

1: MAN PrimeServ - Two-stroke

The main difference between two and four stroke engine is that in 2 stroke engine the crankshaft revolve two times to complete its working cycle where as in 4 stroke, the crankshaft does 2 revolution to complete its working cycle.

The difference is that in a two stroke engine there is only one upward and one downward stroke, giving a total of two movements in one cycle of the engine. In a four stroke engine, there are two upward and downward strokes, giving a total of four movements to complete one cycle of the engine. The first stroke of a two stroke engine is the compression stroke, which is then followed by explosion of the fuel. In the second stroke, the new fuel mix is pushed into the cylinder. In a four stroke engine, the spark occurs inside the cylinder, and the cylinder already contains the burnt gases. The sparkplugs in a two stroke engine last longer than those in a four stroke engine. Although, since two stroke engines do not have a separate lubricating system, its spare parts could wear out a bit faster compared to four stroke engines. Therefore, four stroke engines generally last longer than two stroke engines. Two stroke engines are easier and less costly to manufacture because they have a simple construction and do not have any valves. Four stroke engines are much more complex in their design and construction, and therefore, their manufacture takes longer, and is more expensive. Four stroke engines are much more fuel efficient than two stroke engines, as the latter will run for only a few miles on one gallon. Something else to consider, is that two stroke engines are responsible for much more pollution due to the combustion of oil in their engines. Four stroke engines are more environmentally friendly. When it comes to power, a two stroke engine can produce twice the amount of power than a four stroke engine, in the same size engine. This is because it fires only once every revolution of the engine. A four stroke engine produces less power because it has four strokes per cycle. A two stroke engine has two strokes per cycle of the engine, while a four stroke engine has four strokes per cycle. The sparkplugs in two stroke engines last longer than those in four stroke engines. Two stroke engines are simpler and cheaper to manufacture compared to four stroke engines. Four stroke engines are longer lasting than two stroke engines. Four stroke engines are more fuel efficient and environmentally friendly when compared to four stroke engines. If you like this article or our site. Please spread the word.

2: 2 Stroke vs 4 Stroke Engine - Difference Between

The basic and main difference between two stroke and four stroke engine is that the crankshaft complete one revolution in one power stroke in 2 stroke engine and complete two revolution in one power stroke in four stroke engine.

There are many types of engines to meet the requirements of say airplanes, rockets, cars, ships, trains etc. It is inside these combustion chambers that the conversion of energy from the chemical form to mechanical form takes place. A small amount of fuel and air mixture is compressed by pistons and exploded in certain time periods using spark plugs or by self-ignition for diesel engines causing the mixture to expand pushing down the pistons again. This causes an up and down movement of the pistons. The difference between 2stroke and 4stroke engine arises from the number of strokes piston makes while completing one cycle. This one cycle consists of the compression and combustion of the air-fuel mixture. Basically there are four parts to one cycle: In the 2-stroke engine, the cycle gets completed in two strokes of the piston one upward compression stroke and one downward exhaust and intake stroke. Almost all cars we see today use the 4-Stroke engines including most motor bikes, chainsaws, lawnmowers, leaf blowers etc. We shall discuss in detail how each of the engines carry out the combustion cycle. This enables the two stroke engine to produce more power. The lack of valve systems in a two stroke enables it to be lighter and operate in any orientation as compared to the 4 stroke which can operate efficiently in the upright position countering this problem would require design complexities. Thus the 2-Stroke engine has a higher power to weight ratio. Wikipedia Let us look at the cycle from the ignition. At this point, the fuel and air mixture is compressed and ignited using the spark plug or self-ignition which causes the gas to expand. When this happens, the burnt fuel exhaust is sent into the exhaust outlet which is uncovered just as the piston moves down below it. The gas intake is then compressed again using the momentum created by the combustion stroke expansion and ignited repeating the entire cycle once again. Since the piston acts as both to pressurize the crankcase and as a valve to the outlet and fuel intake, a lot of friction is generated by it with the walls of the combustion chamber. For this reason a significant amount of oil is mixed with the fuel which is poured in which acts as a lubricant. The oil requirement introduces an increased pollution factor by the two stroke engine. Also, as the spark plug has to fire many times, it wears out quite quickly. The faster fuel intake leads to decreased fuel efficiency in the two stroke engine. It has been given more attention and development unlike its brother, the two stroke engine. It consists of a complex valve system which is operated by time shafts or cam shafts that open and close the valves at the required time. The 4-stroke engines have many different cylinder layouts such as Inline 4 used as a default in most of the mid-range cars , V5, V6, V8 used is higher end car engines. All the pistons follow a different firing order to produce maximum possible efficiency and the sparks are provided as per this firing order by a distributor. Wikipedia Let us study the cycle of the four-stroke, one stroke at a time. Firstly, the inlet valve opens pushing in a mixture of air and fuel from created from the carburettor this pushes the piston down. In the second stroke the fuel-air mixture is compressed and ignited when it reaches the Top Dead centre TDC position. Generally compression ratio of engines is 9: In the third stroke the combusted gas expands pushing the piston down. In the 4th stroke, the exhaust valve is opened by the cam shaft and therefore the pressure difference created pushes out the exhaust gases out which moves the piston up. Again a new cycle starts from here. The valves are controlled by cam shafts which are either controlled by the crank or by other mechanisms A 4-stroke Engine has more advantages when a large scale use is required. It has a longer life period than the 2-Stroke. There is a lot of room for designing in the 4-stroke engines. It has a better fuel efficiency than the 2-stroke. The pollution is also controlled; it is lowered further as the exhaust gases are sent into catalytic converters to convert the environment-hazardous gases to clean gases.

3: differences b/w two stroke engine and four stroke engine?

Difference Between Two Stroke and Four Stroke Engine, here in this video tutorial you will learn about difference between two strokes and four strokes engine. I am sure you have watch my video.

Is there a difference between a 2 cycle and a 2 stroke? Looking at the cylinder head. I have experienced this since I have two kinds of motorcycles, one is a 2T 15 years old the other is a 4T 8 years old and the 4T eats more gas than my 2T motorcycle. Here in my country Philippines you will see tricycles with a very old 2 stroke motorcycles running smoothly than the newer 4 stroke motorcycles and they live longer than the 4 stroke motorcycles. I loved the Saabs, great winter cars, they loved the cold! Both were still on the original crank and bore. Both just improved with age, in fact, perfect piston and ring seal. Never bore a good cylinder, but try and find a piston a tad bigger than normal if the measured clearance gets too much, a floppy piston can explode. I just changed pistons 4 times a year, 2 sets of rings per piston, and little-end bearings. Racing what to you guys would consider professional racing but normal to us I did this more often than a simple club-rider in the USA would need to, it was possible to race an entire season on the same piston forged Mahle - and I knew a guy who raced all year on the same ring too! But he was lucky, it was worn so thin it was going to blow any second. And he really DID need a rebore. Never use synthetic 2T oils. Only run at The piston passes heat to the cylinder via the oil, so it needs a good cushion of oil. I never seized or holed a piston, however hot the day, or tough the track. But fun when you got it right. Some of the oil does fly up the transfers and gets burned with the petrol, yes, but this is less than percent and is only the lightest fraction of the oil, almost gas-state anyway. But a lot of this oil still manages to migrate into the expansion-chamber. Petroil is a wonderful lubrication system. What you can see is very interesting. The carbon build-up, the shiny, oily bits, tell them better than any mathematics how well the expansion-chamber is designed, how well the engine has been working and, going by the glares, how fast the works-rider has been riding! We had them too. They were made from the best materials and, revving to only rpm, could last an entire season before being renovated valve-springs aside. I can assure you those old bikes were very fast. They are designed to be thrown-away and replaced after a season. We rode for the love of it, the guys making the European bikes raced for the love of it. Why they went bankrupt. Some people are just in the business of making money. And they are professionals. If I increase the amount of air which goes inside with same amount of fuel, will the power of engine be increased? Or will it remain same? Tcs Post 78 Answers to 68 and The solution to your question is very simple. Wish you all a great Memorial Day weekend, remember the Vets and our troops who make it possible for us to have fun on the internet. The four stroke has valves and a cam shaft for exhaust and intake. A two stroke uses two strokes: Two strokes use two-stroke mix which is often 3: When it comes to mowers I prefer a no engine push, rotary mower first, followed by a two stroke engine one. No matter what all pistons will never be at bdc. Gasoline in an internal combustion engine basically any gas engine does not will not and will never explode, gas burns but never explodes. In a compression ignition engine or diesel it explodes, so get your facts right bud. A two stroke is a motor that will use more fuel but is a great motor for accelerations. A two stroke has way more bottom end than a 4 stroke. Why do you think that a 2-stroke dirt bike races a 4-stroke? The only thing a 4 stroke has got going for it is the lubrication system, and top end power and speed. You mix gas in a 2-stroke. Does one assume that because they are both hp that the boats would accelerate at the same pace and have the same top speed?

4: ME-B Applications

The cycle of the 4-stroke engine is called the "Otto Cycle" named after the inventor of the internal combustion cycle "Nikolaus Otto". In the 2-stroke engine, the cycle gets completed in two strokes of the piston (one upward compression stroke and one downward exhaust and intake stroke).

On the medium speed engines this normally takes the form of two inlet and two exhaust valves per unit. The reasons for this are as follows: The area of the valve openings must be large enough to provide for an efficient gas exchange process. The cylinder head must accommodate inlet and exhaust valves, so unlike a two stroke engine, one large central exhaust valve is not possible. If the valves are too large, then the strength of the cylinder head will be compromised. Keeping the exhaust valve temperature within acceptable limits is of paramount importance. It is easier to cool a smaller valve. The moving parts and springs are of smaller proportions reducing the inertia of the parts and the power demand on the engine. Exhaust valves are subject to arduous conditions, and require regular overhaul. To aid this, exhaust valves are often fitted in separate cages. This allows the exhaust valve to be changed and overhauled without removing the cylinder head. The cages have water cooling passages connected to the cylinder head cooling water. The cage is of cast steel. The cooled seats are made from a heat resistant molybdenum steel which may be stellite faced. The exhaust valve may be of a similar material or of a nimonic alloy. Inlet valves are subject to much less arduous conditions and are not usually fitted in separate cages. Two different sized springs are fitted to aid positive closing of the valves. The reason for fitting two springs are that if one fails, the other will prevent the valve dropping down into the cylinder. The two springs have different vibration characteristics, so the incidence of resonance is reduced. Exhaust valves are designed to rotate in service. A mechanical method is generally used, and this is either the "rotocap" or the "turnomat". Winged rotators or spinners as used on the 2 stroke engine exhaust valves can also be used, but this entails using a ball bearing race between the spring carrier and the cover.

Burning Out of Exhaust Valves Once an exhaust valve does not seat correctly, the high pressure burning gas will pass across the faces of the valve and seat during the power stroke. This will cause the temperature of the valve and seat to rise in this area, weakening the material and distorting the surfaces. The temperature of the valve in this area will rise further, leading to further burning and greater distortion. The first indication of a valve burning out will be a rise in the exhaust temperature, which will rapidly increase together with a loss of power from the unit.

Rocker Gear Master and Slave Most medium speed four strokes use push rods and rocker gear to open and shut the valves at the correct time. Operated by cams, mechanically timed to the crankshaft, the pushrods transmit the motion to the rocker gear, which pushes the valves open at the correct time. Because there are two of each valve mounted in the cylinder head, the rocker gear must operate both valves simultaneously. Various methods are used including master and slave arrangements Sulzer ZA40 and yoke Fiat. A hydraulic operating system was introduced in place of push rods and rocker gear on the Sulzer ZA This had the advantage of being able to adjust the timing of the closing of the valves to suit operating conditions.

Yoke Rocker or Tappet Clearances Rocker or Tappet clearances refer to the clearance between the top of the valve spindle and the rocker arm. It is to ensure that the valve closes properly when it expands as it gets to operating temperature. Clearances are set according to manufacturers instructions, but usually done with the engine cold, and with the push rod follower on the base circle of the cam. If the clearance is too small, then not only is there a chance that the valve will not close properly when it comes up to temperature, but it effectively will open early and close late. Conversely if the clearance is too large, then the valve will open late and close early.

5: Difference between 2 Stroke vs 4 Stroke Engine - mech4study

The biggest difference between a two stroke and four stroke engine has to do with firing timing, which can often be noticed in terms of sound: the two engine often has a high-pitched, very loud rumble, whereas the four engine tends to have a quieter purr.

In a two-stroke engine, the four "cycles" of internal combustion engine theory intake, compression, ignition, exhaust occur in one revolution, mechanical degrees, whereas in a four-stroke engine these occur in two complete revolutions, mechanical degrees. Intake begins when the piston is near the bottom dead center. Air is admitted to the cylinder through ports in the cylinder wall there are no intake valves. All two-stroke Diesel engines require artificial aspiration to operate, and will either use a mechanically driven blower or a turbo-compressor to charge the cylinder with air. In the early phase of intake, the air charge is also used to force out any remaining combustion gases from the preceding power stroke, a process referred to as scavenging. As the piston rises, the intake charge of air is compressed. As the piston moves downward in the cylinder, it will reach a point where the exhaust port is opened to expel the high-pressure combustion gasses. However, most current two-stroke diesel engines use top-mounted poppet valves and uniflow scavenging. Continued downward movement of the piston will expose the air intake ports in the cylinder wall, and the cycle will start again. Detroit Diesel two-stroke engines, very few parameters are adjustable and all the remaining ones are fixed by the mechanical design of the engines. The remaining, adjustable, parameters have to do with exhaust valve and injection timing these two parameters are not necessarily symmetrical about TDC or, for that matter, BDC, they are established to maximize combustion gas exhaust and to maximize charge air intake. A single camshaft operates the poppet-type exhaust valves and the Unit injector, using three lobes: Specific to EMD two-stroke engines, and In EFI-equipped engines, the electronically-controlled unit injector is still actuated mechanically; the amount of fuel fed into the plunger-type injector pump is under the control of the engine control unit in locomotives, locomotive control unit, rather than the traditional Woodward PGE governor, or equivalent engine governor, as with conventional unit injectors. Whereas some EMD and Detroit Diesel engines employ turbocharging, only such EMD engines employ a turbo-compressor system; such Detroit Diesel engines employ a conventional turbocharger, in some cases with intercooling, followed by the usual Roots blower, as a turbo-compressor system would be too costly for these very cost-sensitive and highly competitive applications. Electro-Motive Diesel, uniflow diesel engines for marine, railway and stationary applications Fairbanks-Morse, opposed-piston diesel engines for marine and stationary applications. An upscaled unlicensed copy of the Junkers Jumo aero engine. Foden, FD series of diesel engines for commercial vehicle, marine and industrial power. Junkers, patent from, opposed piston design for stationary, marine and automotive single crankshaft engines, later aircraft usage with dual crankshaft layout Junkers Jumo Gray Marine, uniflow diesel engines for marine applications.

6: difference b/w a two stroke and a four stroke bike (enfield)? | Yahoo Answers

So the 2 stroke engine give high power compare to 4 stroke engine but the 4 stroke engine is more fuel efficient. Here I like to list many other differences, It Two stroke engine (2\$) has one revolution of crankshaft within one power stroke.

7: Difference between Gasoline and Diesel Engines - NCH Europe

A two stroke engine has two strokes per cycle of the engine, while a four stroke engine has four strokes per cycle. The sparkplugs in two stroke engines last longer than those in four stroke engines. Two stroke engines are simpler and cheaper to manufacture compared to four stroke engines.

8: What is Difference Between Petrol and Diesel Engine? - Mechanical Booster

DIFFERENCE B W TWO STROKE AND FOUR STROKE ENGINE pdf

International. Argentina; Australia; Brazil; Canada; France; Germany; India; Indonesia; Italy; Malaysia; Mexico.

9: What is the difference b/w 4-stroke and 2-stroke engine? | Yahoo Answers

2 - stroke engines were used in two wheeler and mopeds. but now a days in all vehicles we use 4 - stroke engine. now lets understand about 4 - stroke engine. 4 - Stroke engine: As i say 2 stroke and 4 stroke both engine performs same strokes. now lets understand suction, compression, power and exhaust stroke in 4- stroke engine.

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