



# SERVICE DATA

## DUSTER/MIST BLOWER

### ECHO: **MB-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 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. **20-58A-00**  
**ISSUED : 201211**



## 1 SERVICE INFORMATION

## 1-1 Specifications

Model		MB-580		
Dimensions	Length*	mm(in)	360 (14.17)	
	Width*	mm(in)	475 (18.70)	
	Height*	mm(in)	680 (26.72) <12L>      735 (28.93) <20L>	
Dry weight**		kg(lb)	12.2 (26.8) <12L>      12.6 (27.7) <20L>	
Engine	Type	YAMABIKO, air-cooled, two-stroke, single cylinder		
	Rotation	Anticlockwise as viewed from the output end		
	Displacement	cm <sup>3</sup> (in <sup>3</sup> )	58.2 (3.551)	
	Bore	mm(in)	46.0 (1.181)	
	Stroke	mm(in)	35.0 (1.378)	
	Compression ratio	6.7		
Carburettor	Type	Rotary type : Diaphragm, horizontal-draft, with purge bulb		
	Model	Walbro WYK-375		
	Venturi size-Throttle bore	mm(in)	13.5 - 15.0 (0.531 - 0.591)	
Ignition	Type	CDI (Capacitor discharge ignition) system Digital magneto		
	Spark plug	BPMR7A		
Starter	Type	Automatic rewind starter		
	Rope diameter x length	mm(in)	3.8 x 1400 (0.15 x 55.1)	
Fuel	Type	Premixed two-stroke fuel		
	Mixture ratio	50 : 1 (2 %)		
	Petrol	Minimum 89 octane petrol		
	Two-stroke air cooled engine oil	ISO-L-EGD (ISO/CD13738), JASO FC/FD		
	Tank capacity	L (U.S.fl.oz.)	1.83 (61.9)	
	Chemical tank capacity	L (Imp.gal.)	12 (2.6) <12L>	20 (4.4) <20L>
Blower	Fan type	Centrifugal, single stage		
	Max. air volume (with pipes)	m <sup>3</sup> /min (ft <sup>3</sup> /min)	11.9 (420.5)	
	Max. air velocity (with pipes)	m/s (mph)	99.5 (222.6)	
	Discharge ID	mm (in)	55 (2.17)	
Misting maximum discharge		liter/min(gal/min)	4.7 (1.25)	

ID : Inner diameter

\* Without blower pipes.

\*\* With blower pipes.

## 1-2 Technical data

Model		MB-580	
Engine			
Idling speed*	r/min	2,800 +/- 300	
Wide open throttle speed*	r/min	Over 8,200	
Compression pressure	MPa (kgf/cm <sup>2</sup> ) (psi)	0.94 (9.6) (137)	
Ignition system			
Spark plug gap	mm(in)	0.6 - 0.7 (0.024 - 0.028)	
Minimum secondary voltage at 1,500 r/min	kV	15	
Primary coil resistance	kΩ	0.14 - 0.16	
Secondary coil resistance	kΩ	1.2 - 1.6	
Pole shoe air gaps	mm (in)	0.3 - 0.4 (0.012 - 0.016)	
Ignition timing	at 3,000 r/min	°BTDC	32
	at 8,000 r/min	°BTDC	30
PET-9000	Parameter 1		60
	Parameter 2		07
Carburettor			
Main jet			#47
Idle adjust screw initial setting	turns in**		1 1/2
Idle mixture needle initial setting	turns out***		12
Hi speed mixture needle initial setting	turns out		---
Test Pressure, minimum	MPa (kgf/cm <sup>2</sup> ) (psi)		0.05 (0.5) (7.0)
Metering lever height	mm(in)		1.5 (0.06) lower than diaphragm seat

BTDC: Before top dead centre

\*With all blower pipes and mist nozzle.

\*\* Set idle speed screw to contact throttle plate before initial setting.

\*\*\* Screw in idle mixture needle from initial thread engagement (at the point that the clicking sound is heard).

**1-3 Torque limits**

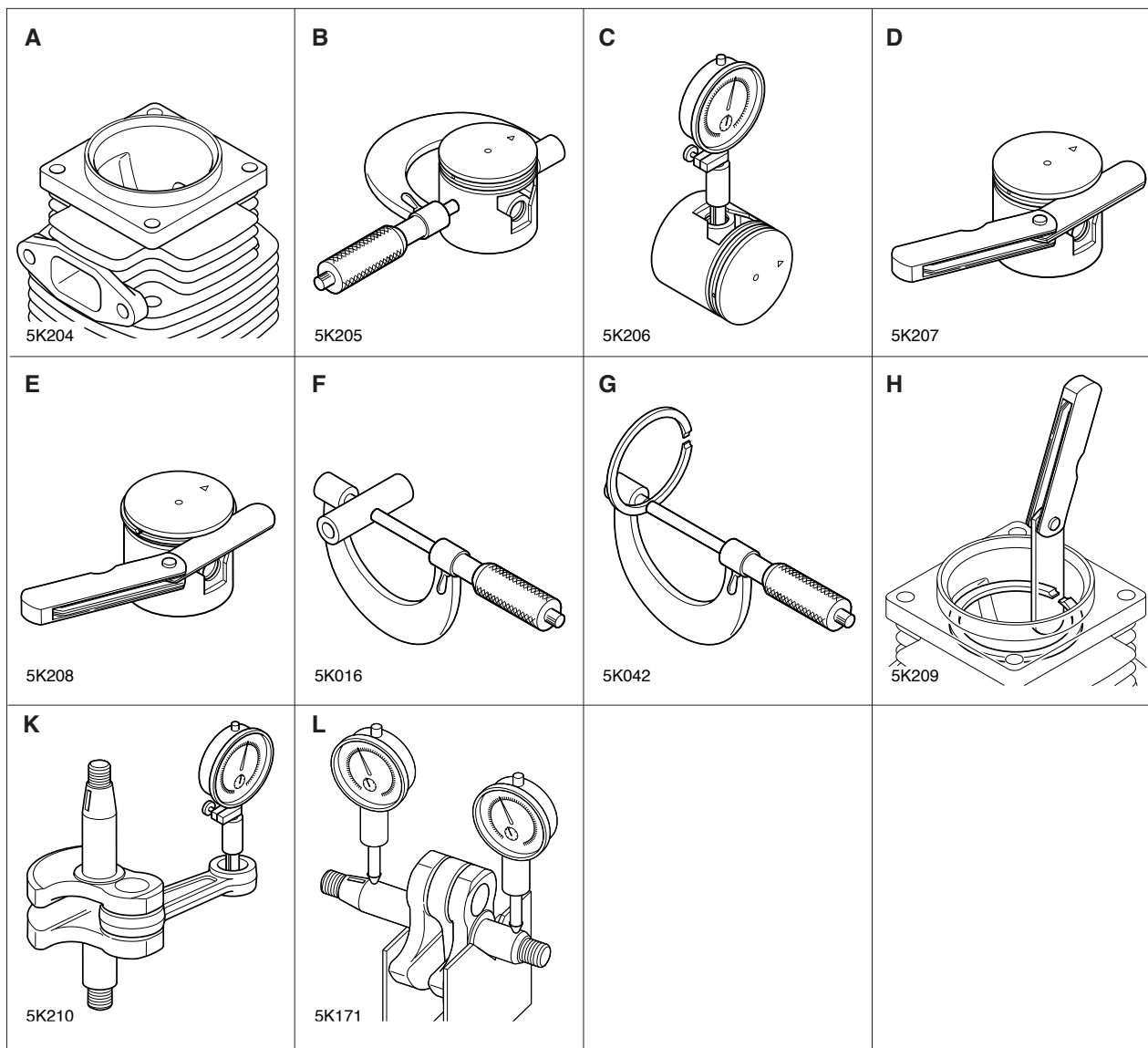
Descriptions		Size	kgf·cm	N·m	in·lbf
Starter system	Starter pawl assembly	M 10	130 - 180	13 - 18	115 - 160
	Starter case	M 4	15 - 25	1.5 - 2.5	13 - 22
Ignition system	Flywheel	M 10	250 - 350	25 - 35	220 - 300
	C.D.I module	M 4	30 - 40	3 - 4	26 - 35
Fuel system	Spark plug	M 14	130 - 170	13 - 17	115 - 150
	Carburettor	M 5	25 - 45	2.5 - 4.5	22 - 40
	Fuel tank	M 6	30 - 40	3 - 4	26 - 35
	Intake insulator	M 5	50 - 70	5 - 7	45 - 60
Engine	Crankcase	M 5	70 - 110	7 - 11	60 - 95
	Cylinder	M 5	70 - 110	7 - 11	60 - 95
	Cylinder cover	M 5	25 - 45	2.5 - 4.5	22 - 40
	Engine mount	M 5	25 - 45	2.5 - 4.5	22 - 40
	Engine cover	M 5	25 - 45	2.5 - 4.5	22 - 40
	Muffler	M 6	130 - 170	13 - 17	115 - 150
	Muffler stay	M 5	25 - 45	2.5 - 4.5	22 - 40
	Dust cover	M 5	20 - 40	2 - 4	17 - 35
Others	Blower fan	M 5*	40 - 60	4 - 6	35 - 50
	Fan case	M 5	25 - 45	2.5 - 4.5	22 - 40
	Cushion	M 6*	20 - 40	2 - 4	17 - 35
Regular bolt, nut and screw		M 3	6 - 10	0.6 - 1	5 - 9
		M 4	15 - 25	1.5 - 2.5	13 - 22
		M 5	25 - 45	2.5 - 4.5	22 - 40
		M 6	45 - 75	4.5 - 7.5	40 - 65
		M 8	110 - 150	11 - 15	95 - 130

\* Apply thread locking sealant (See below)

**1-4 Special repairing materials**

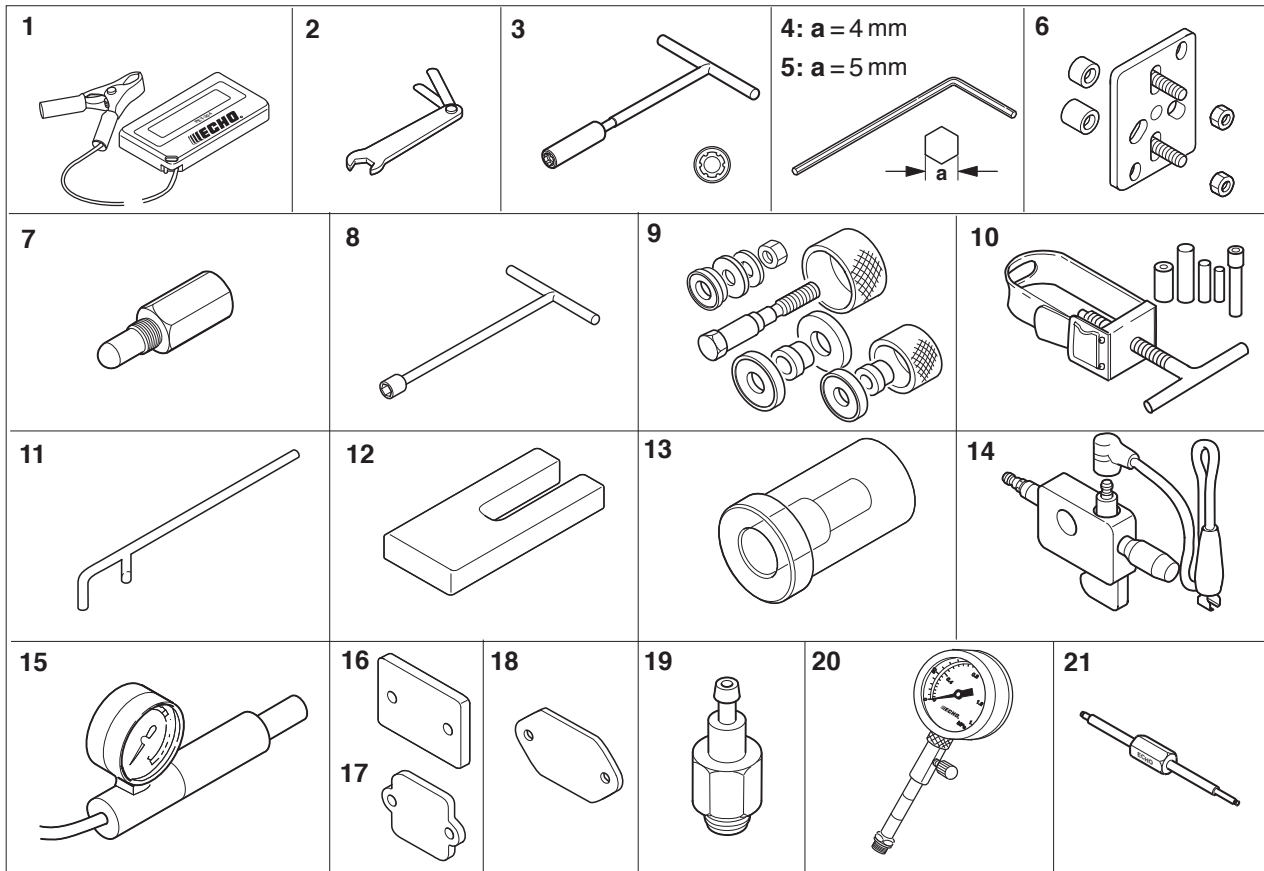
Material	Location	Remarks
Grease	Rewind spring	Lithium based grease or ECHO XTended Protection™ Lubricant
	Starter center post	
	Shutter shaft O-ring	
	Oil seal inner lips	
Thread locking sealant	Fan	Loctite #222, ThreeBond #1342 or equivalent
	Cushion screw	
Sealant	Straight pin pressed in	Loctite #595, ThreeBond #1212 or equivalent

1-5 Service Limits



Description		When plating is worn and aluminium can be seen	
A	Cylinder bore		
B	Piston outer diameter	Min.	45.90 (1.807)
C	Piston pin bore	Max.	10.025 (0.3947)
D	Piston ring groove,	Max.	1.6 (0.063)
E	Piston ring side clearance	Max.	0.1 (0.004)
F	Piston pin outer diameter	Min.	9.98 (0.3929)
G	Piston ring width	Min.	1.45 (0.057)
H	Piston ring end gap	Max.	0.6 (0.02)
K	Con-rod small end bore	Max.	14.025 (0.5522)
L	Crankshaft runout	Max.	0.01 (0.001)

## 1-6 Special tools



Key	Part Number	Description	Reference
1	G310-000050	Tachometer PET-304	Measuring engine speed
2	895115-00330	Magneto wrench	Adjusting pole shoe air gaps
3	895317-03310	T-wrench	Removing and installing chemical tank holder screw
4	895610-79920	L-hex wrench (4 mm)	Removing and installing hex. socket bolt (M5)
5	895611-79920	L-hex wrench (5 mm)	Removing and installing hex. socket bolt (M6)
6	897501-03938	Puller	Removing magneto rotor
7	897537-30130	Piston stopper	Locking crankshaft rotation
8	897558-02830	T-socket wrench(8mm)	Removing and installing hex. head bolt/nut (M5)
9	897701-14732	Bearing tool	Removing and installing ball bearings on crankcase
10	897702-30131	Piston pin tool	Removing and installing piston pin (Use 10mm dia.adapter)
11	897712-04630	2-pin wrench	Removing and installing pawl carrier
12	897719-02830	Piston holder	Making piston steady to remove and install piston / rings
13	897726-16130	Oil seal tool	Installing crankcase oil seal
14	897800-79931	Spark tester	Checking ignition system
15	897803-30133	Pressure tester	Testing carburettor and crankcase leakage
16	897826-16131	Pressure rubber plug	Plugging intake port to test crankcase / cylinder sealing
17	897827-16131	Pressure plate	Plugging intake port to test crankcase / cylinder sealing
18	897834-79930	Pressure rubber plug	Plugging exhaust port to test crankcase / cylinder sealing
19	897835-16131	Pressure connector	Testing crankcase and cylinder leakage
20	91037	Compression gauge	Measuring cylinder compression
21	91020	Limiter plug tool	Removing and installing plug

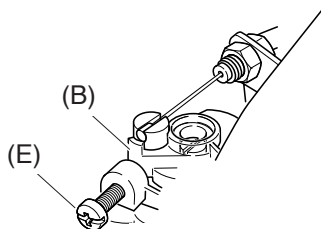
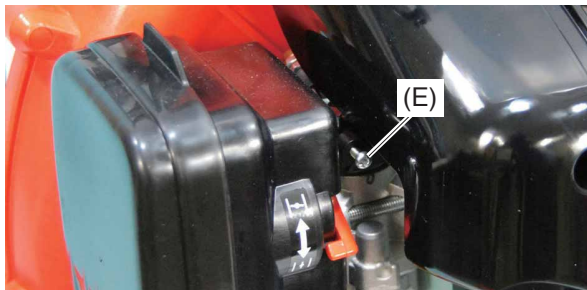
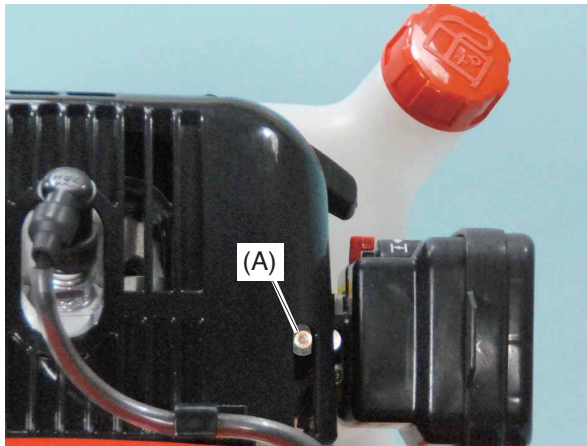
## 2 CARBURETTOR ADJUSTMENT PROCEDURE

### 2-1 General adjusting rules

A. Before starting the unit for 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.
6. All blower pipes are installed for proper engine loading with mist nozzle head.

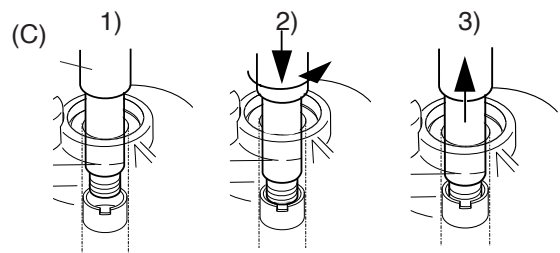
### 2-2 Presetting Idle adjust screw and Idle mixture needle



Tools Required : Small screwdriver with 2.5 mm blade, P/N G310-000050 electronic tachometer, P/N 91020 limiter plug tool with 2.5 mm left-hand thread. Parts Required : (2) limiter plug P/N A259-000000

1. Remove the plugs from Idle mixture needle hole (A) using limiter plug tool (C) as follows.

- 1) Put limiter plug tool (C) on limiter plug in mixture needle hole.
- 2) Push and turn limiter plug tool anticlockwise 2 turns into limiter plug slowly.
- 3) Pull out limiter plug tool with the limiter plug from mixture needle hole.



**NOTE :** If plug is damaged and stays in the hole, use hand auger or pin-shaped tool to scrape, and lift the cap pieces out of the hole.

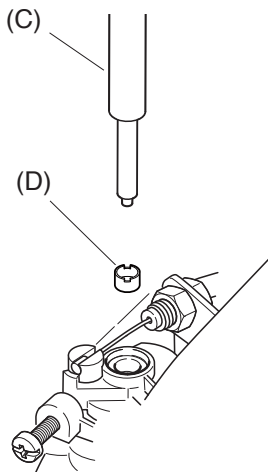
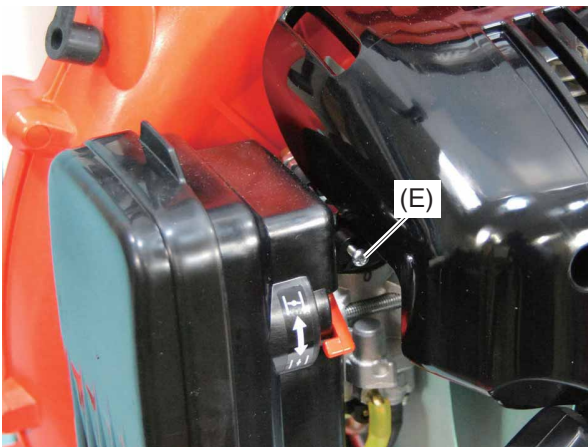
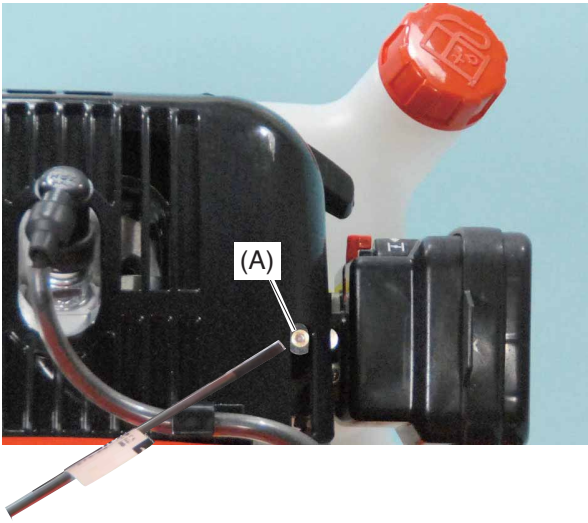
2. Turn Idle mixture needle (A) anticlockwise to fully come out until clicking sound is heard. Then turn it clockwise 12 turns.

3. Turn Idle adjust screw (E) anticlockwise until screw tip just touches throttle plate (B). Then turn Idle adjust screw (E) clockwise 1 1/2 turns.

**NOTE :** The initial carburettor settings for Idle adjust screw and Idle mixture needles are intended to start and run the engine before final carburettor adjustments are made to conform the unit to meet Emission Directive. Actual turns required for engine operation may vary.



## 2-3 Adjusting carburettor



1. Start and warm engine at WOT for 3 minutes.
  2. Adjust Idle mixture needle (A) to reach maximum idle speed using 2.5 mm blade screwdriver.
  3. Set Idle speed to 3,300 r/min by turning Idle adjust screw (E). Engine speed should be stable at 3,300 +/- 50 r/min.
  4. Turn Idle mixture needle anticlockwise to reduce engine idle speed 500 r/min to set idle speed at 2,800 r/min. The idle speed range is 2,700 - 2,900 r/min.
- NOTE :** Engine speed must be allowed to stabilize a minimum of 20 seconds after each adjustment of idle mixture needle to assure accurate tachometer readings.
5. Stop engine, restart engine again and verify engine idle speed ranges from 2,500 to 3,100 r/min, and WOT engine speed should be over 8,200 r/min.

6. After adjusting carburettor, insert and secure new plug (D) A259-000000 deep in the needle holes per the Emission Directive using limiter plug tool 91020 (C).

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