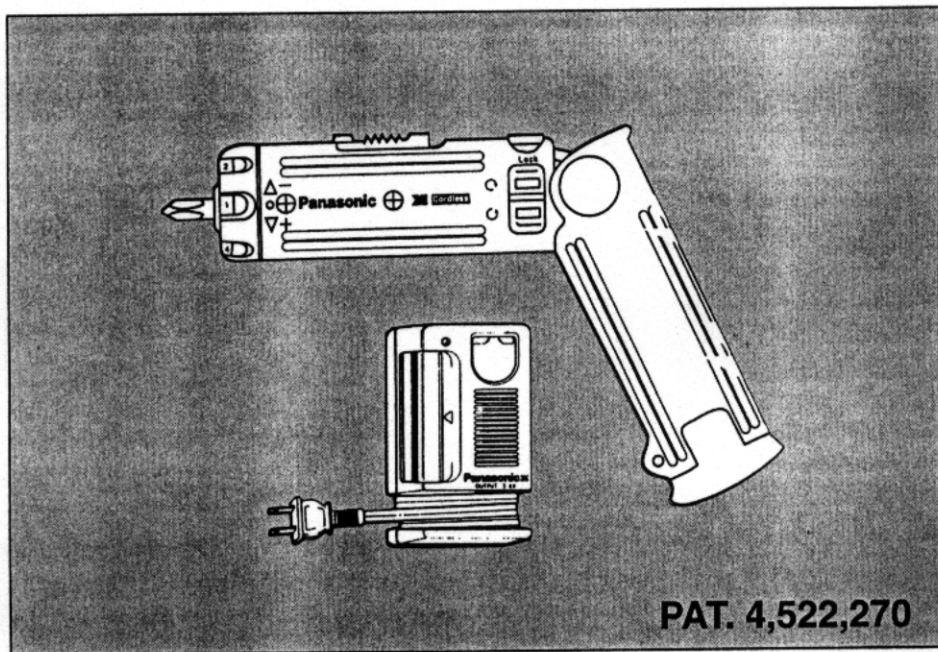


# Operating Instructions

**Cordless**

Drill & Driver

**EY503**



PAT. 4,522,270

## **Panasonic**

Before operating this unit, please read these instructions completely.

# IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following:

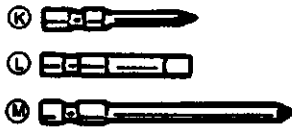
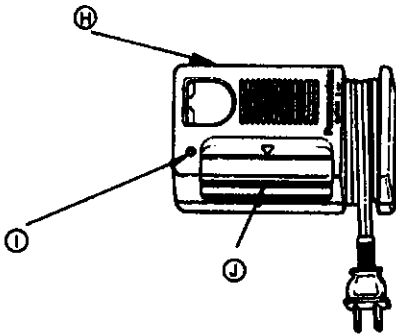
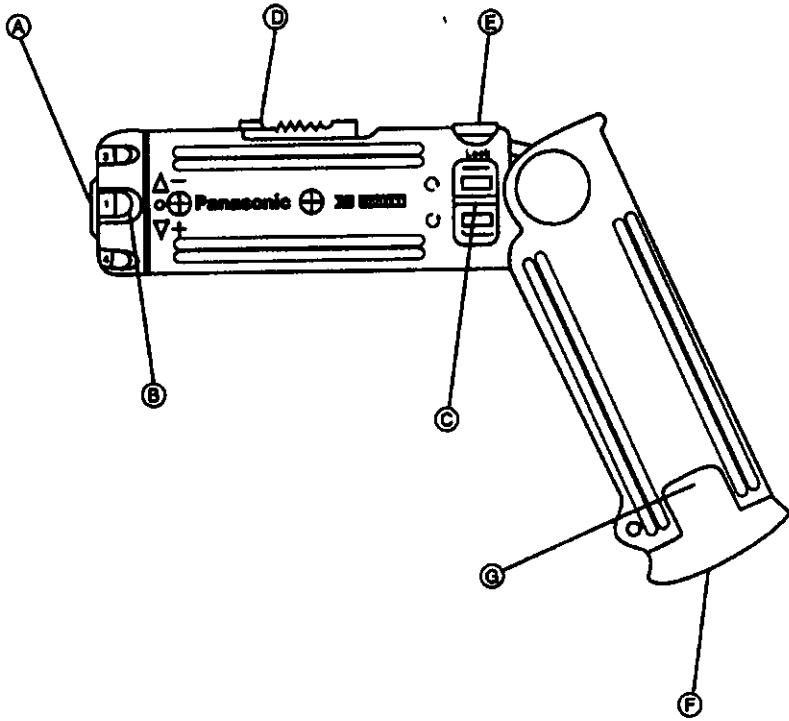
## READ ALL INSTRUCTIONS BEFORE USING

- 1) **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 2) **CONSIDER WORK AREA ENVIRONMENT.**  
Do not expose power tools to rain.  
Do not use power tools in damp or wet locations.  
Keep work area well lit.  
Do not use tool in presence of flammable liquids or gases.
- 3) **GUARD AGAINST ELECTRIC SHOCK.**  
Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.
- 4) **KEEP CHILDREN AWAY.** Do not let visitors contact tool. All visitors should be kept away from work area.
- 5) **STORE IDLE TOOLS.** When not in use, tools should be stored in a dry, high or locked-up place – out of reach of children.
- 6) **DO NOT FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
- 7) **USE RIGHT TOOL.** Don't force small tools or attachments to do the job of a heavy duty tool. Don't use tool for purpose not intended—for example—don't use circular saw for cutting tree limbs or logs.
- 8) **WEAR PROPER APPAREL.** No loose clothing or jewelry to get caught in moving parts. Rubber gloves and nonskid footwear are recommended when working outdoors. Wear protective

hair covering to contain long hair.

- 9) **USE SAFETY GLASSES** with most tools. Also use face or dust mask in dusty environment.
- 10) **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
- 11) **DO NOT OVERREACH.** Keep proper footing and balance at all times.
- 12) **MAINTAIN TOOLS WITH CARE.** Keep tools sharp at all times and clean for best and safest performance. Follow instructions for lubricating and changing accessories. Keep handles dry, clean, and free from oil and grease.
- 13) **DISCONNECT TOOLS/BATTERIES.** When not in use, before servicing, and when changing accessories, such as bits.
- 14) **REMOVE ADJUSTING KEYS AND WRENCHES.** Form a habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- 15) **AVOID ACCIDENTAL STARTING.** Do not carry tool with finger on switch.
- 16) **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
- 17) **CHECK DAMAGED PARTS.** Before further use of the tools, check guard or other safety devices carefully to determine that they will operate properly and perform their intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center. Have defective parts replaced by an authorized service center. Do not use a defective tool.

## SAVE THESE INSTRUCTIONS



# FOR BATTERY CHARGER & BATTERY PACK

## 1) SAVE THESE INSTRUCTIONS

This manual contains important safety and operating instructions for battery chargers RE503.

2) Before using battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery pack.

3) **CAUTION** - To reduce the risk of injury, charge only Battery Pack EY903 or EY9021.

Other types of batteries may burst causing personal injury and damage.

4) Do not expose charger to rain or snow.

5) To reduce risk of damaging the electric plug and cord, pull by plug rather than cord when disconnecting charger.

6) Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.

7) An extension cord should not be used unless absolutely necessary.

Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:

- that pins on plug of extension cord are the same number, size and shape as those of plug on charger.
- that extension cord is properly wired and in good electrical condition.
- that wire size is large enough for ampere rating of charger as specified below.

8) Do not operate charger with damaged cord or plug – replace them immediately.

9) Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.

10) Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

11) To reduce the risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.

12) The charger and battery pack are specifically designed to work together. Do not attempt to charge any other cordless tool or battery pack with this charger.

13) Do not attempt to charge the battery pack with any other charger.

14) Do not attempt to disassemble the battery pack housing.

15) Do not store the tool and battery pack in locations where the temperature may reach or exceed 122°F (50°C) (such as a metal tool shed, or a car in the summer), which can lead to deterioration of the storage battery.

16) Do not charge battery pack when the temperature is BELOW 32°F (0°C) or ABOVE 104°F (40°C). This is very important.

17) Do not incinerate the battery pack. It can explode in a fire.

18) Avoid dangerous environment. Do not use charger in damp or wet locations.

19) The charger is designed to operate on standard household electrical power only. Do not attempt to use it on any other voltage!

### RECOMMENDED MINIMUM AWG SIZE OF EXTENSION CORDS FOR BATTERY CHARGERS

AC Input Rating.	Ampere	AWG Size of Cord			
		Length of Cord. Feet			
Equal to or greater than	But less than	25	50	100	150
0	2	18	18	18	16

- 20) Do not abuse cord. Never carry charger by cord or yank it to disconnect from outlet. Keep cord away from heat, oil and sharp edges.
- 21) Charge the battery pack in a well ventilated place, do not cover the charger and battery pack with a cloth, etc., while charging.
- 22) Use of an attachment not recommended may result in a risk of fire, electric shock, or injury to persons.

7) When storing or carrying the tool, set the reversing lever to the center (switch lock) position.

8) Do not operate the speed selector switch (LOW-HIGH) while pushing the trigger. This can cause the rechargeable battery to wear quickly or damage the internal mechanism of the motor.

• Changes or modifications not expressly approved by MATSUSHITA ELECTRIC WORKS, LTD. could void the user's authority to operate the equipment.

## **ADDITIONAL SAFETY RULES**

1) Be aware that this tool is always in an operating condition, since it does not have to be plugged into an electrical outlet.

2) When drilling into walls, floors, etc., "live" electrical wires may be encountered. DO NOT TOUCH THE CHUCK OR ANY FRONT METAL PARTS OF THE TOOL! Hold the tool only by the plastic handle to prevent electric shock in case you drill into a "live" wire.

3) If the bit becomes jammed, immediately turn the main switch off to prevent an overload which can damage the battery pack or motor. Use reverse motion to loosen jammed bits.

4) Do not operate the reversing lever when the main switch is on. The battery will discharge rapidly and damage to the unit may occur.

5) During charging, the charger may become slightly warm. This is normal. Do not charge the battery for a long period.

6) Use only a dry, soft cloth for wiping the unit. Do not use a damp cloth, thinner, benzine, or other volatile solvents for cleaning.

# PART IDENTIFICATION

## A Hexagonal driving shaft

**Note:** When attaching or removing a bit, be sure to set the main switch lock at the lock position.

Select the suitable bit and lightly push it into the hexagonal driving shaft of the main unit.

Hexagonal driving shaft



## B Clutch handle

When using the tool for driving screws into soft material or for terminal screws, etc..., there is the possibility of damaging the material or threads if the torque is too high. To compensate for this, the clutch torque may be adjusted by turning the clutch handle to the required setting.

Clutch position 1 is the minimum and the clutch torque increases with positions 2, 3, 4 and 5. When the device is set at position 6, the clutch will not slip and the connection to the motor will be direct

**CAUTION:** If the battery pack loses its power during usage, the clutch may not slip even at positions 4 or 5, if this occurs, recharge the battery pack.



## Bit locking function

1) With the switch at off, the bit is locked in place, and the tool can be used as a manual screw-driver (up to 14.7 Nm, 150 kg-cm, 130 in. lbs.)

There will be a little play in the driving shaft, but this is not a malfunction.

2) In the manual mode, this feature can be used to break screws loose and finish the reversing with power. Also this feature can be used to further tighten the

screw previously driven for confirming the tightness.

**CAUTION:** Exact torque should be verified with a torque wrench for precise limits as the screw can be damaged.



## C Main switch (ON/OFF)

Push the upper half of the switch for forward rotation, or the lower half for reverse rotation.

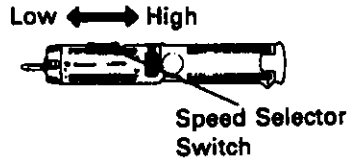


## D Speed selector switch

To suit the application of this tool, two different rotational speeds are available. Depending upon use, either the high or low speed should be selected.

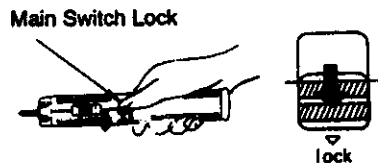
LOW	200 min <sup>-1</sup> (RPM)	strong torque
HIGH	400 min <sup>-1</sup> (RPM)	less torque

**CAUTION:** Check rotational speed selection before operating this tool.



## E Main switch lock

After use, set the main switch lock at the lock position to prevent accidental operation.



## Ⓕ Battery pack (EY903, EY 9021)

1. Press the battery pack release buttons Ⓖ on both sides and pull the pack away from the tool.
2. Charge the battery pack using the battery charger.
3. After the charging has been completed, remove the battery pack from the charger and connect it to the tool. Disconnect the charger from the power source when not in use.

## The Lifespan of the Storage Battery.

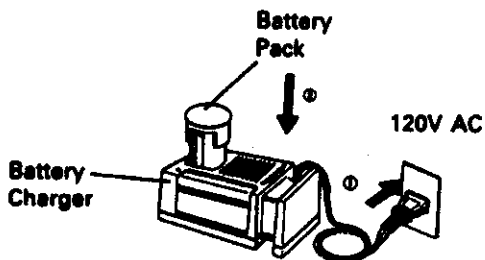
The storage battery has a lifespan of about 5 years when charged twice a week. It will be shorter with more frequent charging and can be affected by the conditions. If the operation time is extremely short after a proper charge, replace the battery with a new one. If the tool is not used frequently, charge the battery at least once in 6 months to maintain battery performance.

**Note:** Use under extremely hot or cold conditions will reduce operation capacity on a single charge.

## Ⓖ Battery pack release button

## Ⓖ Battery charger (RE503)

1. Plug the charger into the power source.
2. Insert the battery pack firmly into the charger.



3. During charging, the charging lamp will light up. When the charge is completed, an internal electronic switch will automatically be triggered to prevent overcharging.

4. When charging is completed, the charging lamp Ⓘ will go out.
  - If a fully charged battery pack is inserted into the charger again, the charging lamp may light. This is normal.
5. If the charging indication lamp does not turn on immediately after the charger has been plugged in, or if after standard charging time, the lamp does not go off, consult an authorized dealer for advice.

## Ⓘ Charging lamp

## Ⓙ Bit holder

## Ⓚ # 1 Phillips bit

## Ⓛ Slotted head bit

## Ⓜ # 2 Phillips bit

### ATTENTION:

The product that you have purchased contains a rechargeable battery. The battery is recyclable.

At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

# SPECIFICATIONS

## CORDLESS DRILL & DRIVER (EY503)

Motor	DC Motor 2.4V
No load speed	LOW: 200 min <sup>-1</sup> (RPM) HIGH: 400 min <sup>-1</sup> (RPM)
Hexagonal driving shaft	6.35 mm, 1/4" across flats
Maximum torque	LOW: 2.9 Nm, 30 kg-cm, 26 in.lbs. HIGH: 1.5 Nm, 15 kg-cm, 13 in.lbs.
Maximum clutch torque	2.0 Nm, 20 kg-cm, 17.5 in.lbs. at 5 position
Overall length	239 mm, 9-3/8"
Weight (with battery pack)	0.4 kg., 0.9 lbs.

## BATTERY PACK (EY903, EY 9021)

Storage battery	Ni-Cd battery
Battery voltage	2.4 V DC (1.2V x 2 cells)
Battery life	Approx. 500 cycles (1 cycle = 1 charger/1 discharge)

## BATTERY CHARGER (RE503 / EY503B7658)

Input	120V AC, 50 - 60 Hz
Output	2.4 V DC
Weight	0.67kg, 1.5 lbs
Charging time	Standard 1 hour

# DRILLING AND DRIVING CAPACITIES

The following reference chart indicates approximate drilling and driving capacities with a single-charge at ambient temperature 68°F (20°C).

### • Drilling capacity

Application	Drill diameter	Material/thickness		Number of holes
For metal	2 mm, 5/64"	Aluminum sheet	2.5 mm, 3/32"	Approx. 70
		Cold-rolled steel plate	1.0 mm, 3/64"	Approx. 50

### • Driving capacity

Application	Screw dimension	Material	Fastenings
Wood screw	φ 3.1 mm x 13 mm 1/8" x 1/2"	Medium hard wood	Approx. 300
	φ 3.5 mm x 20 mm 1/8" x 3/4"		Approx. 100

The above is a reference chart, and there may be some difference according to the battery conditions, the sharpness of the drill bit, the material hardness, and so on.

**MATSUSHITA HOME & COMMERCIAL PRODUCTS COMPANY**

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