1

SERVICE DATA

HEDGE TRIMMER

HCR-1500

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 products information available at the time of publication.

For further information to service this model, please refer to ECHO SERVICE MANUAL Ord. No. 402-19.

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Reference No. **12-21A-00**
ISSUED: 199807

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KIORITZ CORPORATION

1 SERVICE INFORMATION

1-1 Specifications

Dimensions	Length	mm(in)	1022 (40.2)
	Width	mm(in)	237 (9.3)
	Height	mm(in)	197 (7.8)
Dry weight		kg(lb)	5.0 (11.0)
Engine	Type		KIORITZ, air-cooled, two-stroke, single cylinder
	Rotation		Counterclockwise as viewed from the output end
	Displacement	$cm^3(in^3)$	21.2 (1.294)
	Bore	mm(in)	32.2 (1.268)
	Stroke	mm(in)	26.0 (1.024)
	Compression ratio		6.6
Carburetor	Type		Diaphragm, horizontal-draught, with primer (purge pump)
	Model		ZAMA C1U-K51
Ignition	Type		CDI (Capacitor discharge ignition) system in a single integrated piece
	Spark plug		BPM7Y, RCJ-8Y
Starter	Type		Automatic rewind
	Rope diameter x length	mm(in)	3.0 x 890 (0.12 x 35.0)
Fuel	Type		Premixed two-stroke fuel (Refer to Operator's manual.)
	Tank capacity	cm^3(U.S.fl.oz.)	300 (14.2)
Clutch	Type		Centrifugal, 2-shoe slide
Handle	Type	Front	Rubber grip
		Rear	Rubber grip with throttle trigger
Gear case			
	Reduction ratio		5.88
	Gear tooth		Spiral bevel
	Lubrication		Lithium based grease
Cutter			
	Type		Double reciprocating, double edge blade
	Length	mm(in)	550 (21.7)
	Pitch	mm(in)	35 (1.4)
	Height	mm(in)	21 (8.3)
	Thickness	mm(in)	2.5 (0.098)
	Clearance*	mm(in)	0.25 - 0.5 (0.01 - 0.02)
	Lubrication		Apply oil every 4 hours of use

* See **NOTE** on page 4.

1-2 Technical data

Engine		
Idling speed	rpm	3000 - 3400
Maximum speed	rpm	10000 - 10500
Clutch-in speed	rpm	3500 - 4100
Compression pressure, standard	kgf/cm²(psi)	8.5 (121)
Carburetor		ZAMA C1U-K51
Type		Diaphragm horizontal-draught
Venturi Size	mm(in)	8.5 (0.335)
Throttle Bore	mm(in)	12.7 (0.5)
Idle speed screw initial setting	turn in	3 - 4
H needle initial setting	turn back	1 3/4
L needle initial setting	turn back	1 3/4
Test Pressure, minimum	kgf/cm²(psi)	0.5 (7.0)
Metering lever height lower than diaphragm seat	mm(in)	0.1 - 0.25 (0.004 - 0.010)
Ignition system		
Spark plug gap	mm(in)	0.6 - 0.7 (0.024 - 0.028)
Minimum secondary voltage at 1000 rpm	kV	15
Secondary coil resistance	kΩ	1.0 - 2.0
Pole shoe air gaps	mm(in)	0.3 - 0.4 (0.012 - 0.016)
Ignition timing	°BTDC	27

H needle: High speed needle.

L needle: Idle needle.

BTDC: Before top dead center.

1-3 Torque limits

Descriptions		Size	kgf•cm	in•lbf
Starter system	Pawl carrier	M 8	160 - 200	140 - 175
	Starter case	M 4 *	14 - 28	12 - 24
Ignition system	Ignition coil (CDI module)	M 4	35 - 50	30 - 45
	Spark plug	M14	130 - 170	110 - 150
Fuel system	Carburetor insulator	M 5 *	25 - 40	22 - 35
	Carburetor	M 5	25 - 40	22 - 35
	Throttle cable nut	M 6	25 - 35	22 - 30
	Fuel tank	M 5 *	25 - 40	22 - 35
Clutch	Clutch hub	M 8	160 - 200	140 - 175
Engine	Crankcase	M 5	70 - 110	60 - 95
	Cylinder	M 5	70 - 110	60 - 95
	Muffler	M 5	60 - 100	52 - 85
Gear case	Gear case	M 4 *	30 - 50	26 - 45
	with cylinder cover	M 4 *	14 - 28	12 - 24
	Bottom cover	M 4	35 - 50	30 - 45
Cutter	Cutter bolts (See **NOTE** below)	M 6	10 - 15	9 - 13
	Cutter nuts	M 6	50 - 60	45 - 52
Handle	Rear handle set	M 5 †	10 - 20	9 - 18
	Rear handle set to handle fixture	M 5 *	25 - 40	22 - 35
	Handle fixture to gear case	M 5	25 - 30	22 - 26
Regular bolt, nut, and screw		M 3	6 - 10	5 - 9
		M 4	15 - 25	13 - 22
		M 5	25 - 45	22 - 40
		M 6	45 - 75	40 - 65
		M 8	110 - 150	95 - 130
		M10	210 - 300	180 - 270

* Apply thread locking sealant. (See below.)

† Tapping screw.

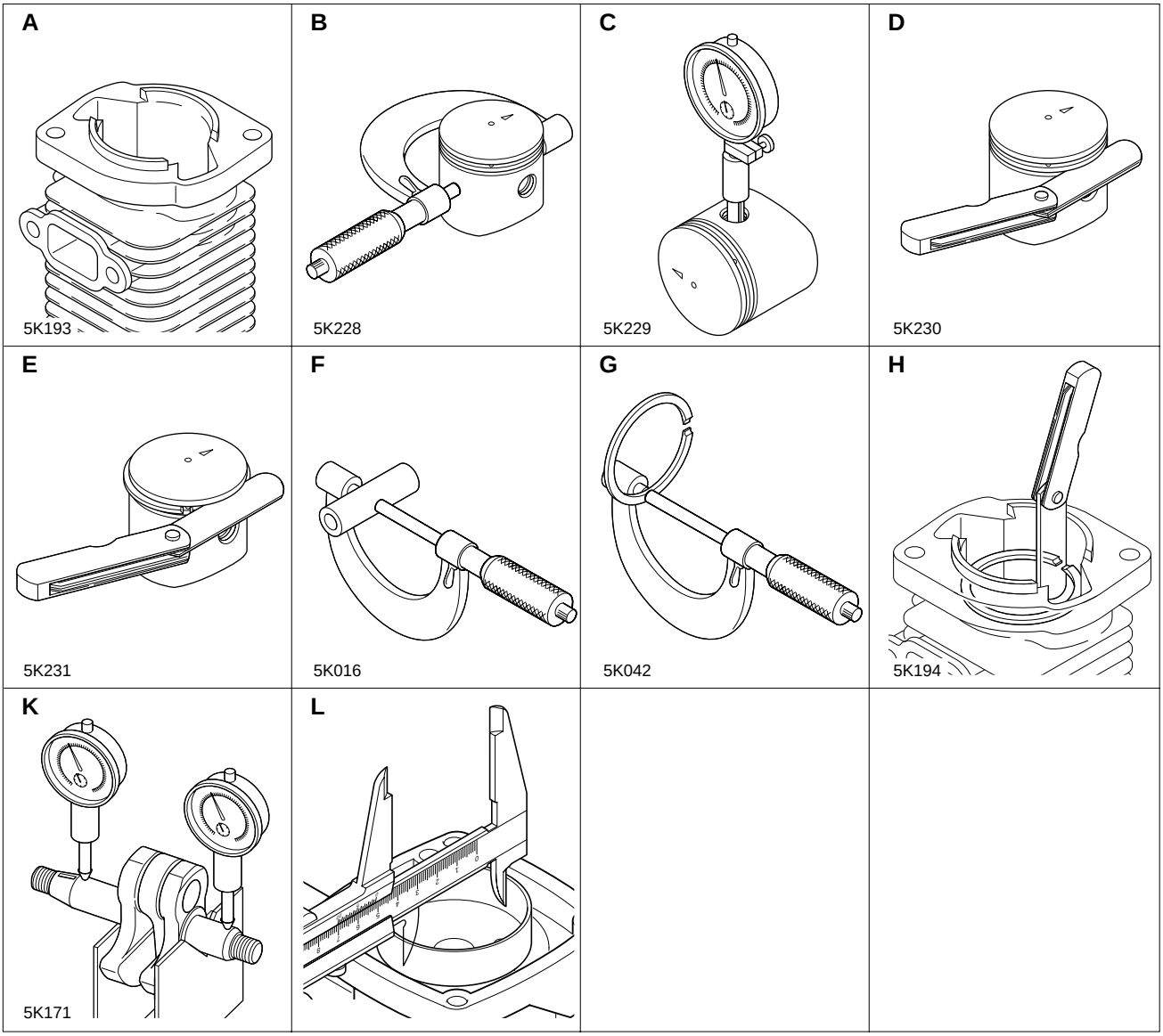
NOTE: Adjusting cutter clearance

Fasten all cutter bolts to this torque, then back 1/2 turns(180°) counterclockwise.

1-4 Special repairing materials

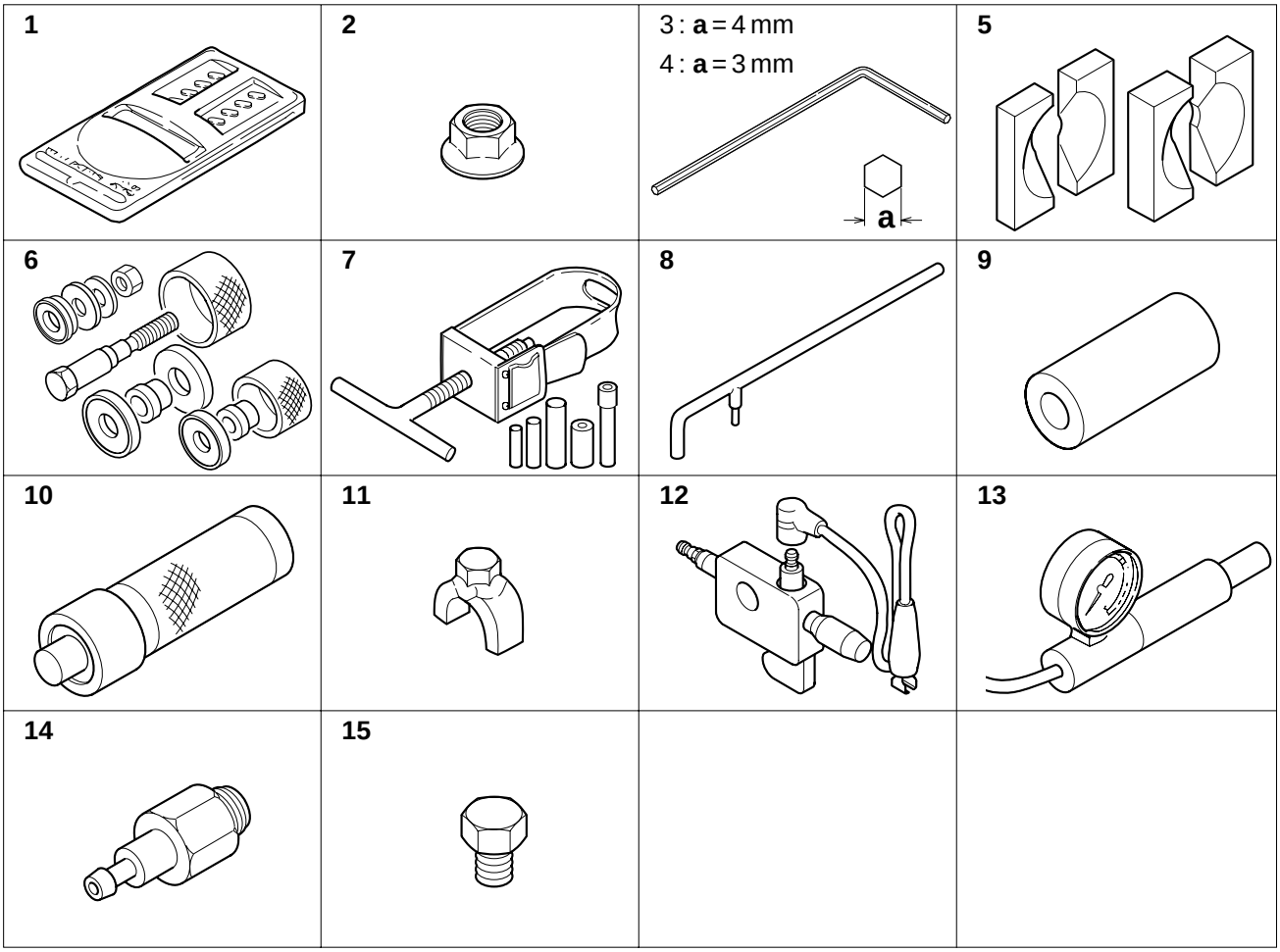
Material	Location	Remarks
Grease	Gear case	Lithium based grease
	Rewind spring	
	Starter center post	
Thread locking sealant	Starter case	Loctite #222, ThreeBond #1342, or equivalent
	Carburetor insulators	
	Fuel tank	
	Gear case	
	Rear handle to handle fixture	

1-5 Service limits



Description			mm (in)
A	Cylinder bore		When plating is worn and aluminum can be seen
B	Piston outer diameter	Min.	32.10 (1.264)
C	Piston pin bore	Max.	8.030 (0.3161)
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.	7.98 (0.3142)
G	Piston ring width	Min.	1.45 (0.057)
H	Piston ring end gap	Max.	0.5 (0.02)
K	Crankshaft runout	Max.	0.05 (0.002)
L	Clutch drum bore	Max.	51.0 (2.01)

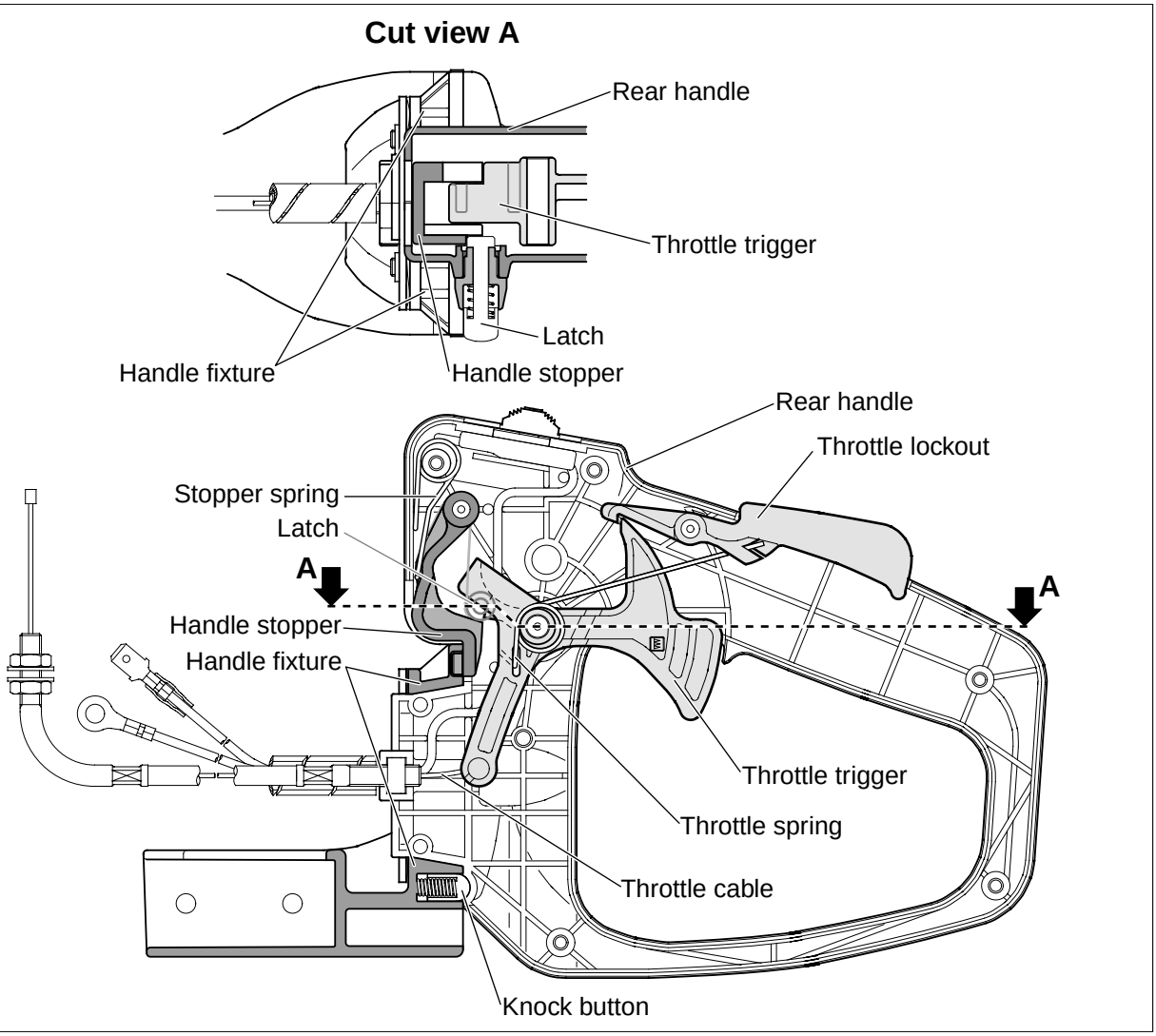
1-6 Special tools



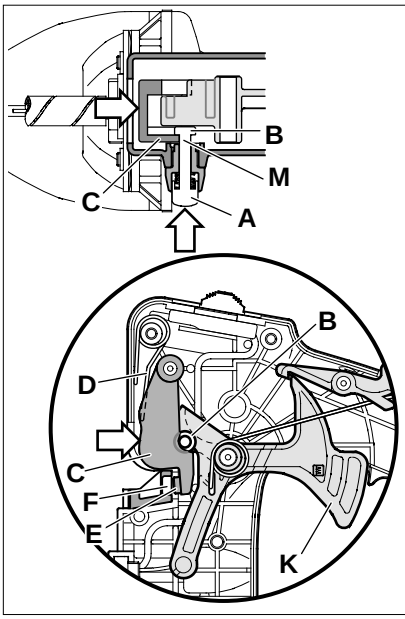
Key	Part Number	Description	Used for:
1		Tachometer	Measuring engine speed
2	433019-12330	Flange nut	Removing magneto rotor (flywheel)
3	895610-79920	L-hex wrench (4 mm)	Removing and installing hex. socket bolts (M5)
4	895612-79920	L-hex wrench (3 mm)	Removing and installing hex. socket bolts (M4)
5	897701-06030	Bearing wedge	Removing ball bearings on crankshaft
6	897701-14732	Bearing tool	Removing and installing crankcase ball bearings
7	897702-30131	Piston pin tool	Removing and installing piston pin (Use 8 mm dia. adapter.)
8	897712-07930	2-pin wrench	Removing and installing pawl carrier
9	897714-24330	Oil seal tool	Installing crankcase oil seals
10	897718-02830	Bearing tool	Installing clutch drum ball bearing in gear case
11	897731-04920	Clutch tool	Removing and installing clutch assembly
12	897800-79931	Spark tester	Checking ignition system
13	897803-30130	Pressure tester	Checking carburetor and crankcase leakages
14	897835-16131	Pressure connector	Checking crankcase and cylinder leakages
15	900100-08008	Bolt	Removing magneto rotor (flywheel)

2 SERVICE HINT

2-1 Rotating rear handle construction



2-2 Rotating rear handle function



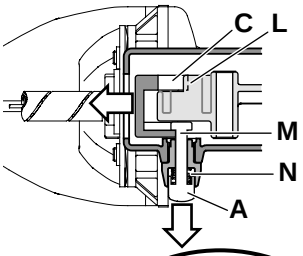
1. With the Throttle trigger (K) in idle position, the Latch (A) is pushed, the head (B) of Latch comes off Throttle stopper (C).

Throttle stopper (C) is pushed to the neck (M) of Latch by Stopper spring (D).

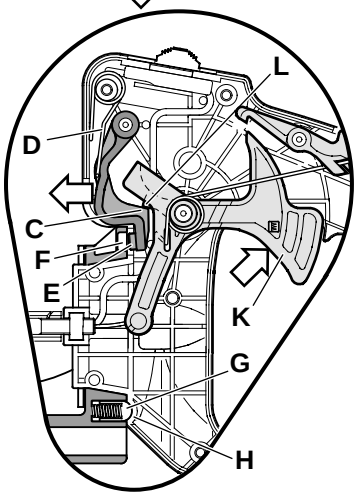
Then projection part (E) of Throttle stopper disengages from dent (F) of Handle fixture.

In this state, the Rear handle can be rotated.

2-2 Rotating rear handle function

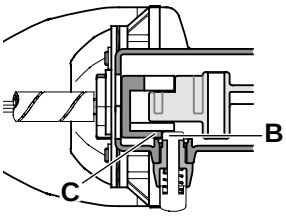


2. When the Rear handle is rotated 45 or 90 degrees clockwise or counterclockwise, the Knock button (G) engages with the dent (H) of Rear handle and makes click noise.



Throttle trigger (K) is pulled in this position, Throttle stopper (C) is pushed to the front by part (L) of Throttle trigger.

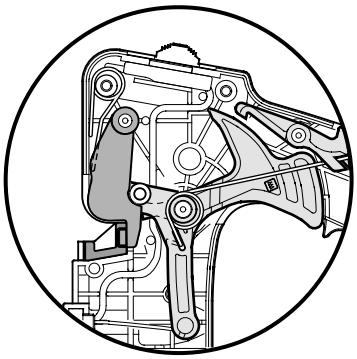
Then, The projection part (E) of Throttle stopper engages with dent (F) of Handle fixture to stop rotating of Rear handle.

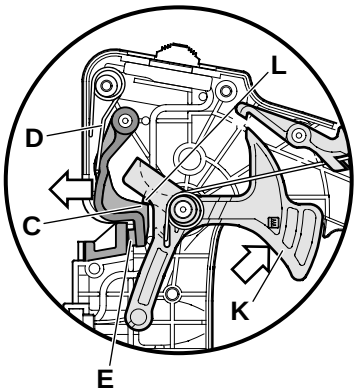


On the other hand, when the Throttle stopper (C) is pushed to the front, the connection of the neck (M) of Latch comes off from Throttle stopper (C).

Then the Latch (A) is pushed and moved toward outside by the Spring (N).

And the head (B) of Latch prevents the Throttle stopper (C) from moving backward.





3. When projection (E) of Throttle stopper (C) doesn't engage with dent (F) of Handle fixture, Throttle stopper (C) doesn't move to the front even if Throttle trigger (K) is pulled, and the movement of part (L) of Throttle trigger is obstructed by Throttle stopper (C).

Therefore the Throttle trigger can't be pulled, and engine rotation isn't raised.