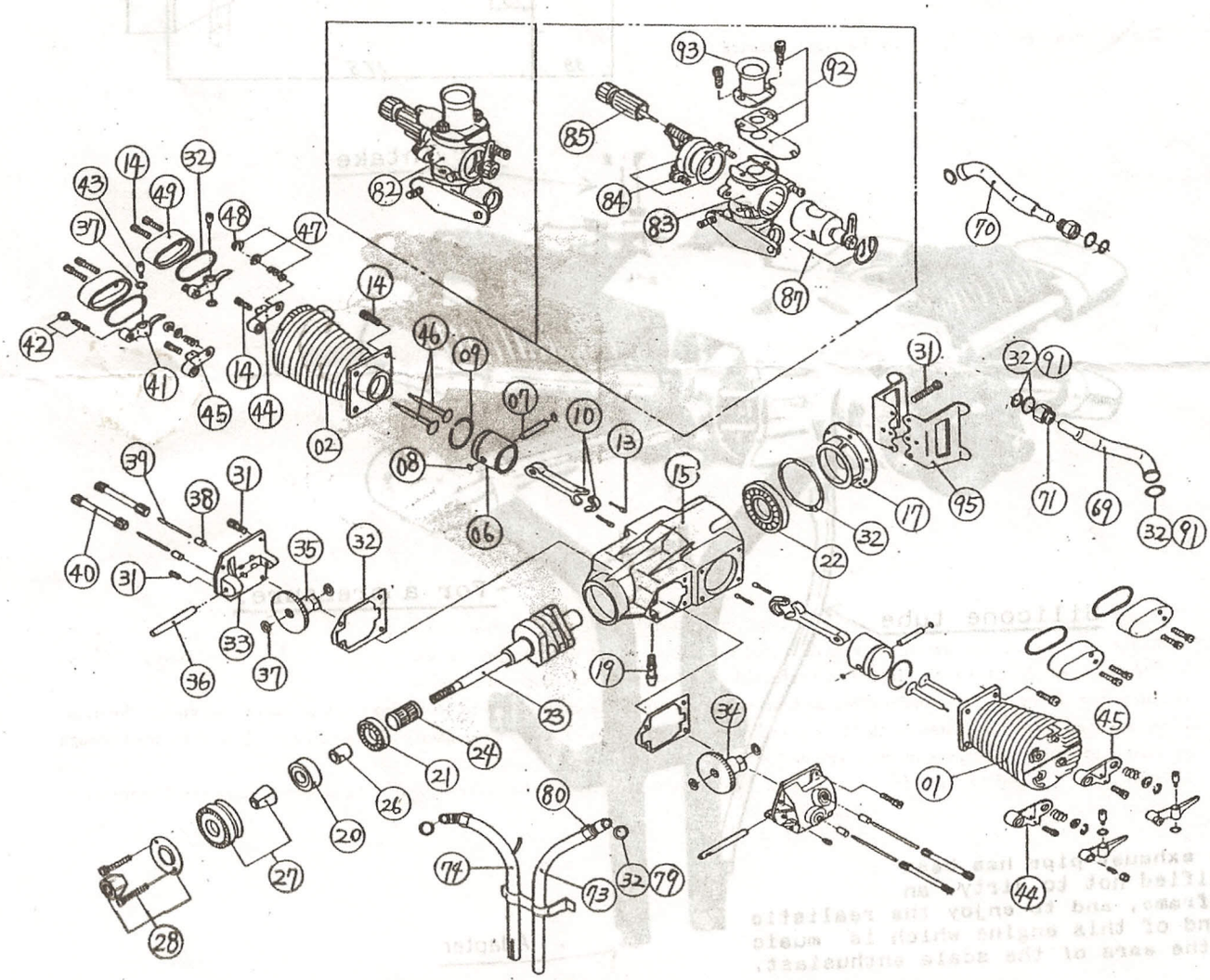
Saito FA-270T MK2 Parts List

No.	Description	Q'ty
01	Cylinder (left)	1
02	Cylinder (right)	1
06	Piston	2
07	Piston pin	2
08	Piston pin retainer	4
09	Piston ring	2
10	Connecting rod	2
13	Conrod screw	4
14	Cylinder screw set	2set
15	Crankcase	1
17	Rear cover	1
19	Breather nipple	1
20	Front bearing	1
21	Main bearing	1
22	Rear bearing	1
23	Crankshaft	1
24	Pinion (crankshaft)	1
26	Collar (crankshaft)	1
27	Taper collet & Drive flange	1ea.
28	Prop washer & nut & screw	1set
31	Crankcase screw set	1set
32	Engine gasket set	1set
33	Cam gear housing	2
34	Cam gear (left)	1
35	Cam gear (right)	1
36	Cam gear shaft	2
37	Teflon washer set	1set

No.	Description	Q'ty
38	Tappet	4
39	Pushrod	4
40	Pushrod cover & Rubber seal	4ea.
41	Rocker arm	4
42	Rocker arm screw & nut	4ea.
43	Rocker arm pin	4
44	Rocker arm bracket (left)	2
45	Rocker arm bracket (right)	2
46	Valve (in & out)	4
47	Valve spring & Keeper & Retainer	4ea.
48	Valve retainer	
49	Rocker arm cover	4
69	Intake manifold (left)	1
70	Intake manifold (right)	1
71	Intake manifold nut	2
73	Muffler (left)	
74	Muffler (right)	1set
79	Muffler gasket	2
80	Muffler nut	2
82	Carburetor complete	1set
83	Carburetor body assembly	1set
84	Spray bar assembly	1set
85	Full throttle needle	1
87	Throttle barrel assembly	1set
92	Choke valve assembly	1set
93	Intake velocity stack	1
95	Engine mount	1



* Rotate forcibly the propeller toward counter-clockwise direction about two turns to absorb fuel.(When choking, open the throttle to full open position. Keep choking till the fuel flows out from the exhaust pipe.)
* Open the choke valve.
* In the event of flooding, there may be some possibility of the rod broken by fuel compression. Confirm by manual turn that fuel compression has not built up.
* Open the throttle valve a little bit more than low speed.(Be careful not to open the throttle too much to avoid jack rabbit start)
* Rotate the propeller toward the counter-clockwise direction till compression has built up, plug and heat.(If a battery is small in capacity, heat the right and the left separately)
* Flick the propeller toward the clockwise direction, and the engine will turn reversely, then will explode and start running toward the normal direction. (This is a safety way to start the engine without kicking back. It might be better to put on gloves. After the engine starts, disconnect the power supply. Make the needle adjustment from behind the engine. When starting, keep spectators away to behind the engine. Secure all persons against danger)

b) Adjustment of engine response by the throttle valve.

When opening the throttle valve quickly to full open position from engine idling speed:

a. Quick response is normal.

b. c. d. and e's troubles and counterplans to.

	Conditions	Causes	Counterplans
b	When throttle response from low speed running to high speed is no good. Darker gas from an exhaust pipe. Low speed running becomes erratic.	Caused by rich mixture.	There is a hole on a needle body, put a hexagonal wrench 1.5 mm into the hole and turn it clockwise direction gradually, so that mixture gas becomes lighter. Throttle response will be good little by little.
c	When increasing speed from low to high, if the engine stalled.	Mixture gas is too light.	Turn gradually the needle body counter-clockwise, and mixture gas will become rich. It prevents engine stalling.
d	If the idling does not continue.	Neither plug nor fuel fits the engine.	In normal way, it will be almost stabilized by the needle body adjustment. If it cannot be stable, adjust it by the airneedle.
e	When idle adjusting, no response is gained, although the needle body is turned toward the right or the left.	There must be a gap between the surface of the throttle valve and the surface of the needle body.	Confirm whether there are dirt and blemish between the surface of the throttle valve and the surface of the needle body, or dirt between the carburetor body.
		A spring of the throttle valve loses its elasticity, and is not in connection with.	Take off the spring and make its elasticity strong.

※Do not take the carburetor apart unless absolutely neccessary. When dismantling the carburetor, if dirt or any hard object comes into, this may probably cause the carburetor a trouble.

F. Break-In

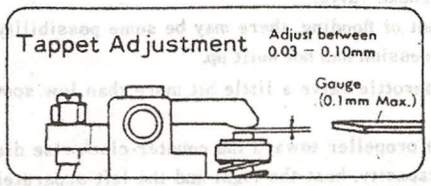
The break-in procedures for all engines should be followed carefully as a proper break-in will achieve the best, long lasting performance. During the "break-in" period, a fuel with castor oil system should be used. After a start according to the procedure (E), move the throttle gradually and set it around 2,500 – 3,000 rpm.(It is recommendable to use a dynamometer) It is unnecessary to rev up, because the break-in is made mainly for the connecting rods and gears. It is enough to do the break-in about for twenty minutes. Open the throttle to full open position. Adjust it to gain rather richer than mixture gas at the peak position. Rotate the needle by five turns toward the loosened position. If mixture gas is still light, rotate the needle body toward the left, and mixture gas will become rich.

If the engine is installed in an airplane, the operator will be able to do the break-in during its flying, high up in the air as high as possible at middle speed. If the engine keeps running on the ground for a long time, the engine may probably inhale a dust from the ground. The break-in will be completed after about five flights. After the break-in, the carburetor should be regularly adjusted.

* First, open the throttle to full open position.
* After reaching the peak by the main needle, loosen it by two – three roulette turns.
* Move the throttle to the middle speed running position, and adjust the needle body to gain a little rich mixture gas.
* Move the throttle toward the low speed running position, and set it at 1,500 – 1,700 rpm.
* Accelerate from low speed running to high speed running by the throttle lever.(If the mixture gas between low speed and middle speed is light, the engine will stall. Rotate the needle body, as shown in the illustration, toward the counter-clockwise and adjust it.
* When the engine is running at the high speed, the operator has to readjust the needle.(If the operator adjusted the needle body, it is necessary to readjust the main needle and a screw for the low speed adjustment)

G. General Running & Maintenance Procedures

1. Too lean of a needle valve setting will cause the engine to run hotter than normal.(It will cause the engine stalling and has a bad influence on the connecting rod and the cam gear.)
2. After running for about the first one hour period, tappet clearance will have to be adjusted periodically due to wear in of the moving parts. If the supplied gauge will fit, the tappets need to be adjusted for proper spaces. After adjustment make sure to tigten up the lock nut. This will keep wear to a minimum.(See diagram)

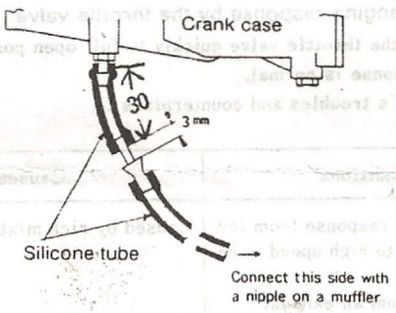


*Internal Lubrication in Engine Inside and Waste Oil Drain

Oil contained in fuel from between a piston and a cylinder comes into the inside will lubricate piston, bearing, cam and gear etc. For draining waste oil, fit a silicone tube into a breather nipple on the lower part of a crank case, and connect the other tube side with a nipple on a muffler as shown in the right illustration.

3. Rocker arm and valve should be lubricated as occasion demands on inspection.

How to use the breather nipple



H. Do not take the engine apart unless necessary.

※Muffler

Do not detach adapters not to decrease pressure. Keep the adapters as they are.

Warning After starting of the engine, operate it behind the propeller. It is dangerous if the propeller will fly.
Moreover, tighten the screws occasionally. Use a starter or a pair of gloves for starting.
Always, set an interval of the tappet within 0.1 as shown. Please pay your attention to saftey and other troubles.

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