



SERVICE DATA

TRIMMER/BRUSHCUTTER

ECHO: **SRM-580**

(Serial number : 36000001 and after)

INTRODUCTION

We are constantly working on technical improvement of our products. For this reason, technical data, equipment and design are subject to change without notice. All specifications, illustrations and directions in this SERVICE DATA are based on the latest product information available at the time of publication.

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Reference No. **10-58D-00**

ISSUED: 201008



1 SERVICE INFORMATION

1-1 Specifications

Model		SRM-580	
Dimensions*	Length	mm(in)	1835 (72.2)
	Width	mm(in)	635 (25.0)
	Height	mm(in)	455 (18.0)
Dry weight*		kg(lb)	9.1 (20.0)
Engine	Type	YAMABIKO, air-cooled, two-stroke, single cylinder	
	Rotation	Anticlockwise as viewed from the output end	
	Displacement	cm ³ (in ³)	58.2 (3.551)
	Bore	mm(in)	46.0 (1.811)
	Stroke	mm(in)	35.0 (1.378)
	Compression ratio		7.0
Carburettor	Type	Diaphragm, horizontal-draught	
	Model	ZAMA C3M-K80	
	Venturi size -Throttle bore	mm(in)	15.0 - 19.0 (0.590 - 0.748)
Ignition	Type	CDI (Capacitor discharge ignition) system with electronic timing advancer and speed governor	
	Spark plug	BPMR8Y	
Starter	Type	Automatic rewind	
	Rope diameter x length	mm(in)	4.0 x 1100 (0.15 x 43.3)
Fuel	Type	Premixed two-stroke fuel	
	Mixture ratio	50 : 1 (2 %)	
	Petrol	Minimum 89 octane petrol (RON)	
	Two-stroke air cooled engine oil	ISO-L-EGD (ISO/CD13738), JASO FC/FD	
	Tank capacity	L (U.S.fl.oz.)	0.75 (25.4)
Clutch	Type	Centrifugal, 2 - shoe pivot	
Handle	Type	U-handle with integrated control grip	
Drive shaft	Type	Solid type with serration (10-tooth)	
	Inner shaft: Diameter - Length	mm(in)	8 - 1588 (0.31 - 62.5)
	Housing OD -ID	mm(in)	28 - 24 (1.10 -0.94)
	(Main pipe) Length	mm(in)	1530 (60.2)
Gear case	Reduction ratio	1.33	
	Gear tooth	Spiral bevel gear	
	Lubrication	Lithium based grease or ECHO XTended Protection™ Lubricant	
Cutter	Type	3-tooth blade (255mm)	
	Pilot diameter for blade	mm(in)	25.4 (1.0)
	Fastener type, size	mm	Left-hand thread nut, M10 x 1.25 pitch
	Cutting rotation	Anticlockwise as viewed from top	

OD: Outer diameter.

ID: Inner diameter.

* Without shoulder harness and standard cutter.

1-2 Technical data

Model		SRM-580	
Engine			
Idling speed	r/min	2,550 +/- 250	
Operating speed	r/min	8,500	
Wide open throttle speed [†]	r/min	11,300 - 12,300	
Clutch engagement speed	r/min	3,600	
Service limit speed*	r/min	3,100	
Compression pressure	MPa (kgf/cm ²) (psi)	0.96 (9.8) (139)	
Ignition system			
Spark plug gap	mm (in)	0.6 - 0.7 (0.024 - 0.028)	
Minimum secondary voltage at 1,000 r/min	kV	17	
Secondary coil resistance	kΩ	1.0 - 1.5	
Pole shoe air gaps	mm (in)	0.30 - 0.40 (0.012 - 0.016)	
Ignition timing	at 2,000 r/min	°BTDC	28
	at 3,000 r/min	°BTDC	32
	at 8,000 r/min	°BTDC	35
	at 10,000 r/min	°BTDC	32
PET-9000	Parameter 1		345
	Parameter 2		03
Carburettor			
Idle adjust screw initial setting	turns in**		1
L mixture needle initial setting	turns out***		1 1/4
H mixture needle initial setting	turns out***		1/2
Test Pressure, minimum	MPa (kgf/cm ²) (psi)		0.05 (0.5) (7.0)
Metering lever height	mm (in)		0.1(0.004) -0.25(0.010) lower than diaphragm seat

BTDC: Before top dead centre.

* If clutch engagement speed is lower than service limit speed, replace clutch assembly with new one.

** Set idle adjust screw to the point that its tip just contacts throttle plate before initial setting.

*** Turn L/H mixture needles anticlockwise from point that needle is lightly seated.

† With 3-tooth blade (255 mm).

1-3 Torque limits

Descriptions		Size	kgf•cm	N•m	in•lbf	
Starter system	Starter case	M5	35 - 45	3.5 - 4.5	30 - 40	
Ignition system	Magneto rotor (Flywheel)	M10	300 - 350	30 - 35	265 - 305	
	Ignition coil	M4	10 - 20	1 - 2	9 - 18	
	Spark plug	M14	130 - 170	13 - 17	113 - 150	
Fuel system	Carburettor	M5	50 - 60	5 - 6	45 - 50	
	Intake insulator	M5	50 - 75	5 - 7.5	45 - 65	
	Fuel tank	Crankcase side	M5*	25 - 45	2.5 - 4.5	22 - 40
		The lower side	M5	50 - 75	5 - 7.5	45 - 65
Clutch	Clutch hub	M10	200 - 230	20 - 23	175 - 200	
	Clutch arm	M8	160 - 200	16 - 20	140 - 175	
	Clutch case	M5	60 - 90	6 - 9	50 - 80	
	Clutch case cover	M5	50 - 70	5 - 7	45 - 60	
Engine	Crankcase	M5**	70 - 110	7 - 11	60 - 95	
	Cylinder	M5**	70 - 110	7 - 11	60 - 95	
	Cylinder cover	M5	50 - 75	5 - 7.5	45 - 65	
	Muffler	M5*	60 - 100	6 - 10	50 - 90	
	Muffler stay	M5	70 - 100	7 - 10	60 - 90	
	Muffler cover	M5	50 - 75	5 - 7.5	45 - 65	
	Ground lead	M5*	25 - 45	2.5 - 4.5	22 - 40	
Other	Cutter fastener	LM10	280 - 320	28 - 32	245 - 280	
	Cap cover	M5	15 - 30	1.5 - 3	13 - 25	
	Cleaner lid	M5	20 - 25	2 - 2.5	18 - 22	
Regular bolt, nut and screw		M3	6 - 10	0.6 - 1	5 - 9	
		M4	15 - 25	1.5 - 2.5	13 - 22	
		M5	25 - 45	2.5 - 4.5	22 - 40	
		M6	45 - 75	4.5 - 7.5	40 - 65	
		M8	110 - 150	11 - 15	95 - 130	

LM: Left hand thread.

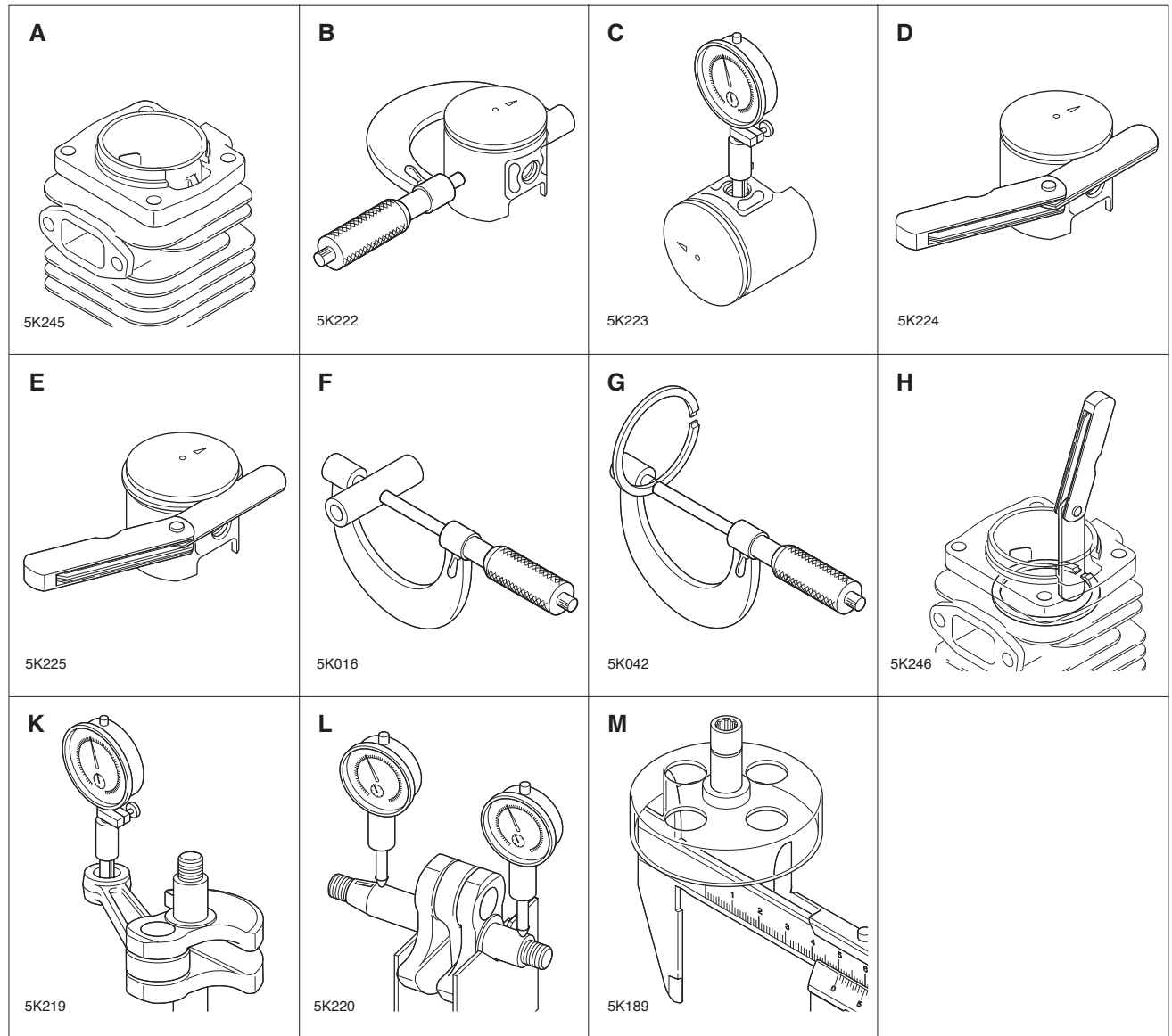
* Apply thread locking sealant. (See below)

** The torque differences among four bolts should not exceed 20 kgf•cm (2N•m, 17in•lbf) on one cylinder or crankcase.

1-4 Special repairing materials

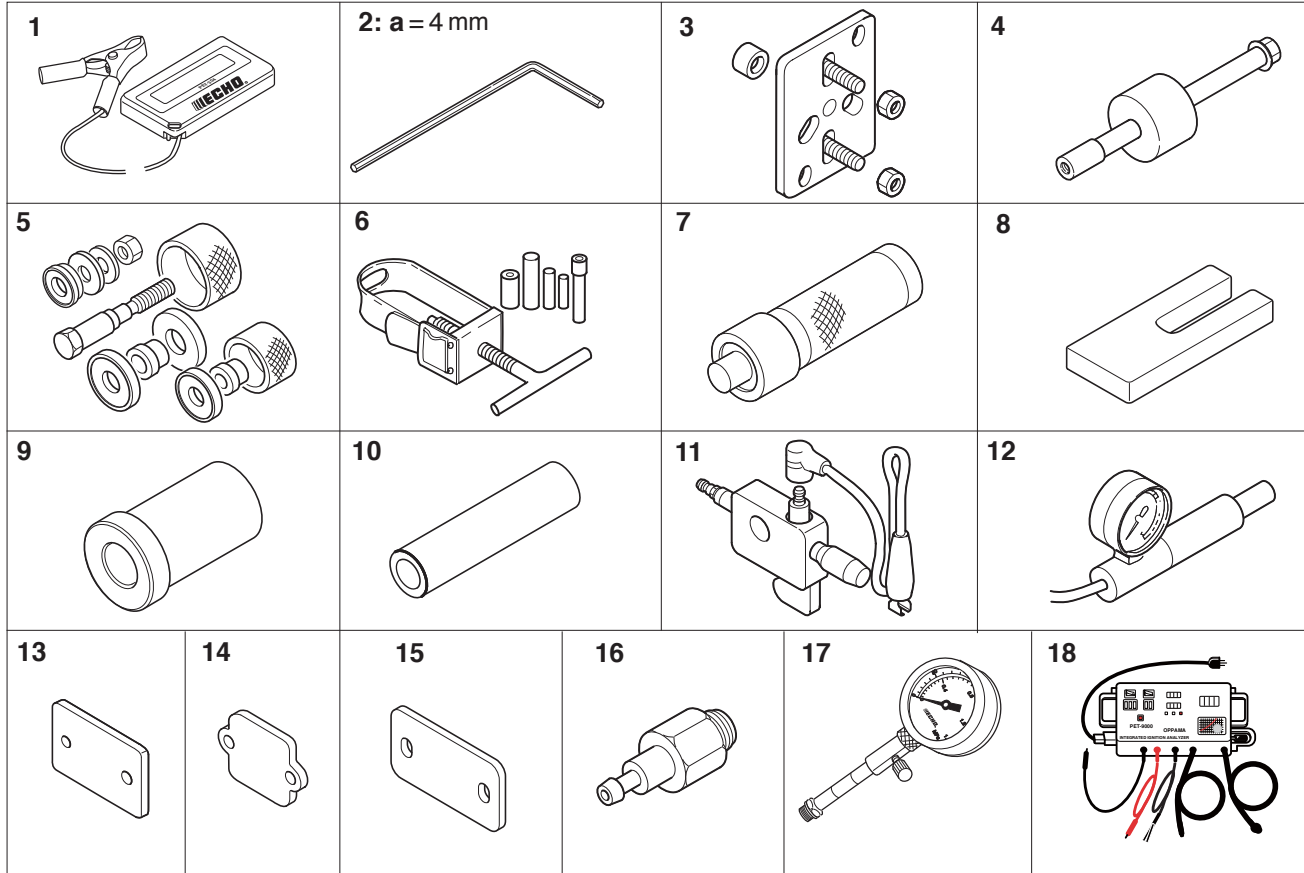
Material	Location	Remarks
Grease	Gear case	Lithium based grease or ECHO XTended Protection™ Lubricant
	Rewind spring	
	Starter centre post	
Oil	Oil seal inner lips	Two-stroke engine oil or engine oil (SAE#30)
	Drive shaft	
Thread locking sealant	Muffler	Loctite #242, ThreeBond #1324 or equivalent
	Fuel tank Crankcase side	
	Ground lead	Loctite #222, ThreeBond #1342 or equivalent

1-5 Service limits



Description		mm (in)	
A	Cylinder bore	When plating is worn and aluminum can be seen	
B	Piston outer diameter	Min.	45.87 (1.806)
C	Piston pin bore	Max.	10.035 (0.3951)
D	Piston ring groove	Max.	1.3 (0.051)
E	Piston ring side clearance	Max.	0.15 (0.006)
F	Piston pin outer diameter	Min.	9.98 (0.3929)
G	Piston ring width	Min.	1.15 (0.045)
H	Piston ring end gap	Max.	0.5 (0.02)
K	Con-rod small end bore	Max.	14.025 (0.5522)
L	Crankshaft runout	Max.	0.02 (0.001)
M	Clutch drum bore	Max.	79.5 (3.13)

1-6 Special tools



Key	Part Number	Description	Used for:
1	G310-000050	Tachometer PET-304	Measuring engine speed to adjust carburettor
2	895610-79920	L-hex wrench (4 mm)	Removing and installing hex. socket bolt (M5)
3	897501-03938	Puller	Removing flywheel
4	897603-47530	PTO shaft puller	Removing PTO shaft
5	897701-14732	Bearing tool	Removing and installing ball bearings on crankcase / clutch drum
6	897702-30131	Piston pin tool	Removing and installing piston pin (Use 10mm dia. adapter)
7	897718-02830	Bearing tool	Installing crankcase oil seal (starter side)
8	897719-02830	Piston holder	Making piston steady to remove and install piston / ring
9	897726-16130	Oil seal tool	Installing crankcase oil seal (clutch side)
10	897726-21430	Oil seal tool	Installing crankcase oil seal (clutch side)
11	897800-79931	Spark tester	Checking ignition system
12	897803-30132	Pressure tester	Testing fuel pipes/tank and crankcase leakages
13	897826-16131	Pressure plug	Plugging intake port to test crankcase / cylinder sealing
14	897827-16131	Pressure plate	Plugging intake port to test crankcase / cylinder sealing
15	897831-16131	Pressure plug	Plugging exhaust port to test crankcase / cylinder sealing
16	897835-16131	Pressure connector	Testing crankcase and cylinder leakages
17	91037	Compression gauge	Measuring cylinder compression
18	900300	Ignition Analyzer : PET-9000	Measuring Ignition timing, Primary/Secondary voltage engine speed

2 CARBURETTOR ADJUSTMENT PROCEDURE

2-1 General adjusting rules

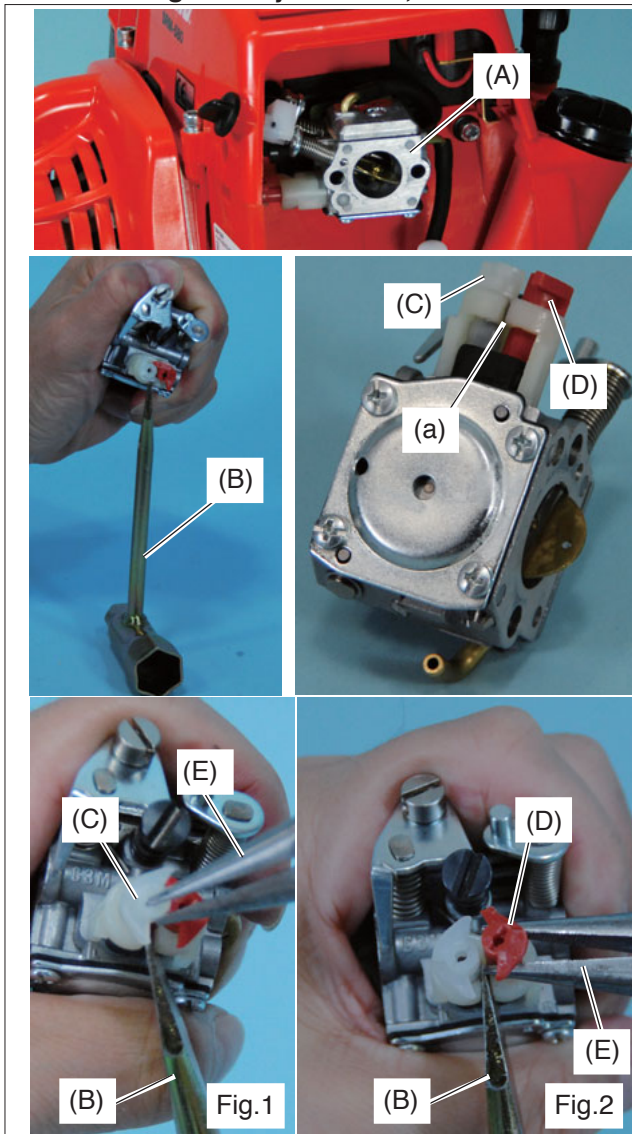
- 1) Before adjustment, check the following items.
 1. The correct spark plug must be clean and properly gapped.
 2. The air filter element must be clean and properly installed.
 3. The muffler exhaust port must be clear of carbon.
 4. The fuel lines, tank vent and fuel filter are in good condition and clear of debris.
 5. The fuel is fresh (> 89 octane : RON) and properly mixed at 50 : 1 with "ISO L-EGD" or "JASO FC/FD" 2-stroke oil.

2) Preliminary adjustment. Adjustment by Idle adjust screw of carburettor.

Start and run engine for 10 seconds at idle, and for 2 minutes alternating engine speed between WOT for 20 seconds and Idle for 10 seconds. Adjust idle engine speed to 2,800 +/- 200 r/min by turning Idle adjust screw. If engine does not run correctly after this adjustment, proceed to the next step 2-2.

IMPORTANT : After adjusting carburettor according to the steps 2-2 and 2-3, the limiter plug(s) must be installed in L and H mixture needle(s) hole(s) to comply with Emission Directive.

2-2 Presetting Idle adjust screw, L mixture needle and H mixture needle



Tools Required : Small screwdriver with 2 mm blade, electronic tachometer P/N G310-000050

1. Remove Air filter and Air filter lid. And then remove Carburettor(A).

2. Insert Spark plug wrench(B) into needle housing slit(a) to open the slit(: approx. 3 mm). And pull White limiter cap(C) a little using Long-nose plier(E) as shown Fig.1, Fig.4.

3. Repeat Step 2 to pull Red limiter cap(D) same as white cap(C) as shown Fig.2, Fig.4.

NOTE : After pulling, both White/Red limiter caps should be as shown Fig.4 for tentative position so that L/H mixture needles would be free with L/H mlimiter caps.

(continued)

2-2 Presetting Idle adjust screw, L mixture needle and H mixture needle (Continued)

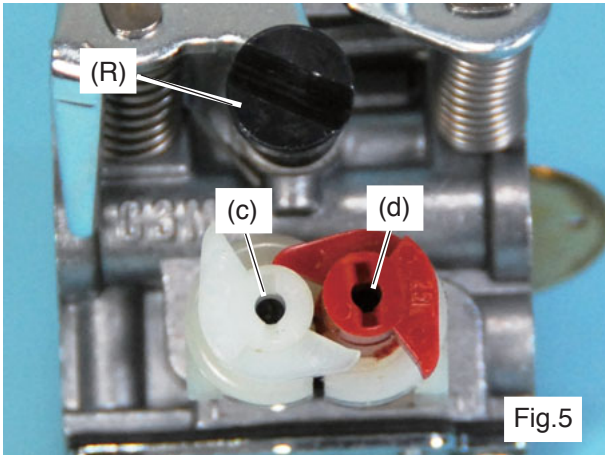
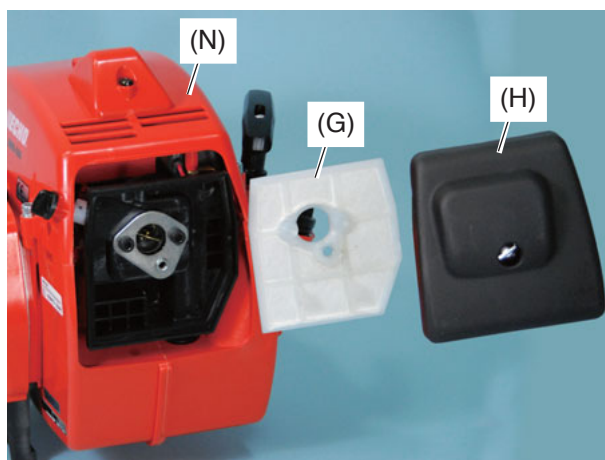
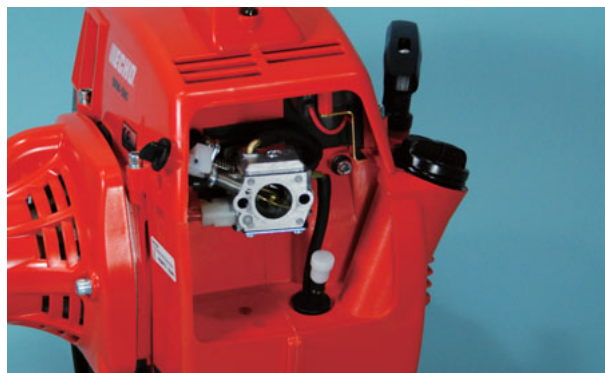
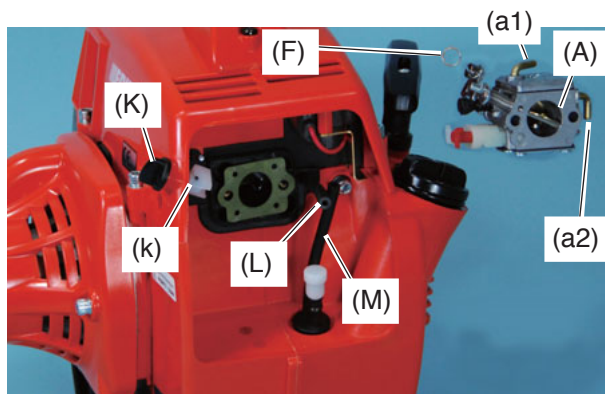


Fig.5



4. Turn White/Red limiter caps anticlockwise stop as shown Fig.5.

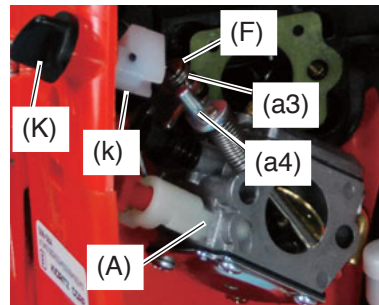
5. Turn L mixture needle clockwise until lightly seated by 2 mm blade screwdriver through White limiter cap centre hole(c). Then turn it anticlockwise 1 1/4 turns.

6. Turn H mixture needles clockwise until lightly seated by 2 mm blade screwdriver through Red limiter cap centre hole(d). Then turn it anticlockwise 1/2 turns.

NOTE : Do not over tighten needles, otherwise needles tip and seat damage may occur.

7. Turn Idle adjust screw (R) anticlockwise and set the screw until the tip to just contact throttle plate. Then turn it clockwise 1 turn.

NOTE : The initial carburettor settings for Idle adjust screw, L and H speed mixture needles are intended to start and run the engine, before final carburettor adjustments are made to conform the unit to meet Emission Directive are made. The actual number of turns needed for engine operation may vary.



8. Set Bowden cable in swivel post(a3) of Carburettor(A). And set Clip(F) on swivel post(a3).

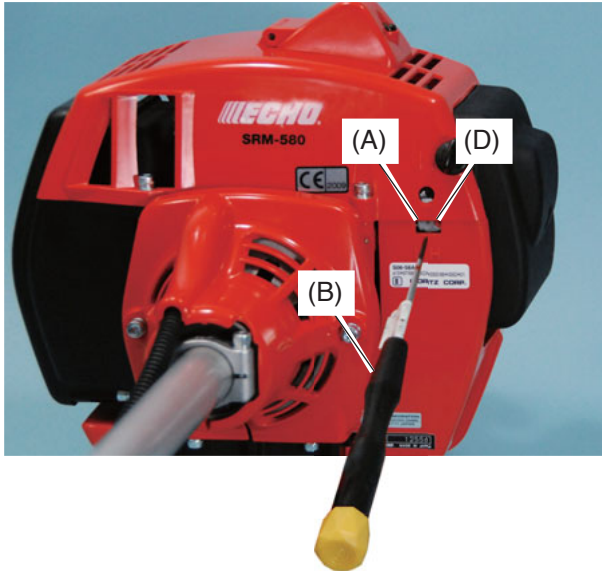
9. Connect pulse pipe(L) on carburettor fitting(a1) and fuel pipe(M) on carburettor fitting(a2) .

Install carburettor(A) choke shaft post(a4) in lever end groove(k) so that choke rod(K) would be linked carburettor choke shaft as shown.

NOTE : When it is difficult to reassemble carburettor, remove engine cover(N).

10. Install Air filter(G) and Air filter lid(H) on cleaner case inside engine cover(N).

2-3 Adjusting carburettor



1. Start and warm engine for about 1 minutes with cycle of 10 seconds at WOT (Wide Open Throttle) and 10 seconds at idling.

2. Adjust L mixture needle(A) to reach maximum idle speed with 2 mm blade screwdriver(B) through White limiter cap centre hole .

3. Set idle speed to 3,250 r/min by turning Idle adjust screw(C). Engine speed should be stable at 3,250 +/- 50 r/min.

4. Turn L mixture needle(A) anticlockwise to reduce engine idle speed 650 r/min to set idle speed at 2,600 r/min. The idle speed range is 2,400 - 2,800 r/min.

NOTE : Engine speed must be allowed to stabilize a minimum of 20 seconds after each adjustment to assure accurate tachometer readings.

5. Before high speed adjustment, WOT engine speed should be 11,000 r/min or less. If engine speed is higher, turn H mixture needle anticlockwise until 11,000 r/min is achieved with 2 mm blade screwdriver(B) through Red limiter cap hole. To make the final WOT engine speed adjustment, turn the H mixture needle clockwise in 1/8 turn increments with the engine at idle. After each adjustment, accelerate to WOT, and check WOT engine speed. The final WOT engine speed should fall within 11,600 - 12,000 r/min.

6. Press respective limiter caps to the bottoms using tool like T wrench(P) as shown.

Stop engine, restart engine again and verify engine idle speed ranges from 2,300 to 2,800 r/min, and WOT engine speed ranges from 11,300 to 12,300 r/min after 20 seconds at WOT.

Make sure 3-tooth blade(255 mm) does not rotate when engine is idle engine speed, and engine should accelerate smoothly.

NOTE : Engine WOT, and idle speed in field operation may vary from final adjustment specifications due to changing ambient conditions, fuel, and engine loads. Safe engine r/min variances should be within the safe ranges for WOT and Idling speed as listed in Section 1-2, otherwise the carburettor should be readjusted.