FABRICATION OF KIDS BIKE

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***Abstract*:** *A bicycle, often called a bike, is a human-powered, pedal-driven, single-track vehicle, having two wheels attached to a frame, one behind the other. A bicycle rider is called a cyclist, or bicyclist. The bicycle's invention has had an enormous effect on society, both in terms of culture and of advancing modern industrial methods. Several components that eventually played a key role in the development of the automobile were initially invented for use in the bicycle, including ball bearings, pneumatic tires, chain-driven sprockets, and tension-spoked wheels. To avoid human effort to ride cycle in certain difficulties and it helps to ride easily by the help of our project, titled "**FABRICATION OF KIDS BIKE**". Today, motorized bi-cycles are still being developed as complete designs and as add-on motor kits for use on standard bi-cycles, either by part- time hobbyists or by commercial manufacturers. With the development of new, lighter, and more powerful batteries, electric motors for power assist are increasingly popular, often using hub motors to facilitate after market conversions. Motorized bi- cycles using electrical motors have also re-entered the market. Electrically powered bi- cycles use batteries, which have a limited capacity and thus a limited range, particularly when large amounts of power are utilized. This design limitation means that the use of the electric motor as an assist to propulsion is more emphasized than is the case with an internal combustion engine.*

Keywords*-kids bike, Fabrication of kid's bike, comfort and economy.*

INTRODUCTION

BICYCLE USES

Bicycles have been and are employed for many uses:
Utility: transportation, bicycle commuting, and utility cycling

- Work: mail delivery, paramedics, police, couriering, and general delivery.
- Recreation: bicycle touring, mountain biking, BMX, physical fitness, and play.
- Racing: track racing, criterium, roller racing and time trial to multi-stage events like the Tour of California, Giro d'Italia, the Tour de France, the Vuelta a España, the Volta a Portugal, among others.
- Military: scouting, troop movement, supply of provisions, and patrol. See bicycle infantry.
- Entertainment and performance: Artistic cycling, Freestyle BMX.

Fig: Fabrication of kids bike

ENGINE

An engine or motor is a machine designed to convert energy into useful mechanical motion. Heat engines, including internal combustion engines and external combustion engines (such as steam engines) burn a fuel to create heat, which then creates motion. Electric motors convert electrical energy into mechanical motion,

pneumatic motors use compressed air and others—such as clockwork motors in wind-up toys—use elastic energy. In biological systems, molecular motors, like myosins in muscles, use chemical energy to create motion.
Engines are classified into two types
1. External combustion engine
2. Internal combustion engine
1. External combustion engine:-in this case combustion of fuel takes place outside the cylinder .
Example: steam engine
2. Internal combustion engine: In this case combustion of fuel with oxygen of the air occurs within cylinder of the engine
Example: motor cycle

BASIC TERMS OF IC ENGINE

Bore: The inside diameter of the cylinder is called bore.
TDC and **BDC**: The upper most position (i.e position nearest to cylinder cover) is termed as the top dead centre. While the lower most position (i.e position nearest to crank shaft) is termed as the bottom dead centre.
Piston stroke: The distance travelled by the piston from one dead centre to the other centre is called piston stroke. During one stroke the crank shaft rotates half a turn.
Stroke volume: The volume displaced by the piston as it is moves from one dead centre to the other is called stroke volume or swept volume. It is measured in cubic centimeters or liters.
Clearance volume: The space between the cylinder head and the piston face at the top dead centre is known as the clearance volume. It is measured in cubic centimeters or liters.
Compression ratio: The ratio of the whole cylinder volume i.e, volume of cylinder when piston is at BDC or ODC to the clearance volume is called compression ratio.

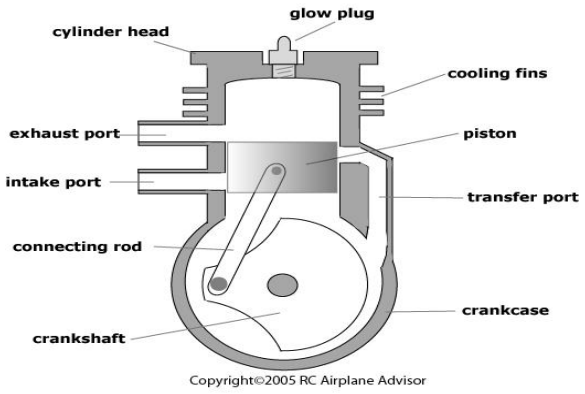
TYPES OF ENGINES

Inter combustion engines may classified as given below:
According to cycle of operation
1. Two stroke cycle engine
2. Four stroke cycle engine
According to cycle of combustion
1. Otto cycle engine
2. Diesel cycle engine
3. Dual combustion engine
According to arrangement of cylinder
1. Horizontal engine
2. Vertical engine
3. V- type engine
4. Radial engine
According to fuel employed and method of fuel supply to engine cylinder
1. Oil engine
2. Petrol engine
3. Gas engine
According to method of ignition
1. Spark ignition engine
2. Compression ignition engine
According to cooling of engine
1. Air cooled engine
2. Water cooled engine
According to number of cylinders
1. Single cylinder engine
2. Multi cylinder engine

OPERATION OF A TWO STROKE ENGINE

A two-stroke, two-cycle, or two-cycle engine is a type of internal combustion engine which completes a power cycle in only one crankshaft revolution and with two strokes, or up and down movements, of the piston in comparison to a "four-stroke engine", which uses four strokes. This is accomplished by the end of the combustion stroke and the beginning of the compression stroke happening simultaneously and performing the intake and exhaust (or scavenging) functions at the same time. Two-stroke engines often provide high power-to-weight ratio, usually in a narrow range of rotational speeds called the "power band". Compared to 4-stroke engines, they have a greatly reduced number of moving parts, are more compact and significantly lighter.The first commercial two-stroke engine involving in-cylinder compression is attributed to Scottish engineer Dugald Clerk, who in 1881 patented his design, his engine having a separate charging cylinder. The crankcase-scavenged engine, employing the area below the piston as a charging pump, is generally credited to Englishman Joseph Day.

COMPONENTS OF TWO STROKE ENGINE



CYLINDER

The cylinder contains gas under pressure and guides the piston. Its in direct contact with products of combustion and it must be cooled. The ideal form of consist of main cylinder barrel in which the piston slides. The upper end consist of combustion or clearance space in which ignition and combustion of the charge take place.

CYLINDER HEAD

One end of the cylinder closed by means of the removable cylinder head which usually contains the spark plug. Spark plug is placed in the middle of the cylinder head.

PISTON

A piston is fitted to each cylinder as a face to receive the gas pressure and transmit the thrust to connecting rod. The piston must

1. Give the gas tight seal to the cylinder through bore.
2. Slide freely
3. Be light
4. Be strong

Piston wall called skirt must strong enough to stand up to this side thrust. Piston made of cast iron or aluminium alloy for lightness.

PISTON RINGS

Piston must fairly loose fit in the cylinder. If it were a tight it would expand it got hot and might stick tight in the cylinder. To provide a good sealing fit between the piston and cylinder, piston are equipped with pistons rings as shown in the figure. The rings are usually made of cast iron of fine grain and high elasticity which is not affected by the working heat. They are split at one point so that they can be expanded and slipped over the end of the piston and into ring grooves which have been cut in the piston.

GUDGEON PIN

These are hardened steel parallel spindles fitted through the piston bosses and the small end bushes or eyes to allow the connecting rods to swivel. Gudgeon pins are press fit in the piston bosses of light alloy pistons when cold. It made hollow for lightness since it is a reciprocating part.

CONNECTING ROD

The connecting rod transmits the pistons load to the crank causing the latter to turn, the converting the reciprocating motion of the piston into a rotary motion of the crankshaft. The connecting rods are made of nickel, chrome vanadium steels.

CRANK

The piston moves up and down. This reciprocating motion changed into rotary. The connecting rod connects the piston to the crank.

CRANK SHAFT

The crank is part of the crankshaft. The crankshaft of an internal combustion engine receives via its cranks the efforts supplied by the pistons to the connecting rods. It is usually a steel forging but some makers use special types of cast iron such as spheroidal graphitic or nickel alloy casting which cheaper to produce and have good service life.

CRANK CASE

The main body of the engine to which the cylinders are attached and which contains the crank shaft and crank shaft bearing is called crankcase. It's also

protect the parts from dirt and serves as a part of lubricating system.

BEARING

A bearing is a machine element that constrains relative motion and reduces friction between moving parts to only the desired motion. The design of the bearing may, for example, provide for free linear movement of the moving part or for free rotation around a fixed axis; or, it may prevent a motion by controlling the vectors of normal forces that bear on the moving parts. Many bearings also facilitate the desired motion as much as possible, such as by minimizing friction. Bearings are classified broadly according to the type of operation, the motions allowed, or to the directions of the loads (forces) applied to the parts.

SPARK PLUG

As engines and their electronics become more complex, one of the few things left to hobbyists and auto enthusiasts who like a little grease under their fingernails is the ability to change their spark plugs. Although just about every other car repair out there takes a code reader and a college degree to diagnose and fix, spark plugs remain accessible and easy to understand.

The first reliable spark plug was invented in 1903 by Oliver Lodge. They're aptly named as well; spark plugs are simply insulated plugs that are screwed into an internal combustion engine's cylinder head to deliver the spark that ignites the mixture of air and fuel in the combustion chamber. Spark plugs also transfer heat away from the combustion chamber.

Basically, this is what happens. The spark plug sits at the top of the cylinder head. The piston first travels down the cylinder, drawing in a mixture of fuel and air. The piston then goes back up toward the spark plug, compressing the mixture. At the very last second, when the piston is at its fullest reach or Top Dead Center (TDC), the spark plug sparks and ignites the mixture. The piston is forced back down to create power for the vehicle, then pushed back up again to clear out the exhaust. At that point, the process starts all over again.

A four-cylinder car will have four spark plugs; a six-cylinder car will have six and so on (though a HEMI engine has two plugs per cylinder). Now that we've got the basics down, let's talk about the kinds of spark plugs on the shelves at your local parts shop.

AIR FILTER

The combustion air filter prevents abrasive particulate matter from entering the engine's cylinders, where it would cause mechanical wear and oil contamination.

Most fuel injected vehicles use a pleated paper filter element in the form of a flat panel. This filter is usually placed inside a plastic box connected to the throttle body with ductwork. Older vehicles that use carburetors or throttle body fuel injection typically use a cylindrical air filter, usually a few inches high and between 6 inches (150 mm) and 16 inches (410 mm) in diameter. This is positioned above the carburetor or throttle body, usually in a metal or plastic container which may incorporate ducting to provide cool and/or warm inlet air, and secured with a metal or plastic lid.

CARBURETTOR

A carburetor basically consists of an open pipe through which the air passes into the inlet manifold of the engine. The pipe is in the form of a venturi: it narrows in section and then widens again, causing the airflow to increase in speed in the narrowest part.

Below the venturi is a butterfly valve called the throttle valve a rotating disc that can be turned end-on to the airflow, so as to hardly restrict the flow at all, or can be rotated so that it (almost) completely blocks the flow of air. This valve controls the flow of air through the carburetor throat and thus the quantity of air/fuel mixture the system will deliver, thereby regulating engine power and speed. The throttle is connected, usually through a cable or a mechanical linkage of rods and joints or rarely by pneumatic link, to the accelerator pedal on a car or the equivalent control on other vehicles or equipment. The carburetor has several functions:

1) It combines gasoline and air creating a highly combustible mixture,
2) It regulates the ratio of air and fuel, and
3) It controls the engine's speed.

When the piston moves down the cylinder on the intake stroke it draws air from the cylinder and intake manifold. A vacuum is created that draws air from the carburetor. The airflow through the carburetor causes fuel to be drawn from the carburetor through the intake manifold past the intake valves and into the cylinder. The amount of fuel mixed into the air to obtain the required air to fuel ratio is controlled by the venturi or choke. When air flows through the venturi its speed increases and the pressure drops. This causes the fuel to be sucked into the air stream from a hole or jet. When the engine is at idle or at rapid acceleration there is not enough air passing through the venturi to draw fuel. To overcome these problems other systems are used.

Gasoline is delivered to the carburetor by the fuel pump and is stored in the fuel bowl. To keep this level of fuel stored in the bowl constant under all conditions a float system is used. A float operated needle valve and seat at the fuel inlet is used to control the fuel level in the bowl. If the fuel level drops below a certain level the float lowers and opens the valve letting more fuel in. When the float rises it pushes the inlet valve against the seat aControlling the speed of the engine

The throttle controls the speed of the engine by controlling the amount of air fuel allowed in the engine. The throttle is a butterfly valve located after the venturi and is opened by pressing on the gas pedal. The farther the valve is opened the more air/fuel mixture is let into the engine and the faster the engine runs. At low engine speeds when the throttle is only open a little there is not enough air flow to pull in fuel.

Fuel is introduced into the air stream through small holes at the narrowest part of the venturi and at other places where pressure will be lowered when not running on full throttle. Fuel flow is adjusted by means of precisely calibrated orifices, referred to as *jets*, in the fuel path.

POWER TRANSMISSION

CHAIN DRIVE

Chain drive is a way of transmitting mechanical power from one place to another. It is often used to convey power to the wheels of a vehicle, particularly bicycles and motorcycles. It is also used in a wide variety of machines besides vehicles.

Most often, the power is conveyed by a roller chain, known as the drive chain or transmission chain, passing over a sprocket gear, with the teeth of the gear meshing with the holes in the links of the chain. The gear is turned, and this pulls the chain putting mechanical force into the system. Another type of drive chain is the Morse chain, invented by the Morse Chain Company of Ithaca, New York, USA. This has inverted teeth.

Sometimes the power is output by simply rotating the chain, which can be used to lift or drag objects. In other situations, a second gear is placed and the power is recovered by attaching shafts or hubs to this gear. Though drive chains are often simple oval loops, they can also go around corners by placing more than two gears along the chain; gears that do not put power into the system or transmit it out are generally known as idler-wheels. By varying the diameter of the input and output gears with respect to each other, the gear ratio can be altered, so that, for example, the pedals of a bicycle can spin all the way around more than once for every rotation of the gear that drives the wheels.

A bicycle chain is a roller chain that transfers power from the pedals to the drive-wheel of a bicycle, thus propelling it. Most bicycle chains are made from plain carbon or alloy steel, but some are nickel-plated to prevent rust, or simply for aesthetics. bicycle chain can be very energy efficient: one study reported efficiencies as high as 98.6%. The study, performed in a clean laboratory environment, found that efficiency was not greatly affected by the state of lubrication. A larger sprocket will give a more efficient drive, reducing the movement angle of the links. Higher chain tension was found to be more efficient: "This is actually not in the direction you'd expect, based simply on friction". A wide range of factors should be taken into account when selecting a chain drive in order to secure its long service life and reliable operation. The service life of roller chains is supposed to be around 10 000 running hours providing two chain wheels are used and all the principles of correct assembly and maintenance are respected. Non-compliance with or undervaluation of the constructional and/or maintenance principles will lead to considerably shorter service life of the chain.

Main factors influencing chain selection and service life:

- transmitted power
- load type
- chain running speed
- number of teeth of the small chain wheel
- transmission ratio
- axial distance and sag
- specific pressure at chain joint
- lubrication method
- work conditions

- correct assembly of the complete drive
- chain drive maintenance

TRANSMITTED POWER

The maximum loading force can be determined as follows: for static load on a correctly installed and properly maintained roller and bush chains the loading force should not exceed 1/3 of the breaking load. With Gall chains the loading force should not surpass the value of 1/5 of the breaking load. Continuous operation, impact strain or less favourable work conditions require for the permissible load to be multiplied by the safety coefficient.

TYPE OF LOAD

When in operation, chains are rarely exposed to steady pull and that is why the loading force increased by operational impacts should be taken into consideration. For continuous operation, a larger force should also be considered. Shafts and bearings should be dimensioned in such a way that vibrations are avoided. Overhung installation of chain wheels is not suitable for heavy-duty service.

CHAIN RUNNING SPEED

The permissible peripheral velocity gets lower with the increasing pitch and with decreasing number of the chain wheel teeth, the marker being 19. At chain pitch of 25.4 mm and 19 teeth the maximum permissible velocity is 9.7 m/sec, the maximum permissible velocity for a pitch of 50.8mm being 6.2 m/sec. Where the peripheral velocity is higher than 4 m/sec the effect of the centrifugal force should be included in the calculation.

NUMBER OF CHAIN WHEEL TEETH

Chain wheel girdled with a chain forms a polygon with leg size equal to that of the chain pitch. When the chain is approaching the wheel periphery a certain degree of acceleration comes into play and increases together with the increasing difference between the circumscribed circle and the circle inscribed by the chain. The acceleration grows proportionally with the pitch and quadruple to the number of revolutions. The acceleration results in a jerking motion which can be observed in case of low speeds of the chain and less number of pinion teeth. Chain wheels with number of teeth below 17 show a dramatic growth of work consumed for the acceleration while there are minute changes apparent where the pinion teeth are more than 25 in number. Pinions featuring small number of teeth show faster wear not only due to the more frequent engagement of the teeth but also due to the fact that they together with the chain consume the work exerted upon uneven chain movement. Uneven chain movement is caused by the two chain wheels. To avoid the harmonic oscillation of the whole system an odd number of teeth should be selected, adopting prime numbers as far as possible, while the transmission ratio should not be an integer.

TRANSMISSION RATIO

The use of chain drives is, as a rule, connected with reduction transmission ratios. The number of the pinion teeth should preferably be 17 as a minimum. The teeth of the large (driven) wheel should not be more than 70 in number. Chains showing larger pitch should not feature transmission ratio higher than 1:7 while the transmission ratio of smaller-pitched chains should not be above 1:9. A step-up transmission ratio is unfavourable and larger ratios of this type should be avoided as much as possible. Where applicable, the smaller (driving) wheel should have at least 25 teeth.

TENSIONER

A tensioner is a device that applies a force to an object to maintain it in tension. Often the amount of force is adjustable. There are tensioners for applying a tensioning force to drive belts and chains, fibers, and bolts. One type of tensioner is a large industrial spring. A tensioner is used between two objects that should be kept together but that make relative, more or less unpredicted, motions towards each other. The tensioner makes sure that independent of the motion the connection remains intact, without elements becoming overstressed. An anchor chain could be defined as the easiest tensioner. A belt is a loop of flexible material used to mechanically link two or more rotating shafts, most often parallel. Belts may be used as a source of motion, to transmit power efficiently, or to track relative movement. Belts are looped over pulleys and may have a twist between the pulleys, and the shafts need not be parallel.

PROCEDURE

FOR CONSTRUCTION OF KIDS BIKE

Fitting instructions for RAW 50cc and 80cc bicycle engines

Some mechanical ability is very desirable to properly install your engine. Some buyers can complete the job in 2 hours whilst others may take 2 days. It is not important how long it takes - you will gain great pleasure and satisfaction from doing the job right. Have fun. The easiest installation is performed on the standard v frame 26" bike with 25mm round tube frame. It can be mounted to some other bikes but it best to stick with the standard bike. Some motors come with a frame adapter plate for fitting to non standard oval or larger tube configurations. If time and care is taken with the initial installation and ongoing maintenance, you should have many thousands on kilometers of trouble free operation.

FITTED ENGINE INSTALLING REAR SPROCKET

STEP 1

There are two rear sprocket rubber packers. Cut only one of them. Cut between the drilled holes.

STEP 2

Place the cut one inside of the spokes.

STEP 3

Place the other packer on the outside of the spokes.

STEP 4

Thread the nine bolts through the sprocket and use the half moon backing plates on the inside. Tighten all nine bolts moving across in a star fashion and a little at a time to allow for an even pull down. Once the sprocket is tight, spin the wheel and check that the sprocket runs true. Deviation can be no more than 1.5mm both ways. Any side-to-side excess deviation can be corrected by spinning the wheel and then tightening the sprocket where needed in order to get correct alignment. Make sure bolts are tight. Notice that concavity or indentation of teeth of the rear sprocket is inward towards spokes. This helps keep the chain closer to the inside of the wheel and spokes and allows for better clearance of the rear stays of the bicycle frame.

MOUNTING ENGINE TO FRAME

STEP 5

Mount the engine into the frame. This is the front motor mount. Some bikes have a large diameter lower bar and some need clearance for the air box intake so you need to use the parts provided in the kit. Use spacer provided with the kit. This spacer normally would require the drilling of a hole in the frame to bolt the centre of the spacer through (shown below). I prefer the method shown, which is to pull the studs and replace them with longer ones (threaded rod) that you can get at the local hardware store. Then you can use the steel motor mount clamp that came with the kit and not have to drill a hole in your frame. Then cut the excess off. My bike had an ovoid shaped lower bar about 50mm across. I used this method.

Here is step 5 complete with studs nipped and looking good!! Notice how well the intake inlets clear. Always mount air intake with inlets down! Always! If you need to, you can put the air box on a grinder and cut down on the inlet tubes a little to make sure they clear the frame. If you use the spacer on the front engine mount, usually this is enough to clear. Also, you may need to file down any water bottle screw mounts if they protrude and are in the way of a engine mount.

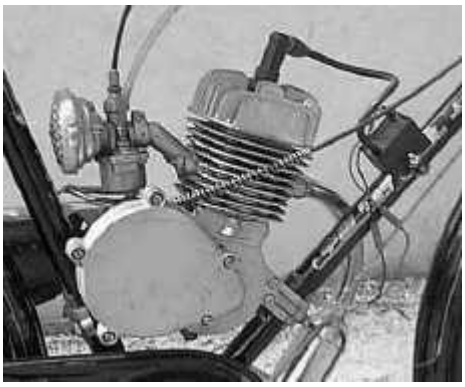
STEP 6

The new style throttle is fitted to the r/h side of the handle bars - before you slip the throttle onto bars you will need to drill a 5mm hole in the handle bar 125mm from the end to locate the plastic throttle location tit. Put a drop of machine oil into the cable sheath whilst you have it apart. Care should be taken with the cable location grove - if you are too rough with it, you will break it. Be gentle when installing the throttle. The throttle has a kill switch incorporated into it. Earth the kill switch anywhere on bike frame using the wire with the lug on its end. Attach the remaining kill switch wire to the white wire from the engine. Pressing kill switch will cut power to the spark plug and stop engine running. If your bike has twist

action gear shifter it may cause problems when fitting your throttle. The twist action gear shifter can be replaced with a thumb action gear shifter available from any bike shop or from the RAW.

STEP 7

Mount the clutch lever.



Standard mounting to 28mm tube.

STEP 8

Screw in the fuel valve filter combo into the tank and then mount the tank. Tip. Wrap top frame tube with bar wrap where tank clamps are. Also, if you have cable runs on the top bar that are open cables, you may need to run them through cable sheath the length of the tank in order for them to work once tank is clamped over them. Apply plumber's tape to thread if leaking.

STEP 9

Mount your coil. Use 2 high quality cable zip ties. Go up and over and around the coil and zip tie it to the frame. Loop one zip tie up and over and also through the holes that would normally have the screws going through them. This is a better method than using the screws that come with the kit. You will have a more solid mount and not break the coil. It is not hard the break the coil ears off using the screws. Wire Connections: Blue to Blue and Black To Black.

Engine vibration can often cause the HT lead between the black box and plug cap to come loose. If this happens you will have no spark so twist the HT leads in a clockwise direction at both ends to close connection.

It is very important to ensure the cover plate on the magneto remains tightly sealed (use 'Holdtite' or 'Locktite' on screws). If water is allowed to get into the magneto chamber, it will cause the magneto to fuse out. Also seal the wire outlet with silicon or similar sealant to ensure water is not carried into the magneto via the wires. Silicon sealant and 'Holdtite' is available on the RAW spare parts page.

If your spark plug has its crown screwed on. Unscrew it and remove it so that you can put your spark plug cap on. Failure to remove this crown can damage or ruin the spark plug cap.

STEP 10

Remove the 3 screws from Counter shaft side cover and also remove spark plug. Remove clip from master link of chain and then thread chain up and over counter shaft sprocket by rotating the sprocket using tool. Having the spark plug removed allows engine to be turned easily to thread chain.Since you have this cover off, hold clutch arm and rotate cover and pull clutch arm out of cover and then grease it and rotate it back in. RAW engines are fitted with an extra heavy duty 415 chain so it is a good idea to remove the sharp tips from the small drive sprocket with a file or grinder to ensure smoother travel of the chain over the teeth.

STEP 11

Put some molly grease on the shaft and in the hole.

STEP 12

Cut chain to length and using master link put chain back together. Do not cut chain too short! Install idler pulley. Do not over tighten chain. Install chain guard. Use some tin snips to cut cover at the rear if needed. Use a good zip tie at the rear and the extra long bolt for the counter shaft cover will hold the front.

If you ever need a new chain and can't buy the 415 chain locally, you can buy BMX stunt chain (probably even better than 415 heavy) from any good bicycle shop - save the waiting time and save on the freight costs from Bellingen to you.

STEP 13

Install exhaust pipe. If you need to bend the pipe so it will not hit the frame or bolts, clamp the pipe into wood blocks and bend. Don't bend it too much because you don't want to break it. Don't bend the exhaust whilst mounted to engine. If you do, you will not bend the exhaust, you will break the motor! Exhaust pipe is very

strong - much stronger than the 2 mounting studs on the motor.

STEP 14

Mount the carburetor. Check the other screws including the brass fuel inlet screw for tightness. Typically they need some slight turning. Once the carburetor is on and tight, you are ready to connect the tank line to the carburetor. Even though the fuel petcock has a screen filter, it is porous and allows sediment through. A high quality RAW inline fuel filter with paper element is the way to go to keep fine particulate out of the carburetor and the engine.The installation is now completed. Mix your oil with the petrol before adding to tank. Fuel up the bike and fire it up. It is recommended to pedal the bike up to about walking pace before releasing the clutch lever. This is a new motor and you need to take it easy for the first 500 kilometers in accordance with the run-in procedure.

During run in, keep drive chain snug. During run in keep the mix ratio at 16:1 for 500 kilometers and keep your speed down to a maximum of 20kph and do not run your motor for longer than 30 minute periods.

KIDS BIKE SPECIFICATIONS

Particulars	Dimensions in Cms
Front tyre Diameter	60.96
Rear tyre Diameter	66.04
Over all Length	172.72
Over all Height	78.74
Ground Clearence	30.48
Seat Height	91.84

ENGINE SPECIFICATION

Particulars	Specification
Engine type	2 Stroke air cooled
Displacement	50cc
Number Of cylinders	1
Power	4.578Kw
Maximum Speed	55kmph
Mileage	50km

SCOPE FOR FUTURE WORK

- There is a possibility of capacity of a fuel tank half litre to 4or5 litres capacity.
- There is a possibility of large diameter of the disc replaced by small diameter because more power will developed.
- There is a possibility of cycle tyres are in large diameter,whlie breaking some problems will occurs.so reduce diameter of a cycle tyres to get easily breaking system adopted.
- There is a chance to adopt the self starting system.

CONCLUCION

- The fabrication was done using locally available materials. Compared to the kids bike existing in the market, our bike is economical. The weight of our kids bike with par with light weight bikes available in the market .The bike has adjustable seat and handle positions enabling children.

REFERENCES

1. Setright, L. J. K. (1979). The Guinness book of motorcycling facts and feats. Guinness Superlatives. pp. 8–18. ISBN 978-0851122557.
2. Falco, Charles M.; Guggenheim Museum Staff (1998). "Issues in the Evolution of the Motorcycle". In Krens, Thomas; Drutt, Matthew. The Art of the Motorcycle. Harry N. Abrams. pp. 24–31. ISBN 0-89207-207-5.

3. "The Past—1800s: First motorcycle". The History and Future of Motorcycles and motorcycling—From 1885 to the Future, Total Motorcycle Website. Retrieved 28 June 2007.
4. Kresnak, Bill (2008). Motorcycling for Dummies. Hoboken, New Jersey: For Dummies, Wiley Publishing. ISBN 0-470-24587-5.
5. "Horseless Carriages", The Times, 21 May 1896, p. 6, via The Times Digital Archive
6. William Harris, Motorcycle History, How Stuff Works, retrieved 2012-11-26
7. Rafferty, Tod, The Complete Illustrated Encyclopedia of American Motorcycles, Philadelphia, PA: Courage Books.
8. Depuydt, Filiep. "Minerva Motorcyclettes, 1900–1909: History". Retrieved 19 April 2011.
9. Rafferty, Tod, The Complete Illustrated Encyclopedia of American Motorcycles, Philadelphia, PA: Courage Books, p. 22

WEB SITES

1. www.bicycle.com
2. www.ic enginescom
3. www.google.com.