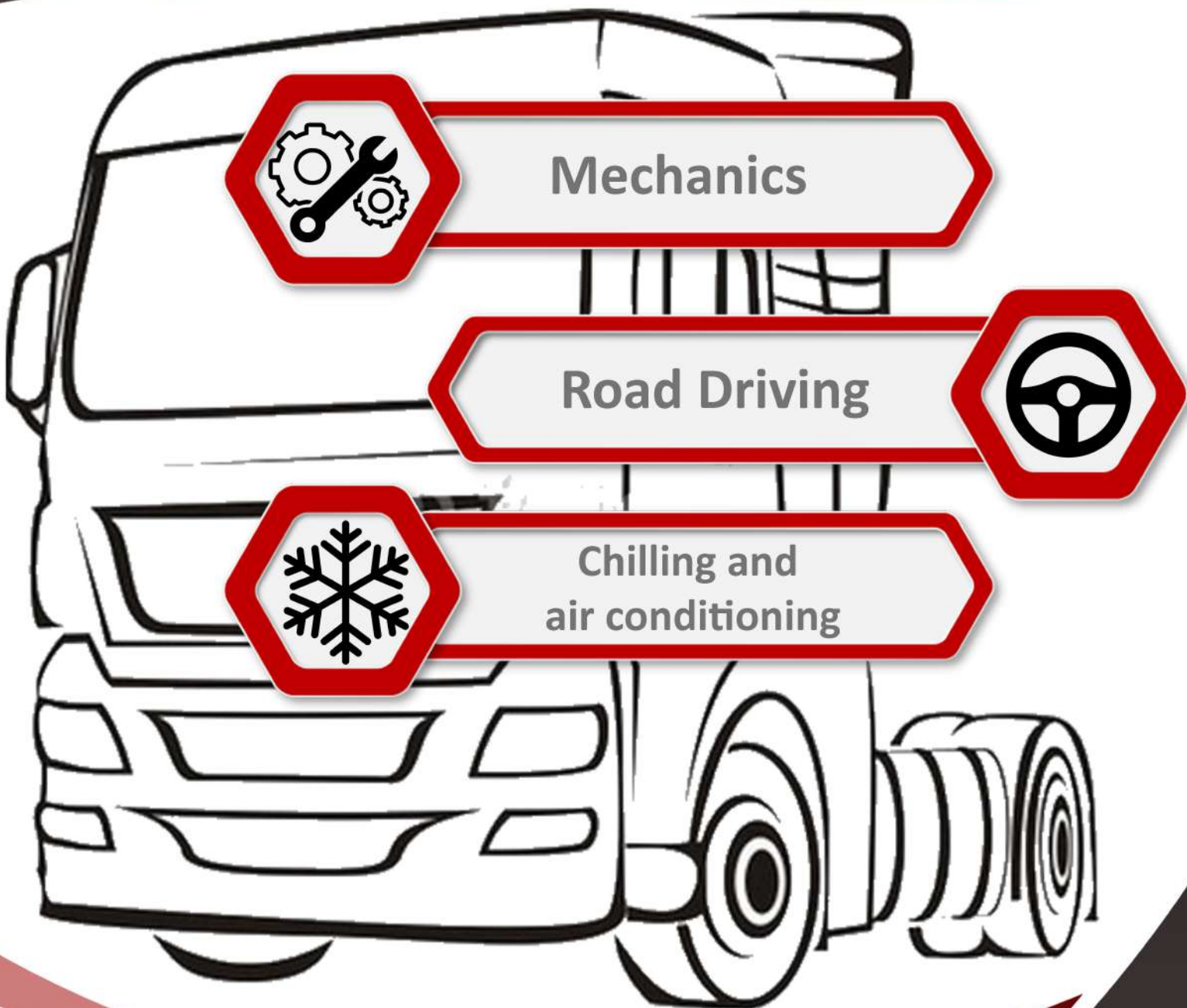


# SPECIFIC TERMS :



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# INTRODUCTION

In order to support allophone students in their learning, mainly their professional learning, this glossary has been developed by the teaching team members of the Gustave Eiffel high school in Talange in 3 languages (English, Italian and Persian)

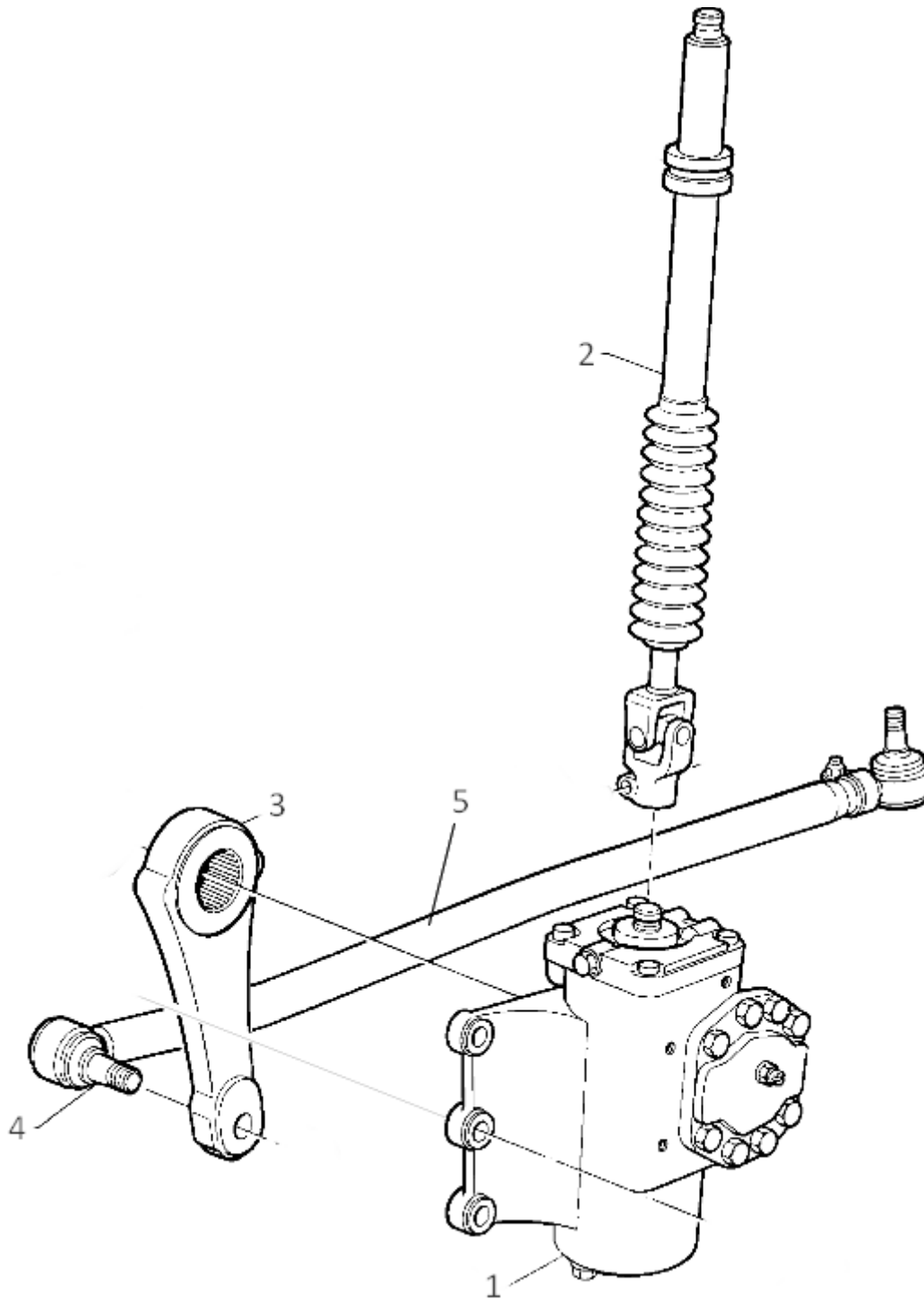
this lexicon may be useful to learn the specific professional terms offered by our vocation school, including:

- the mechanic
- road driving
- the refrigeration system

hoping that this lexicon helps you as a future vehicle maintenance technician the pedagogical team of talange wishes you a good training

# Direction

## Maintenance of road transport vehicles

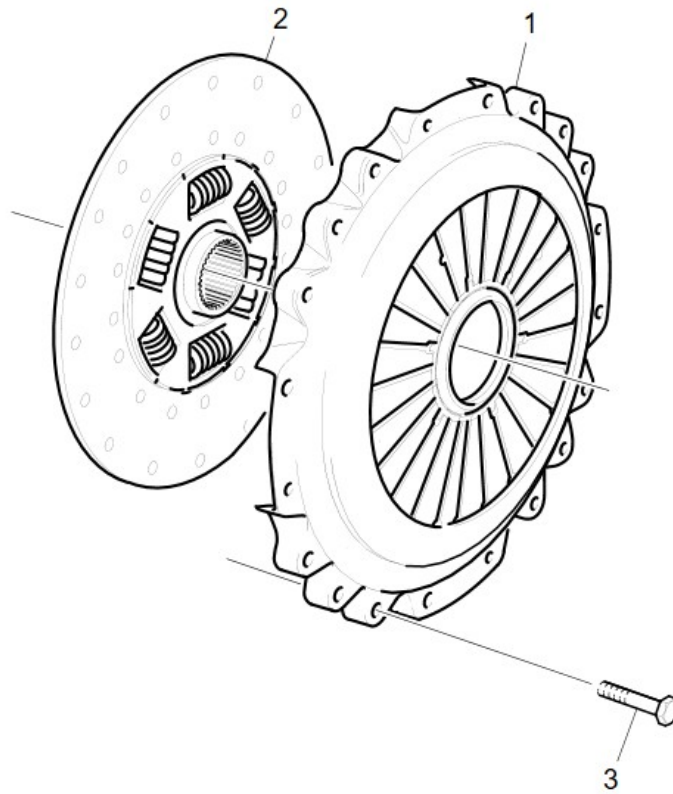


1. Case management
2. Steering column
3. Drop arm
4. Ball joint
5. Steering rod

# Gearbox

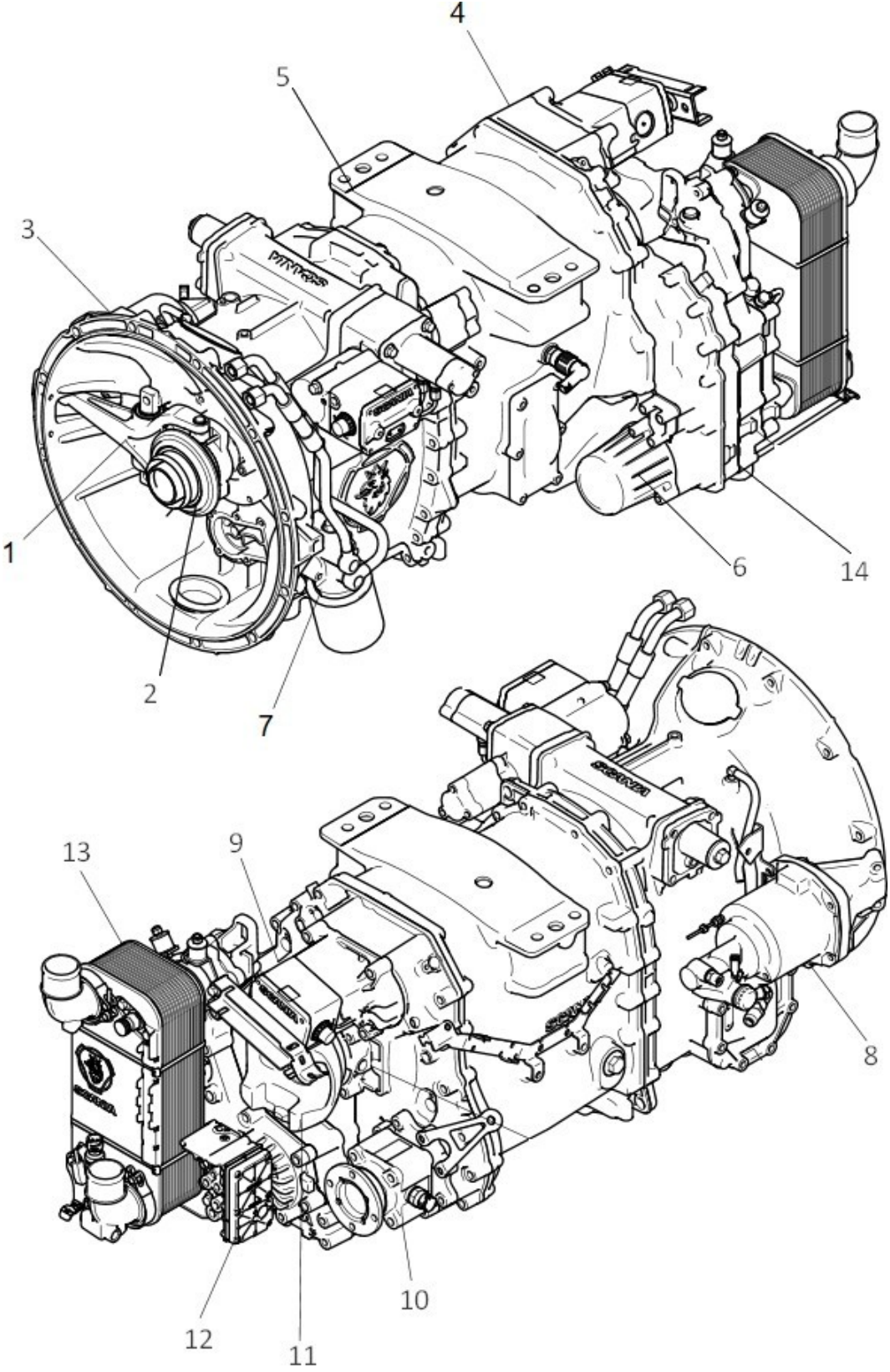
## Maintenance of road transport vehicles

### Clutch



1. Clutch mechanism
2. Clutch disc
3. Screw

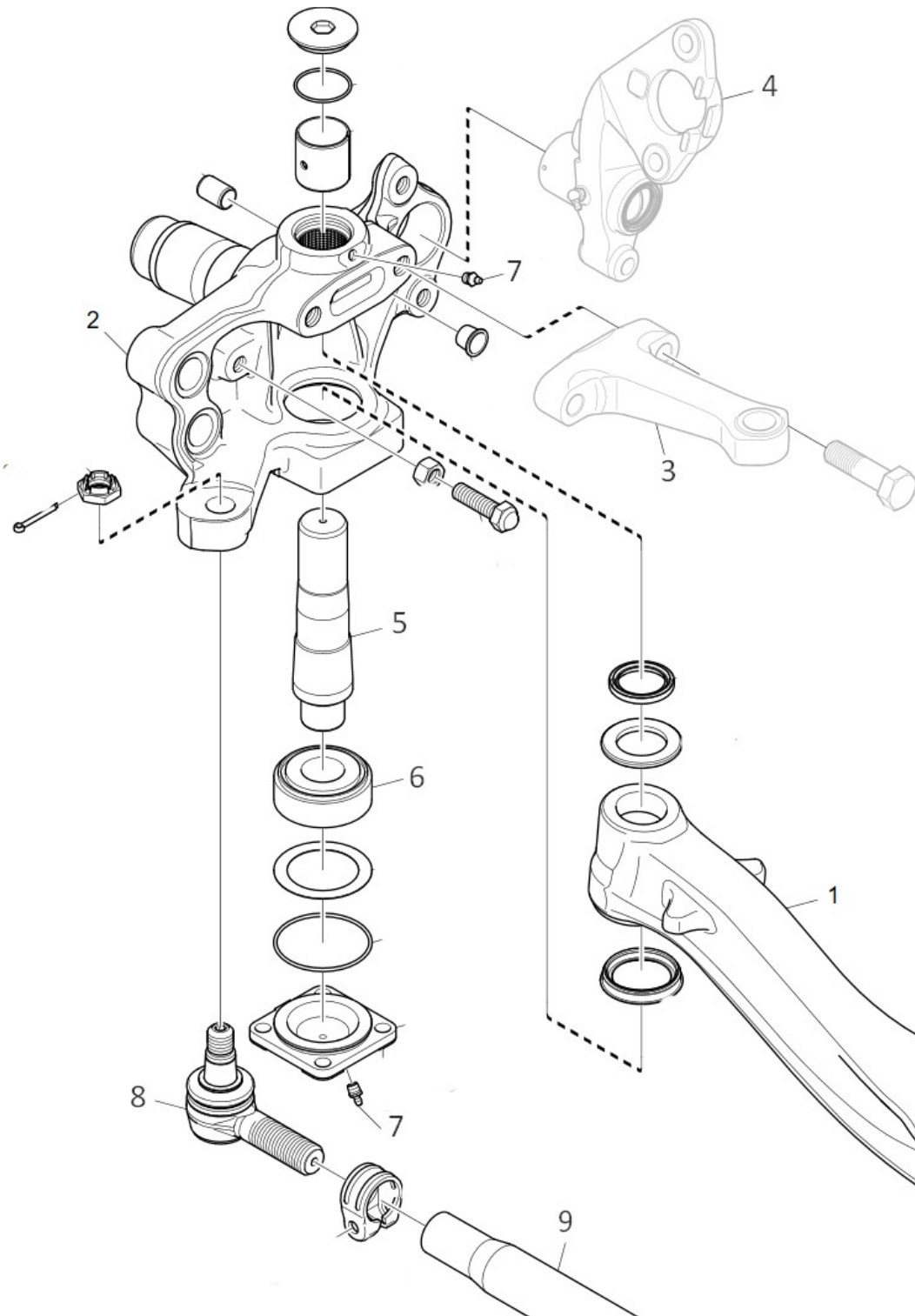
Gearbox



1. Clutch fork
2. Clutch thrust bearing
3. Clutch cover
4. Relay
5. Gearbox housing
6. Hydraulic retarder filter
7. Gearbox oil filter
8. Clutch slave
9. Block of relay and ½-speed control solenoid valves
10. Power take-off
11. Gearbox output yoke
12. Hydraulic retarder control solenoid valve
13. Hydraulic retarder cooler
14. Hydraulic retarder



# Front axle

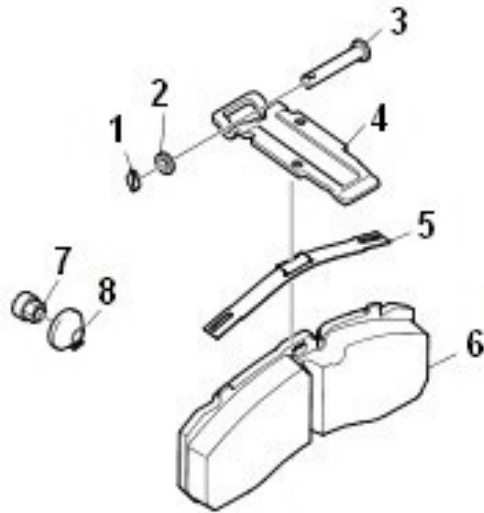


1. Front axle
2. Rocket
3. steering lever
4. brake cylinder holder
5. pivot axis
6. Swivel bearing
7. Greaser
8. Kneecap
9. Tie rod



## Brakes and hubs

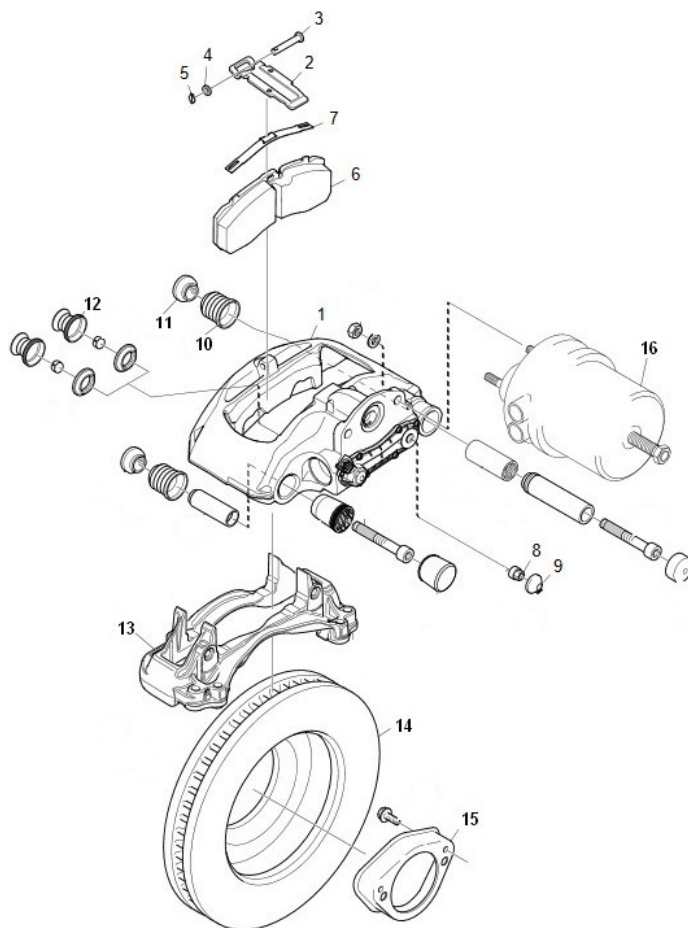
### Maintenance of transport vehicles



- |            |                       |
|------------|-----------------------|
| 1 – Clips  | 5 – anti-noise spring |
| 2 – washer | 6 – brake pad         |
| 3 – Axis   | 7 – Adapter           |
| 4 – Fork   | 8 – Cork              |

### Truck parts glossary appendix :

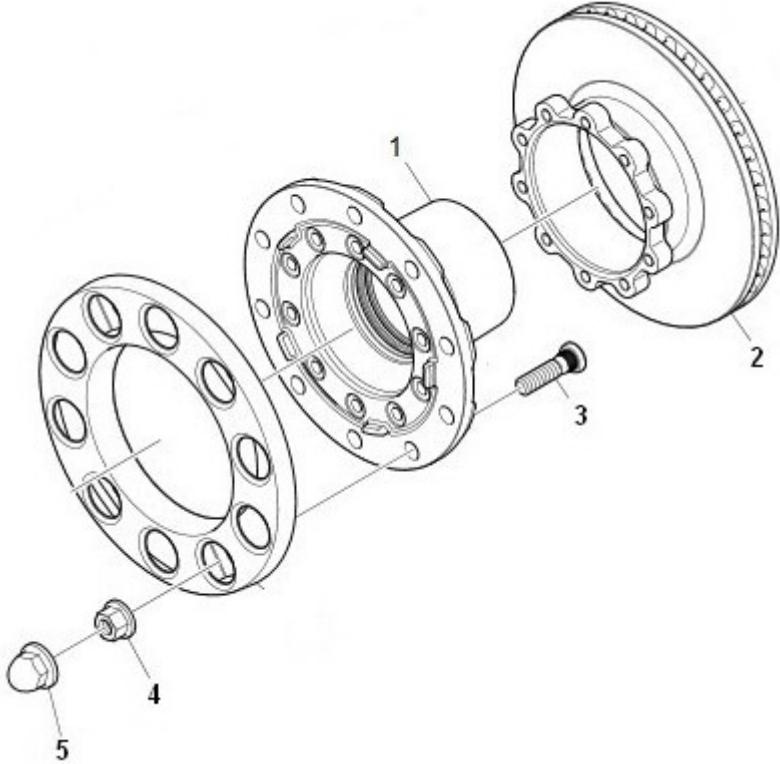
#### Brake system :



- 1 – Brake caliper
- 2 – Brake pad fork
- 3 – Fork axle
- 4 – Washer
- 5 – Clips
- 6 – Brake pad
- 7 – Anti-noise spring
- 8 – Tuning adapter

- 9 - Cork
- 10 – Caliper boot
- 11 – Caliper boot stopper
- 12 – Caliper piston boot
- 13 – Caliper yoke
- 14 – Brake disc
- 15 – Brake plate
- 16 – Brake cylinder

**Moyeu :**



- 1 – Hub
- 2 – Brake disc
- 3 – Wheel stud
- 4 – wheel nut
- 5 – Wheel nut cap

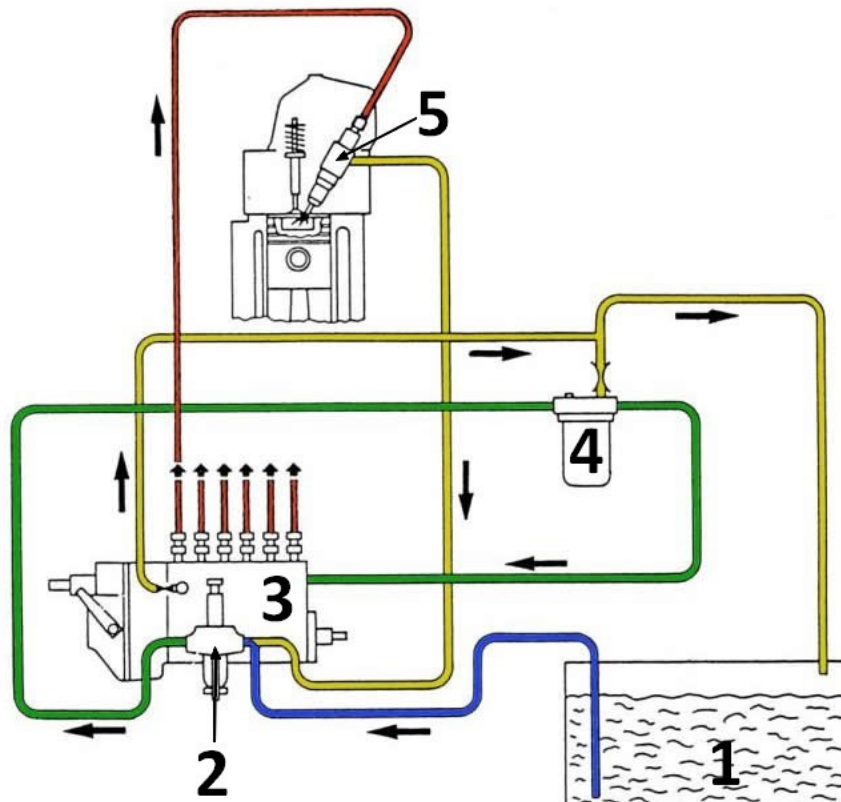


# Diesel injection system

Maintenance of road transport vehicles

Evolution of the injection system

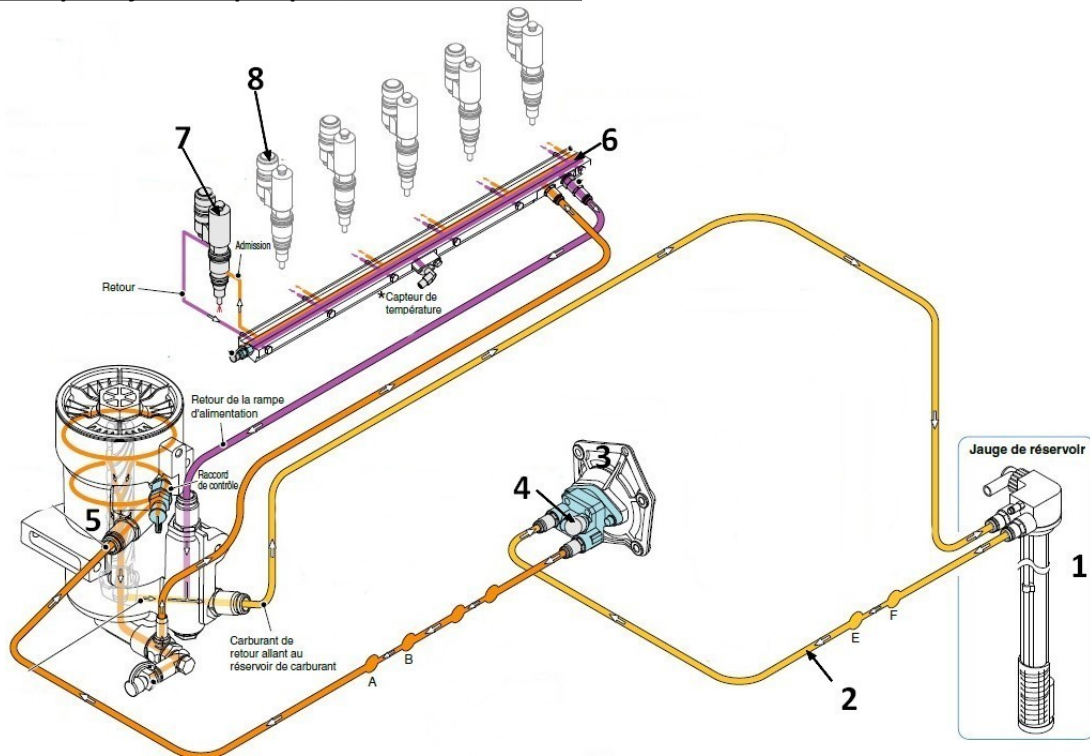
Inline pump: EURO 0 to EURO III



Injection pump in line

- |                                 |                |
|---------------------------------|----------------|
| 1. Fuel tank                    | 4. Fuel filter |
| 2. Priming pump with pre-filter | 5. Injector    |
| 3. Injection pump               |                |

## Injection par injecteurs pompes : EURO III à EURO IV

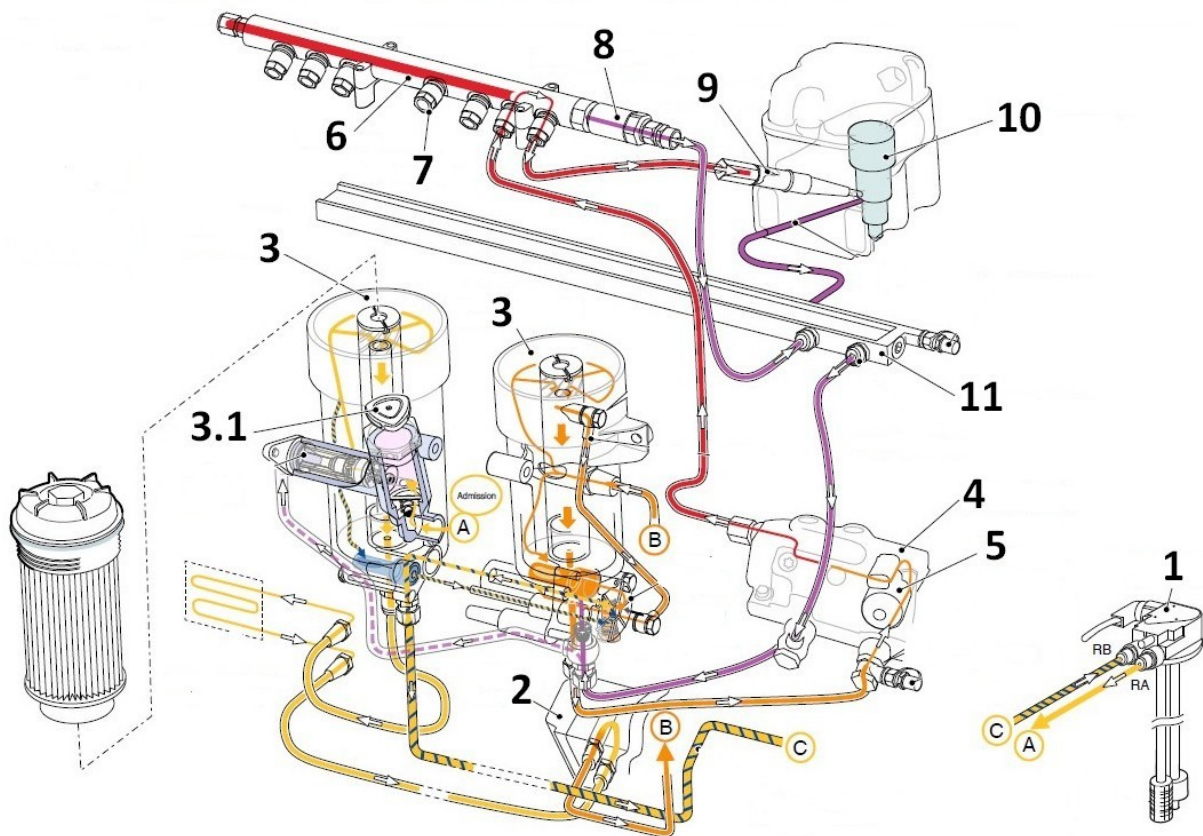


### Pump injector injection

1. Fuel tank and gauge
2. Supply line
3. Feed pump
4. Priming pump

5. Gasoil filter
6. Injection ramp
7. Injector
8. Injector solenoid valve

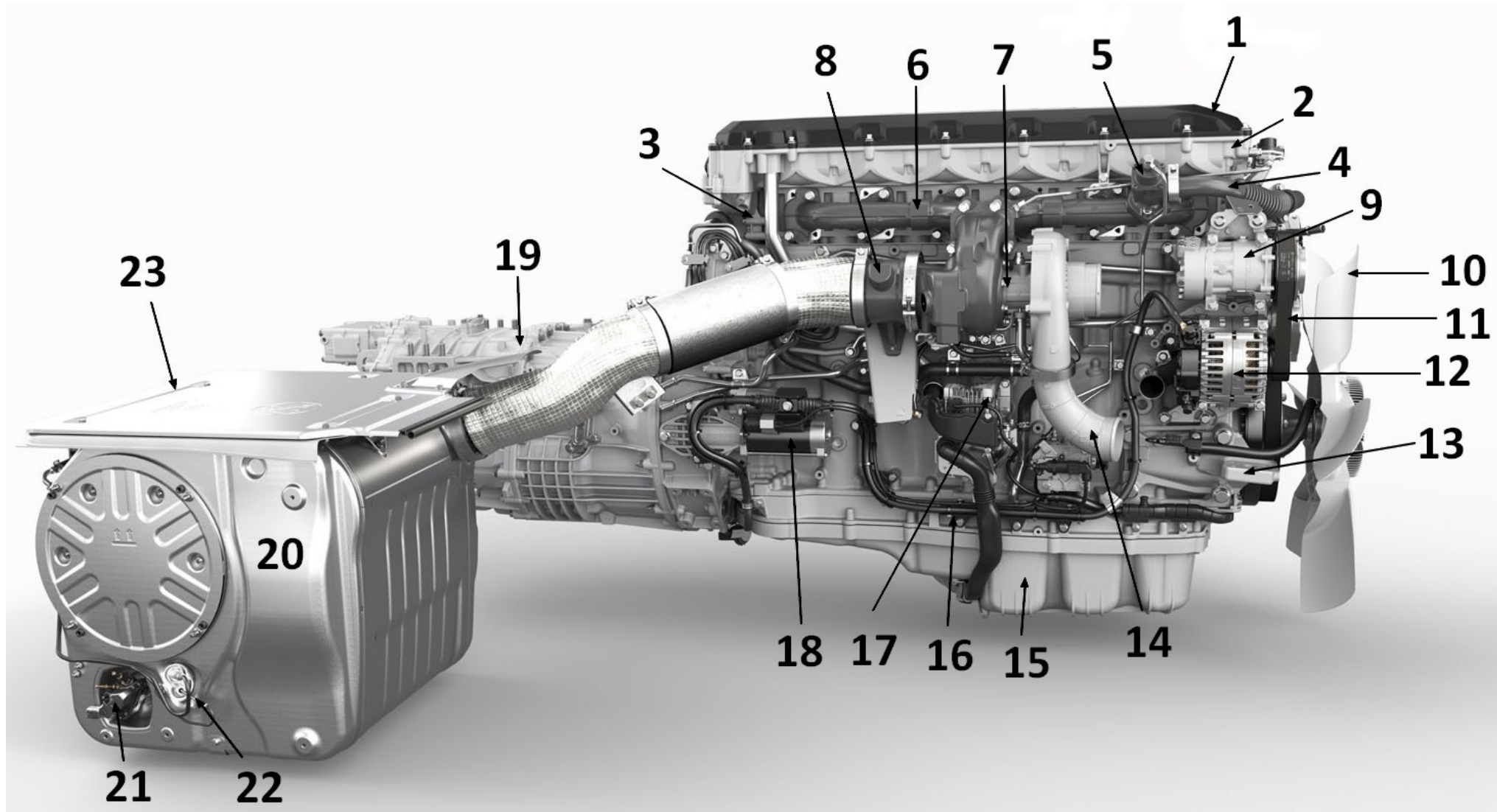
**High pressure injection: EURO IV à EURO VI**



- |                       |                              |
|-----------------------|------------------------------|
| 1. Fuel gauge         | 6. High pressure common rail |
| 2. Feed pump          | 7. Pressure sensor           |
| 3. Fuel filters       | 8. Safety valve (3000 bar)   |
| 3.1. Priming pump     | 9. High pressure pipe        |
| 4. High pressure pump | 10. Injector                 |
| 5. Dosing valve       | 11. Return ramp              |



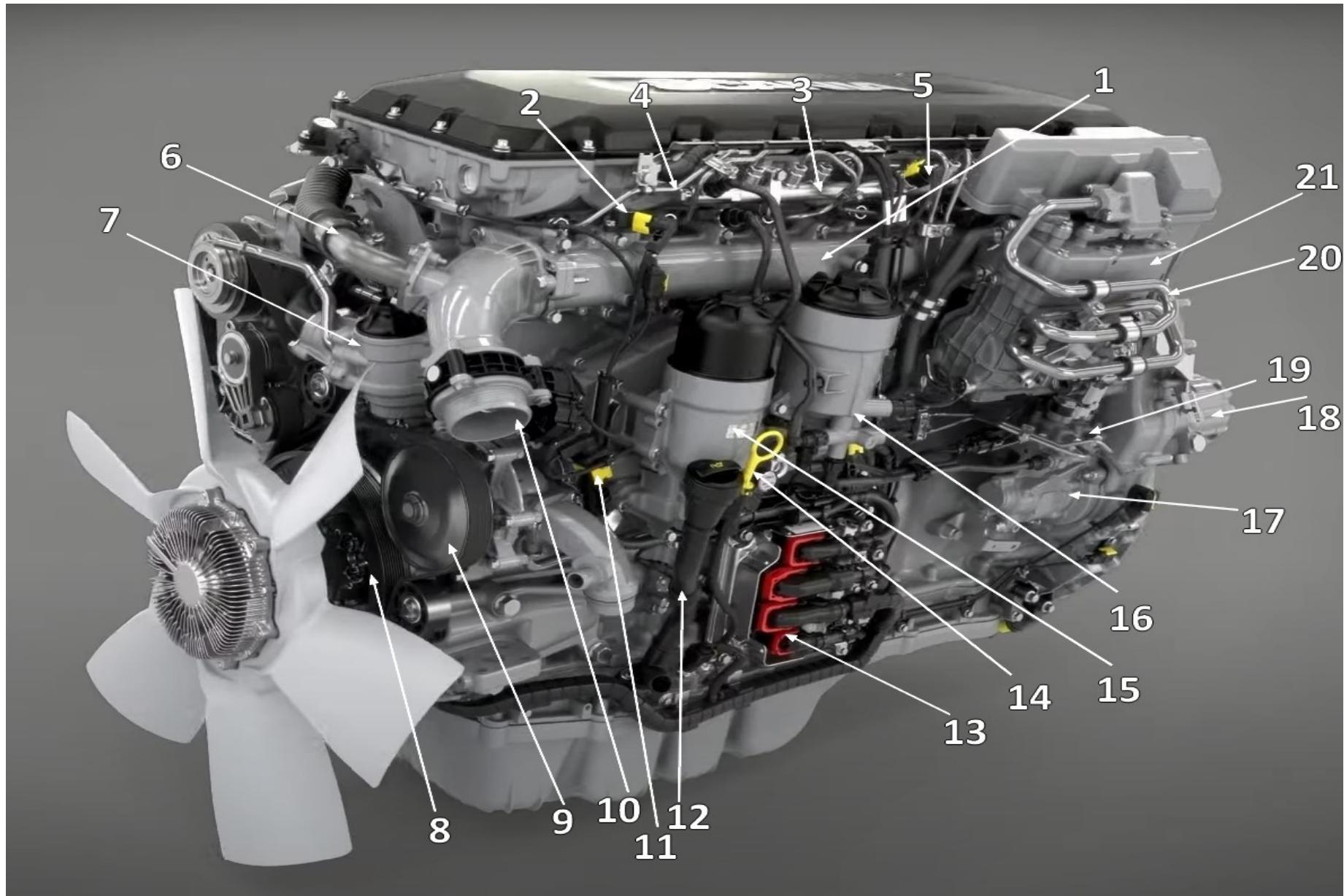
VEHICLE KNOWLEDGE :



1. Rocker cover or cylinder head cover
2. Camshaft support
3. Cylinder head
4. EGR tube
5. EGR valve
6. Exhaust manifold
7. Turbocharger
8. Exhaust brake flap

9. Air conditioning pump
10. Fan
11. Accessory belt
12. Alternator
13. Engine mounting bracket
14. Boost pipe
15. Oil sump
16. Ladder frame

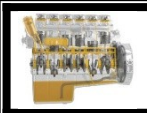
17. Oil vapor recycling valve
18. Starter
19. Gearbox
20. Exhaust silencer
21. AdBlue metering and injector
22. Temperature sensor
23. Protection plate



1. Intake manifold
2. Boost pressure sensor
3. Diesel high pressure rail
4. Injector tube
5. sensor
6. EGR tube
7. Thermostat housing with thermostat

8. Damper pulley
9. Water pump
10. Intake flap
11. Oil pressure sensor
12. Oil filler pipe
13. Electronic engine management unit
14. Oil level control gauge

15. Oil filter
16. Diesel filter
17. Diesel fuel pump
18. Power steering pump
19. Diesel high pressure pump
20. Compressor coil
21. Air compressor



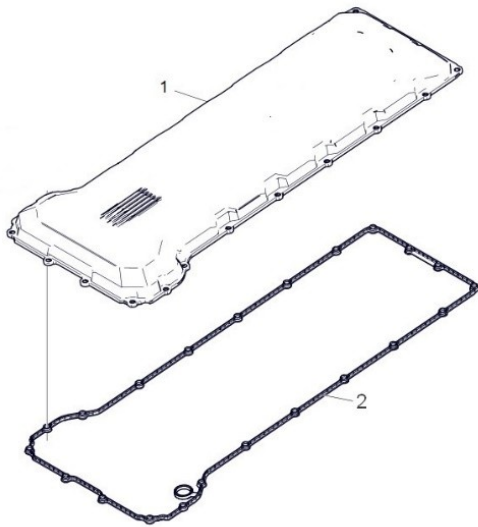
# Engine

## Engine role:

An engine is a **mechanical element** specific to motorized vehicles which makes it possible to **transform energy** created from the combustion of fuel into **mechanical movement** . The main types of engines that can be found on motor vehicles are the so-called internal combustion engines.

## Composition :

Rocker cover or cylinder head cover:

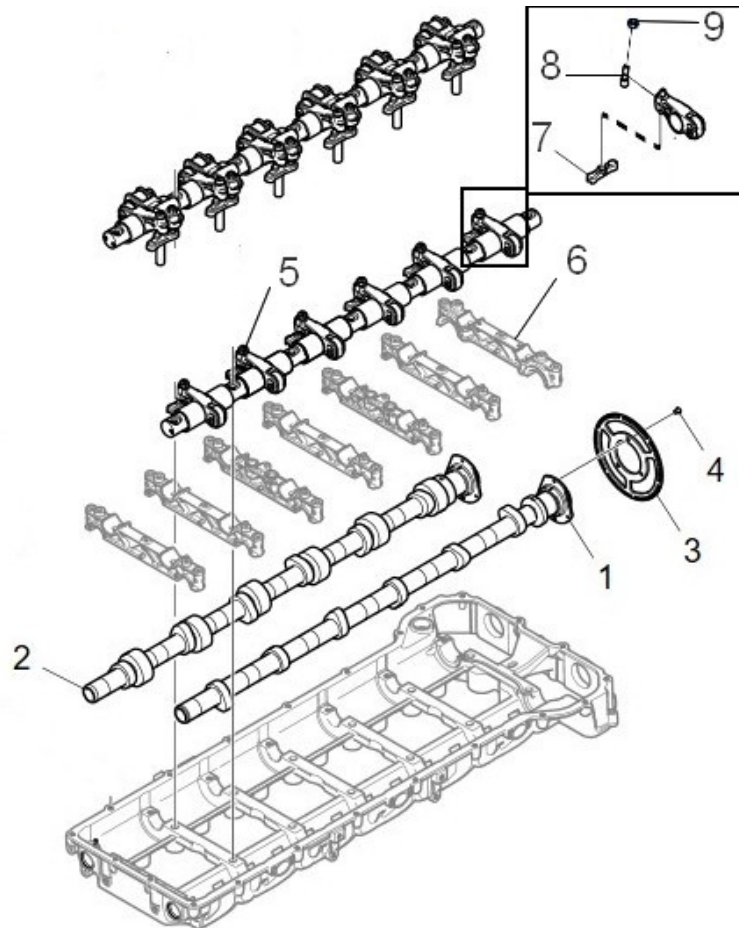


1. Rocker cover or cylinder head cover

2. Rocker cover gasket or cylinder head cover gasket

## 1) Rocker arms and camshafts: (overhead camshaft engine )

Engine with overhead camshaft:



1 and 2. Intake and exhaust camshafts

3. Camshaft pulley

4. Pulley pin

5. Roller rocker arm

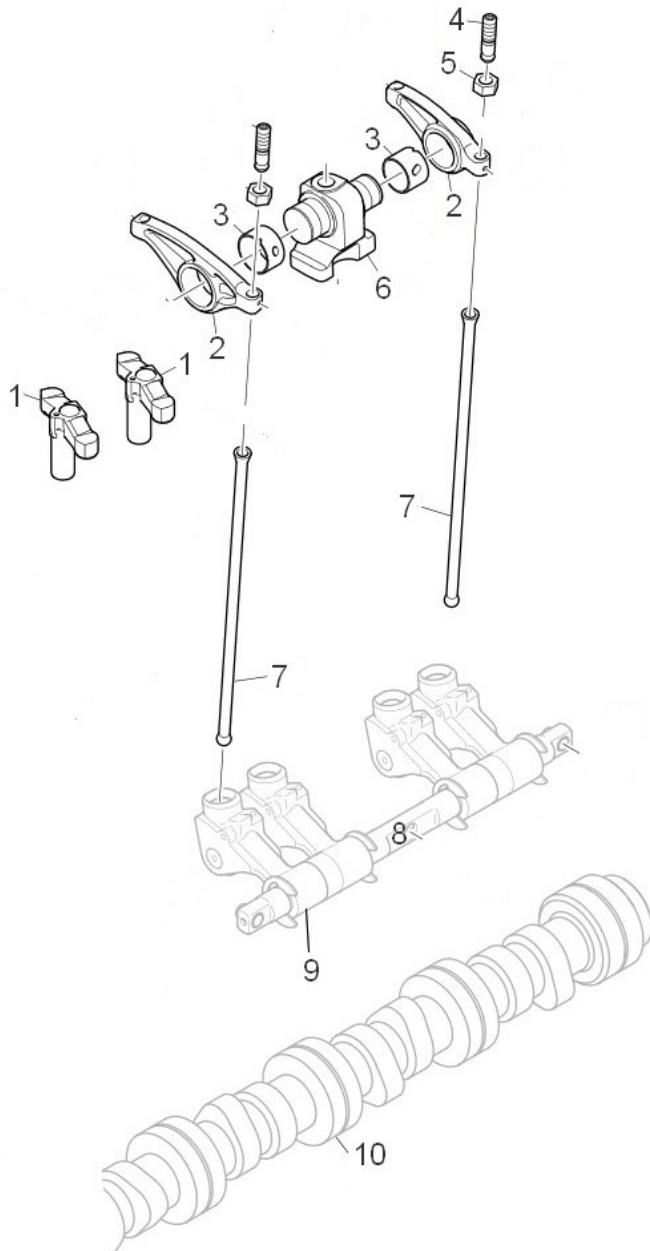
6. Camshaft support

7. Rocker arm bridge

8. Rocker arm adjustment screw

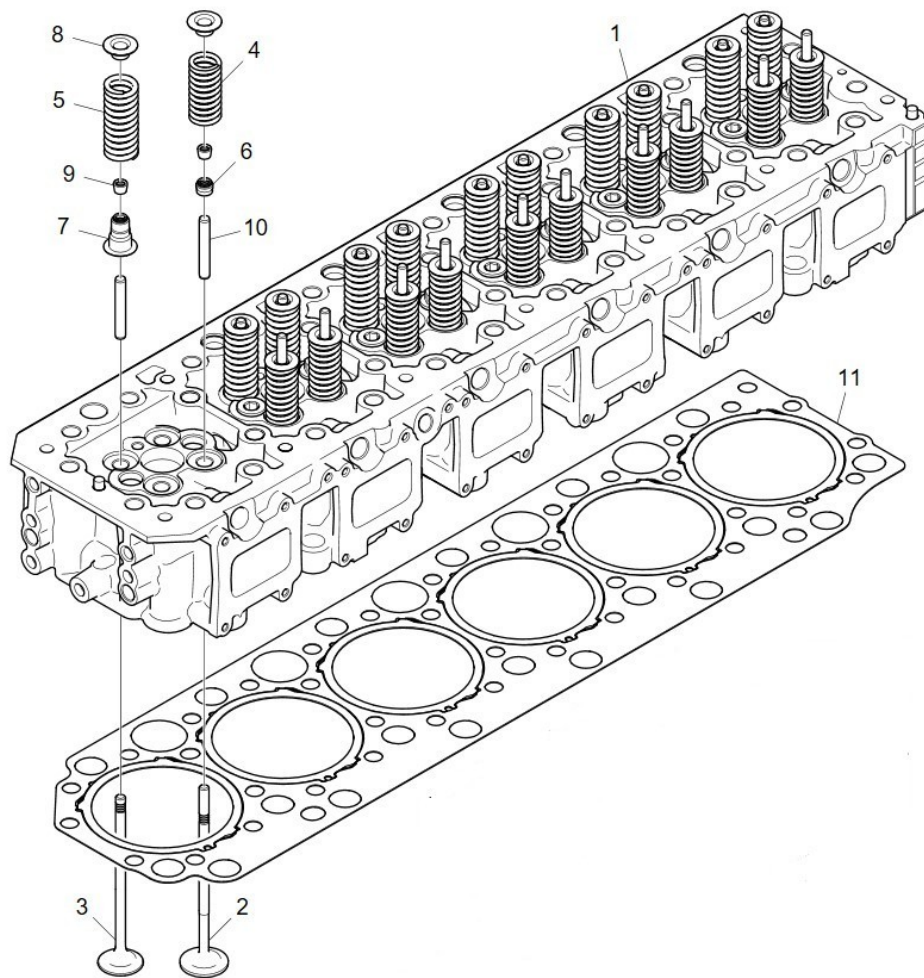
9. Rocker arm adjustment screw lock nut

Side cam engine:



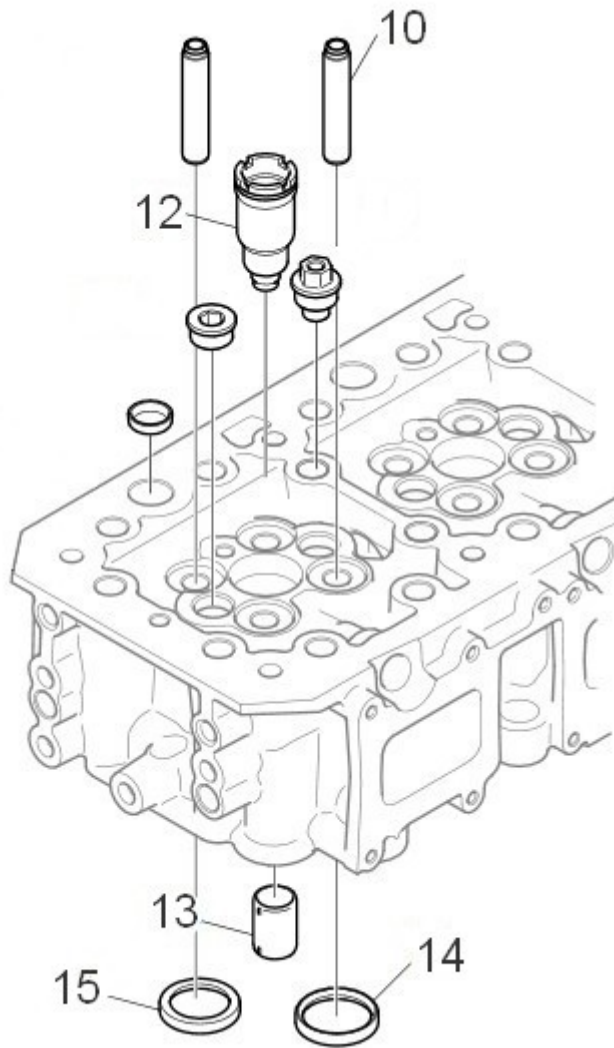
1. Rocker arm bridge
2. Rocker arm
3. Rocker arm wear ring
4. Rocker arm adjustment screw
5. Rocker arm adjustment screw lock nut
6. Rocker arm support
7. Push rod
8. Tappet ramp
9. Roller tappets
10. Camshaft

## 2) Cylinder head



1. Cylinder head
2. Intake valve
3. Exhaust valve
4. Intake valve Spring
5. Exhaust valve spring.
6. Valve stem seal
7. Spring support ring
8. Spring retainer
9. Valve cotter
10. Valve guide
11. Cylinder head gasket.





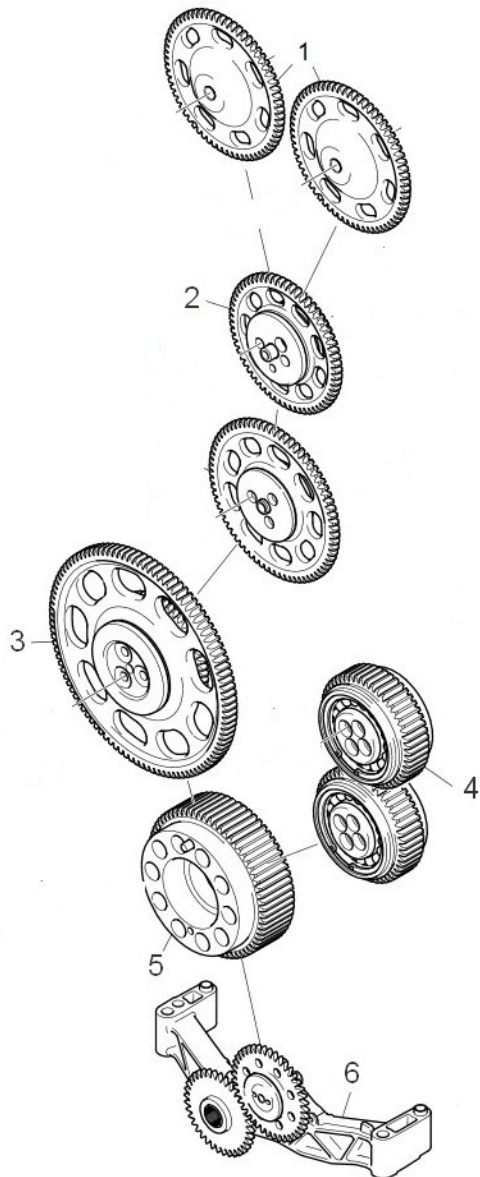
12. Injector well

13. Cylinder head centering ring

14. Intake valve seat

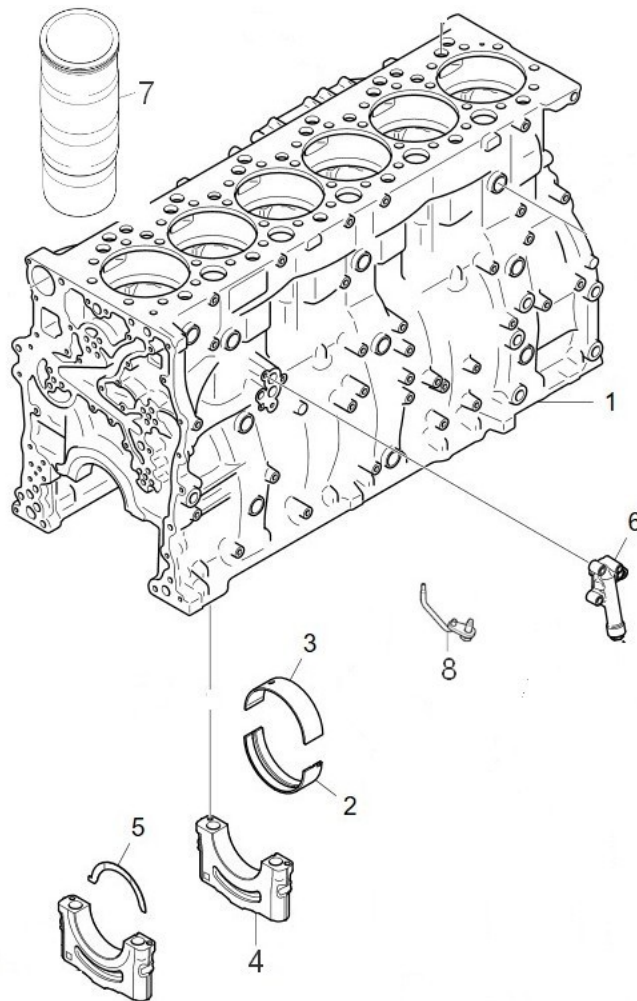
15. Exhaust valve seat

### 3) Distribution



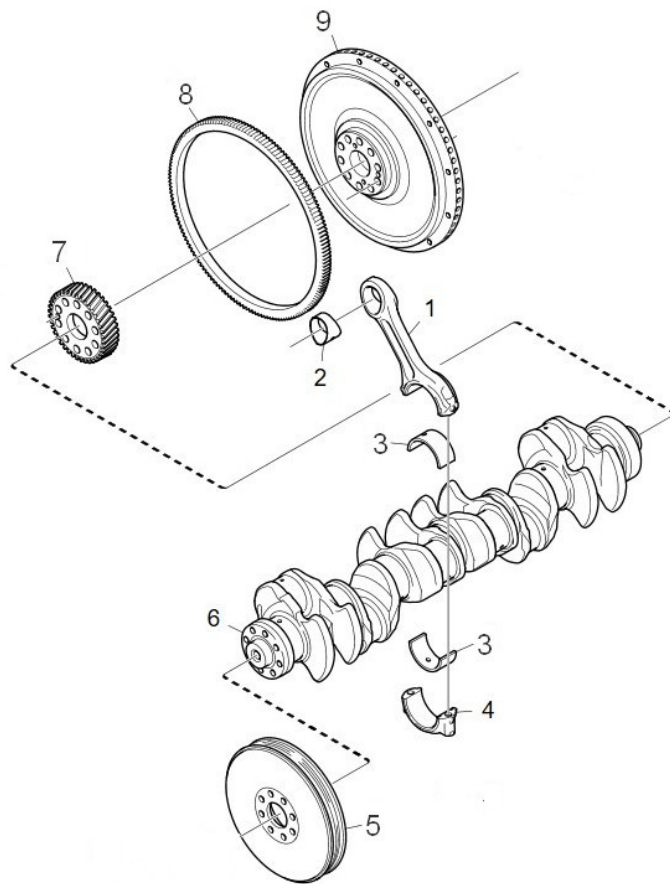
1. Camshaft pulleys
2. Idler or free timing gear
3. Intermediate pinion
4. Intermediate sprockets
5. Crankshaft pulley.
6. Oil pump

#### 4) Engine block



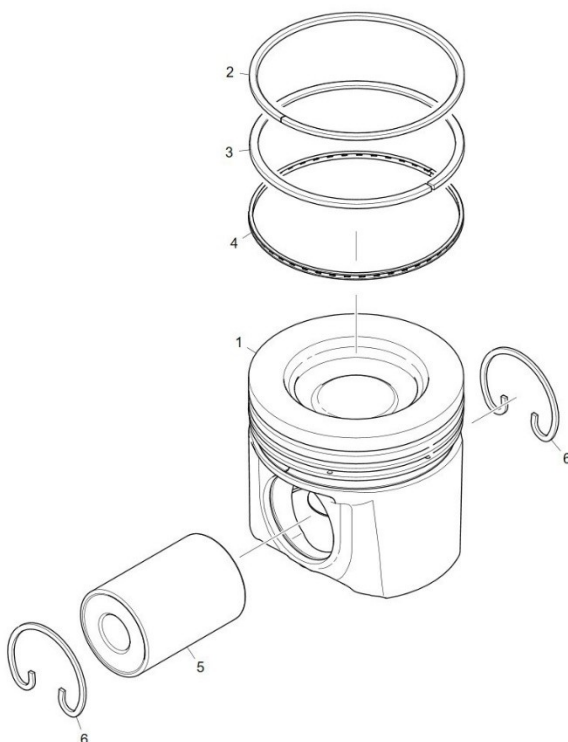
1. Engine block
2. Lower crankshaft bearing
3. Upper crankshaft bearing
4. Crankshaft bearing
5. Side shim
6. Oil pressure limiter
7. Cylinder sleeve
8. Oil jet

## 5) Mobile crew



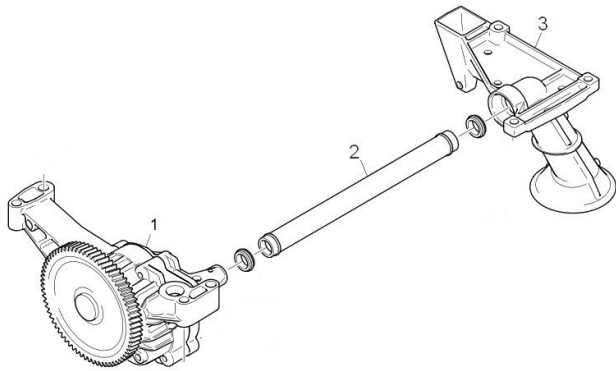
1. Connecting rod
2. Wear ring (connecting rod small end)
3. Connecting rod bearing (big end)
4. Connecting rod cap
5. Damper or crankshaft pulley
6. Crankshaft
7. Crankshaft pulley timing
8. Starter crown
9. Flywheel

## 6) Plunger



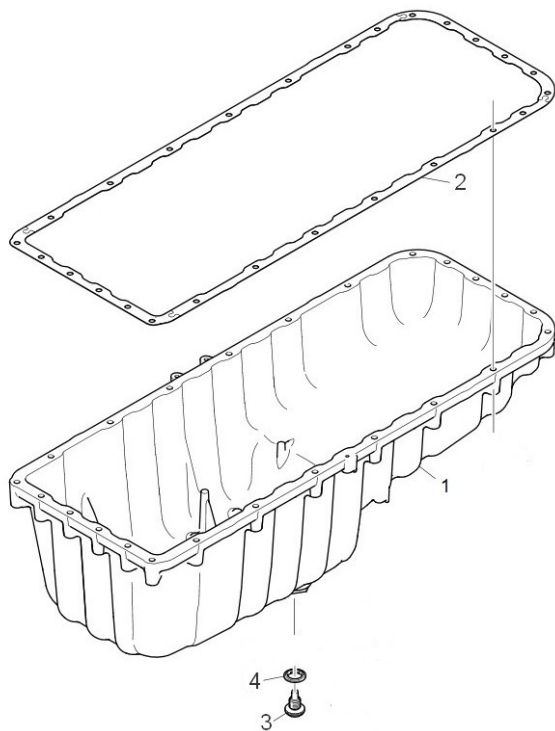
1. Piston
2. Segment per fire
3. Sealing segment
4. Scraper ring
5. Piston axis
6. Piston axis circlips

### 7) Oil pump



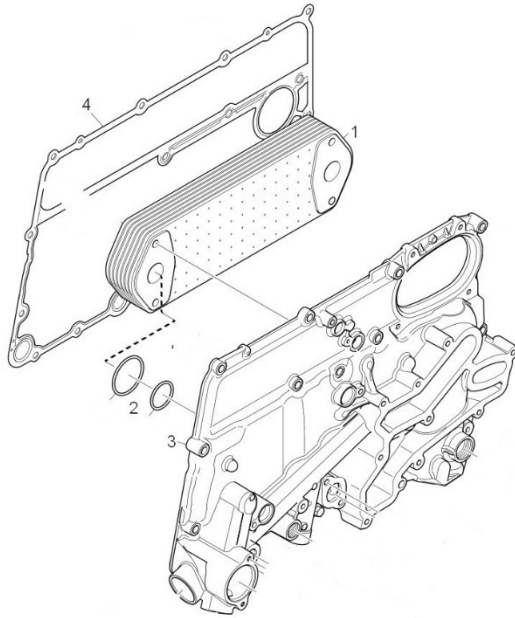
- 1. Oil pump
- 2. Suction tubes
- 3. Suction strainer

### 8) Oil sump



- 1. Oil pan
- 2. Sump gasket
- 3. Drain plug
- 4. Plug gasket

## 9) Engine oil cooler



1. Oil cooler or oil heat exchanger
2. Cooler seals
3. Cooler housing
4. Casing gasket



# Pneumatic Systems: Brakes

## Maintenance of road transport vehicles

### I. Some parts composing the braking system.



#### - The compressor

Its role is to produce the energy necessary for the "compressed air" circuit

It is driven by the vehicle engine and is usually mounted on the timing.



#### - The desiccator

It filters, dries and regulates the pressure in the air circuit.



- **The quadruple protection valve or four-way valve:**

It ensures circuit independence. In the event of an anomaly on a circuit, it isolates it. And ensures minimum pressure with these preset valves.



- **Service Brake Valve:**

It allows two independent circuits to be controlled, each with their own air reserve and can operate separately in the event of failure of one of the two circuits.



- **Braking corrector:**

Adapts the brake pressure of the rear circuit according to the load on the rear axle. It is replaced by a pressure sensor on recent vehicles.



- **Single brake cylinder :**

Single diaphragm reservoir for the service brake



- **Double Acting Spring Brake Cylinder :**

In the same cylinder is a diaphragm vase for the service brake and a spring cylinder for the parking brake (parking) and emergency. In addition, it has a screw to compress the spring manually in the event of a breakdown to move the vehicle without the need for air.



- **Parking brake valve:**

Controls the pressurization (road position) or the emptying of the spring brake cylinders for the parking brake.



- **Red Coupling Hand:**

Hose with an end fitting connecting from the tractor to the trailer. Permanent air supply.



- **Yellow Coupling Hand:**

Hose with an end fitting connecting from the tractor to the trailer.  
Brake control.



- **Brake Reservoir:**

Builds up air pressure from the compressor.

Front brake reservoir.

Rear brake reservoir.

Parking and trailer brake reservoir.



- **ABS (Anti-lock Braking System) Modulator :**

Pneumatic braking element controlled by the ABS electronic unit to prevent the wheels from locking and maintain the vehicle's steerability.



- **EBS (electronic braking system) Modulator :**

Pneumatic braking elements electrically controlled by the EBS electronic box and allowing the braking to be controlled electrically. Several systems also make it possible to integrate load and load anti-tilt controls, trajectory correction and traction control.

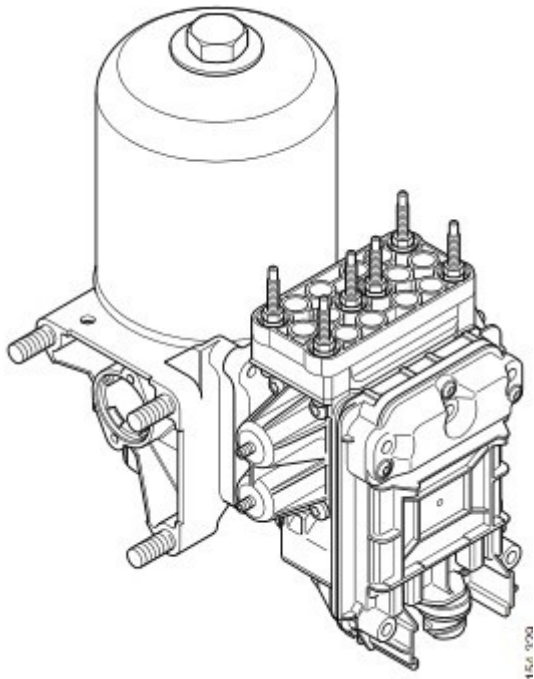
## Traitement de l'air Véhicules récents :



### - A.P.U (Air Processing Unit)

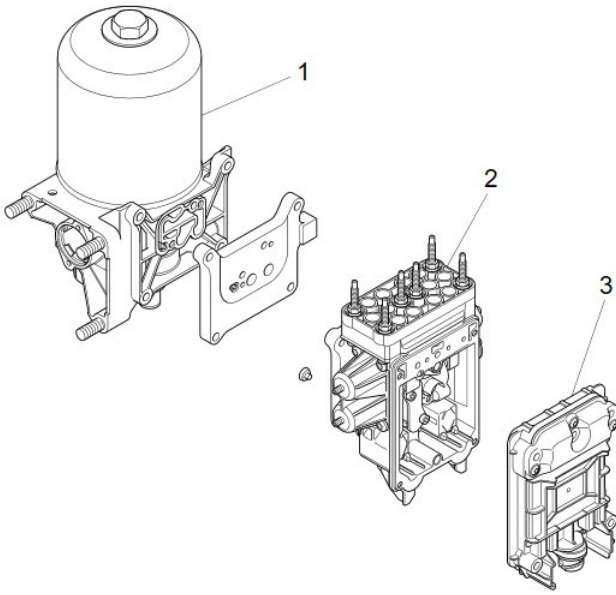
The APU (Air-Processing Unit) is a multipurpose device, that is to say a combination of several devices. This unit includes an air dryer with pressure adjustment, which can be used with or without heating, as well as a safety valve and a tire inflation connection. To this air dryer is flanged a 4-way valve with one or two built-in pressure limiting valves and two built-in check valves.

**OR (depending on vehicle brand)**

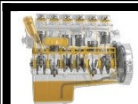


### - A.P.S (Air Processing System)

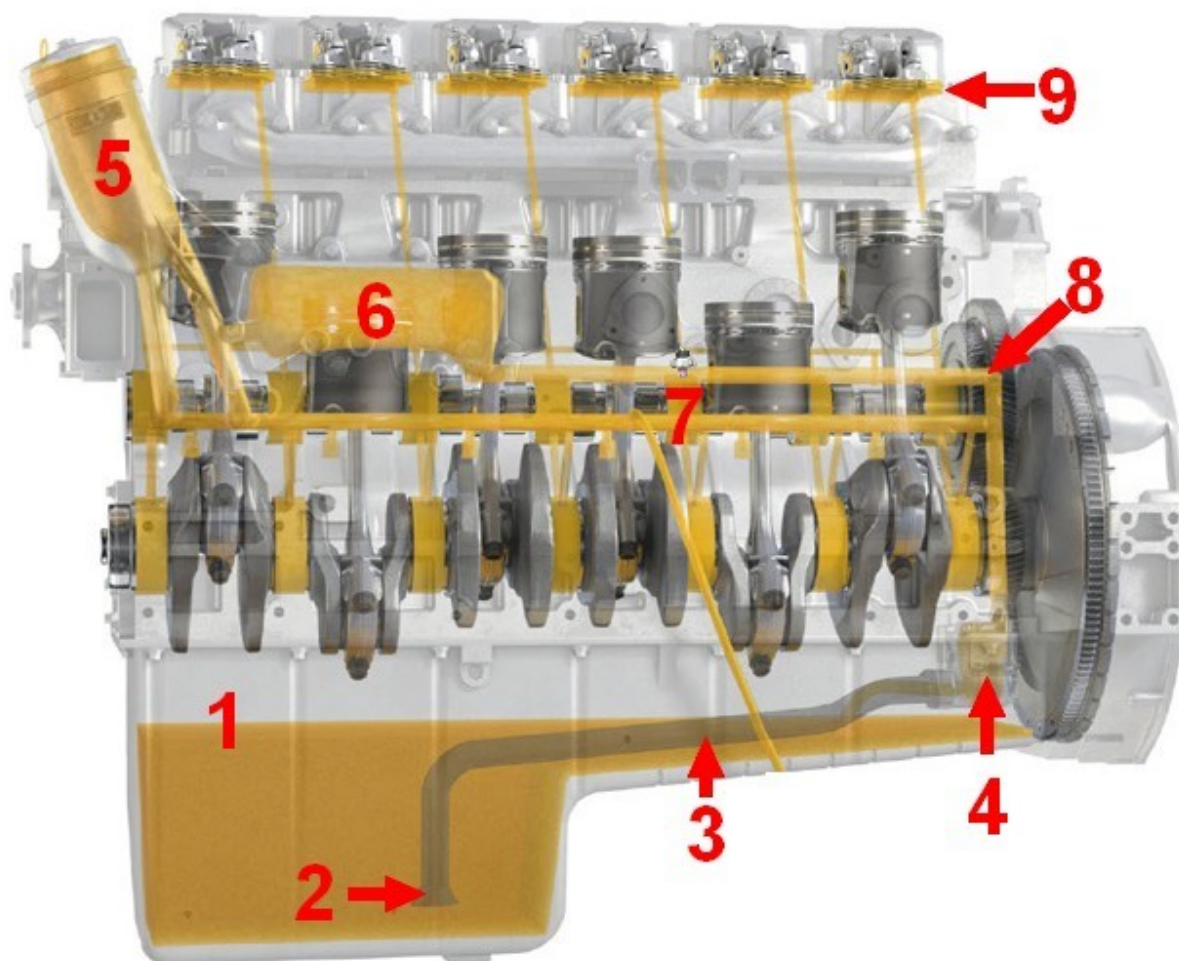
The APS unit manages the air pressure in the compressed air system. Incoming air from the compressor is dry and clean. In the event of a pressure drop in one circuit, the other circuits are protected from a pressure drop. The APS unit includes pressure sensors which detect and transmit information on the air pressure in the parking brake, front circuit and rear circuit, to the combined instrument via the CAN network. The normal system pressure range is between 9.0 and 12.3 bar. At an air pressure of 5.5 bar, the brake pressure warning light in the instrument cluster flashes and the buzzer sounds.



1. Desiccator
2. Circuit protection valve
3. Electronic control box



## Engine lubrication



1 – Oil pan

2 – Suction stainer

3 – Suction tube

4 – Oil pump

5 – Oil filter

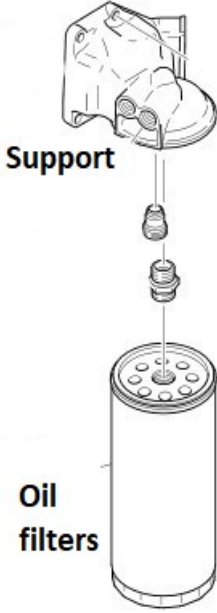
6 – Heat exchanger

7- Pressure switch

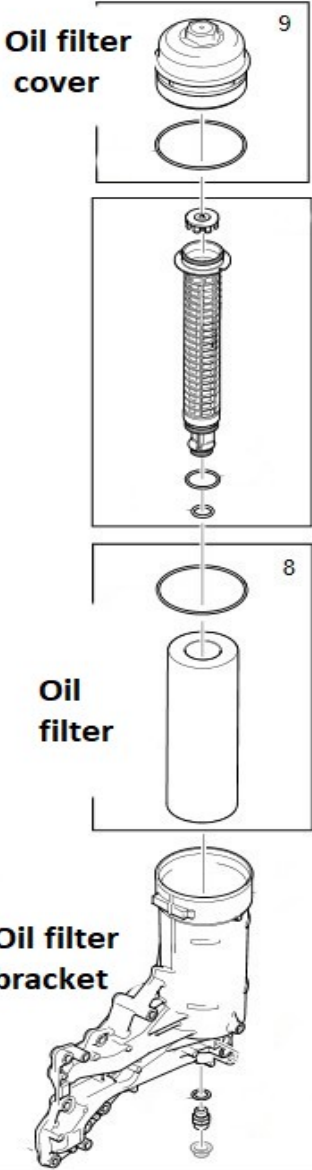
8 – Crankshaft oil circuit

9 – Cylinder head oil circuit

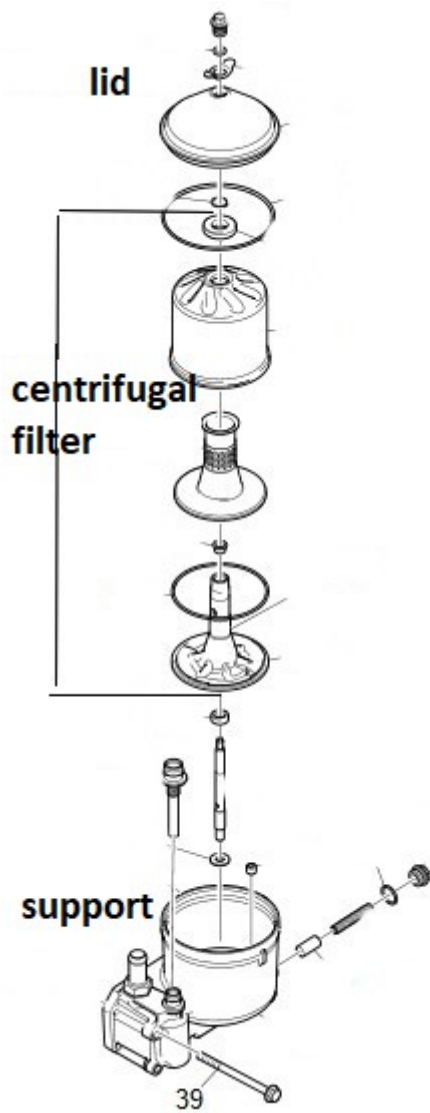
**Examples of oil filters :**



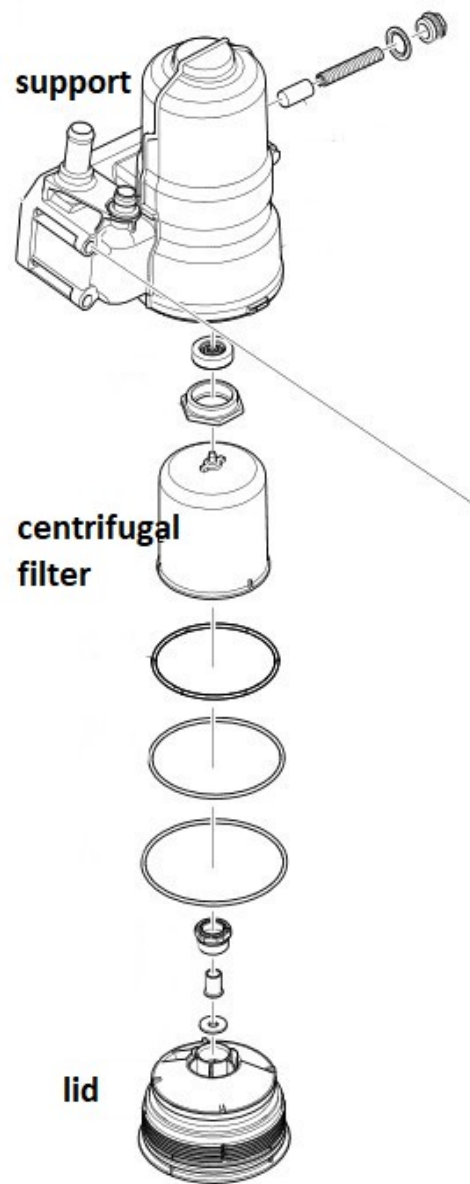
**screw cartridge**



**Flooded cartridge**



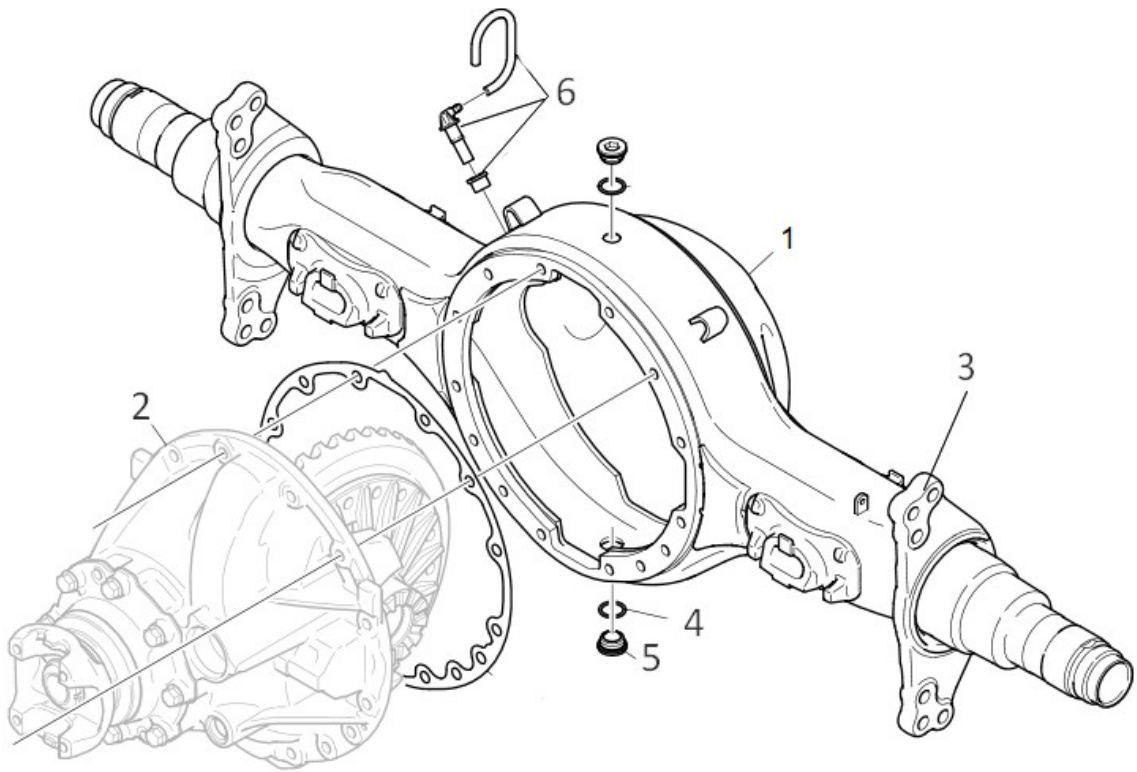
centrifugal filter to clean



centrifugal filter to replace

# Rear Deck

## Maintenance of road transport vehicles



1. Bridge housing or bridge banjo
2. Central mechanics
3. Brake caliper support
4. Drain plug gasket
5. Drain plug
6. Venting device



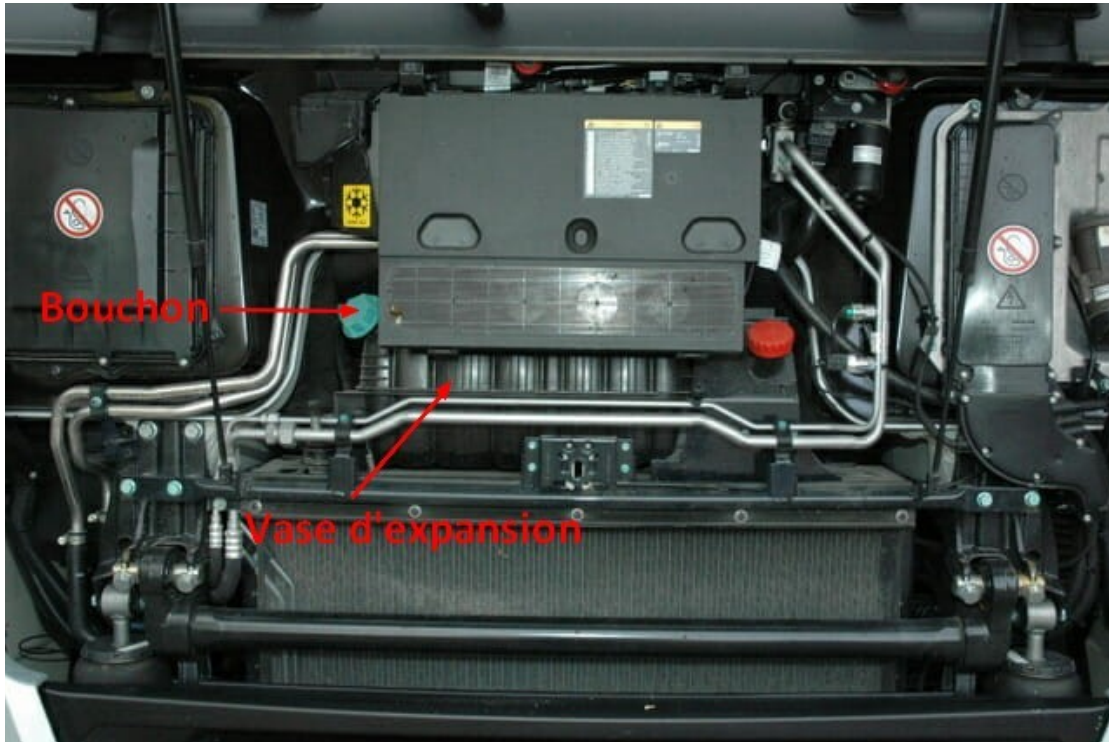


# The cooling circuit

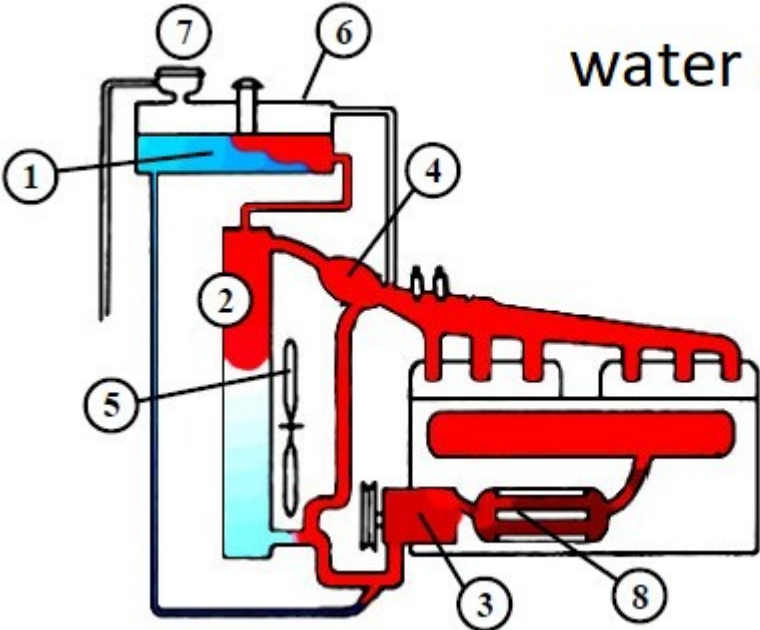
## Maintenance of road transport vehicles

Fill and Level:

Example of expansion vessel



Eléments :



water cooler

- 1. Cooling liquid
- 2. Radiator
- 3. Water Pump
- 4. Thermostat
- 5. Fan
- 6. Expansion tank
- 7. Cork
- 8. Oil cooler

# Road Driving

**BEZEL:** rear window of a vehicle

**WINDOWS:** specific signage: this sign indicates an area particularly exposed to the wind. It does not indicate the strength or direction of the wind.

**MARKINGS ON THE ROAD:** (marking on the ground): it is used to guide the drivers. The features of the continuous lines delimiting the traffic lanes have a length of 3 meters.

**MEDICATIONS:** taking medications. Most of the drugs that the driver takes, even for a mild illness such as colds, coughs, migraines, can cause different disorders in certain individuals. Be careful to respect the pictograms drawn on the boxes.

**SAFETY NICHE:** They do not protect against fire. The emergency call station allows you to contact the emergency services directly. Fire extinguishers are used to fight the beginning of a fire.

**LEVEL CROSSINGS:** level crossing equipped with manually operated gates or automatic half gates when passing trains.

**PERMIT WITH POINTS:** driving is not a trivial act. Driving is a responsibility that the driver takes towards himself and others. This is why, with the point-based license system, the driver's license is no longer held "for life". It is designed as a reminder of permanent vigilance.

**PROBATIONARY PERMIT:** it concerns: all new holders of a driving license (car, motorcycle, heavy goods vehicle, etc.). All drivers whose license has been invalidated by the total loss of points or who have been sentenced to a cancellation of the license by the judge.

**LICENSE PLATES:** White reflective front and back. Rear lighting allows it to be read at least 20 m away.

**ACTUAL WEIGHT, TOTAL AUTHORIZED LOADED WEIGHT:** PV 5 curb weight), GVW (total authorized laden weight), GCWR (total loaded rolling weight)

**ADVANCE WARNING:** the warning triangle is mandatory on board the vehicle. It must be placed so that the driver arriving on the lane can spot the obstacle in advance. It is strongly advised not to put it on the emergency stop band.

**CRUISE CONTROL:** The choice of a fixed speed.

**SANCTIONS:** The owner of a car is financially responsible for the offenses committed, unless he proves that he was not the driver.

**HAZARD SIGNAL:** The hazard warning lights warn other road users when: the driver is traveling at a very low speed (due to mechanical trouble or road congestion), the driver is last in an unbroken line which is stopped or moving very slowly, the vehicle has broken down on the roadway in a dangerous place (bend, top of a hill, intersection, tunnel, etc.)

**NATIONAL ALERT SIGNAL:** (alert to the population): The alert signal is emitted by sirens. It consists of three successive cycles of a modulated sound (rising and falling). When the danger is averted, the national end-of-alert signal consists of a continuous sound lasting 30 seconds.

**SIGNS OF OFFICERS:** Officers sometimes direct traffic especially at intersections. The signs of the agents cancel the indications of the panels and the traffic lights.

**SLEEPY:** being tired, sleepy, is not the same thing. Fatigue is a natural phenomenon due to the nervous and visual tension that requires driving.

Drowsiness comes from a lack of sleep. It results in difficulty staying awake even when driving.

**ALCOHOL LEVEL:** Being in a state of alcohol does not mean being drunk. The rate not to be reached is: 0.20 g/l of blood for novice drivers, i.e. 0.10 mg/l of exhaled air.

0.50 g/l of blood for the others, i.e. 0.25 mg/l of exhaled air.

**MOBILE PHONE:** Vigilance is the ability to respond at any time to any event. Several factors can be the cause of a decrease in alertness: monotony, routine, distraction, fatigue, worries, concerns, strong emotion (fear, joy, sadness...)

**WARNING TRIANGLE:** See warning.

**TUNNEL:** Signaling in tunnels is subject to specific rules and signage.

Before entering, circulating in the tunnel, breakdown, fire....

**PRIORITY VEHICLES:** to quickly fulfill their mission, the vehicles of the police, gendarmerie, fire-fighting services, intervention of mobile hospital units (SAMU-SMUR), customs are authorized not to respect the signs and the general traffic rules.

**VIGILANCE:** see blood alcohol level.

**SPEED:** The maximum allowed speed is different depending on the type of road. With bad weather, these speeds are lowered to take into account the additional difficulties.

**BLUE ZONE:** In certain streets or zones, the duration of parking is limited to allow as many people as possible to access them. This type of parking is free. Floor markings are blue.

ZONE

SELF-MEDICATION: personal choice of taking medication, without medical advice.

LIMINOUS HORNERS: flashes of headlights with high beams

AUDIBLE HORN: commonly called "HORN" (registered trademark) allows you to signal your presence in case of danger.

BEACON: devices implanted to guide or signal a risk.

EMERGENCY CALL TERMINAL: used to contact the operating and/or emergency services in the tunnels.

RUSSIA: also known as "motorway connection ramp": road linking the motorways to the rest of the network.

ROUNDAABOUT: space made one-way from the right onto which various roads lead.

CARTRIDGE: sign placed on the panel informing of the name of the road.

CASSIS OR DOS D'ANE: blackcurrant: hollow of the road. Speed bump: bump on the pavement.

REGISTRATION CERTIFICATE: in other words "grey card"

ONE-WAY ROAD: I recognize a one-way road by the continuous bank line on the left.

AMICABLE REPORT: document intended to describe the facts during an accident to facilitate settlement.

The establishment of this contract is essential because it protects my rights and speeds up reimbursement procedures.

CONTRAVENTION: offense punished by the police courts is sanctioned by a fine.

CARPOOLING: mode of travel where several people use a single car to make a trip together.

DALTONISM: hereditary problem of color vision, in particular red and green.

## Composants et symboles frigorifiques

