





Specification, Performance, and Parameters:

1	Type of petrol engine	50 petal type	60 petal type	80 petal type
2	Mode of engine	Single cylinder air cooling 2-stroke		60 type 80 type
3	Bore & stroke	40mm × 38mm = 48 cm ³	45mm × 40mm = 60 cm ³	47mm × 40mm = 80 cm ³
4	Power* rotary speed	Rated power	Rated power	Rated power
		1.15kw/5000r/min	1.5kw/5000r/min	2.5kw/5000r/min
		(1.6horsepower/5000r/min)	(2 horsepower/5000r/min)	(3 horsepower/5000r/min)
		Max. Power	Max. Power	Max. Power
		1.6kw/6000r/min	2kw/6000r/min	3.5kw/6000r/min
		(3horsepower/6000r/min)	(4-5horsepower/6000r/min)	(5-6horsepower/6000r/min)
5	Ignition Mode	CDI		
6	Compression ratio	6:01		
7	Driving ratio	18:01		
8	Fuel	No.90		
9	Lub.Oil	oil for 2-stroke petrol engine (or oil for 10W/40, 10W/30)		
10	Mixing ratio of fuel and engine oil	16:1 for new sets	20:1 after running 500 km	
11	Type of sparking plug	Z4C	14MM	
12	Volume of oil consumption	1.5L/100 km	2.0L/100 km	2.5L/100 km
13	Net weight of main set	6.5kg	7.0kg	
14	Type of clutch	Friction plate	Dry	
15	Cooling mode	Natural air cooling		
16	Speed limitation	30km/hour	35km/hour	38km/hour

Mixture of Fuels:

This set is of a sort of 2-stroke petrol engine, its air drawing with crankcase, its driving parts of cylinder and crankcase to be lubricated by the fuel system. The fuels of the set adopts the mixtures of petrol and lub.oil. Before filling fuels, mix thoroughly petrol and lub. Oil inside a container as per a certain ratio, then full into the oil tank.

You should not allow fill into oil tank two kinds of oil respectively, avoid adding pure petrol into the oil tank.



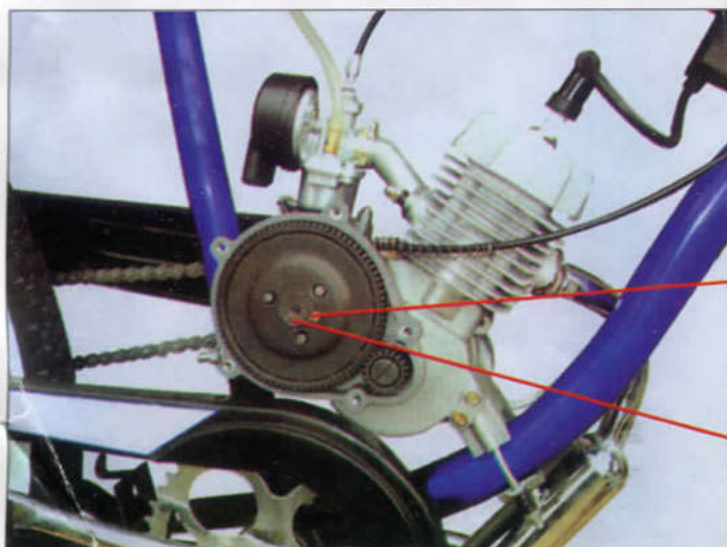
Circuit Indications:

1. Check the space between two poles of the sparking plug is 0.4mm to 0.5 mm. After adjustment, tighten the sparking plug.
2. Correctly install the electronic ignition set, the blue wire or the red wire of the ignition set, the blue wire of the connecting coils. The ignition set to be installed at the slant beam of the bicycle, forward slant of 20°. You may pack with a plastic bag to prevent leakages, which may cause aging of components and shorten the service lives.



Adjustment of Clutch:

At the ends of the handle of the clutch, please ensure keep a certain free space, generally 2-3 mm. Only proper space able to ensure the timely decoupling of the clutch and free of slipery. In the course of adjustment, loosen the handle of the clutch, turn the hollow-center screws, turn outside for decrease of space, turn inside for increase of space. After adjustment, tighten the nuts and avoid loose. If slipery in case of proper space, dimantle the cover of the clutch to check if the cover sleeve of the clutch is loose, and tighten if necessary. Never add engine oil or grease between the friction plates of the clutch. Regularly add small amounts of grease at small and large skewed teeth.



①

When adjustment loosens 1 screw first

②

Then adjusts 2 screws



List of Inspection on Faults Engine:

Faults			Causes	Remedies		
Engine unable to start	Normal compression pressure	Normal sparking	Abnormal carburetor	Unsmooth fuel supply. Oil leakages. Wear of piston for air volume.	Check the filtering mesh of carburetor and the main measuring hole. Check the possible block, flush if necessary. Replace sealing washer. Replace piston.	
		Normal sparking	Abnormal sparking	HV line may work	Anti-direction installation of magnetic iron. Oil dirt or carbon deposits at sparking plug. Damages on the sparking plug. Damages on HV cap. Excessive space between poles of sparking plug.	Change directions. Clean sparking plug, remove carbon deposits. Replace. Replace. Adjust the space to 0.5 mm
				Unable to work	Anti-directional connection between ignition set and wire coils. Damages at HV wire or ignition coils. Crack or loose HV line. Damages on coils.	Change connection. Replace. Replace or tighten HV wire. Replace coil.
Engine stops	Normal carburetor	Normal sparking	Insufficient compression pressure	Adhesion, wear, or break of piston ring. Excessive wear of cylinder piston.	Replace. Replace.	

Faults			Causes	Remedies
Irregular running of engine	Interruptedly lack of ignition	Normal sparking	Water, or oil, or dirt at the oil storing base of carburetor cause unsmooth supply of fuel	Remove them, check the blocking conditions of filtering mesh and small hole at the lid of the oil tank, wash to keep smooth flows.
		Normal sparking	Excessive large space of poles of the sparking plug or carbon deposits.	Clean sparking plug, remove carbon deposits, adjust the space to 0.5mm.
			Damages of HV wires or short circuit of connection	Replace HV wires or get rid of short circuit
	Long periods of insufficient	Carbon deposits of combustion room, air outlet, air discharging pipes. Wear of piston, piston ring, and cylinder body Leakages of oil and gas of connections of crankcase, cylinder body, cylinder cover, carburetor Magnetic iron without magnetism	Remove carbon deposits Replace the worn parts Remove dirt, ensure sealings of connections Renewal of magnetic iron	
insufficient] powe	insufficient]	Transit]	Excessive hot of engine Damages of sparking plug	Stop for cooling, avoid high speed running Renewal



Procedures of Installing Engine and Its Accessories at Bicycle:

The engine is suitable for installation on 26" , or 28" bicycle as a substitution of walking, after installation, generally there is no need of adding or replacing parts.



Installation Procedures:

1. Install the assembly of gear disc at the rear wheel of the bicycle, cover the outside tightening rubber at the rear axle, then cover the assembly of gear disc, its concave side closely attached to rubber. At the other side of the steel wires of the rear axle of the bicycle, install the inside tightening rubber, press the outside tightening rubber with small and large tightening plates. Install and tighten the assembly of gear disc at the rear wheel. In the course of tightening, ensure the radial and axial deflection between the gear disc and the rear axle less than 1 mm. Don't tighten excessively, tighten only for alignment of the assembly.
2. Install the engine at the bicycle rack, fix in case of the clipping cover and the clipping block of the crankcase in conformity with the tube, generally the center line of the cylinder of the engine forward slanting approx. 20°
3. Install the chain line, properly adjust the tightness of the chain line with guide wheel.
4. Install the cover of the chain line, fix the exhaust pipes.
5. Install the throttle control parts at the right sides of the handle of the bicycle, install the control parts of clutch at the left sides of the handle, fix them after proper adjustment.
6. Fix the oil tank under the beam, connect the oil pipe with the oil inlet of carburetor.







A type petal engine:

Contents of parts:

Serial No	Items	Amts	Serial No	Items	Amts
1	Sparking plug	1	48	4 × 28 cylindrical head screw	4
2	Cylinder cover	1	49	B4 plain washer	7
3	Cooper washer of cyliner cover (aluminium washer)	1	50	Coils	1
4	6 × 112 double screws	4	51	Electronic ignition set	1
5	Cylinder	1	52	3.8 oil sealing	1
6	Air inlet washer	1	53	Magnetic steel	1
7	Cylinder washer	4	54	6 × 22 cylindrical head screw	3
8	6 × 28 double screws	4	55	Chain wheel cover	1
9	Air outlet washer	1	56	Cover sleeve	1
10	M6 cap nut	8	57	Cover of clutch	1
11	B6 plain washer	4	58	Steel ball cover	1
12	6C spring washer	8	59	Φ3 steel balls	57
13	6 × 18 cylindrical head screw	8	60	Friction plate	15
14	Cover of gear box	1	61	Large helical gear	1
15	8 × 10 round screw	1	62	M14 × 1 nut	2
16	Washer of Φ 10 outer gear	1	63	14 inner gear	1
17	Small helical gear	1	64	Φ 6position pin	3
18	7.5 oil sealing	1	65	Clutch base	1
19	6 × 35 cylindrical head screw	3	66	Bearing cover	2
20	6 × 40 cylindrical head screw	2	67	202 bearing Egrade	2
21	Washer of gear box	1	68	Adjusting nut	1
22	Cliping block of box	1	69	4.5 spring	1
23	Cliping cover	2	70	Center axle	1
24	6C spring	4	71	Halfround key	2
25	M6 nut	4	72	Axle ofclutch	1
26	Right half box body	1	73	Φ 4.5 position pin	1
27	6 × 40 double screws	2	74	Cover ring	1
28	6 × 12 countersunk screw	6	75	Small chain wheel	1
29	202 bearing E grade	2	76	Φ 8 steel ball	1
30	Thin washer (adjusting)	4	77	Stop ring of 14 inner tooth	1
31	Balance sleeve ring	2	78	Top rod	1
32	Half-round key	1	79	Φ2.5 needle bearing positioning pin	1
33	Crank (longand short axles formed one)	1	80	Crank bearing	1
34	Piston ring	2	81	Stud	1
35	Piston	1	82	B6 plain washer	1
36	Piston clip	2	83	M6 nuts	1
37	Piston pin	1	84	Steel wire clip	1
38	Link	1	85	0.8 spring	8
39	Link bearing	1	86	Center wire of clutch	1
40	8 × 1nut	1	87	Hallow center screw	1
41	l eft box body	1	88	Gate base	1
42	6 × 70double screws	2	89	0.9 spring	1
43	Washer ofcrankcase	1	90	Outer tubes of clutch	1
44	4 × 16cylindrical headscrew	4	91	Handle of clutch	1
45	4Cspring washer	9	92	Crank pin	1
46	Relay cover	1	93	Cooper sleeve of link	1
47	Relay washer	1	94	HV line cap	1



Diagram 1
Section of cylinder

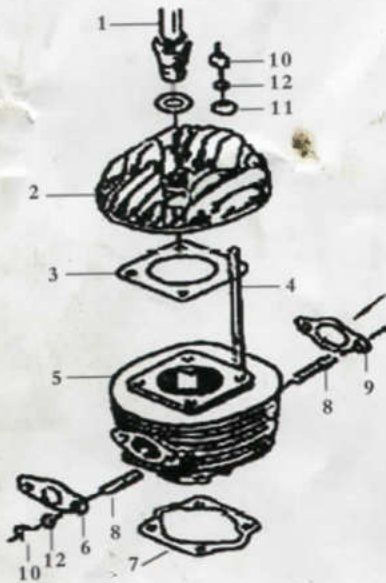


Diagram 3
Section of clutch and controls of clutch

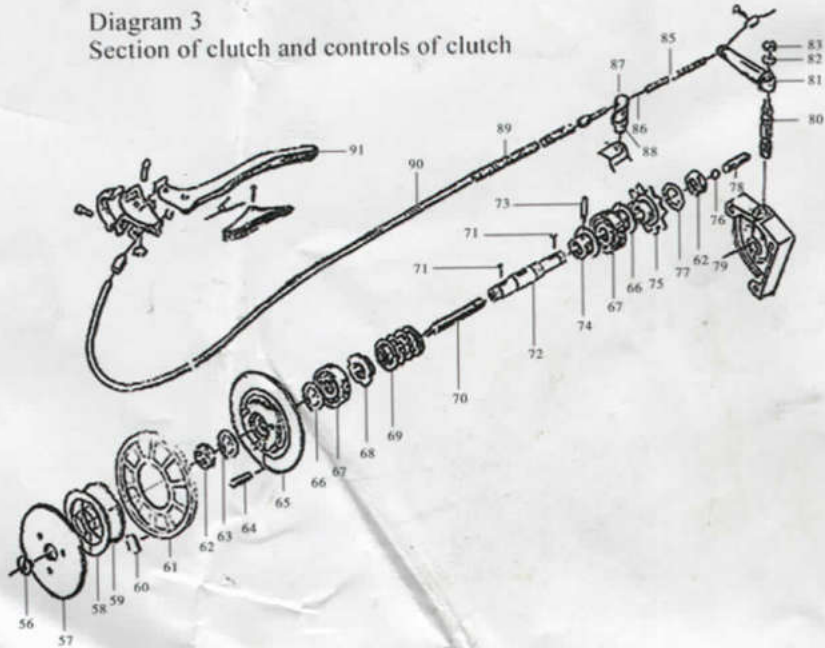
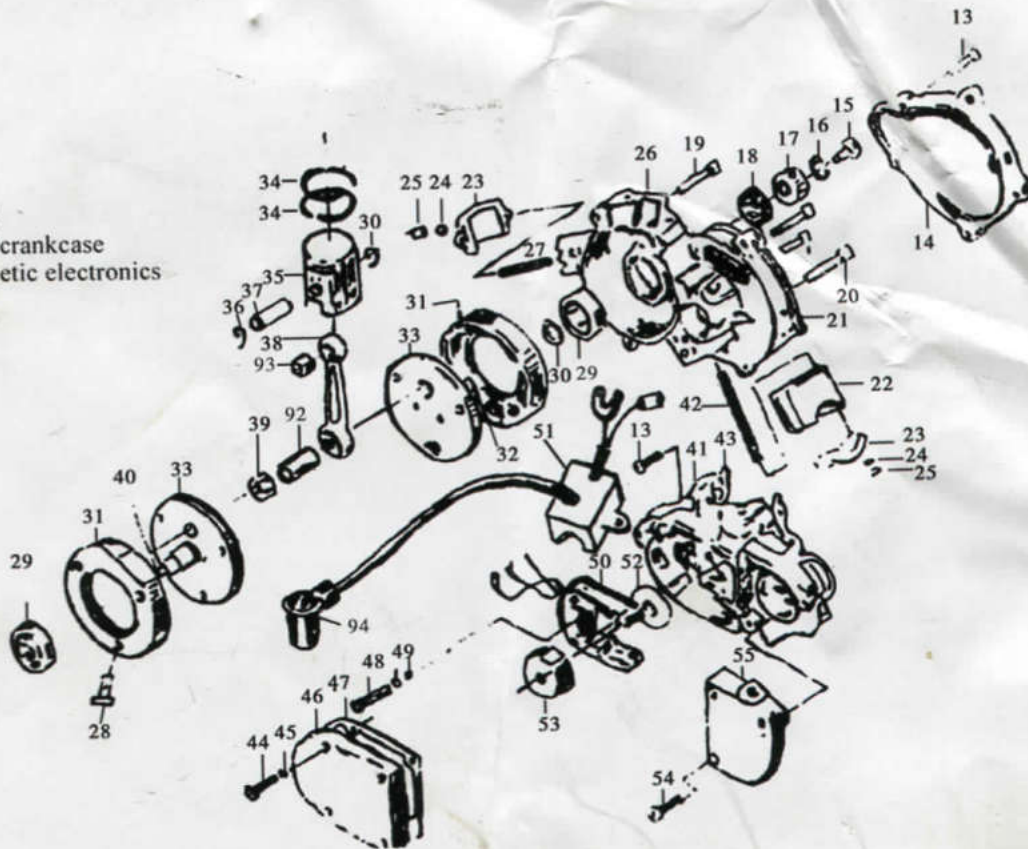
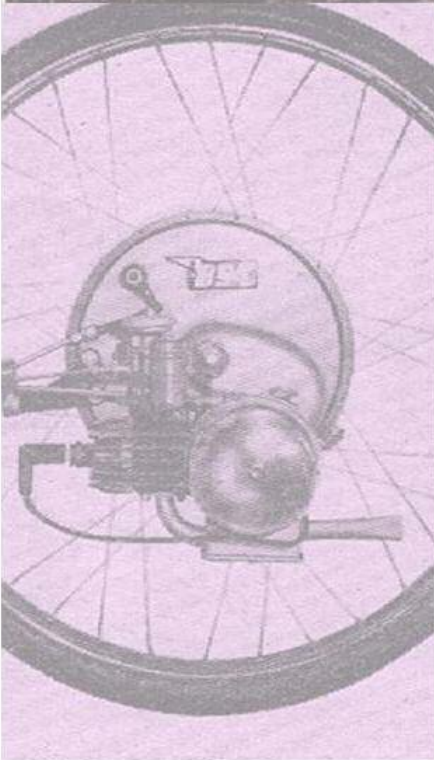


Diagram 2
Section of crankcase
and magnetic electronics



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