



# SERVICE DATA

## HEDGE TRIMMER

### ECHO: HCA-265ES-LW

(Serial number : 37000001 and after)

(Serial number : 38000001 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. **15-25F-01**

**REVISED : 201906**

ISSUED: 201606



## 1 SERVICE INFORMATION

## 1-1 Specifications

Dimensions	Length* <sup>1</sup>	mm (in)	2418 (95.2)	
	Width	mm (in)	246 (9.7)	
	Height	mm (in)	250 (9.8)	
Dry weight* <sup>1</sup>		kg (lb)	6.5 (14.3)	
Engine	Type		YAMABIKO, air-cooled, two-stroke, single cylinder	
	Rotation		Counterclockwise as viewed from the output end	
	Displacement	cm <sup>3</sup> (in <sup>3</sup> )	25.4 (1.55)	
	Bore	mm (in)	34.0 (1.34)	
	Stroke	mm (in)	28.0 (1.10)	
	Compression ratio		7.3	
Carburetor	Type		Diaphragm, horizontal-draft, with purge bulb	
	Model		ZAMA RB-K94	
	Venturi size - Throttle bore	mm (in)	10.5 - 10.5 (0.41 - 0.41)	
Ignition	Type		CDI (Capacitor discharge ignition) system, Digital magneto	
	Spark plug		NGK BPMR8Y	
Exhaust	Muffler type		Spark arrester muffler with catalyst	
Starter	Type		ES (Effortless-Start)	
	Rope diameter x length	mm (in)	3.0 x 830 (0.12 x 32.7)	
Fuel* <sup>2</sup>	Type* <sup>3</sup>		Mixed two-stroke fuel	
	Mixture ratio		50 : 1 (2%)	
	Gasoline		Minimum 89 octane	
	Two-stroke engine oil		ISO-L-EGD (ISO/CD13738), JASO FC/FD	
	Tank capacity		Full tank capacity: 0.5 (16.9) Usable capacity: 0.4 (15.0)	
		L (U.S.fl.oz.)		
Clutch	Type		Centrifugal, 2-shoe pivot	
Handle	Type		Rubber grip with throttle trigger	
Drive shaft	Type		Flexible	
	Inner shaft	Diameter	mm (in)	6.80 (0.268)
		Length	mm (in)	1522 (59.9)
	Housing (Main pipe)	OD - ID	mm (in)	25 - 22 (0.98 - 0.87)
		Length	mm (in)	1504 (59.2)
Gear case	Reduction ratio		5.63	
	Gear tooth		Spiral bevel gear	
	Lubrication		Lithium based grease	
Cutter	Type		Double reciprocating, Double edge blade	
	Effective length	mm (in)	519 (20.4)	
	Pitch	mm (in)	30 (1.2)	
	Height	mm (in)	20 (0.8)	
	Thickness	mm (in)	2.1 (0.1)	
	Lubrication		Apply oil every 4 hours of use	

**OD:** Outer diameter    **ID:** Inner diameter

\*<sup>1</sup> With blades    \*<sup>2</sup> Refer to Operator's manual

\*<sup>3</sup> Premixed alkylate fuel for 2-stroke can be used.

## 1-2 Technical data

Engine			
Compression pressure	MPa (kgf/cm <sup>2</sup> ) (psi)		0.99 (10.1) (143)
Clutch engagement speed	r/min		4,200
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	kΩ		2.7 - 3.3
Pole shoe air gaps	mm(in)		0.3 - 0.4 (0.012 - 0.016)
Ignition timing	at 3,000 r/min	°BTDC	13
	at 8,000 r/min	°BTDC	34
Carburetor			
Test Pressure, minimum	MPa (kgf/cm <sup>2</sup> ) (psi)		0.05 (0.5) (7.0)
Metering lever height	mm(in)		0.05 - 0.2 (0.002 - 0.008) lower than diaphragm seat
Limiting cap / plug			Limiting plug P/N P005-001270
Tool to adjust mixture needles			Screwdriver 2.5 mm P/N X603-000050 (Carb. adjustment tool P/N Y089-000094)
Carburetor adjustment			
1) Initial setting			
H mixture needle	turn out		1 1/2
L mixture needle	turn out		2
Throttle adjust screw	turn out* <sup>1</sup>		7
Engine warm-up	Idle - WOT : Total	sec.	5 - 5 : 120
2) Find idle maximum speed			Adjust L mixture needle to maximum idle speed* <sup>2</sup>
3) Set idle maximum speed w/ TAS		r/min	3,700
4) Set idle speed by turning L mixture needle CCW		r/min	2,900
5) Find WOT maximum speed			Adjust H mixture needle to maximum WOT speed
6) WOT setting		r/min	Turn H mixture needle CCW to decrease WOT speed by 10
7) Verify final engine speed with standard equipment			Idle: 2,600 - 3,300 WOT: 10,300 - 11,300
8) Verify clutch engagement speed		r/min	Confirm clutch engagement speed. If it is less than 1.25 times the idle speed, adjust the idle speed by turning TAS CCW.

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

\*<sup>1</sup> Turn Throttle adjust screw (TAS) clockwise until its head touches boss. Then turn TAS counterclockwise.

\*<sup>2</sup> If clutch engages during adjustment process 2), decrease engine speed by turning TAS ACW until clutch disengages and then redo 2).

## 1-3 Torque limits

Descriptions		Size	kgf•cm	N•m	in•lbf
Starter system	Starter pawl assembly	M 8	80 - 100	8 - 10	70 - 87
	Starter case	M 4*	14 - 28	1.4 - 2.8	12.3 - 24.5
Ignition system	Magneto rotor (Flywheel)	M 8	160 - 200	16 - 20	140 - 175
	Ignition coil	M 4*	30 - 50	3 - 5	26.5 - 43.5
	Fan cover	M 4*	35 - 50	3.5 - 5	30 - 45
	Spark plug	M 14	130 - 170	13 - 17	112 - 150
Fuel system	Carburetor	M 5	30 - 45	3.0 - 4.5	25 - 40
	Intake insulator	M 5	60 - 80	6 - 8	55 - 70
	Fuel tank with stand	M 5*	40 - 60	4 - 6	32 - 55
Clutch	Clutch shoe	M 6	70 - 110	7 - 11	60 - 95
Cylinder cover	Flanged bolt	M 5*	30 - 45	3.0 - 4.5	25 - 40
	Button bolt	M 5*	20 - 30	2 - 3	17 - 25
Engine	Crankcase	M 5	70 - 110	7 - 11	60 - 95
	Cylinder	M 5	70 - 110	7 - 11	60 - 95
	Muffler	M 5	60 - 80	6 - 8	55 - 70
	Exhaust guide	M 4	14 - 28	1.4 - 2.8	12 - 24
	Muffler cover	M 5*	30 - 45	3.0 - 4.5	25 - 40
	Top guard	M 5*	25 - 40	2.5 - 4	21.8 - 32
Gear case cover		M 4	30 - 50	3 - 5	26 - 45
Cutter	Cutter bolts	M 6	See <b>NOTE</b> below		
	Cutter nuts	M 6	See <b>NOTE</b> below		
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

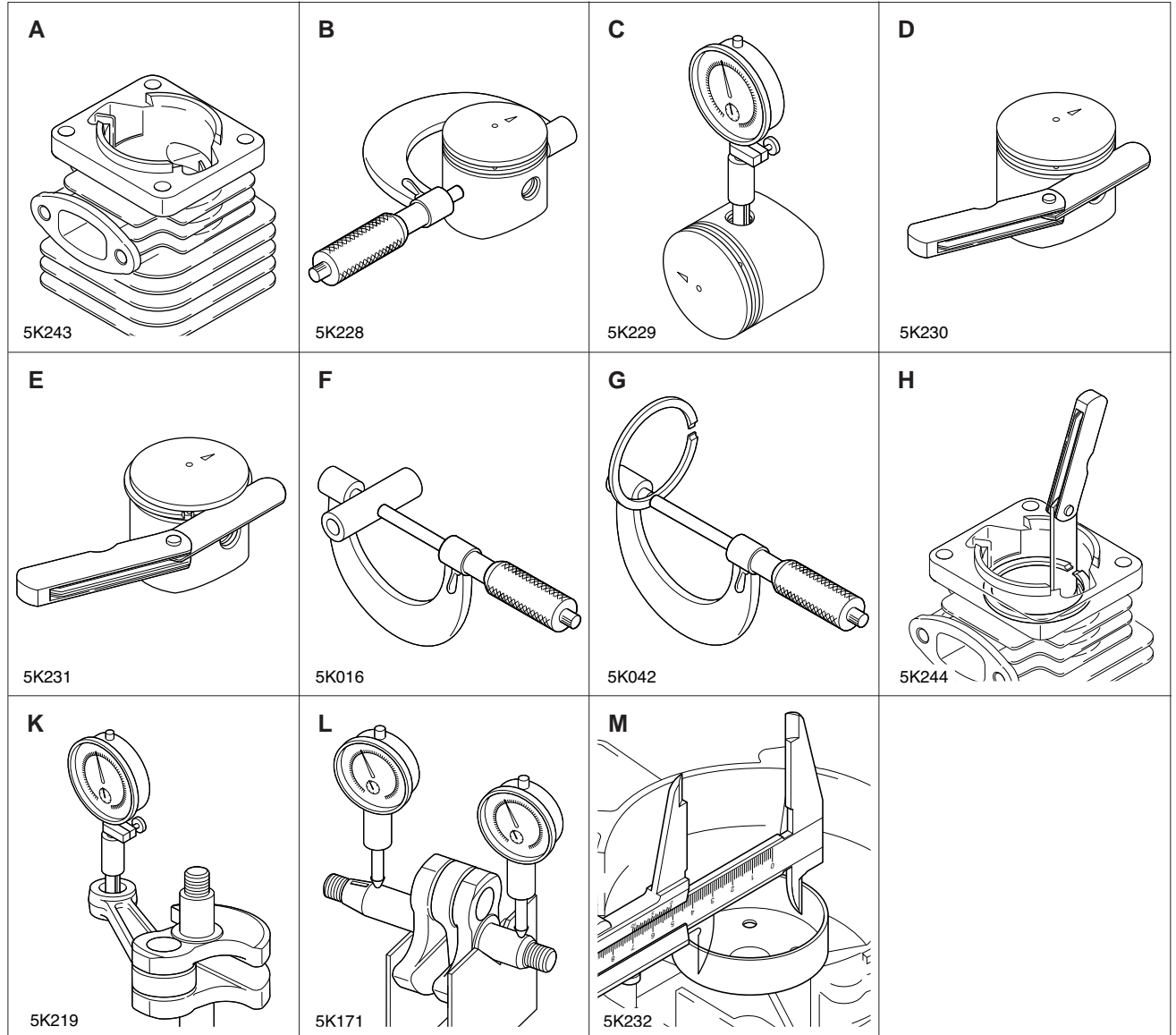
\* Apply thread locking sealant. (See below)

**NOTE:** To adjust cutter clearance, faster 5 pcs of cutter bolts 1-2 N•m, and back 1/2 turn (180°) Counterclockwise. Then tighten the nuts 5-7 N•m holding cutter bolts with spanner.

## 1-4 Special repairing materials

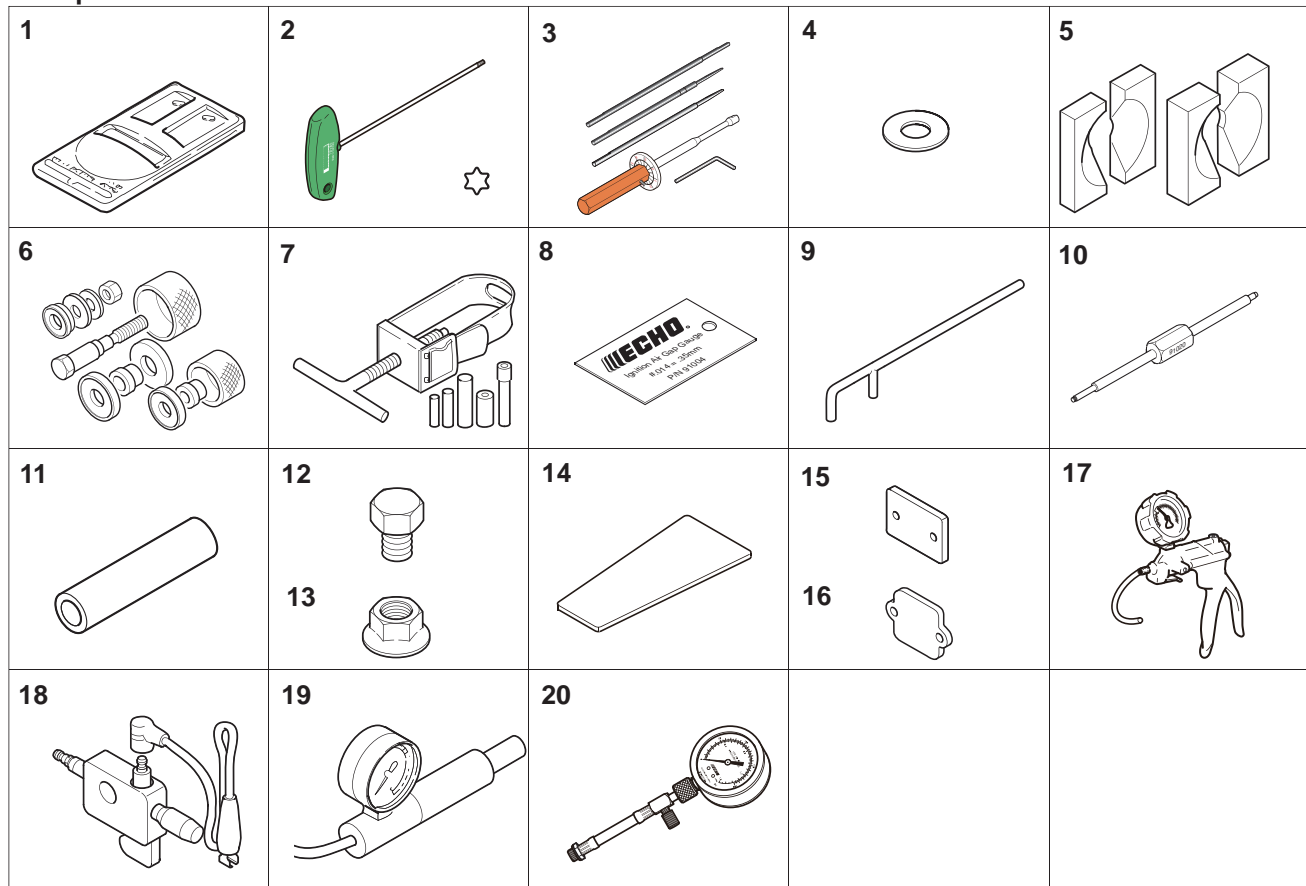
Material	Location	Remarks
Grease	Drive shaft	EPNOC AP2 (Lithium based grease) P/N X695-000060
	Gear case	
	Rewind spring	
	Starter center post	
	Oil seal inner lips	
Thread locking sealant	Muffler cover	Loctite #222, ThreeBond #1342 or equivalent
	Cylinder cover	
	Intake insulator	
	Fuel tank with stand	
	Fan cover	Loctite #242, ThreeBond #1324 or equivalent
	Starter case	
	Ignition coil	

## 1-5 Service limits



Description			mm (in)
A	Cylinder bore		When plating is worn and aluminium can be seen
B	Piston outer diameter	Min.	33.92 (1.335)
C	Piston pin bore	Max.	9.035 (0.3557)
D	Piston ring groove	Max.	1.65 (0.065)
E	Piston ring side clearance	Max.	0.1 (0.004)
F	Piston pin outer diameter	Min.	8.98 (0.3535)
G	Piston ring width	Min.	1.45 (0.057)
H	Piston ring end gap	Max.	0.5 (0.02)
K	Con-rod small end bore	Max.	12.025 (0.4734)
L	Crankshaft runout	Max.	0.03 (0.001)
M	Clutch drum bore	Max.	59.5 (2.34)

## 1-6 Special tools



Key	Part Number	Description	Reference
1	897802-33330	Tachometer PET-1000R	Measuring engine speed to adjust Carburetor
2	X602-000340	Torx wrench (T27)	Removing and installing bolt
3	Y089-000094	Carburetor adjustment tool	Adjusting Carburetor
4	363018-00310	Washer	Installing crankcase oil seal (starter side)
5	897701-02830	Bearing wedge	Removing ball bearings on crankshaft
6	897701-14732	Bearing tool	Removing and installing ball bearings on crankcase
7	897702-30131	Piston pin tool	Removing and installing piston pin
8	91004	Module air gap gauge	Adjusting pole shoe air gaps
9	897712-04630	2-pin wrench	Removing and installing pawl carrier
10	91020	Limiting plug tool	Removing and installing plug
11	897726-09130	Oil seal tool	Installing oil seals
12	900100-08008	Bolt	Removing magneto rotor (flywheel), crankshaft from crankcase
13	V265-000200	Flange nut	Removing magneto rotor (flywheel)
14	91041	Pressure rubber plug	Plugging exhaust port to test crankcase / cylinder leakages
15	897826-16131	Pressure rubber plug	Plugging intake port to test crankcase / cylinder leakages
16	897827-16131	Pressure plate	Plugging intake port to test crankcase / cylinder leakages
17	91149	Pressure / vacuum tester	Testing crankcase / cylinder leakages
18	897800-79931	Spark tester	Checking ignition system
19	897803-30133	Pressure tester	Testing Carburetor and crankcase leakages
20	91037	Compression gauge	Measuring cylinder compression