

Robin Blower

MODEL FL231

INSTRUCTION MANUAL

- Assembly
- Maintenance
- Operation
- Repair Parts

CAUTION:

**Read Rules for Safe Operation and
Instructions Carefully**



FUJIROBIN INDUSTRIES LTD.

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INTRODUCTION

ROBIN BLOWER FL231 is a lightweight, high performance 2 cycle two stroke, gasoline powered blower, which is designed for autumn leaves, driveway and sidewalk sweeping, gutter cleaning, light snow and debris removal. The blower works faster and more efficiently than rakes or brooms. Excellent balance, light weight ensure comfortable, safe and fatigue-free operation.

This manual provides instructions for assembly, operation and maintenance for your unit. Be sure to read this manual before operation.

IMPORTANT

RULES FOR SAFE OPERATION

1. Gasoline

- (1) Handle gasoline with care. It is high inflammable.
- (2) Use proper gasoline-oil fuel mixture.
- (3) Refuel before starting work.
- (4) Do not refuel a hot engine.
- (5) Avoid spilling fuel or oil. Always wipe unit dry before use.
- (6) Move at least 3 meters (10 feet) away from the fueling point before starting engine.
- (7) Always store gasoline in approved container.

2. Operation

- (1) Do not operate in unventilated area.
- (2) Do not allow bystanders in work area.
- (3) Always wear light clothing.
- (4) Always wear safety glasses and a face filter mask.
Wear ear protectors where possible.
- (5) Do not touch muffler, spark plug and rotating parts.
- (6) Keep the end of the straight pipe always not jammed during operation.
- (7) Never leave this machine exposed to hot weather while operation is interrupted.
- (8) Never lay this machine on its side in transport or in storage.

3. Check

- (1) Always check periodically for efficient and safe operation.
- (2) Before Storing, drain fuel tank and carburetor.
- (3) Wash air cleaner element with neutral detergent and dry it well.
- (4) Remove dust from blower.
- (5) Tighten bolts further if they are loose.
- (6) Replace damaged parts.
- (7) Always use proper parts for replacement.

TECHNICAL SPECIFICATIONS Model FL 231

Dimension (L x W x H)		200 x 285 x 330 mm (7.9 x 11.2 x 13.0 in.)
Dry weight		3.3kg (7.27lbs)
Engine	Model	Robin ECO22EF
	Displacement	22.2cc (1.35 cu.in.)
	Carburetor	Diaphragm type
	Ignition system	Non-contact magnet ignition
	Spark plug	NGK BM7A
	Starter	Recoil starter
	Capacity of fuel tank	0.6 lit. (0.159 gal.)
	Fuel	Lubricant-mixed gasoline (mixture ratio : 20–25:1) Mixture ratio in the first 20 hours: 15–20 : 1
Standard accessories		Instruction manual, Straight pipe (x 2), End pipe, Tool kit

*The specification may be subject to change without previous notice.

COMPONENT IDENTIFICATION

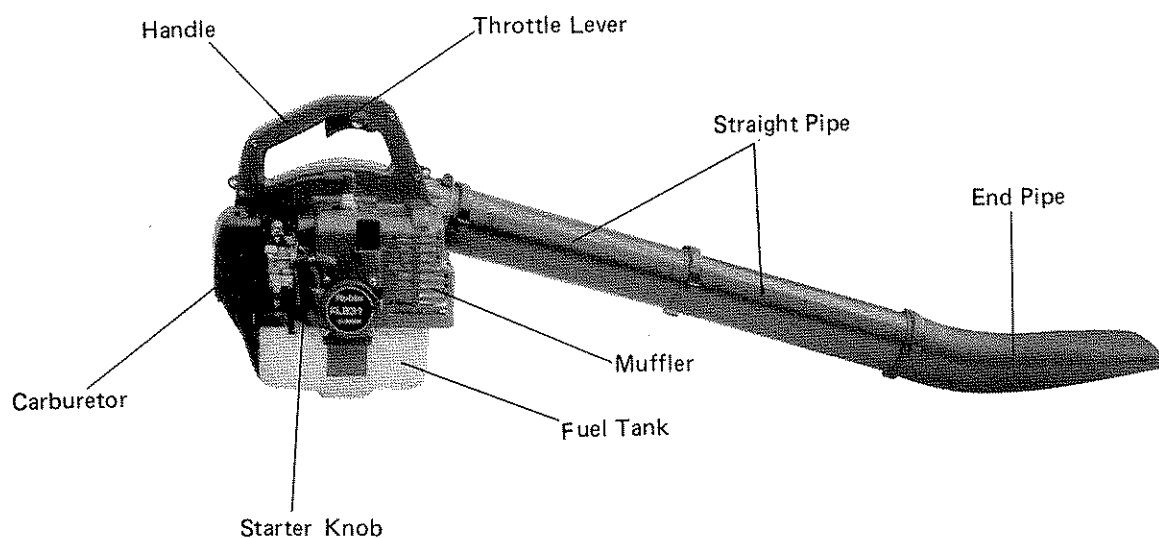


Figure 1

ASSEMBLY

- Mount the straight pipes and end pipe.
Note: Insert securely paying attention to notch. (Figure 2)

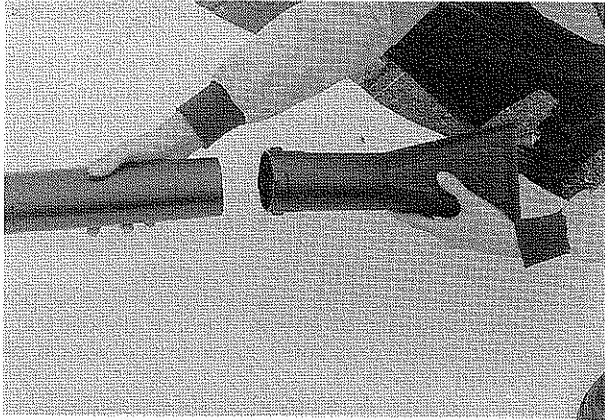


Figure 2

- Turn tube clockwise completely

PREPARATION FOR OPERATION

1. Make sure again that all the parts are assembled correctly. Confirm that the bolts and nuts are tightened securely.
2. Mixture of Fuel
 - Mixture ratio of fuel and oil = 20 – 25 : 1
Example: 20 : 1 = 1 gal. gasoline : 7 oz. oil
25 : 1 = 1 gal. gasoline : 6 oz. oilPut into a container, about half of gasoline to be mixed. Add oil to it and shake it thoroughly. Then place the rest of gasoline and shake them again for enough mixture.

WARNING! **WARNING!** **WARNING!**
WHEN MIXING GASOLINE WITH TWO CYCLE ENGINE OIL, USE ONLY GASOLINE WHICH CONTAINS NO ETHANOL OR METHANOL (TYPES OF ALCOHOL), THIS WILL HELP AVOID POSSIBLE DAMAGE TO ENGINE FUEL LINES AND OTHER ENGINE PARTS.

Caution:

- Prepare fuel mixture in a required quantity. Never leave a fuel mixture unused for more than 2 months.
- Use good-quality regular gasoline.
- Use oil for air-cooled two-cycle engine.
- Use a fuel mixture of 15-20 : 1 in the first 20 hours.
- Be careful not to spill fuel.
- Wipe well spilt fuel with dry cloth.
- Tighten the fuel tank cap securely.

MANIPULATION OF ENGINE

1. Startup of Engine
 - Set the stop switch upward.

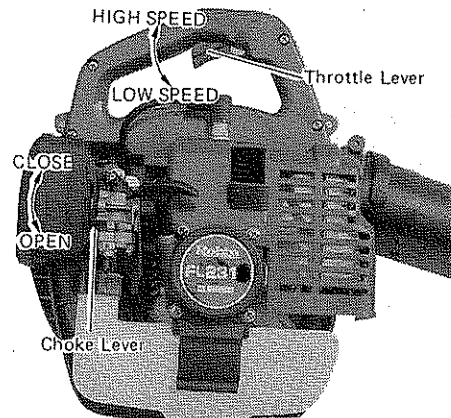


Figure 3

- Close the choke lever totally.
- Hold the handle by your left hand.
- Push primer pump and confirm fuel flows from the overflow pipe.
- Hold the starter knob by right hand and pull it straight powerfully.

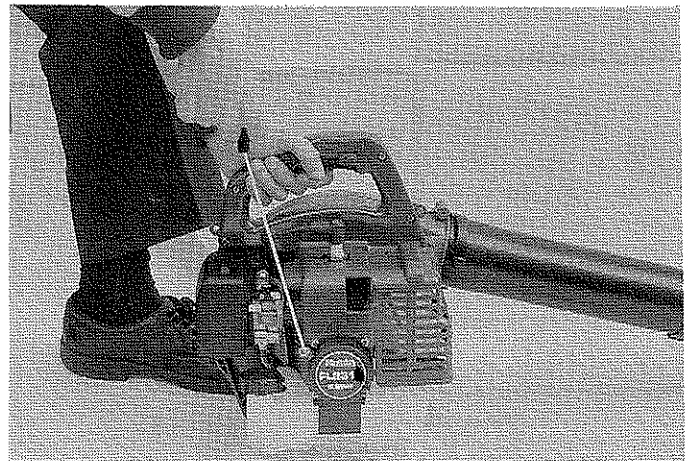


Figure 4

- When the engine starts up, open the choke lever to the full, step by step, paying attention to the engine.
2. Stop of Engine
 - Return the throttle lever to the original position. When the engine rotation drops, lower the stop switch to the position of "STOP".
Caution:
 - In restart, be sure to set stop switch upward.
 3. Caution in Handling
 - Be sure to use lubricant-mixed gasoline.
 - If the engine is cooled down, warm it for one to two minutes.
 - The carburetor is adjusted before shipment. If readjustment is required, consult your dealer.

WORK PROCEDURE

- The blowing air capacity can be controlled in a wide range by adjusting the throttle lever. Control the air quantity according to types of work.
 - Operate the machine at low or medium rotational speed when clearing fallen leaves in a garden or on a turf.
 - Operate the machine at medium or high rotational speed when cleaning mowed leaves or cleaning a street gutter.

Caution:

 - Never direct the straight pipe against man or animals.
 - Never put on clothes which may be caught by the machine.
 - During work, be sure to wear safety goggles and dustproof mask.
 - Prior to operation, read carefully "RULES FOR SAFE OPERATION" in P. 1.

- Cleaning of Muffler Exhaust Port
 - Check the muffler exhaust port every 50 hours. If the exhaust port is jammed with carbon, clear it with a screwdriver.

STORAGE

- If the machine is not used for a long period of time, drain fuel totally from the fuel tank. Then, operate the engine until it stops.
 - Remove the spark plug and let fall a few drops of oil. Pull the starter gently and start the engine. When oil spreads fully over the engine inside, tighten the spark plug.
 - Wipe off dirt or dust adhering to the machine outside and keep the machine at a place free of moisture.
 - Never lay the machine on its side in storage.
- Muffler and exhaust port
 - Carbon built up in the exhaust port will cause power loss or overheat of engine. Carbon deposits at the muffler flange area must be removed with a piece of wood. (Figure 7)
(Spark arrester is removed as shown figure 7.)

INSPECTION AND MAINTENANCE

- Air Cleaner
 - Remove and clean the air cleaner if the filter is fouled. If the machine is used in a dusty environment, clean the filter every time the operation is completed.

(Figure 5)

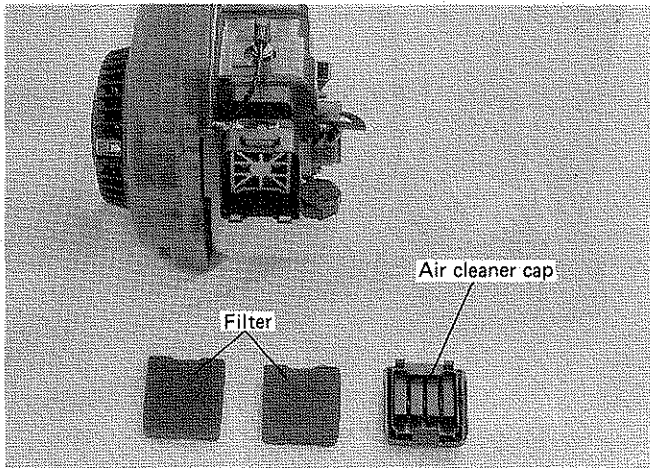


Figure 5

- Spark Plug
 - If the electrode is jammed with carbon or fouled with dust or dirt, clean the electrode thoroughly.
 - If the electrode wears off to an excess, replace it with a new one.
 - The gap between two electrodes must be 0.6 – 0.7 mm (.024 – .028 in.). If the gap is too wide or too narrow, be sure to adjust it. (Figure 6)

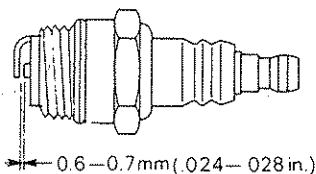


Figure 6

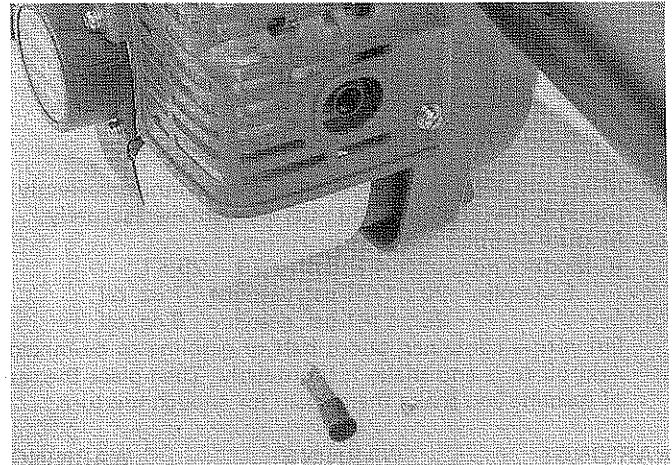


Figure 7

- WARNING !!**
Do not operate without protector. It is very dangerous. (Protector may be removed for maintenance purpose only. Protector is removed by turning anti-clockwise.)

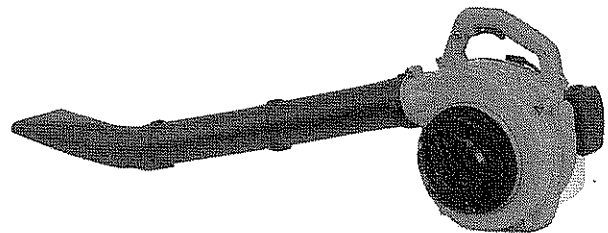
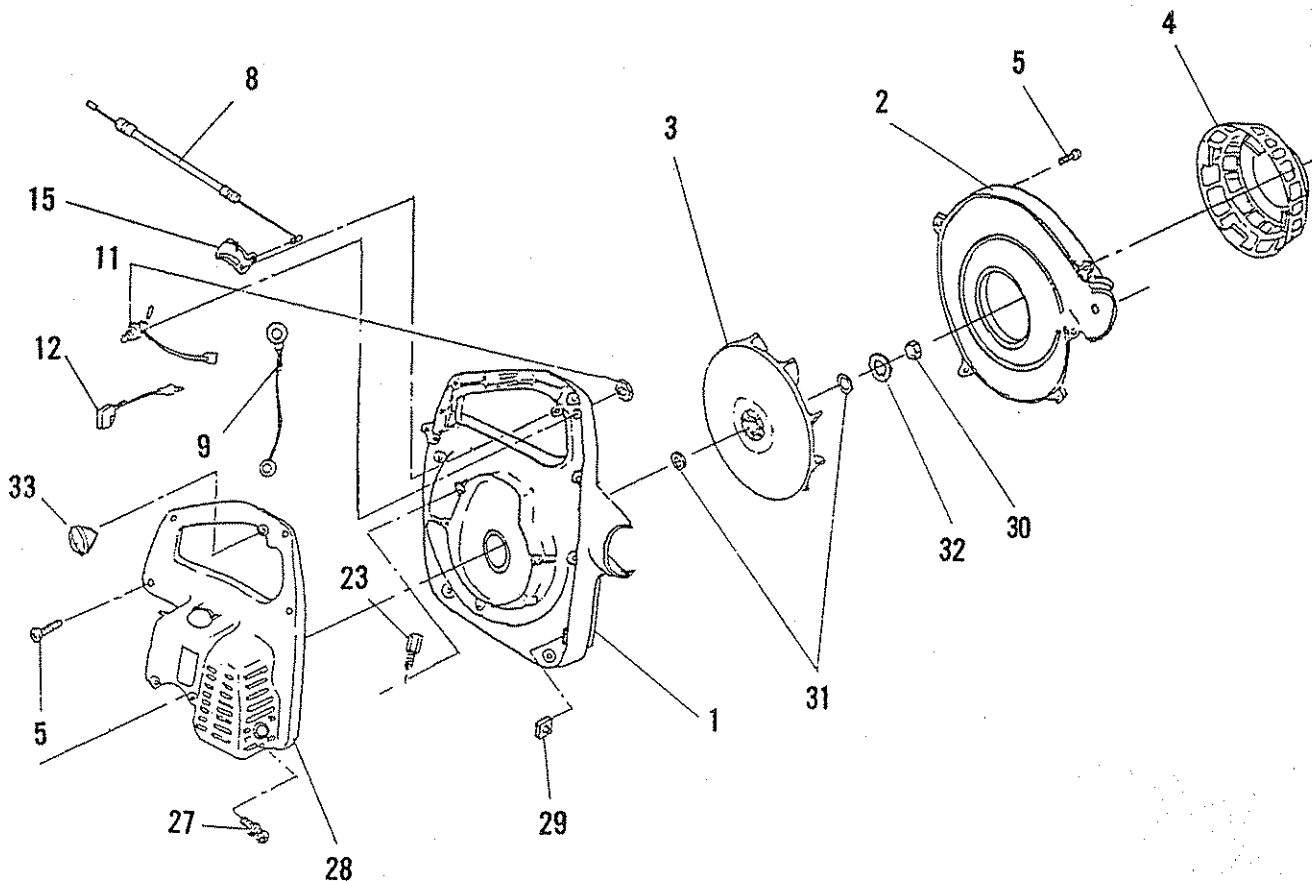


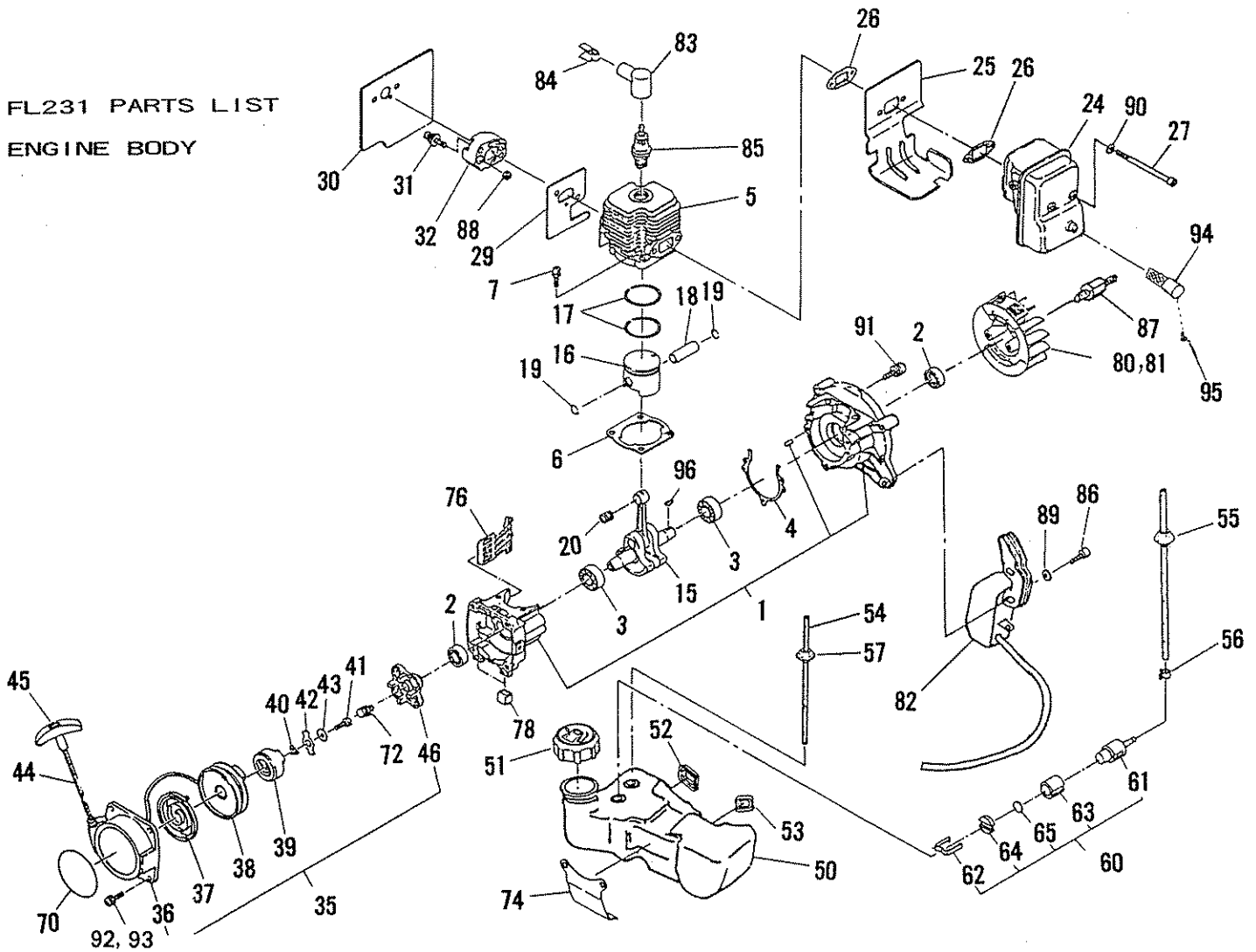
Figure 8



FL231 PARTS LIST
MACHINE BODY

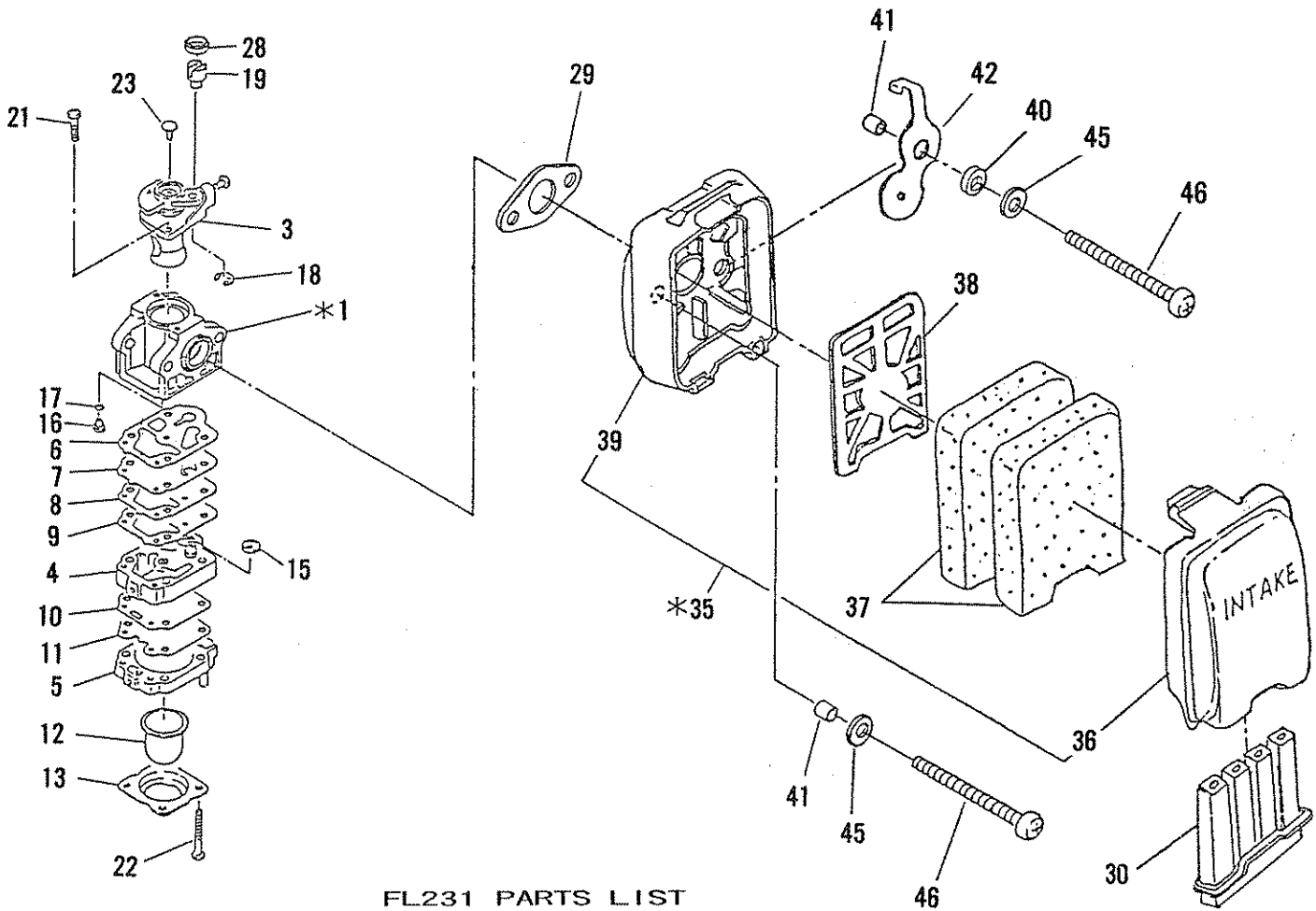
KEY No.	PART No.	QTY.	DESCRIPTION
1	660 10050 00	1	Case 2 volute compl.
2	660 10060 00	1	Case 1 volute compl.
3	660 15011 00	1	Impeller
4	660 10080 00	1	Protector compl.
5	660 15013 00	9	Screw, tapping(M5×20)
8	660 50010 00	1	Wire, throttle compl.
9	660 50020 00	1	Wire, stop compl.
11	660 50060 00	1	Switch, stop compl.
12	660 50070 00	1	Wire joint compl.
15	660 55005 00	1	Lever throttle
23	531 60053 30	1	Screw cable adjust
27	0140 0596 10	1	Screw
28	660 85000 00	1	Cover, engine
29	611 15008 00	1	Nut(M5, square)
30	00217 0800 0	1	Nut(M8)
31	00312 0800 0	2	Washer (85×30×2.0)
32	0200 0898 50	1	Washer(M8)
33	850 55005 00	1	Plug

FL231 PARTS LIST
ENGINE BODY



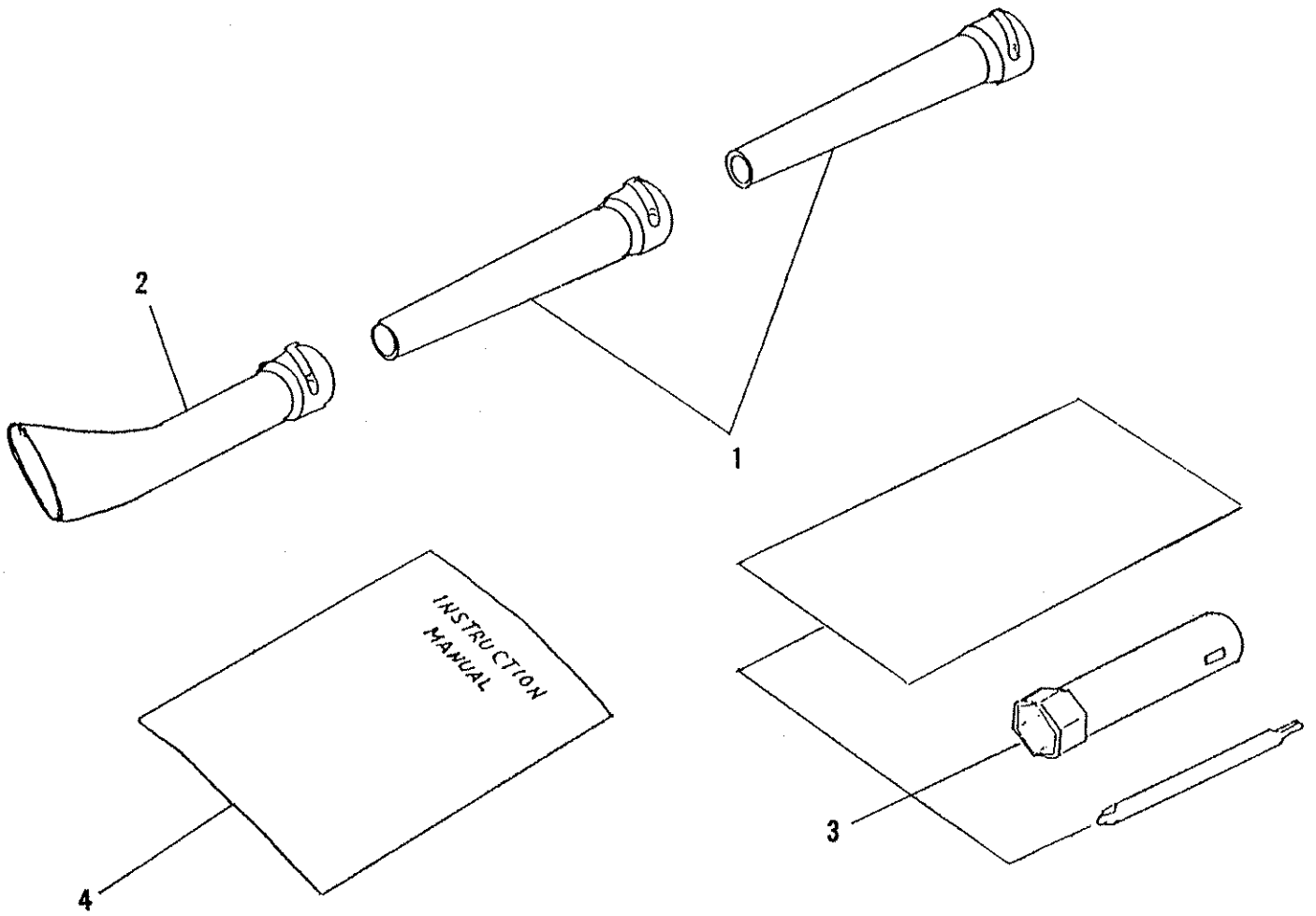
KEY No.	PART No.	QTY.	DESCRIPTION
1	522 10040 00	1	Crankcase ass'y (Incl. 2-4, 91)
2	0440 12999 1	2	Oil seal
3	0600 12992 0	2	Ball bearing
4	521 15004 00	1	Gasket, crankcase
5	523 15000 01	1	Cylinder (M5×20)
6	523 15013 00	1	Gasket, cylinder
7	0119 05995 0	2	Socket head bolt (M5×8, SW)
15	523 20030 01	1	Crankshaft compl.
16	523 25002 01	1	Piston
17	510 25010 00	2	Ring, piston
18	524 25001 00	1	Pin, piston
19	0565 08998 0	2	Clip
20	0610 08999 0	1	Needle roller bearing
24	522 30040 00	1	Muffler exhaust
25	660 55011 00	1	Plate
26	501 35002 00	2	Gasket, muffler
27	0199 0597 40	2	Socket head bolt
29	522 35001 00	1	Gasket, insulator
30	522 35002 00	1	Gasket
31	0140 05968 0	2	Screw
32	523 30140 00	1	Insulator compl. (Incl. 88)
35	522 50040 00	1	Starter, rewind (Incl. 36-46)
36	522 50040 10	1	Starter case
37	521 50050 20	1	Spiral spring
38	521 50050 30	1	Reel
39	521 50050 41	1	Dog
40	521 50050 50	1	Wave washer
41	521 50050 60	1	Center screw
42	521 50051 11	1	Retainer
43	521 50051 21	1	Washer
44	521 50051 30	1	Starter rope
45	522 50040 20	1	Starter knob
46	521 50051 50	1	Crank pulley
50	660 35000 00	1	Tank, fuel

KEY No.	PART No.	QTY.	DESCRIPTION
51	523 60120 03	1	Cap, fuel tank ass'y
52	503 65002 00	1	Plate
53	503 65003 00	1	Plate
54	0851 15999 0	1	Tube
55	0851 17999 0	1	Tube
56	0561 05999 0	1	Hose clamp
57	0241 05994 0	1	Grommet
60	501 65003 00-1	1	Filter (Incl. 61-65)
61	501 65004 00	1	Body ass'y filter
62	501 65005 00	1	Crip filter
63	501 65006 00	1	Filter, felt
64	501 65007 00	1	Retainer, filter
65	501 65008 00	1	Packing, filter
70	660 95032 00	1	Label, model (Incl. 36-46)
72	620 20060 00	1	Bolt ass'y
74	522 65000 00	1	Plate, fuel tank
76	521 55000 00	1	Protector
78	521 65002 00	2	Damper
80	522 70020 00	1	Flywheel magneto (Incl. 81, 82)
81	522 70020 10	1	Flywheel magneto
82	522 70020 20	1	Coil, ignition
83	0655 00994 0	1	Cap, plug
84	0654 00994 0	1	Spring, plug cap
85	0650 17981 0	1	Plug, spark (BM7A)
86	0119 04999 1	2	Socket head bolt (M4×18)
87	660 55009 00	1	Shaft
88	00217 0500 0	2	Nut (M5)
89	00310 0400 0	2	Washer (M4)
90	00310 0500 0	2	Washer (M5)
91	0150 0599 60	3	Screw tapping (M5×35)
92	00436 5020 0	4	Screw ass'y (M5×20, SW, W)
93	00436 0530 0	4	Screw ass'y (M5×30, SW, W, For vacuum)
94	522 30040 30	1	Spark arrester
95	522 30040 20	1	Screw



FL231 PARTS LIST
CARBURETOR

KEY No.	PART No.	QTY.	DESCRIPTION	KEY No.	PART No.	QTY.	DESCRIPTION
1	522 60040 00	1	Carburetor (Incl.3-23)	36	522 30060 10	1	Cover-air cleaner
3	522 60040 10	1	Valve ass'y throttle	37	522 30060 20	2	Filter-air
4	523 60290 20	1	Body ass'y-pump	38	522 30060 30	1	Plate-cleaner
5	524 60080 20	1	Body ass'y-air purge	39	522 30060 40	1	Housing-air cleaner
6	524 60010 30	1	Gasket-pump	40	531 30030 50	1	Washer
7	524 60010 40	1	Diaphragm-pump	41	531 30030 60	2	Sleeve
8	524 60010 50	1	Plate-pump	42	522 30060 50	1	Valve-choke
9	524 60010 60	1	Gasket-plate	45	00310 0500 0	2	Washer(M5)
10	524 60011 20	1	Gasket metering diaphragm	46	00431 0560 0	2	Screw,pan head (M5×60)
11	531 60052 50	1	Diaphragm ass'y metering				
12	524 60011 50	1	Primer-pump				
13	524 60011 40	1	Cover primer pump				
15	501 60040 10	1	Screen-inlet				
16	523 60290 10	1	Jet				
17	524 60010 10	1	Ring-o				
18	531 60051 20	1	Ring retaining				
19	523 60180 40	1	Swivel				
21	524 60012 40	2	Screw throttle collar				
22	524 60012 24	4	Screw pump cover				
23	520 60081 10	1	Plug				
28	521 95000 00	1	Holder				
29	522 35006 00	1	Gasket				
30	522 35007 00	1	Tube, intake				
35	522 30060 00	1	Cleaner air(Incl.36-42)				



FL231 PARTS LIST
STANDARD EQUIPMENTS

KEY No.	PART No.	QTY.	DESCRIPTION
1	660 95025 00	2	Pipe
2	660 95027 00	1	Pipe end
3	501 90010 00	1	Tool kit
4	660 95042 00	1	Instruction manual

LIMITED TWO YEAR WARRANTY

Carswell Import & Marketing Associates, Inc. (hereafter CIMA), sales agent for Fujii Robin Industries, Ltd. warrants each new Robin blower for twenty-four(24) months according to the following terms.

This warranty extends to the original retail purchaser only and commences on the date of original retail purchase.

Any part of Robin blower supplied by CIMA and found in the reasonable judgment of an Authorized Robin Service Center to be defective in material or workmanship will be repaired by an Authorized Robin Service Dealer without charge for parts and labor.

The Robin blower including any defective part must returned to an Authorized Robin Service Dealer within the warranty period. The expense of delivering the Robin blower to the dealer for warranty work and the expense of returning it back to the owner after repair or replacement will be paid for by the owner.

CIMA's responsibility in respect to claims is limited to making the required repairs or replacements and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any Robin blower. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work should be performed by an Authorized Robin Service Dealer.

This warranty is limited to ninety(90) days from the date of original retail purchase for any Robin blower that is used for rental or commercial purposes, or any other income - producing purpose.

This warranty does not cover any Robin blower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Robin blower that is the result of improper maintenance or to any Robin blower or parts that have not been assembled or installed as specified in the Robin Operator's Manual. The warranty does not cover any Robin blower that has been altered or modified so as to adversely affect the product's operation, performance or durability or that has been altered or modified so as to change its intended use. In addition, the warranty does not extend to repairs made necessary by normal wear or by the use of parts or accessories which are either incompatible with the Robin blower or adversely affect its operation, performance or durability.

Robin reserves the right to change or improve the design of any Robin blower without assuming any obligation to modify any blower previously manufactured.

ALL IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE TWENTY-FOUR(24) MONTHS WARRANTY PERIOD OR NINETY(90) DAYS FOR EDGER USED FOR ANY INCOME - PRODUCING PURPOSE. ACCORDINGLY, ANY SUCH IMPLIED WARRANTIES INCLUDING MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, ARE DISCLAIMED IN THEIR ENTIRETY AFTER THE EXPIRATION OF THE APPROPRIATE TWENTY-FOUR(24) MONTHS OR NINETY(90) DAYS WARRANTY PERIOD.

CIMA'S OBLIGATION UNDER THIS WARRANTY, IS STRICTLY AND EXCLUSIVELY LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS, AND CIMA DOES NOT ASSUME OR AUTHORIZE ANUONE TO ASSUME FOR THEM ANY OTHER OBLIGATION. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

CIMA ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO, EXPENSE FOR GASOLINE, EXPENSE OF RETURNING THE ROBIN EDGER TO AUTHORIZED SERVICE DEALER AND EXPENSE OF DELIVERING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY SERVICE IS BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF THE BLOWER LOSS OF TIME, OR INCONVENIENCE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

This warranty applies to Robin blower sold by CIMA in the United States. To validate this warranty original purchaser must complete the attached Warranty Registration Form and return it within ten(10) days of purchase.

CARSWELL IMPORT AND MARKETING ASSOCIATES, INC.
WINSTON - SALEM, NORTH CAROLINA 27115

Fujii Robin Industries, Ltd.
Shibuya-ku, Tokyo, Japan

WARRANTY SERVICE

Warranty service can be performed by an Authorized Robin Service Dealer regardless of whether the consumer purchased the Robin product originally from that dealer. However, we recommend you first contact the original dealer who sold you the product. Remember, it is your responsibility to deliver your Robin product along with proof of purchase to the dealer within the warranty period, and all work must be performed by an Authorized Robin Service Dealer.

Example of Parts and Service not covered by Warranty

Normal service requirements occurring during the warranty period such as carburetor or ignition adjustment.

Normal service over and above repair or replacement of defective parts.

Repair or maintenance service due to normal wear, improper maintenance, misuse, neglect, negligence, accident, also alternations or modifications which adversely affect product's performance, durability, or change their intended use.

Repairs or maintenance made necessary due to use of parts or accessories which are not compatible with Robin products or adversely affect its operation, performance, or durability.

Products not operated or maintained in accordance with the Instruction Manual.

Normal cleaning, lubrication, adjustments, or replacement of such items as spark plugs, filters, ignition points, etc.

Expense of delivering the product to an Authorized Service Dealer or of returning such products, or mechanics travel time, or cost of any rental of a like product during the period warranty service is being performed.

Warranty applies only to original retail purchaser.

Owner's Obligation and Responsibility --

It is the responsibility of the owner to provide for normal maintenance service and replacement of service items and to maintain all components in proper adjustment. These are not considered defects in material or workmanship. Individual operation and application determine the need for normal maintenance service.

Robin Warranty Registration

Owner's Name _____

Address _____

City State Zip

Dealer's Name _____

Address _____

City State Zip

Date of Purchase _____

Model No. _____ Serial No. _____

This Registration Form must be completed and returned within ten (10) days of purchase.

[Detach and Mail]

From _____

PLACE
STAMP
HERE

CM CARSWELL IMPORT &
MARKETING ASSOCIATES, INC.
P.O. Box 4169, Winston-Salem, N.C. 27115



FUJI ROBIN INDUSTRIES LTD.