



# SERVICE DATA

## POWER BLOWER

### ECHO: PB-8010

(Serial number : P51838000001 - P51838999999)

(Serial number : P53838000001 - P53838999999)

(Serial number : P55340000001 - P55340999999)

### shindaiwa: EB810

(Serial number : P53938000001 - P53938999999)

#### 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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#### Carburetor Adjustment Video



Reference No. 21-80D-04

REVISED: 202212

ISSUED: 201909



**1 SERVICE INFORMATION****1-1 Specifications**

Dimensions*	Length	mm (in)	362 (14.3)
	Width	mm (in)	526 (20.7)
	Height	mm (in)	544 (21.4)
Dry weight**		kg (lb)	11.9 (26.2)
Engine	Type	YAMABIKO, stratified scavenging, air-cooled, two-stroke, single cylinder	
	Rotation	Counterclockwise as viewed from the output end	
	Displacement	cm <sup>3</sup> (in <sup>3</sup> )	79.9 (4.875)
	Bore	mm (in)	53.0 (2.087)
	Stroke	mm (in)	36.2 (1.425)
	Compression ratio	6.9	
Carburetor	Type	Diaphragm, horizontal-draft, with purge bulb	
	Model	Walbro WYAB-1	
	Venturi size	mm (in)	10.0 x 16.0 (0.39 x 0.63)
	Throttle bore	mm (in)	16.7 x 16.0 (0.66 x 0.63)
	Air valve venturi	mm (in)	15 (0.59)
Ignition	Type	CDI (Capacitor discharge ignition) system Digital magneto	
	Spark plug	NGK CMR7H	
Exhaust	Muffler type	Spark arrester muffler	
Starter	Type	Automatic rewind	
	Rope diameter x length	mm (in)	3.8 x 1100 (0.15 x 43.3)
Fuel* <sup>1</sup>	Type* <sup>2</sup>	Mixed two-stroke fuel	
	Mixture ratio	50 : 1 (2%)	
	Gasoline	Minimum 89 octane	
	Two-stroke air cooled engine oil	ISO-L-EGD (ISO/CD13738), JASO FC/FD	
	Tank capacity	L (U.S.fl.oz.)	Full tank capacity: 2.56 (86.6) Usable capacity: 2.48 (83.9)
Throttle	Type	Throttle control and Throttle setting device	
Blower	Fan type	Centrifugal, single stage	
	Max. air volume (with pipes)	m <sup>3</sup> /min (cfm)	30.3 (1071)
	Max. air velocity (with pipes)	m/s (mph)	94.5 (211)
	Discharge ID* <sup>3</sup>	mm (in)	90.0 (3.5)

\*Without blower pipes    \*\*With blower pipes

\*<sup>1</sup> Refer to Operator's manual

\*<sup>2</sup> Premixed alkylate fuel for 2-stroke can be used.

\*<sup>3</sup> Inner diameter

## 1-2 Technical data

Engine			
Compression pressure	MPa (kgf/cm <sup>2</sup> ) (psi)		1.03 (10.5) (150)
Ignition system			
Spark plug gap	mm(in)		0.6 - 0.7 (0.024 - 0.028)
Spark test	Tester gap w/ spark plug	mm(in)	4.0 (0.16)
	Tester gap w/o spark plug	mm(in)	6.0 (0.24)
Secondary coil resistance	Ω		785 - 1185
Pole shoe air gaps	mm(in)		0.3 - 0.4 (0.012 - 0.016)
Ignition timing	at 3,000 r/min	°BTDC	27
	at 7,500 r/min	°BTDC	30
Carburetor			
Test Pressure, minimum	MPa (kgf/cm <sup>2</sup> ) (psi)		0.05 (0.5) (7.0)
Metering lever height	mm(in)		1.50 (0.06) lower than diaphragm seat
Limiting plug / cap			-
Tool to adjust mixture needles			Short type D-shaped tool(S) P/N 91159S
Carburetor adjustment			
1) Initial setting			
H mixture needle	turn out		2 1/2
L mixture needle	turn out		2
Throttle adjust screw	turn out* <sup>1</sup>		9 1/4
Engine warm-up	Idle - WOT : Total	sec.	30 - 180 : 210
2) Find idle maximum speed			Adjust L mixture needle to maximum idle speed
3) Set idle maximum speed w/ TAS		r/min	2900
4) Set idle speed by turning L mixture needle CCW		r/min	2500
5) Find WOT maximum speed			First, warm-up 180 sec. with WOT engine speed 7650 r/min over and adjust H mixture needle to maximum WOT speed.
6) WOT setting		r/min	Turn H mixture needle CCW to reduce WOT speed by : 60 - 80
7) Verify final engine speed with standard equipment		r/min	Idle: 2300 - 2700 WOT: 7500 <

**BTDC:** Before top dead center **WOT:** Wide open throttle **CCW:** Counterclockwise **TAS:** Throttle adjust screw

\*<sup>1</sup> Turn TAS clockwise until its head touches boss. Then turn TAS counterclockwise.

## 1-3 Torque limits

Descriptions		Size	kgf•cm	N•m	in•lbf	
Starter system	Starter case**	M5*	45 - 65	4.5 - 6.5	40 - 55	
Ignition system	Magneto rotor (Flywheel)	M10	300 - 400	30 - 40	260 - 348	
	Ignition coil	M4*	30 - 45	3 - 4.5	25 - 40	
	Spark plug	M10	100 - 150	10 - 15	87 - 130	
Fuel system	Carburetor	M5	40 - 60	4 - 6	32 - 50	
	Intake insulator	M5*	60 - 80	6 - 8	50 - 70	
Engine	Crankcase	M5	60 - 90	6 - 9	50 - 80	
	Cylinder	M5*	70 - 90	7 - 9	60 - 80	
	Engine mount		M6*	140 - 180	14 - 18	120 - 157
		with lead	M6*	130 - 180	13 - 18	110 - 157
	Engine cover	Fan case side	M5 <sup>†</sup>	20 - 40	2 - 4	17 - 32
		Crankcase side**	M5*	45 - 65	4.5 - 6.5	40 - 55
	Muffler	M6	100 - 140	10 - 14	87 - 120	
Others	Fancase	M5 <sup>†</sup>	25 - 45	2.5 - 4.5	22 - 40	
	Blower fan	M10	300 - 340	30 - 34	260 - 280	
	Fuel tank	M5*	20 - 40	2 - 4	17 - 32	
	Cleaner case	M5 <sup>†</sup>	25 - 40	2.5 - 4	22 - 32	
	Cylinder cover	M4	15 - 45	1.5 - 4.5	13 - 40	
	Back pack frame	Fan case side	M5 <sup>†</sup>	25 - 45	2.5 - 4.5	22 - 40
		Bottom side	M5 <sup>†</sup>	35 - 60	3.5 - 6	30 - 50
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	

\* Precoat bolt: If the coat is peeled off, replace new one or apply thread locking sealant as shown below.

<sup>†</sup> Tapping screw

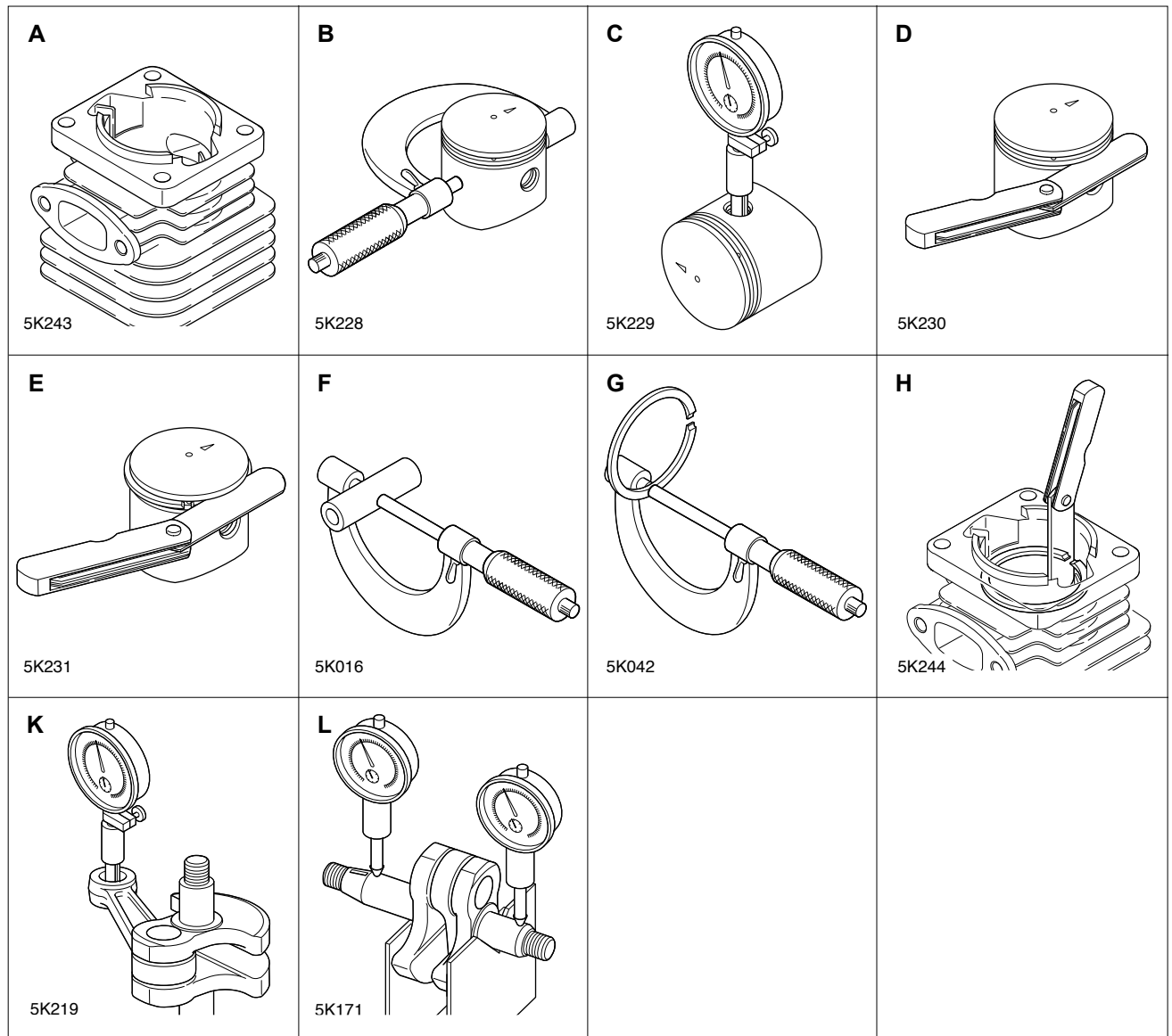
\*\* Bolts on PB-8010 were changed. Refer to Technical Information Y2020-695 for details.

## 1-4 Special repairing materials

Material	Location	Remarks
Grease	Oil seal inner lips	EPNOC AP2 (Lithium based grease) P/N X695-000060
	Rewind spring	
	Starter center post	
	Main pipe O-ring	
Thread locking sealant	Ignition coil (re-use*)	ThreeBond #1344J or equivalent
	Engine mount (re-use*)	
	Cylinder (re-use*)	Loctite #272 or equivalent
	Intake insulator (re-use*)	ThreeBond #1324N or equivalent
	Fuel tank (re-use*)	
	Starter case (re-use*)	
	Crankcase side engine cover (re-use*)	

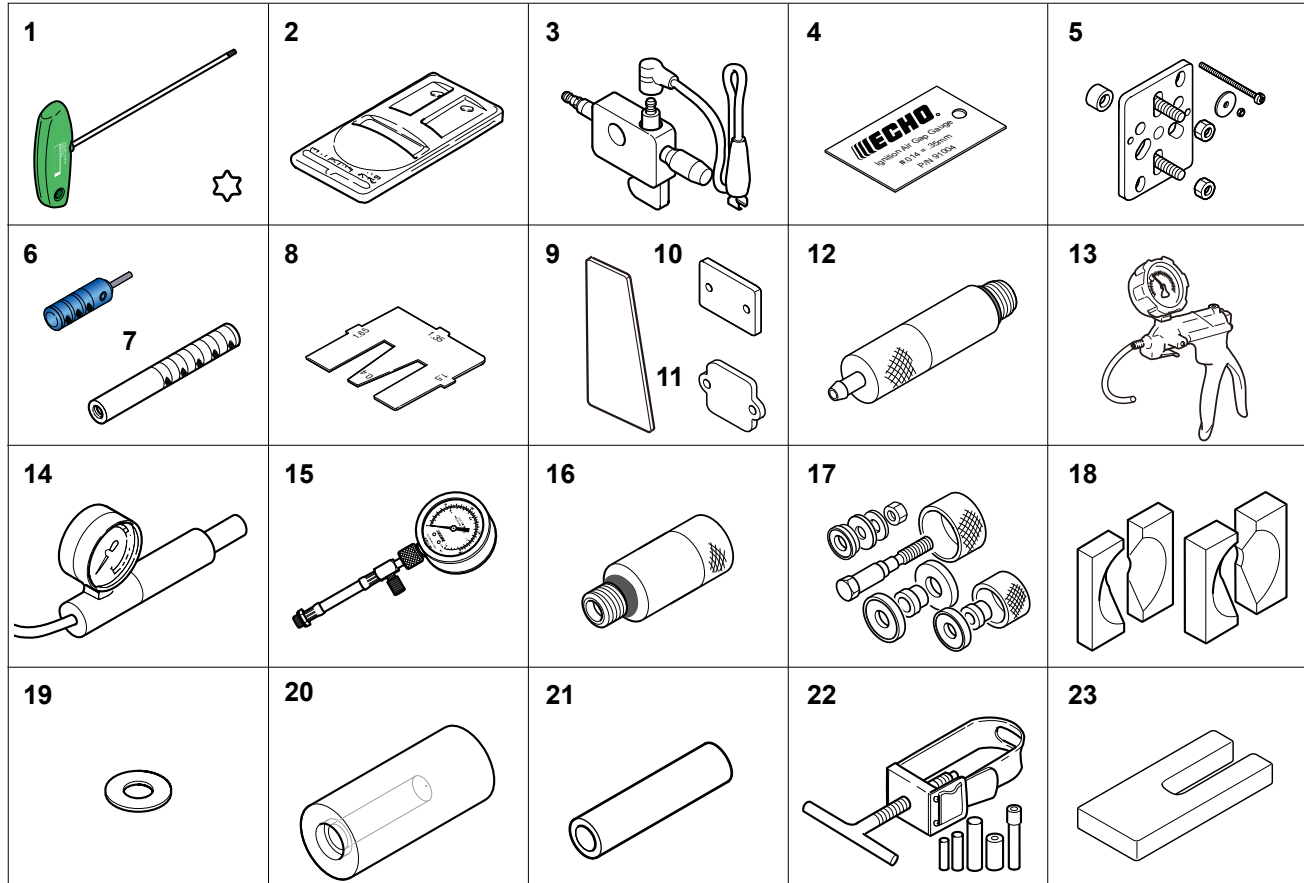
\*If old thread locking sealant is left in threads, correct torque may not be secured. In case old thread locking sealant is left, remove it.

1-5 Service limits



Description		mm (in)
A	Cylinder bore	When plating is worn and aluminum can be seen
B	Piston outer diameter	Min. 52.88 (2.082)
C	Piston pin bore	Max. 13.030 (0.5130)
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. 12.98 (0.5110)
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. 16.025 (0.6309)
L	Crankshaft runout	Max. 0.02 (0.000 8)

## 1-6 Special tools



Key	Part Number	Description	Reference
1	X602-000340	Torx wrench (T27)	Removing and installing torx bolt
2	897802-33330	Tachometer PET-1000R	Measuring engine speed to adjust carburetor
3	897800-79931	Spark tester	Checking ignition system
4	91004	Module air gap gauge	Adjusting pole shoe air gaps
5	Y089-000111	Puller	Removing magneto rotor (flywheel) and crankcase
6	91159S	Short type D-shaped tool(S)	Adjusting carburetor
7	91087	Fan remover	Removing blower fan
8	897563-19830	Metering lever gauge	Measuring metering lever height on carburetor
9	91041	Pressure rubber plug	Plugging exhaust port to test crankcase / cylinder leakages
10	897826-16131	Pressure rubber plug	Plugging intake port to test crankcase / cylinder leakages
11	897827-16131	Pressure plate	Plugging intake port to test crankcase / cylinder leakages
12	A131-000160	Pressure connector	Testing crankcase and cylinder leakage
13	91149	Pressure / vacuum tester	Testing crankcase / cylinder leakages
14	897803-30133	Pressure tester	Testing carburetor and crankcase leakage
15	91037	Compression gauge	Measuring cylinder compression
16	P021-051690	Adapter	Measuring cylinder compression (with P/N: 91147)
17	897701-14732	Bearing tool	Removing and installing ball bearings on crankcase
18	897701-02830	Bearing wedge	Removing ball bearings on crankshaft
19	100014-18430	Washer	Installing crankcase oil seal (t: 0.5 mm)
20	897714-24330	Oil seal tool	Installing crankcase oil seal (starter side)
21	897726-21430	Oil seal tool	Installing crankcase oil seal (fan case side)
22	897702-30131	Piston pin tool	Removing and installing piston pin
23	897719-02830	Piston holder	Making piston steady to remove and install piston/ring