e. engine oil change every 2,500 miles or every 3,750 miles, depending upon model (*Vehicles occasionally exposed to severe operating conditions do not require an additional oil change.*)

### Model year 1981 through 1991

In case of **severe operating conditions** or heavy use mainly in city traffic or over short distances, frequent mountain driving, poor roads, dusty and muddy conditions, trailer towing, hard driving, etc., it may be necessary to carry out maintenance work at shorter intervals, i. e.:

Oil and filter change: half the normally recommended interval.

Automatic transmission: Fluid change (without filter change) every 15,000 miles/24,000 km

Inspect tires.

Air cleaner, clean or replace element.

# Maintenance System

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## Non-scheduled MB Maintenance Service

Every 15,000 miles/24,000 km, the maintenance service consists of 3 parts:

- General and Lubrication Service
- Engine Maintenance
- Safety Inspection

These parts can be performed individually on request, if particular driving conditions so require, or on a precautionary basis before leaving on a long trip, etc.

## Special Maintenance Measures

**Brake fluid** should be replaced annually, preferably in the spring, on all models except models 129 and 140 which should have a brake fluid change every 2 years.

**Engine coolant** should be checked for sufficient protection before the start of and during the cold season. Have the coolant (water/antifreeze mixture) replaced no later than after 3 years.

**It is necessary to have all regularly scheduled maintenance work performed to maintain your vehicle in good operating condition and to keep your warranty valid. While it is not required that such work be performed by factory-authorized dealers, it is strongly recommended to have an authorized MERCEDES-BENZ dealer do such work because he is equipped with tools, instruments, literature, and trained personnel necessary for correct and systematic completion of these jobs.**

## Spare parts

It is recommended that only MERCEDES-BENZ parts be used for service and repairs, since they have been made according to the manufacturer's specifications. It is also important to use only fuels and lubricants that meet factory specifications. See a MERCEDES-BENZ dealer for more information.

## Routine Checks

In addition to the lubrication and maintenance services, it is recommended that the following items be checked regularly and prior to any long trip:

**Engine oil level** - during the break-in period not later than after 300 miles/500 km.

**Automatic transmission fluid level**

**Brake (and clutch) fluid level**

If brake fluid needs to be added, see a MERCEDES-BENZ dealer to determine the cause, i.e. leaks or worn brake pads.

**Battery** - add distilled water only.

**Windshield washer system** - add water mixed with MERCEDES-BENZ windshield detergent, check operation and wiper blades.

**Tire pressure** - check at least every other week.

## Lubrication

Lubricate engine throttle control linkage rods and shafts and check for free movement and for wear every Lubrication Service, at least twice a year, and also after the use of engine cleaning solvent.

Use only Automatic Transmission Fluid. Refer to MBNA Factory Approved Service Products list for listing of approved ATF's.

## Maintenance Vouchers

The MERCEDES-BENZ dealer will certify in the maintenance booklet that all lubrication and maintenance services have been carried out at the correct intervals.

**Stickers** that indicate when the next lubrication service or maintenance service is necessary, or when the brake fluid must be changed, are provided in the middle of the maintenance booklet.

Sticker attachment locations:

In driver's door frame:

- Lubrication service and maintenance service

In the engine compartment:

- Brake fluid change



Lubrication service



Maintenance service

On maintenance booklet with window:

If required, enter next date for next scheduled service or brake fluid replacement.

Maintenance work does not include repair jobs.

For information concerning warranty, see Warranty Policy Booklet.

Model 107 up to 07.1985  
123  
126 up to 08.1985  
201 up to 12.1984

- Inspect all components - engine, transmission, shock absorbers, steering, power steering pump, rear axle, checking condition and for leakage. Remove lower engine compartment cover (6190) or noise encapsulation panel (9490).

**Note:**

Install the lower engine compartment cover or noise encapsulation panel only after all the other maintenance jobs have been completed.



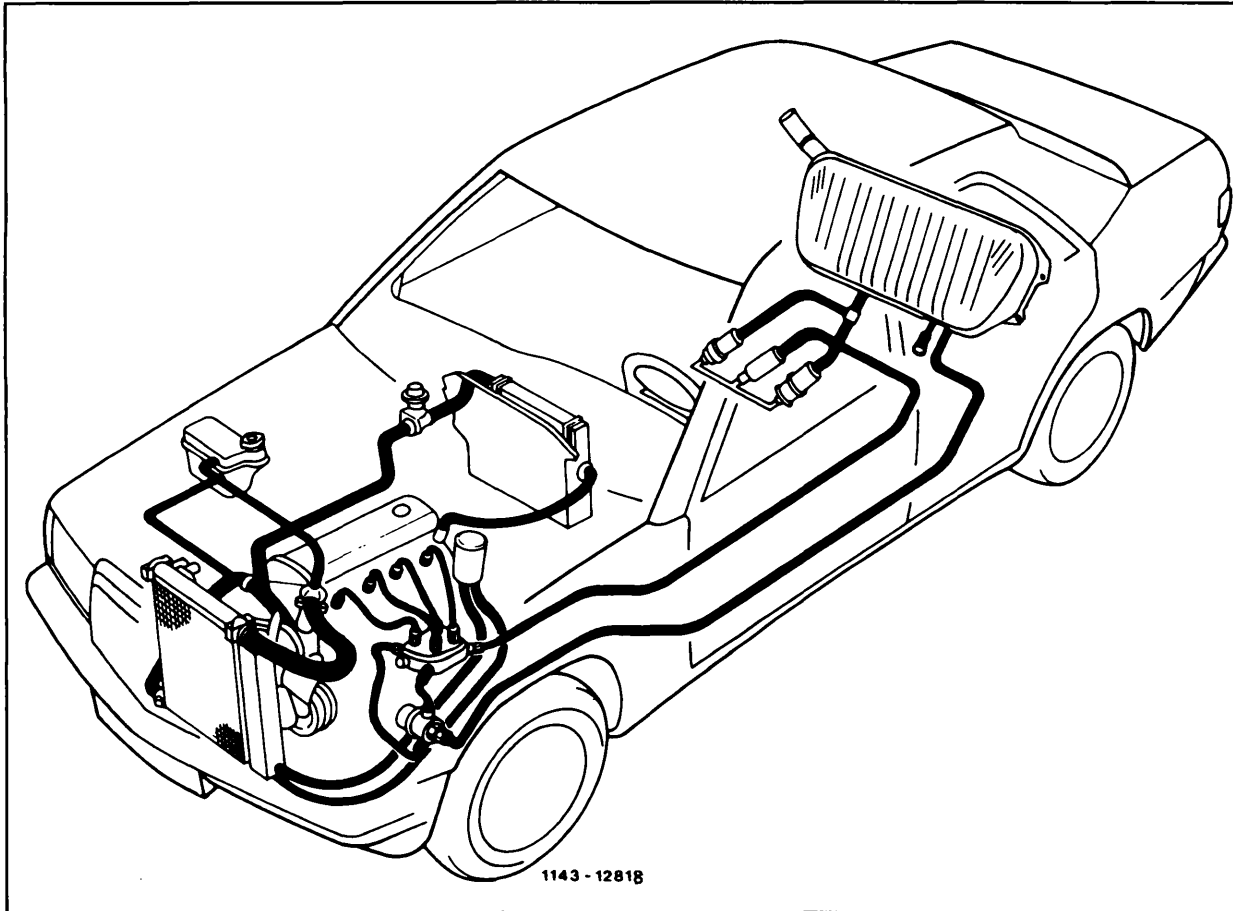
**Model 107 through 07.1985**  
**123**  
**126 through 08.1985**  
**201 through 12.1984**

- Inspect lines and hoses on engine, automatic transmission, and power steering pump checking condition and for leakage.

**Model 107 starting 08.1985**  
124  
**126 starting 09.1985**  
129  
**201 starting 01.1985**  
140

**Note:** To perform this job number, the engine compartment lower panels or the lower noise encapsulation panels must be removed and then reinstalled after completion of all maintenance work (see jobs 6190 or 9490, respectively)

Inspect engine and fuel system, including lines and hoses, for leaks. Check for chafe marks and proper routing.



### Engine

Crankcase  
Coolant pump and housing  
Oil pan  
Air-oil cooler with hoses

Crankcase seal, front  
Timing housing cover  
Coolant and heating hoses

Cylinder head cover  
Radiator  
Oil filter

### Fuel system

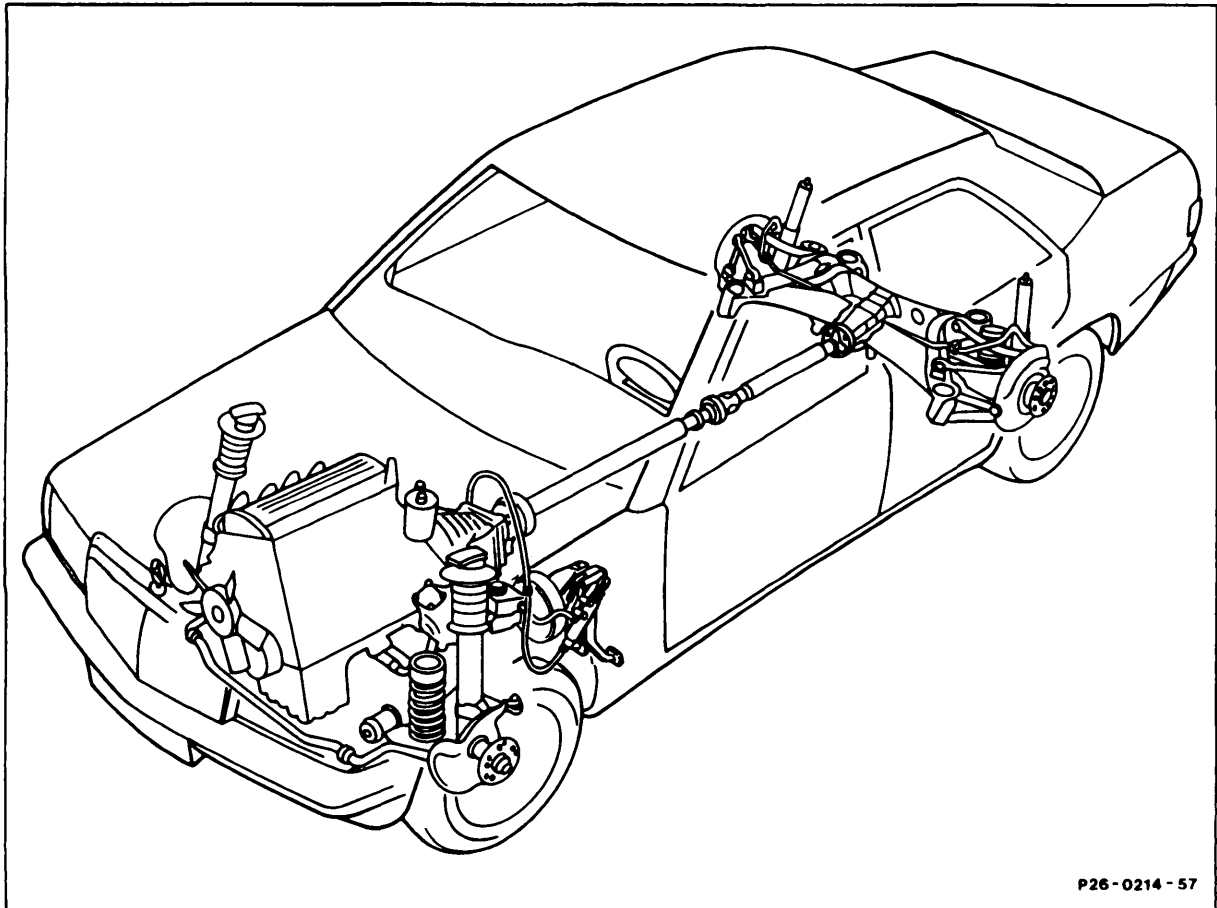
Fuel tank  
Injection pump  
Fuel pump

Fuel filters  
Prefilter  
Fuel cooler starting 1986

Fuel pump assembly  
Injection system  
Fuel preheating

Check condition of manual transmission, hydraulic clutch system, damper struts, shock absorbers, and rear axle.

If traces of oil are found on lower engine compartment panels, determine source.



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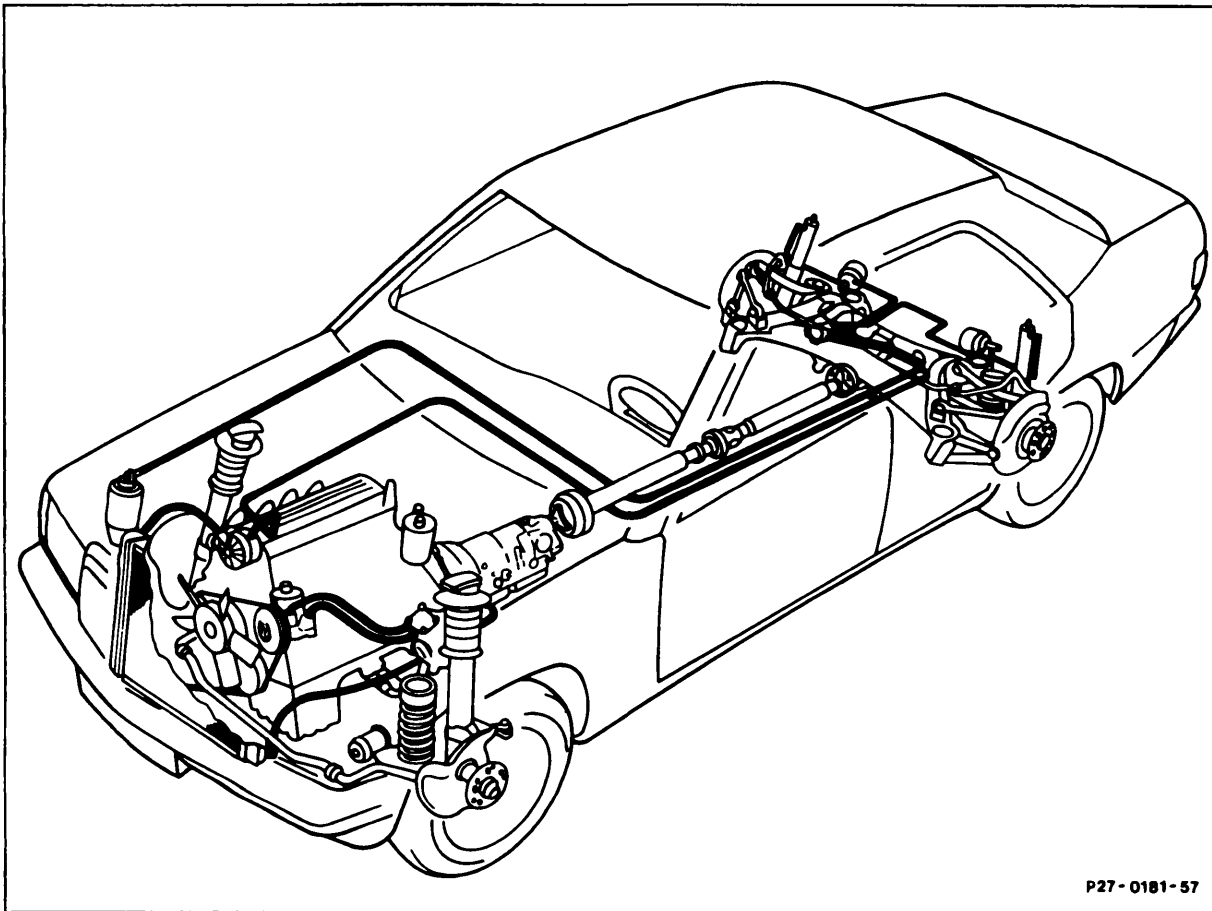
## Manual transmission, clutch hydraulic system, and rear axle

- Sealing rings
- Fill and drain plugs
- Housing cover
- Clutch line and hose

## Damper struts or shock absorbers

- Leaks
- Mounting

Check condition of automatic transmission, level control and power steering, including lines and hoses. Check for chafe marks and proper routing.



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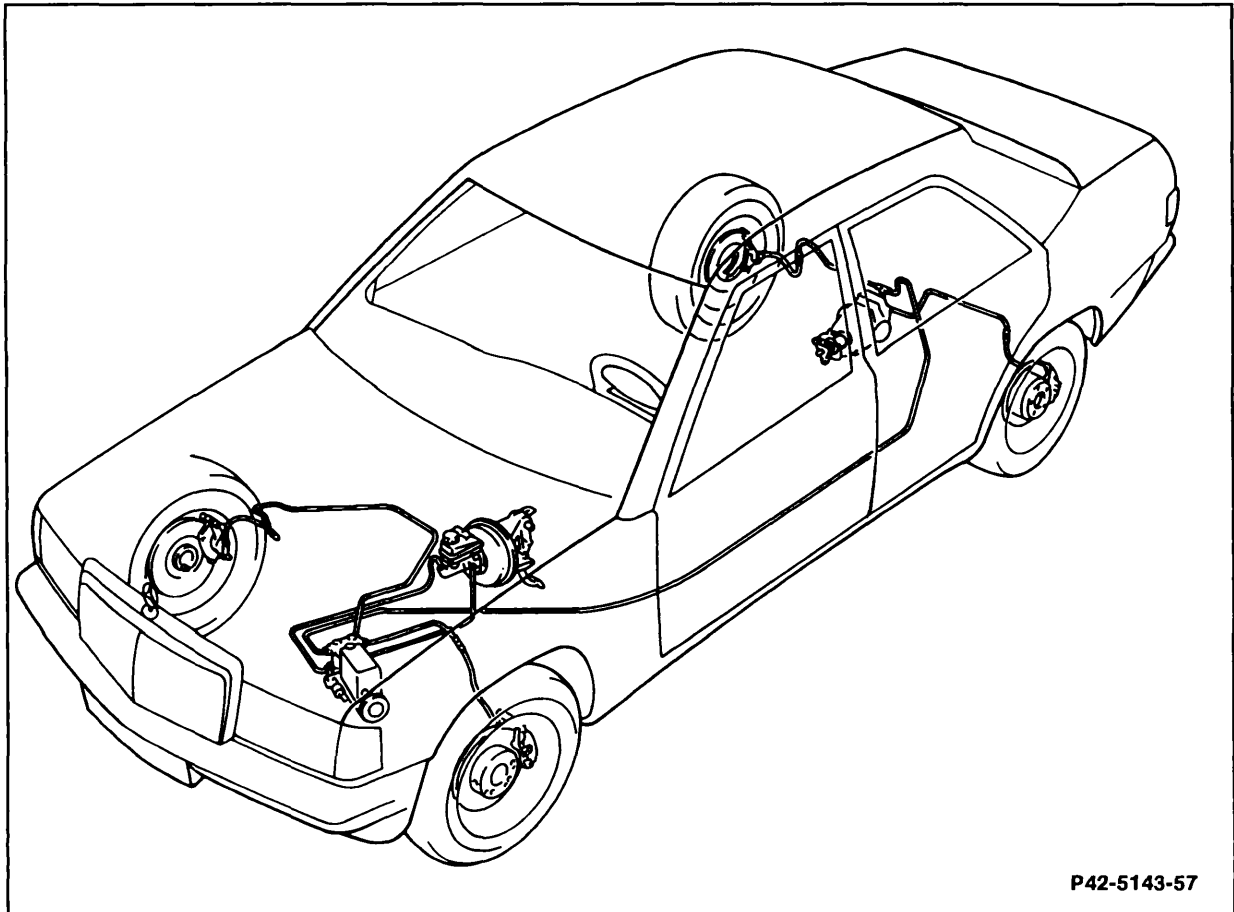
#### Automatic transmission, power steering

Torque converter  
 Sealing rings and gasket  
 Housing plugs  
 Line connections  
 Hoses  
 Oil pan

#### Level control/ADS

Suspension struts  
 Line connections  
 Hoses  
 Leveling valves  
 Hydraulic oil reservoir  
 Hydraulic oil pump  
 Suspension pressure reservoirs  
 Distribution valve  
 Control valve  
 Damping valve units

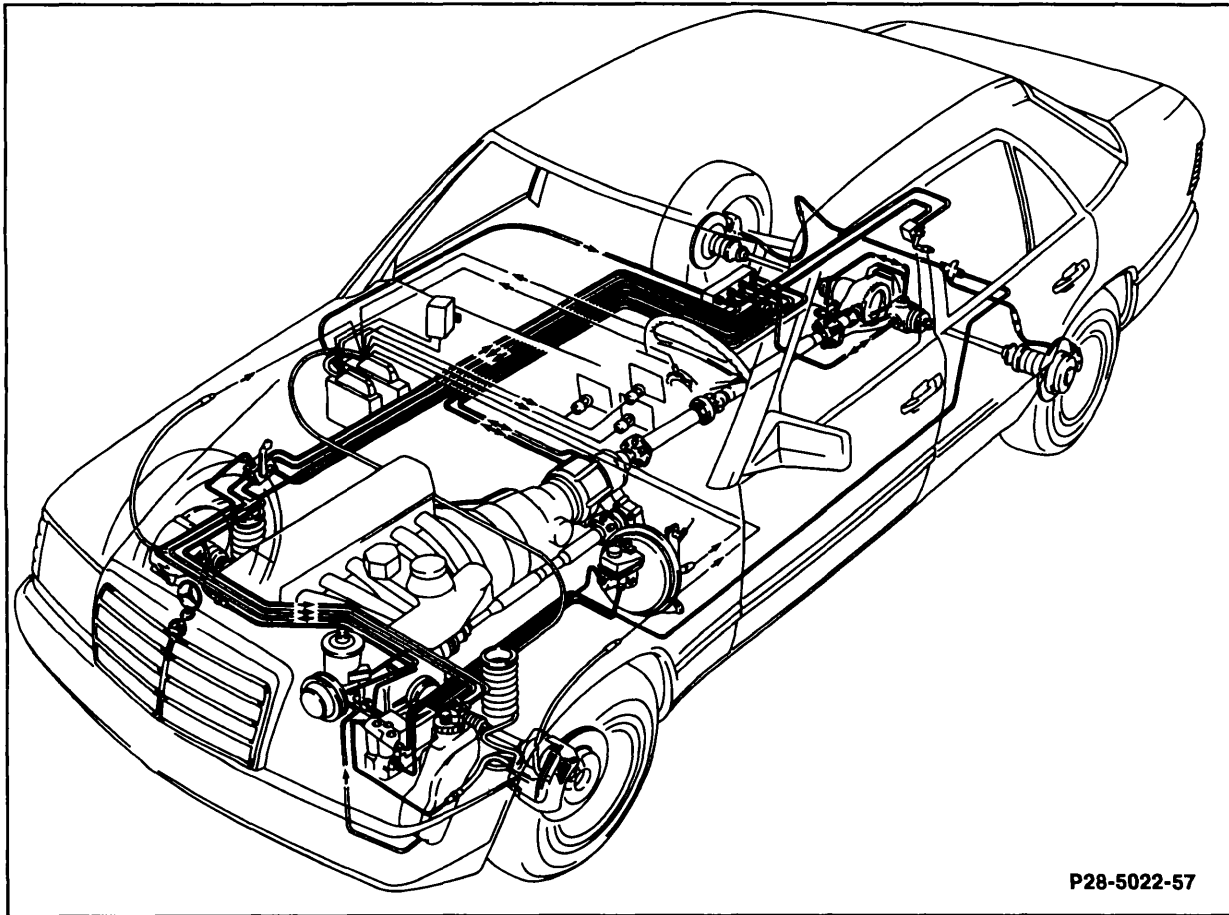
Check condition of brake system including lines and hose . Check for chafe marks and proper routing.



## Brake system

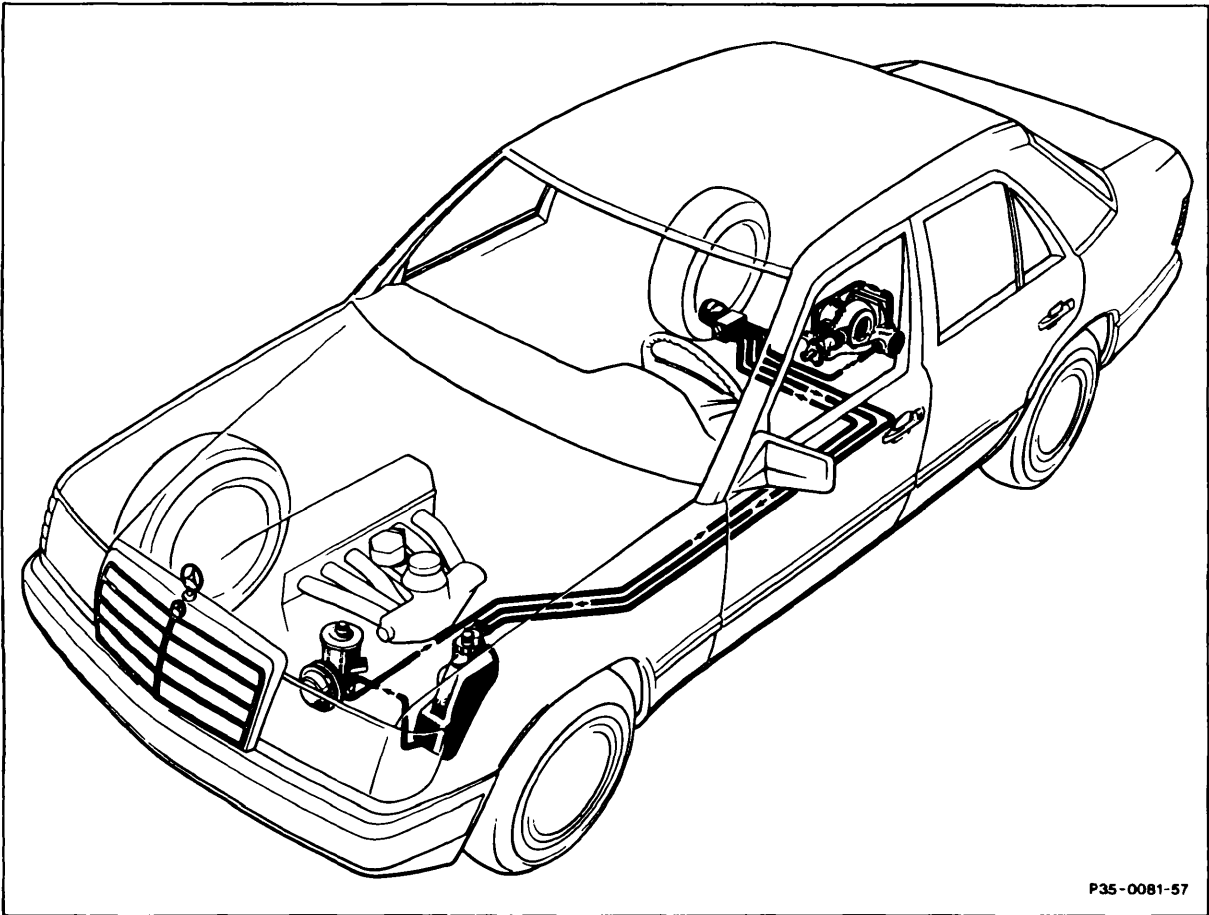
- Lines
- Hoses
- Master cylinder
- Fluid reservoir
- Brake calipers
- ABS hydraulic unit

Check condition of all lines and hoses. Check for chafe marks and proper routing.



Vehicles with 4MATIC

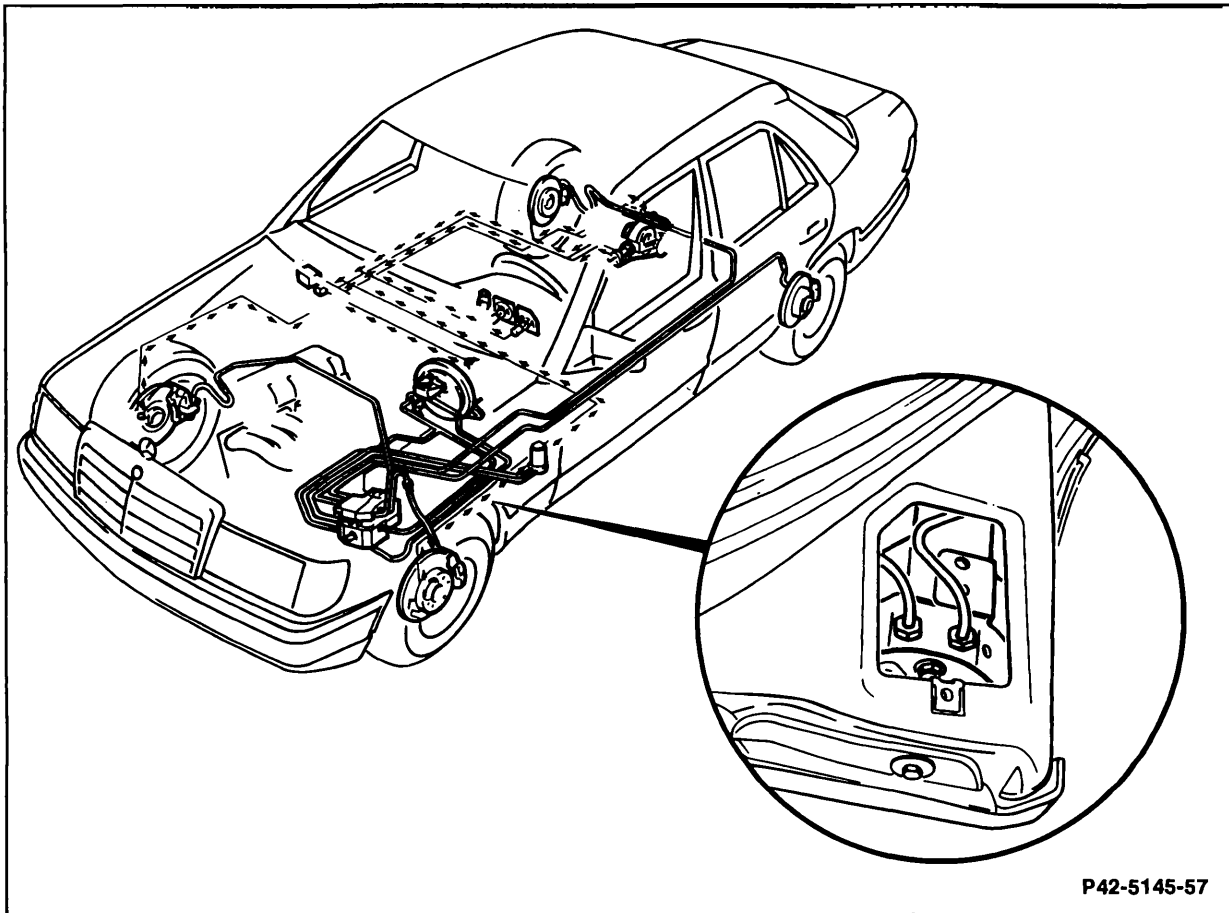
Check condition of all lines and hoses. Check for chafe marks and proper routing.



Vehicles with ASD



Check condition of all lines and hoses. Check for chafe marks and proper routing.



**Vehicles with ASRII**

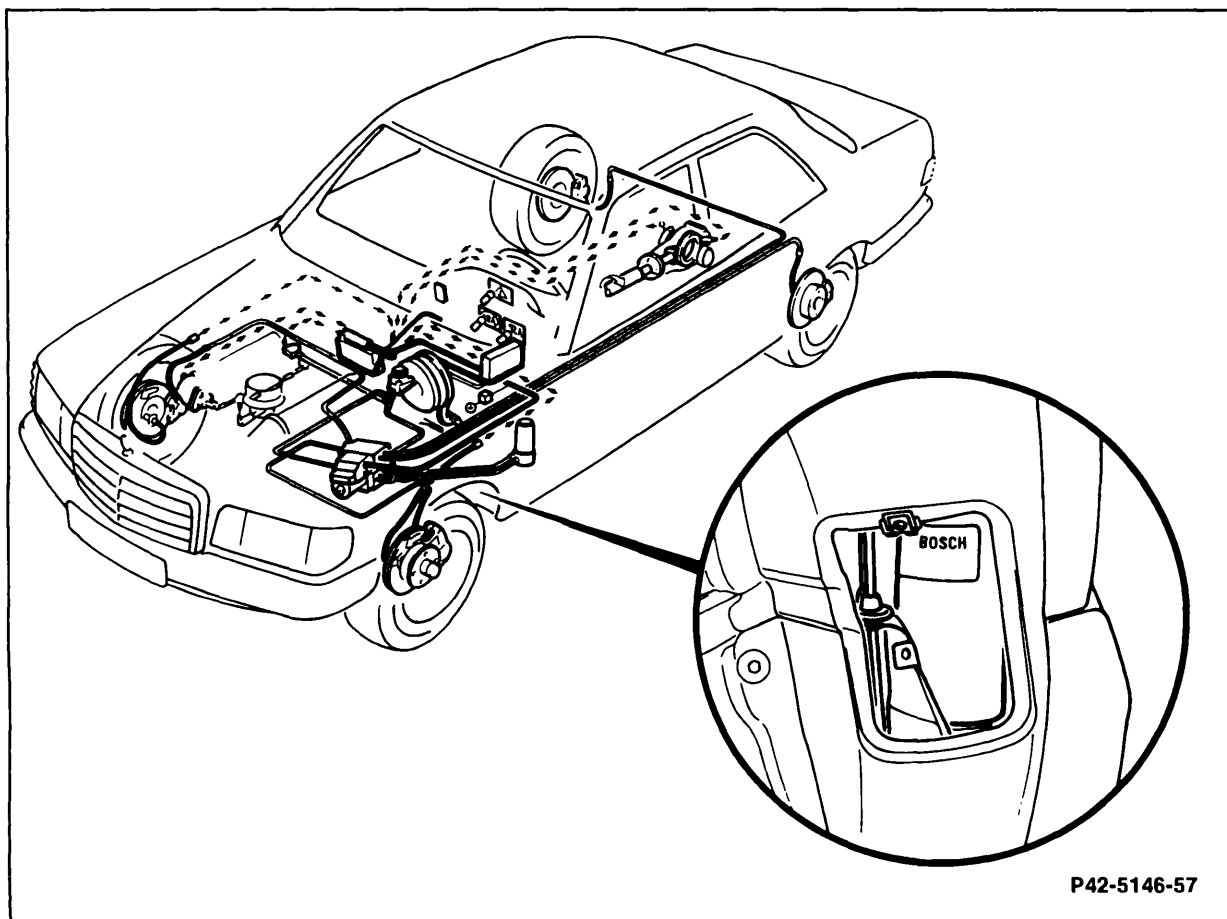
**Models 124, 201**

**Vehicles with ASRIII**

**Models 124.034/036**

- Inspect lines and charging pump. Inspect pressure reservoir through opening in plastic cover under left front fender.

Check condition of all lines and hoses. Check for chafe marks and proper routing.

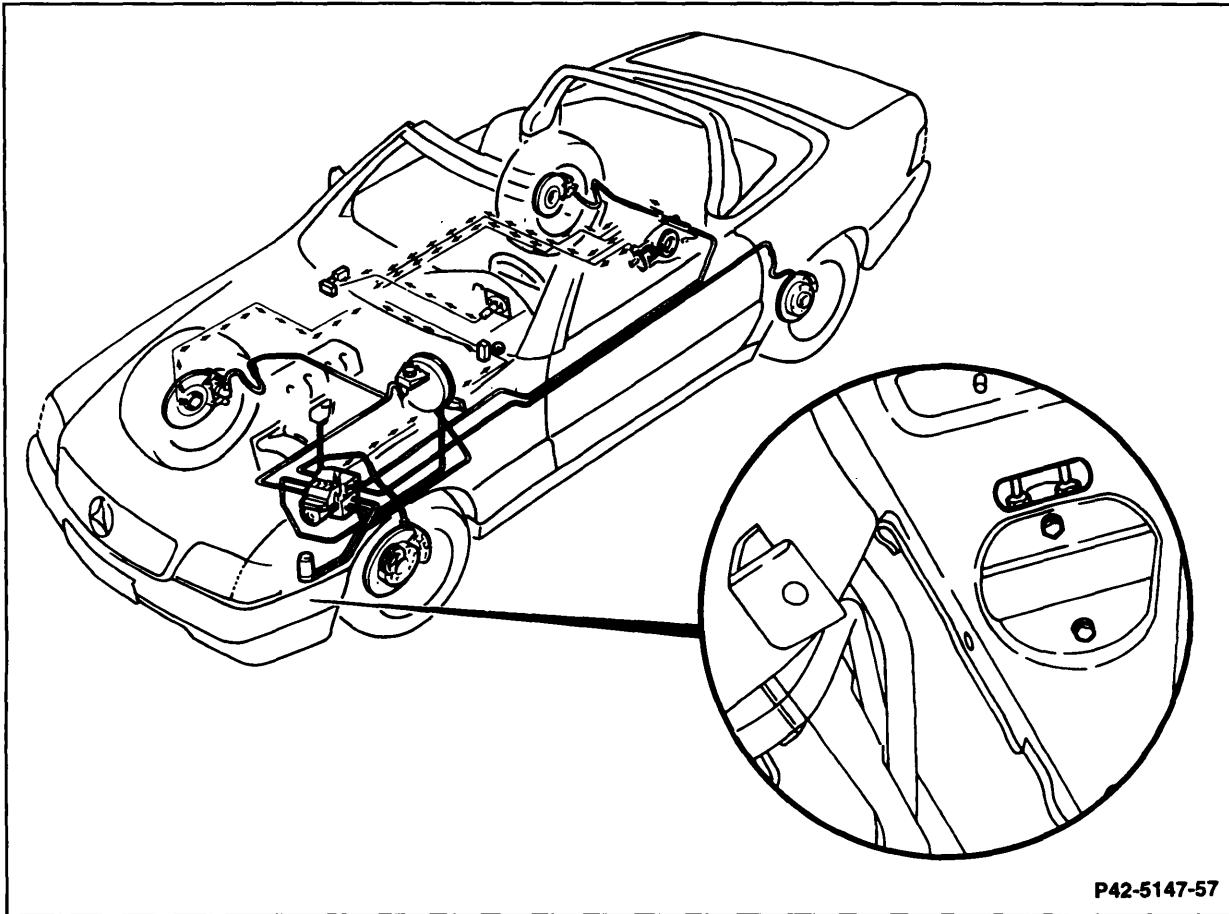


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## Vehicles with ASRII Model 126

- Inspect lines and charging pump. Inspect pressure reservoir through opening in plastic cover under left front fender.

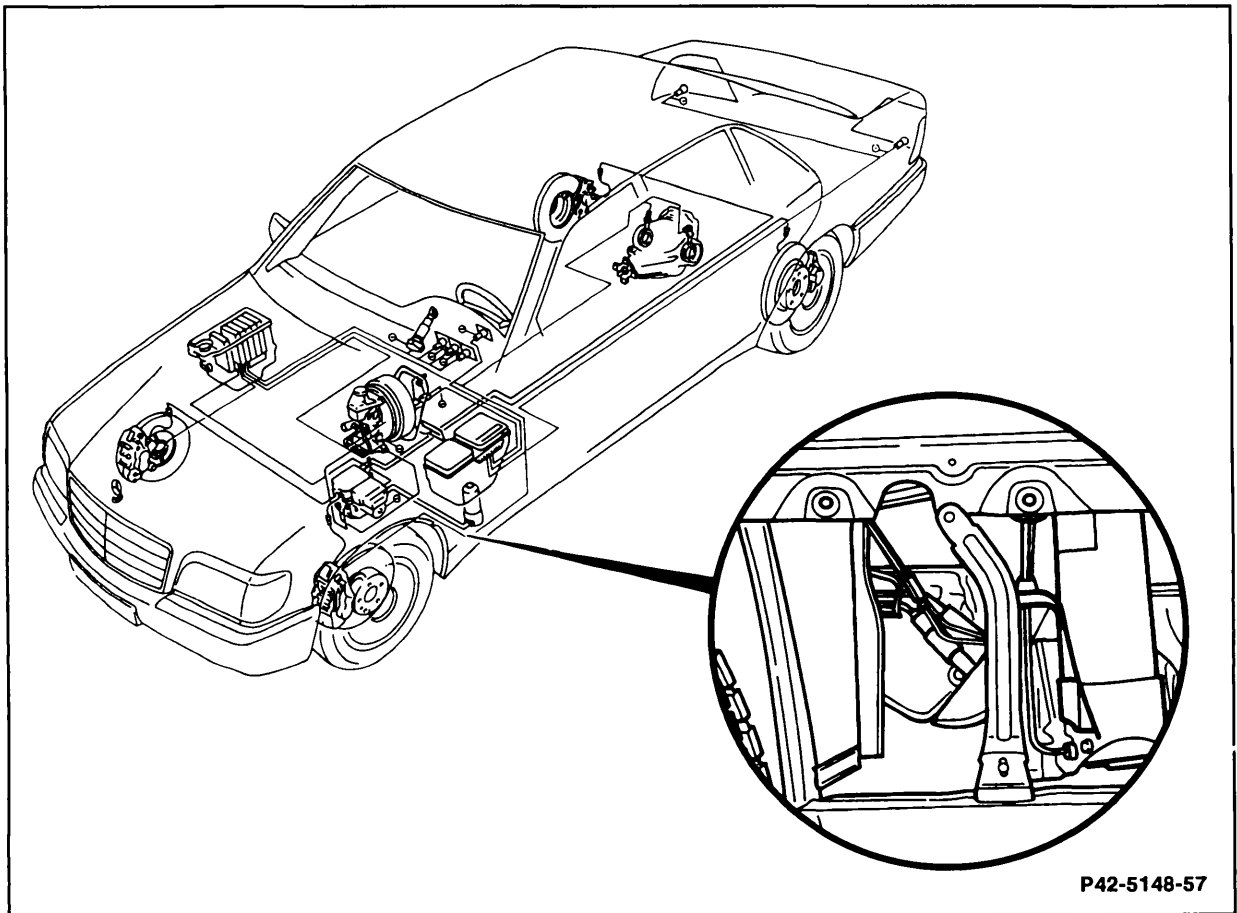
Check condition of all lines and hoses. Check for chafe marks and proper routing.



**Vehicles with ASRII  
Model 129**

- Inspect the pressure reservoir connections from underneath the vehicle through opening in engine compartment left side wall.

Check condition of all lines and hoses. Check for chafe marks and proper routing.

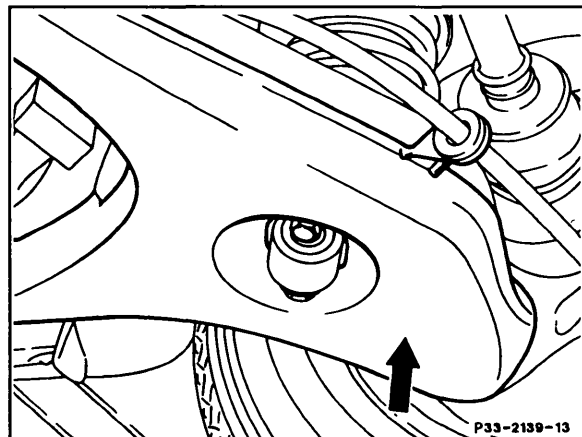


## Vehicles with ASRIII Model 140

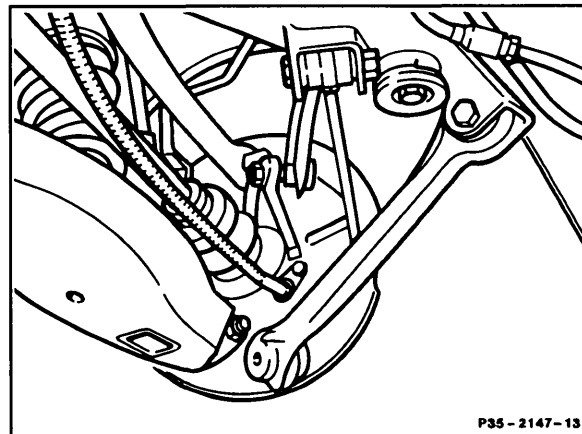
- Inspect the pressure reservoir connections by removing left front fender lower side panel.

Check the following for damage and corrosion:

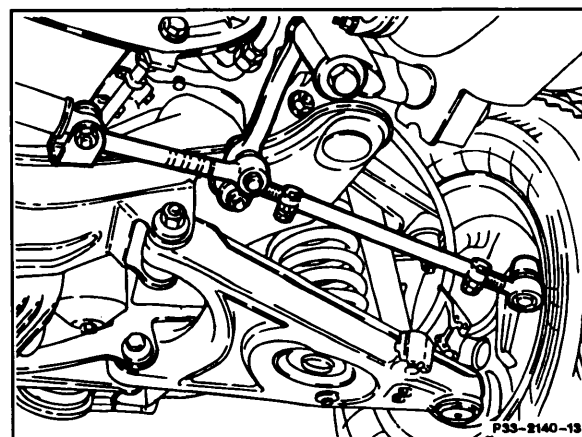
- Rear suspension control arms (semi-trailing arm suspension).



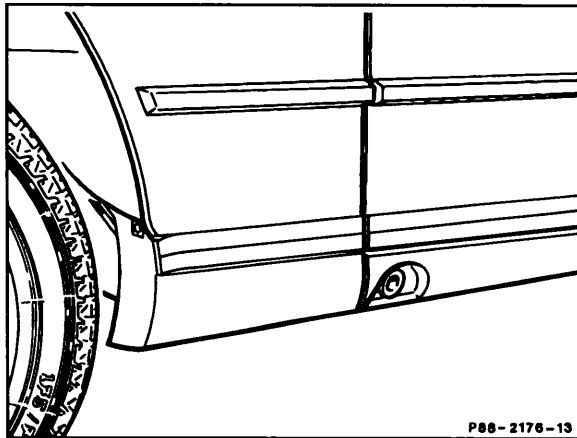
- Rear suspension links (multi-link suspension).



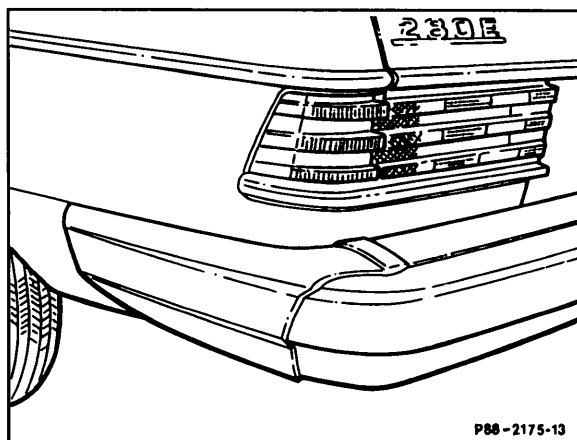
- A-arms and bushings.



- Rocker panel.



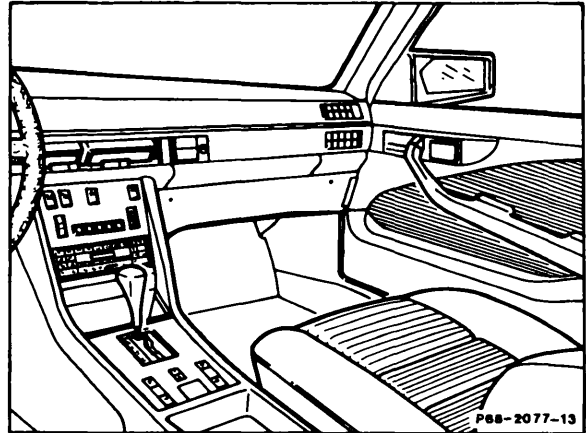
- Bumper and mounting on body.



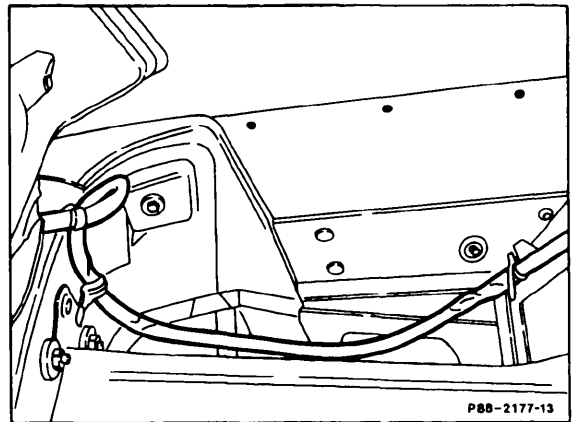
Model 107 through 07.1985  
123  
126 through 08.1985  
201 through 12.1984

Check the following for water entry and corrosion:

- Foot wells front and rear.

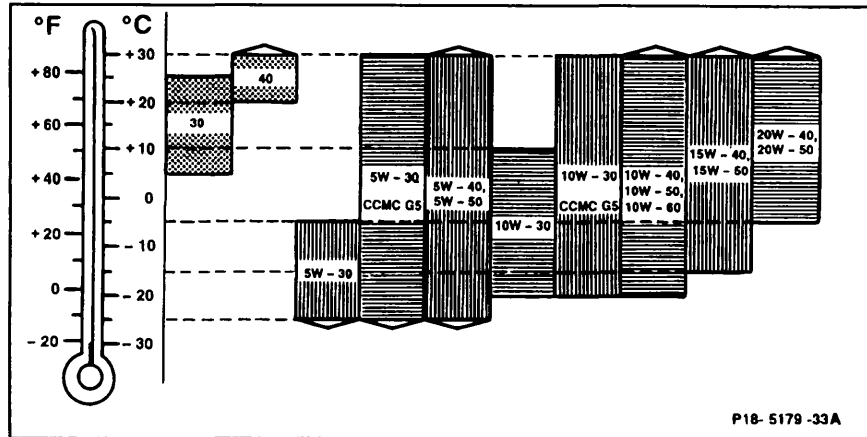


- Lateral trunk recesses.



**Specified SAE viscosity classes during continuous ambient temperatures**

Following the SAE grades exactly according to the ambient air temperatures would result in frequent engine oil changes. The temperature ranges for the SAE grades should therefore be regarded as a guideline which may be exceeded for brief periods.



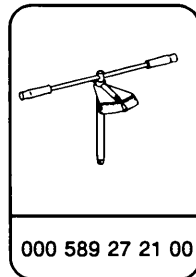
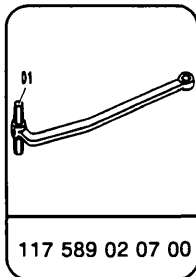
**Oil capacity in liters**

Engine	102.961	102.983
Total capacity during oil and filter change	4.5	5.0
Oil pan	4.3	4.8
Oil dipstick color code	light blue	gray

**Torque specifications (Nm)**

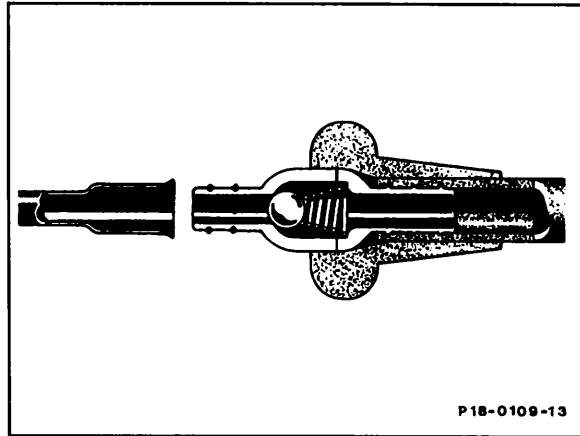
Oil pan drain plug	30	25
Center bolt, oil filter cover	25	25

**Special tools**



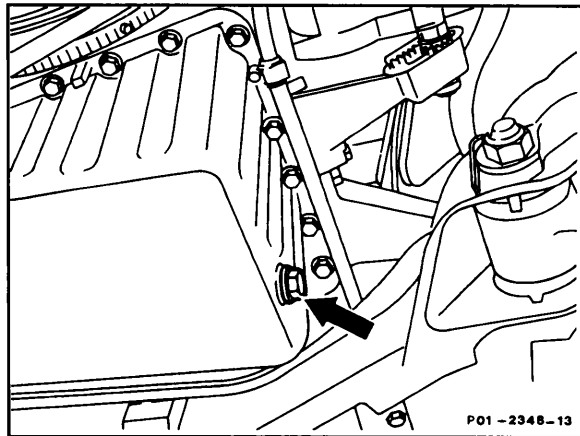


- Before suctioning or draining engine oil, drain oil filter, by unscrewing center bolt and removing together with oil filter cover.
- Suction engine oil via oil dipstick tube with engine at operating temperature.

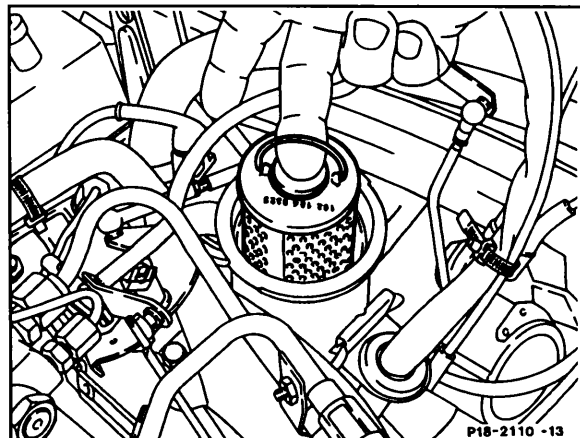


If no suction unit is available:

- Drain engine oil from oil pan (arrow).



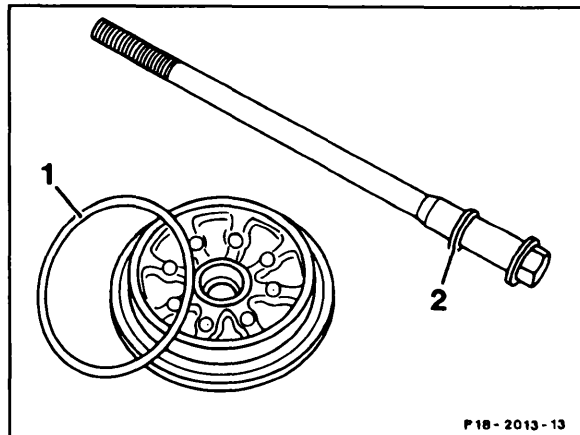
- Replace filter element.



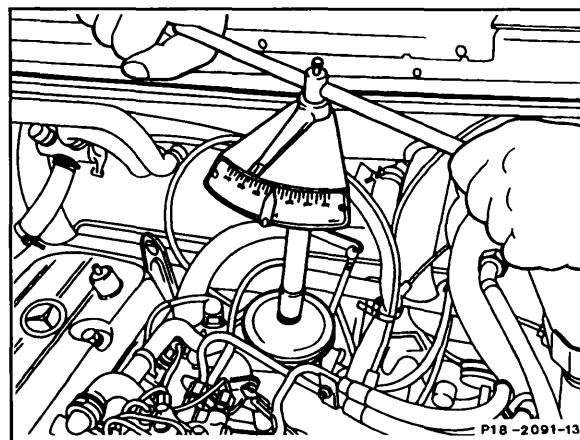
- Replace rubber seal ring (1) on cover.
- Check seal ring (2) on center bolt and replace as appropriate.

**NOTE:** There are two oil filter versions which differ in cover and rubber seal ring diameter and in thickness of rubber seal ring.

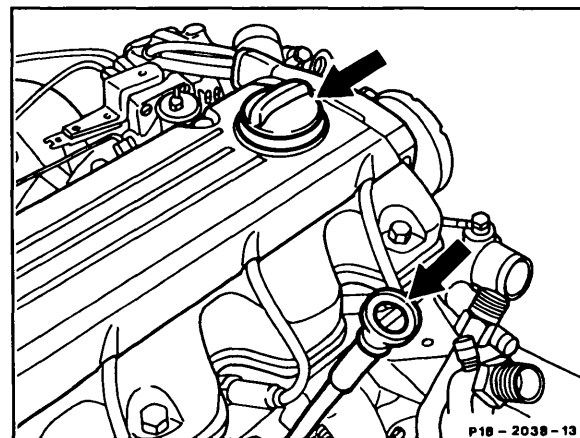
Use care not to use the incorrect rubber seal ring (1).



- Torque center bolt to 25 Nm with torque wrench.

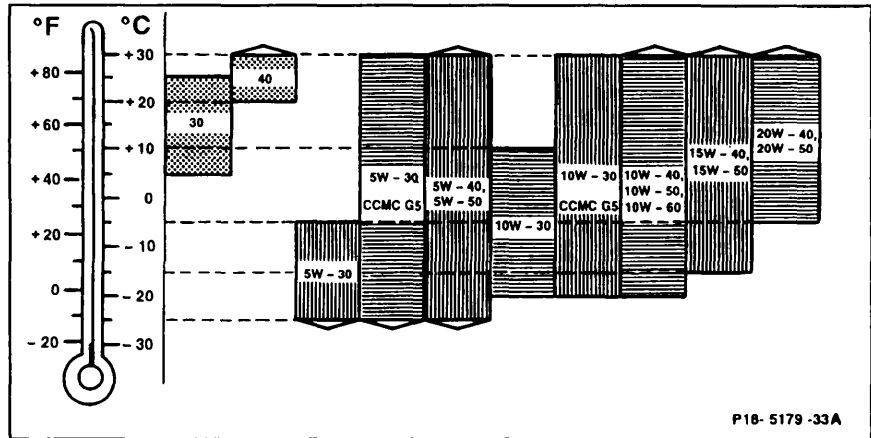


- If oil has been drained from oil pan, replace seal ring on drain plug.
- Tighten oil drain plug to 30 Nm, or for engine 102.983 to 25 Nm.
- Add engine oil.
- Run engine and check for leaks.
- Check oil level approx. 2 min. after stopping engine at operating temperature.



**Specified SAE viscosity classes during continuous ambient temperatures**

Following the SAE grades exactly according to the ambient air temperatures would result in frequent engine oil changes. The temperature ranges for the SAE grades should therefore be regarded as a guideline which may be exceeded for brief periods.



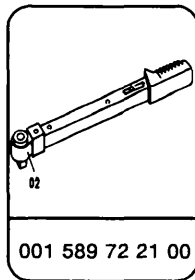
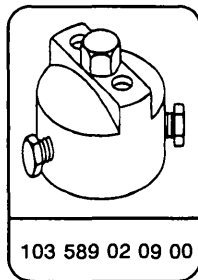
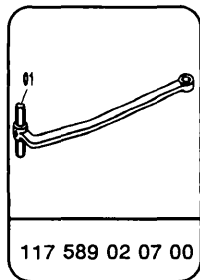
**Oil capacity in liters**

Engine	Model	Total capacity during oil and filter change	Oil dipstick identification	
			Oil dipstick color code	Identification on dipstick handle
102	201	5.0	gray	-
103	124, 126, 201	6.0	red	-
103	124 4MATIC	6.5	red	-
104	124, 129	7.5	-	10407
104	140	7.5	-	60322

**Torque specifications (Nm)**

	Engine	Nm
Oil pan drain plug	all	25
Spin on oil filter	102, 103	20
Threaded cover	104	20

## Special tools



**NOTE:** Change engine oil only with engine at operating temperature.

## Removing old oil filter

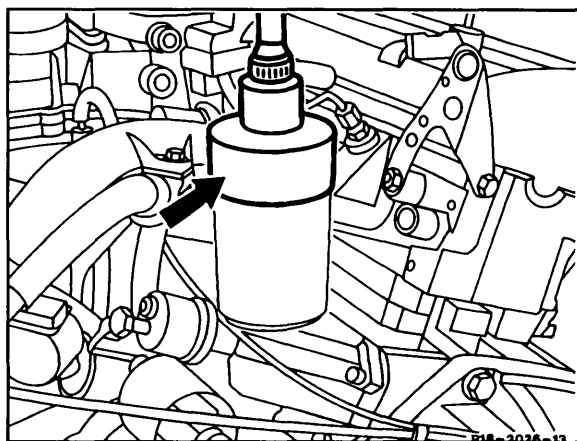
## Engine 102 and 103

- Before suctioning or draining engine oil, unscrew spin-on filter with socket wrench insert 74 mm (arrow). Apply a light seating blow against socket wrench insert, so that it is tightly seated on filter.

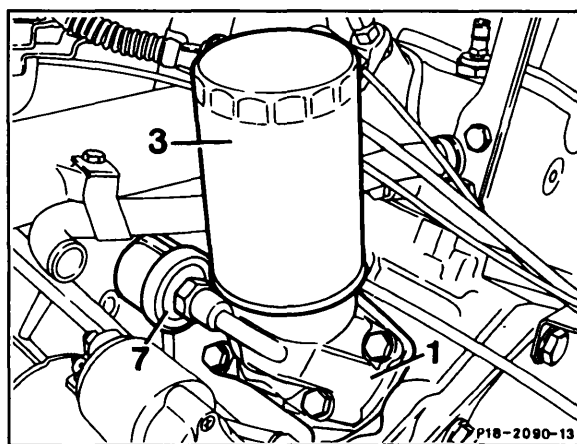
While unscrewing, some oil may run out until the check valves in oil filter cartridge close.

For this reason, hold or place a suitable rag under mounting surface at bottom of oil filter.

**Note:** If the spin on oil filter cannot be loosened with the socket wrench element, remove the air cleaner and drive in a screwdriver or other suitable tool to provide leverage to remove the oil filter.



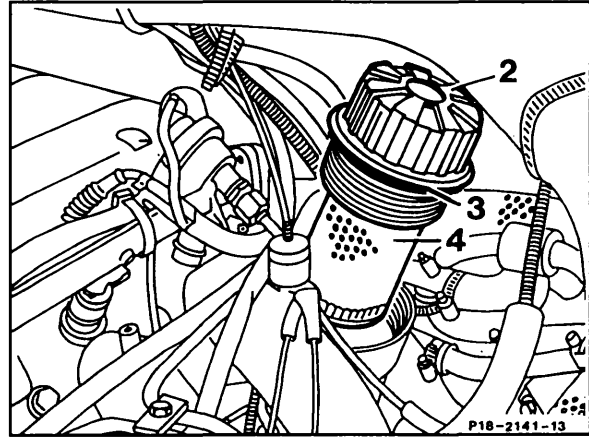
Engine 102



Engine 103

## Engine 104

- Prior to suctioning or draining of engine oil, unscrew screw cover (2) with socket wrench element 74 mm.
  - Remove threaded cover (2) with oil filter element (4).
- On Model 140, remove air filter and replace after installing oil filter cartridge.

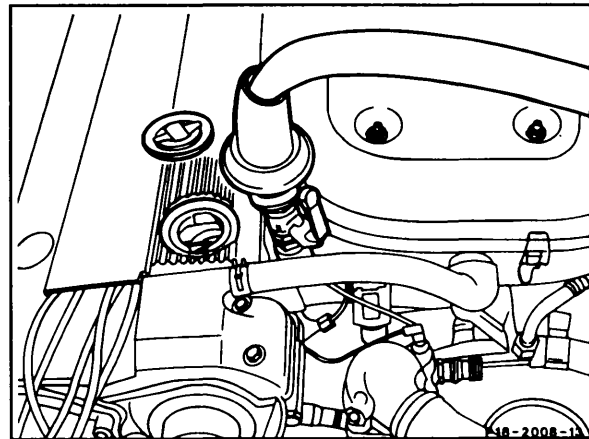


Engine 104

## Removing old oil

### Engine 102, 103, 104

- Suction engine oil via dipstick tube with engine at operating temperature.

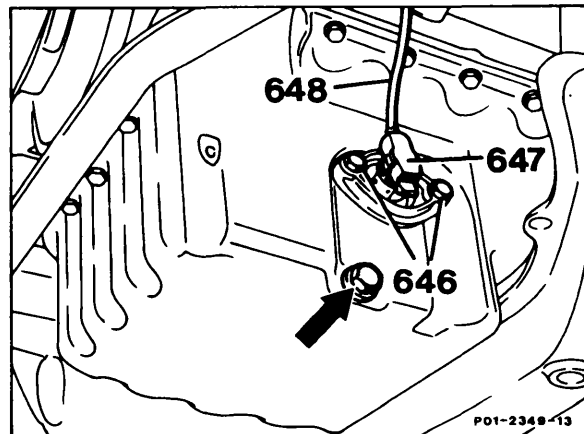


Engine 104

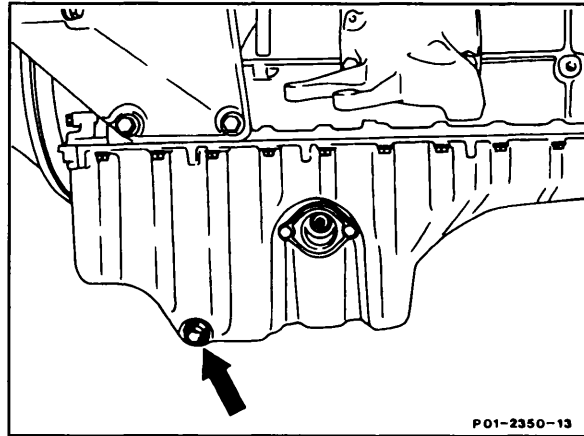
If no suction unit is available:

- Drain engine oil from oil pan (arrow).

First remove engine compartment lower panel and reinstall upon completion of maintenance jobs.

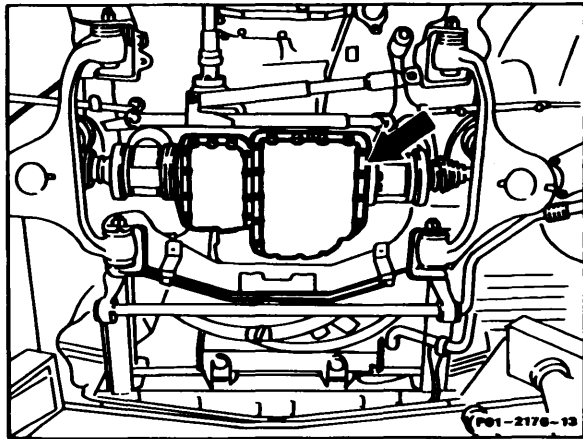


Engine 102



Engine 103,104

- On 4MATIC vehicles open drain plug (5) on large oil pan (4) only.
- If the oil has been drained out of oil pan, replace seal ring on oil drain plug.
- Tighten oil drain plug to 25 Nm.

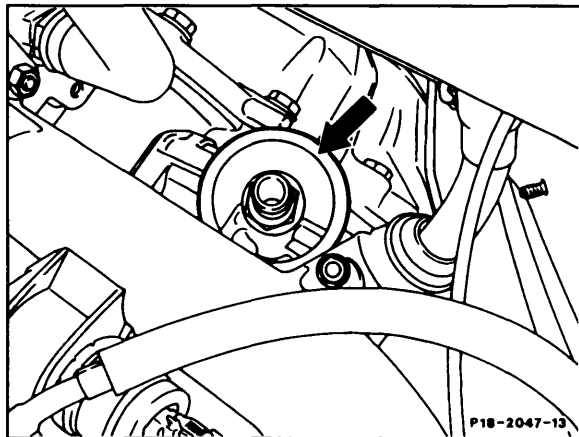


Engine 103 4MATIC

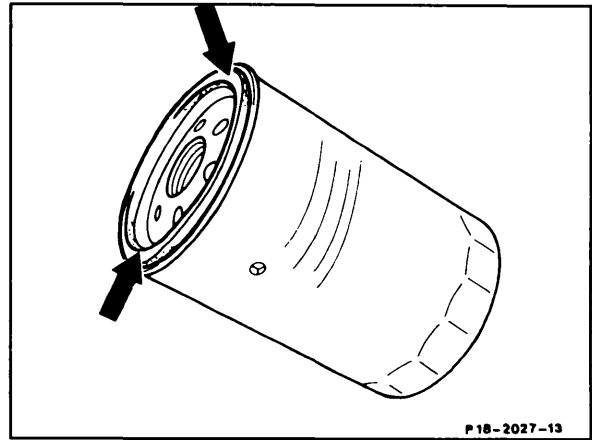
### Installing new oil filter

#### Engine 102 and 103

- Clean mating surface (arrow) on oil filter mounting flange.

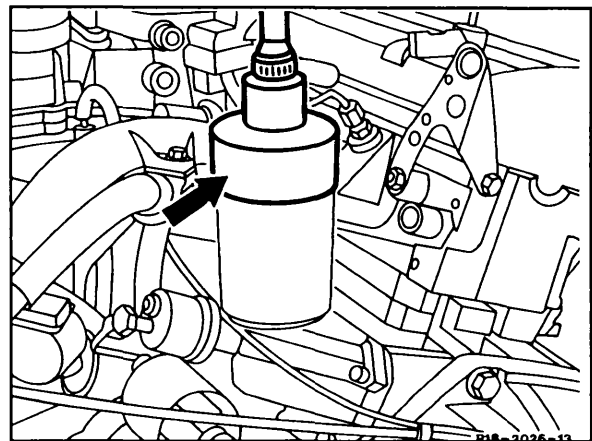


- Slightly lubricate gasket (arrows) on new spin-on filter.



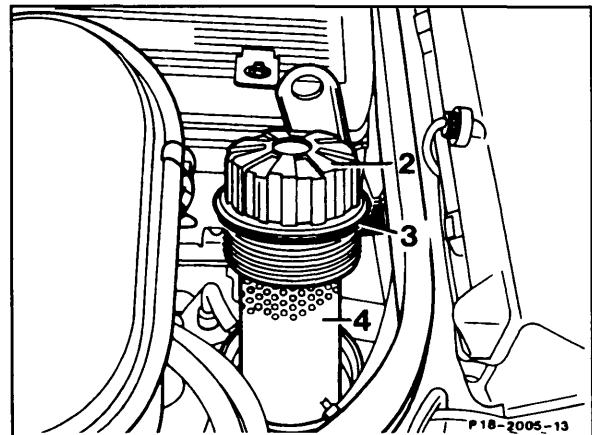
- Screw on filter and tighten by hand.

Then turn filter with 74 mm socket wrench element (arrow) an additional 1/4 turn (90°) (20Nm).



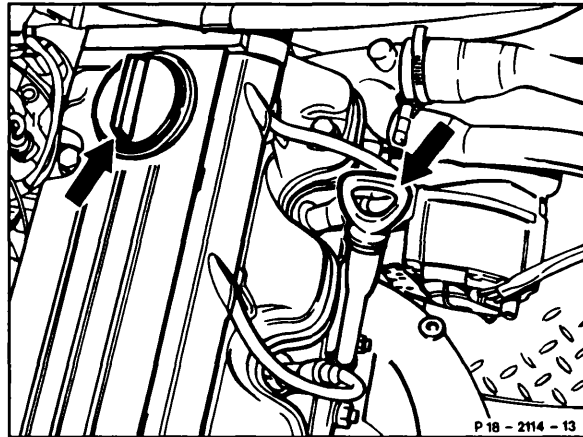
## Engine 104

- Replace seal ring (3).
- Insert oil filter element (4) into threaded cover (2).
- Insert threaded cover with oil filter element and tighten to 20 Nm.

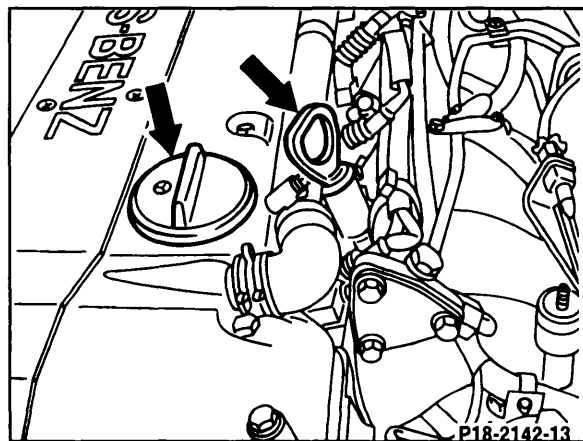


### Filling engine oil

- Add engine oil (arrow).
- Run engine and check for leaks.
- Check oil level (arrow) approx. 2 minutes after shutting off engine at operating temperature.



Engine 102



Engine 103 and 104