Bencin je mešanica več ogljikovodikov z vrelišči med 40 in 200° C. Najpomembnejši lastnosti bencina, kar zadeva pravilen dovod goriva do uplinjača in ustvarjanje pravilne zmesi, sta hlapljivost in pritisk par (nagnjenost k nastajanju plinskih mehurjev v dovodnem sistemu). Glede pravilnega izgorevanja v motorju pa je pomembno predvsem t.i. oktansko število motorja. Oktansko število določa odpornost goriva proti "klenkanju motorja", to je prenaglemu zgorevanju, ki škodljivo vpliva na motor. (Pri normalnem zgorevanju se plamen in s tem tudi tlak ob vžigu svečke širita enakomerno. Pri klenkanju pa prihaja do posameznih eksplozij v valju zaradi samovžiga goriva, in to še prej, preden ga je dosegel plamen od normalnega vžiga.)

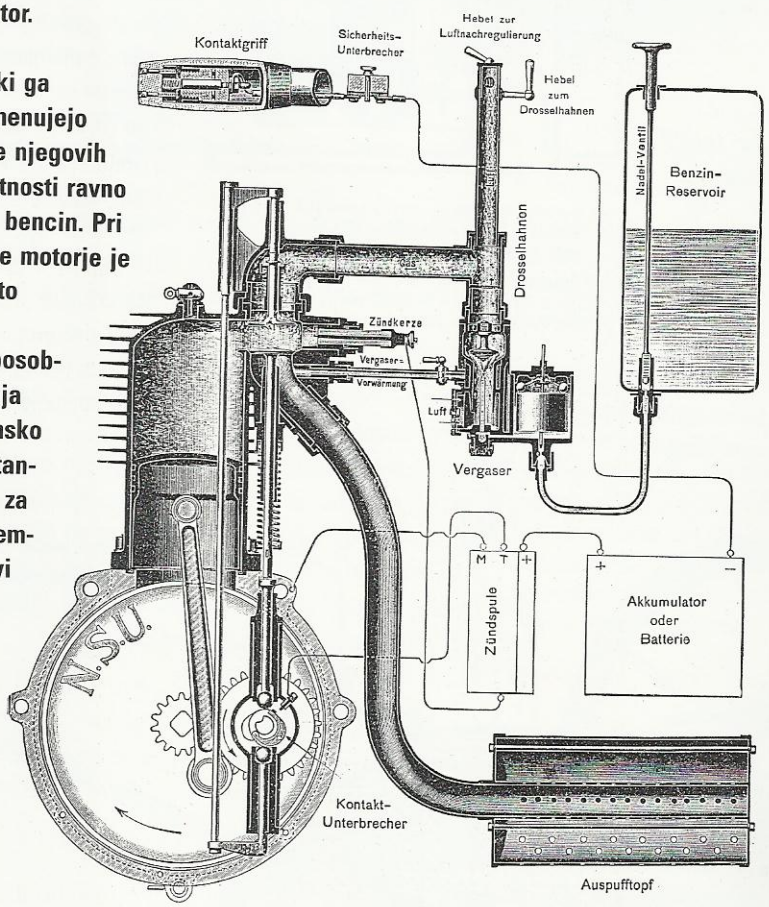
Za sodobne motorje so oktanska števila bencinov, ki se pridobivajo iz rafinerij, prenizka. Bencinu je potrebno z dodatki za zmanjšanje eksplozijskih lastnosti povečati oktansko število. Še do nedavna je bil najbolj v uporabi svinčev tetraetil, ki pa je zaradi vsebnosti strupenega svinca škodljiv okolju. Svinca z znanimi postopki ni možno izločiti iz izpušnih plinov, zato klasični osvinčeni bencin vse bolj izpodriva neosvinčeni, pri katerem lahko strupene snovi odstrani katalizator.

Za plinsko olje, ki ga včasih zmotno imenujejo nafta, velja glede njegovih eksplozijskih lastnosti ravno nasprotno kot za bencin. Pri gorivu za dizelske motorje je zaželjeno, da se to vžge takoj in ne postopoma. To sposobnost plinskega olja opredeljuje cetansko število. Poleg cetanskega števila sta za plinsko olje pomembni še dve njegovi lastnost: strdišče in vsebnost žvepla.

Petrol is a mixture of different carbohydrates with a boiling point at 40 and 200 degrees Celsius. The most important features of petrol regarding accurate influx of fuel into the carburetor and forming of the correct mixture are volatility and steam pressure (liability to forming gas blisters in the inlet system). According to correct combustion within the engine, the so called octane number of the engine is important since it defines the fuel's resistance against the "tinkling of the engine" (overactive combustion that harms the motor; by normal combustion the flame and consequently the pressure expand equally when the sparking plug is ignited. The tinkling of the engine is a consequence of individual explosions inside the cylinder caused by spontaneous ignition of the fuel before reached by the flame of the normal ignition).

The octane numbers of the petrols fabricated in refineries are too low for modern engines. The octane number is thus increased by supplying additives that reduce the explosion potential. Until recently, lead tetraethyl was generally used but because of its environmental noxiousness other substances are used today. Since it is not possible to eliminate lead from exhaust gas by any known procedure, classic petrol is being replaced by unleaded one, where the harmful substances are removed by a catalyst .

As far as explosion features of gas oil are concerned, the rule is exactly counter to that of gas. Diesel engines are preferred to ignite immediately and not gradually. This feature of gas oil is defined by the cetane number. Apart from that also the solidifying point and the amount of sulfur are important.



Zündkerze - svečka / *sparking plug;* **Vergaser** - uplinjač / *carburetor;* **Luft** - zrak / *air;* **Vergaser vorwärmung** - predgrevanje uplinjača / *carburetor preheating;* **Zündspule** - visokonapetostna tuljava / *sparking spool;* **Akkumulator** - akumulator / *accumulator;* **Gas** - mešanica goriva in zraka / *mixture;* **Benzin Reservoir** - posoda za gorivo / *petrol reservoir;*

Prerez štiritaktnega motorja v fazi sesanja. Uplinjač tvori zmes zraka in razpršenega bencina, ki se nato na poti do zgorevalnega prostora uplini (energija goriva se oddaja neposredno). Ilustracija (zasebna last)

Section of a four - stroke engine in the suction phase. Carburetor forms a mixture of air and dispersed petrol which gasifies on its way to the combustion area (energy of the fuel is emitted directly). Graphics - from a private collection