



## TIPS & TRICKS

### Engine oil filter Applications All Engine types

#### Engine oil filter benefits

**Engine oil filter** is responsible to **clean** and **protect** the engine from the following numerous types of particles

- **Organic** (sludge)
  - Unburnt fuel
  - Water
  - Solvents
  - Soot particles
- **Inorganic** (dust)
  - Oil additives
  - Metal particles from parts friction
- **Acids**
  - Resulting from combustion process

To ensure proper lubrication and longevity to the system it is imperative to continuously filter the oil



#### Oil filter element

- The filter element blocks the particles into the filter
- The design of filter element depends on
  - Particles size we have to filter
  - Type of oil
  - The amount of particles to block before servicing
  - The required filter size (space under the hood)

Filter media



Website  
[valeoservice.us/en-us](https://valeoservice.us/en-us)



Technical Assistance  
**1-888-718-2536**

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## What size of particles do we have to filter out?

Maximum **abrasion** occurs when the diameter of the particle is equal to the **gap** between moving parts in the engine.  
 The particles size which need to be removed is from **5 to 25µm** which is the **key** to control **engine wear**



## What is the Filter capacity and efficiency?

- **Filter Capacity**:- the amount of particles which are able to **block** by the filter for a specified **maximum pressure drop**
- **Minimum pressure** losses are required for **long service life** which is measured in **Km** (distance)
- **Filter Efficiency**:- is related to the % of a specified particle **size** which can be able to **blocked** by the filter

Please refer to oil filter catalogue



## Oil filter main types

Type	Spin type	Cartridge type
Description	Filter with a metal body screwed to the engine	Filter element located inside the oil module/housing
Photo		



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## Oil sensor benefits

- **Oil condition sensor** measures the following variables
  - Engine oil temperature
  - Oil level
  - Engine oil quality
- The sensor can determine the **properties** of the oil. These properties **alter** when the engine oil shows signs of **degradation** and **ageing**



## Oil condition sensor structure & how is it work?

- The oil condition sensor consists of **2 cylindrical** condensers
- The condensers are **mounted** above **one another**
- The temperature sensor is **seated** on the **housing** of the oil condition sensor

### How is it work?

- The electric material properties of the oil **changes** as its **wear & ages**
- The **change** in properties of oil will become **dielectric** which will change the **capacity** of the capacitor.
- The **electronic evaluator** converts the **measured capacity** into a **digital signal** which sent later to the **engine management system**, which is used for **internal calculations** for oil properties
- The oil level is measured by the **2nd capacitor** in the **upper part** of the oil condition sensor.
- It **register** the oil level with **engine running**
- The capacitor is at the **same** level as the oil level in the oil sump.
- As the oil level **changes**, the capacitance of the capacitor **changes**

