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Comparison of a Gasoline Engine and a Diesel Engine

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Nowadays petrol engines are used in the majority of cars, and that's why it's very important to know everything about their advantages and disadvantages. The majority of car admirers choose petrol engines because of their low cost and weight, compared to diesel engines. A petrol engine is started due to fuel-air mix, which is ignited by a spark from spark plugs, burning (Figure 1) [1].

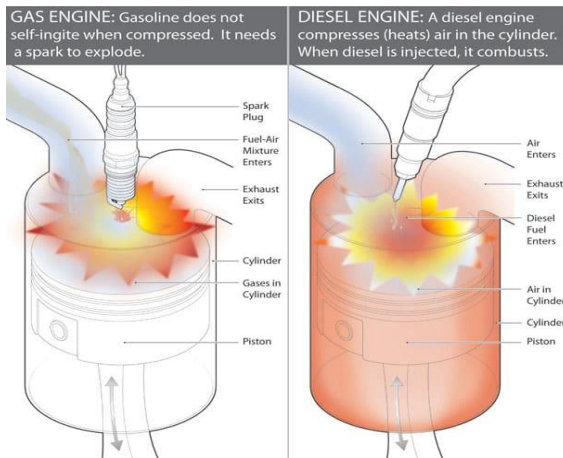


Figure 1 – Gas Engine vs Diesel Engine

Relatively low compression ratio, which has a value of 8 – 12 points, appears in a combustion chamber. The absence of heightened loads allows to make the engine easier as the same safety margin that diesel engines have is not required. But

petrol has some advantages, and one of them is the absence of need of additives even at very low temperature. Talking about diesel fuel is a completely different story? Also, the petrol one is easier to start in winter and requires less time to warm up. Another essential factor is noise and engine vibrations. Speaking of which, petrol engines are much more advantageous than diesel ones. The issue of diesel engines that significantly increases vibrations and causes rumbling that can't be silenced by any soundproof or dampers is the process of ignition being under a lot of pressure. In terms of fire safety, petrol engines are more prone to fire and explosions. Therefore, it requires more attention to leak proofness of the fuel system and condition of electrical equipment [2].



Figure 2 – Comparison of Gas Engine and Diesel Engine

Talking about requirements of the quality of fuel, petrol engines are less demanding and usually run on fuel which has a lower octane number. On the contrary, diesel engines always require fuel of high quality as a proactive way of preventing fuel pump and injector from clogging. What is more, diesel requires high quality filters in good condition as well as timeliness of their replacement, which makes car users contact car services more often. One of the possible advantages of diesel fuel is its price, but the ratio of prices is different and

really dependent on the country where you live and exploit your car in [3].

Let's consider the advantages and disadvantages of diesel fuel (Table 1).

Table 1 – Advantages and Disadvantages of Diesel Fuel

Advantages	Disadvantages
A simple construction	More prone to fire and explosions
Low weight	More demanding for high quality oil
Low cost	The more car is loaded, the more fuel is consumed
An opportunity to exploit at high revs	
Easier to service	
Makes less noise	
Easier to start at low temperature	
Less demanding for fuel quality	
More opportunities for refurbishment to decrease fuel consumption	

Taking into account all specific characteristics of petrol and diesel engines, it is possible to make a conclusion that both of them have their own pros and cons. To cut a long story short, petrol is more suitable for passenger cars, while diesel is often chosen for commercial vehicles and SUV (Sports Utility Vehicles). Your choice should be dependent on your personal needs and clauses of exploitation.

References:

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