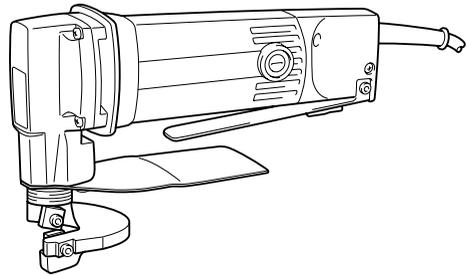




Shear

MODEL JS1600



004665



I N S T R U C T I O N M A N U A L

⚠ WARNING:

For your personal safety, READ and UNDERSTAND before using.
SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

SPECIFICATIONS

Model		JS1600
Max. cutting capacities	Steel up to 400 N/mm ²	1.6 mm (16 ga.)
	Steel up to 600 N/mm ²	1.2 mm (18 ga.)
	Steel up to 800 N/mm ²	0.8 mm (22 ga.)
	Aluminum up to 200 N/mm ²	2.5 mm (13 ga.)
Min. cutting radius		30 mm
Strokes per minute (min ⁻¹)		4,000
Overall length		230 mm
Net weight		1.7 kg
Safety class		□ /II

- Due to our continuing programme of research and development, the specifications herein are subject to change without notice.
- Note: Specifications may differ from country to country.

SYMBOLS

END201-2

The following show the symbols used for the equipment. Be sure that you understand their meaning before use.



.....Read instruction manual.



.....DOUBLE INSULATION



.....Only for EU countries

Do not dispose of electric equipment together with household waste material!

In observance of European Directive 2002/96/EC on waste electric and electronic equipment and its implementation in accordance with national law, electric equipment that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Intended use

The tool is intended for cutting sheet steel and stainless sheet steel.

Power supply

The tool should be connected only to a power supply of the same voltage as indicated on the nameplate, and can only be operated on single-phase AC supply. They are double-insulated in accordance with European Standard and can, therefore, also be used from sockets without earth wire.

For European countries only

Noise and Vibration

The typical A-weighted sound pressure level is 81 dB (A). Uncertainty is 3 dB(A).

The noise level under working may exceed 85 dB (A).

– Wear ear protection. –

The typical weighted root mean square acceleration value is not more than 2.5 m/s².

These values have been obtained according to EN60745.

EC-DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product is in compliance with the following standards of standardized documents, EN60745, EN55014, EN61000 in accordance with Council Directives, 89/336/EEC, 98/37/EC.

Yasuhiko Kanzaki **CE 2005**

Director

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Michigan Drive, Tongwell, Milton Keynes, Bucks MK15 8JD, ENGLAND

Responsible manufacturer:

Makita Corporation Anjo Aichi Japan

GENERAL SAFETY RULES

GEA001-3

WARNING:

Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term “power tool” in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

Work area safety

1. **Keep work area clean and well lit.** Cluttered and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Electrical safety

4. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
5. **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
6. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
7. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
8. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

Personal safety

9. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.

10. **Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
11. **Avoid accidental starting. Ensure the switch is in the off-position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
12. **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
13. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
14. **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
15. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust-related hazards.

Power tool use and care

16. **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
17. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
18. **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

-
19. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
 20. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
 21. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
 22. **Use the power tool, accessories and tool bits etc. in accordance with these instructions and in**

the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

Service

23. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
24. **Follow instruction for lubricating and changing accessories.**
25. **Keep handles dry, clean and free from oil and grease.**

ADDITIONAL SAFETY RULES FOR TOOL

ENB011-2

1. **Hold the tool firmly.**
2. **Secure the workpiece firmly.**
3. **Keep hands away from moving parts.**
4. **Edges and chips of the workpiece are sharp. Wear gloves. It is also recommended that you put on thickly bottomed shoes to prevent injury.**
5. **Do not put the tool on the chips of the workpiece. Otherwise it can cause damage and trouble on the tool.**
6. **Do not leave the tool running. Operate the tool only when hand-held.**
7. **Always be sure you have a firm footing. Be sure no one is below when using the tool in high locations.**
8. **Do not touch the blade or the workpiece immediately after operation; they may be extremely hot and could burn your skin.**
9. **Avoid cutting electrical wires. It can cause serious accident by electric shock.**

SAVE THESE INSTRUCTIONS

FUNCTIONAL DESCRIPTION

⚠ CAUTION:

- Always be sure that the tool is switched off and unplugged before adjusting or checking function on the tool.

Switch action

⚠ CAUTION:

- Before plugging in the tool, always check to see that the switch lever (paddle switch) actuates properly and returns to the "OFF" position when released.

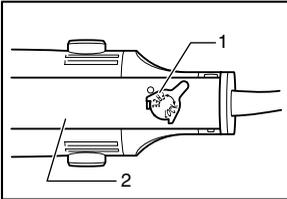
For tools with pivot type lock-off lever

⚠ CAUTION:

- The switch lever does not actuate when the lock-off lever is in the LOCK position. Do not try to actuate the switch lever when the lock-off lever is in the LOCK position.
- When not operating the tool, keep the lock-off lever in the LOCK position.

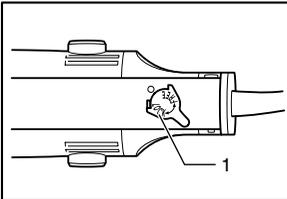
To prevent the switch from being accidentally actuated, a lock-off lever is provided. To start the tool, turn the lock-off lever to the FREE position and then squeeze the switch lever. Release the switch lever to stop.

004671



1. Lock-off lever in the FREE position
2. Switch lever (Paddle switch)

004672

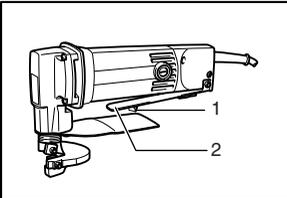


1. Lock-off lever in the LOCK position

004673

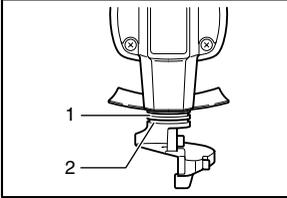
For tools with slide type lock-off lever

To prevent the switch from being accidentally actuated, a lock-off lever is provided. To start the tool, slide the lock-off lever in the direction of the arrow and squeeze the switch lever. Release the switch lever to stop.



1. Lock-off lever
2. Switch lever

004674



1. Gauge for stainless:
1.2 mm (3/64")
2. Gauge for mild steel:
1.6 mm (1/16")

Permissible shearing thickness

The groove on the yoke serves as a thickness gauge for shearing mild or stainless steel plate. If the material fits within the groove, it is shearable.

The thickness of materials to be sheared depends upon the type (strength) of the material. The maximum shearing thickness is indicated in the table below in terms of various materials. Attempting to shear materials thicker than indicated will result in tool breakdown and/or possible injury. Keep within the thickness shown in the table.

006425

Material	Tensile Strength (N/mm ²)	Max. cutting thickness (mm)
Mild steel (A)	400	1.6 (16 ga)
Hard steel (B)	600	1.2 (18 ga)
Stainless steel	800	0.8 (22 ga)
Aluminum plate	200	2.5 (13 ga)

ASSEMBLY

⚠ CAUTION:

- Always be sure that the tool is switched off and unplugged before carrying out any work on the tool.

Blade inspection

Before using the tool, check the blades for wear. Dull, worn blades will result in poor shearing action, and the service life of the tool will be shortened.

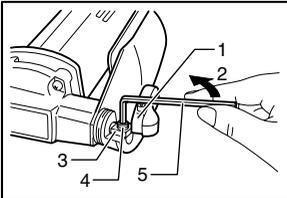
Rotating or replacing blades

Both the upper and lower blades have four cutting edges on each side (the front and back). When the cutting edge becomes dull, rotate both the upper and the lower blades 90° to expose new cutting edges.

When all eight edges are dull on both the upper and lower blades, replace both blades with new ones. Each time blades are rotated or replaced, proceed as follows.

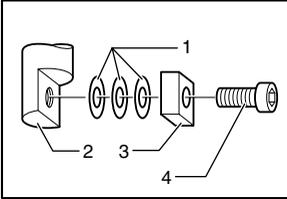
Remove the blade securing bolts with the hex wrench provided and then rotate or replace the blades.

004678



1. Lower blade
2. Loosen
3. Upper blade
4. Upper blade securing bolt
5. Hex wrench

004680



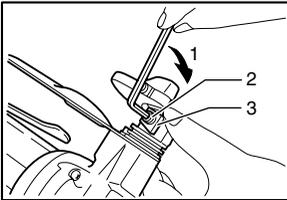
1. Thin washers
2. Blade holder
3. Upper blade
4. Upper blade securing bolt

Some tools have one or more thin washers between the upper blade and the blade holder. Be sure to use the same number of thin washers when reassembling.

NOTE:

- No thin washers are used for the lower blade.

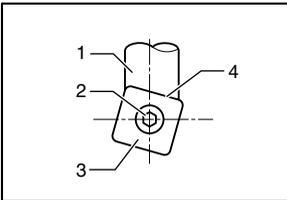
004681



1. Tighten
2. Upper blade securing bolt
3. Upper blade

Install the upper blade and tighten the upper blade securing bolt with the hex wrench. Press up on the upper blade while tightening it.

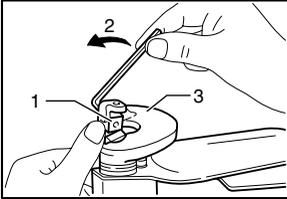
004683



1. Blade holder
2. Upper blade securing bolt
3. Upper blade
4. No gap allowed

After securing the upper blade, be sure that there is no gap left between the upper blade and the bevelled surface of the blade holder.

004686



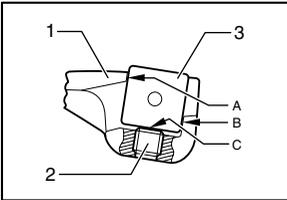
- 1. Lower blade
- 2. Tighten
- 3. Yoke

When installing the lower blade onto the yoke, the lower blade should be pressed against the yoke so as to be contacting the bevelled portions A and B of the yoke and the tip C of the lower blade positioning screw while you tighten the lower blade securing bolt. There must be no clearance between A, B and C during installation.

NOTE:

- The lower blade positioning screw is factory-assembled. Do not tamper with it.

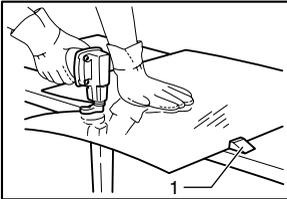
004687



- 1. Yoke
- 2. Lower blade positioning screw
- 3. Lower blade

OPERATION

004699

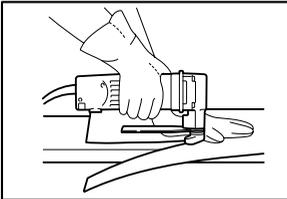


- 1. Workholder

Holding material

The materials for cutting should be fastened to the workbench by means of workholders.

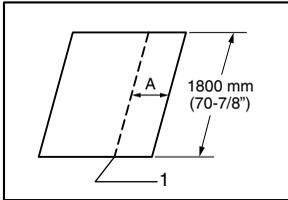
004701



Shearing method

Keep the shear moving parallel with the material.

004703



1. Cutting line

Maximum cutting width

Stay within the specified maximum cutting width (A): Case of length 1,800 mm.

006430

Mild steel (thickness)	1.6 mm	Under 1.2 mm
Max. cutting width (A)	100 mm	No limit
Stainless (thickness)	1.2 mm	Under 1.0 mm
Max. cutting width (A)	80 mm	No limit

Minimum cutting radius

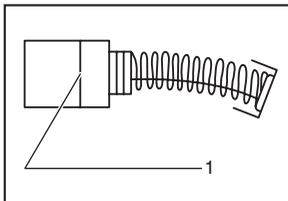
Minimum cutting radius is 30 mm when cutting 1.0 mm mild steel.

MAINTENANCE

⚠ CAUTION:

- Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

001145

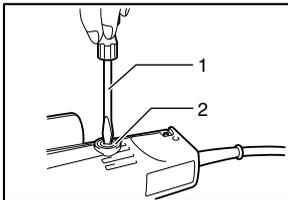


1. Limit mark

Replacing carbon brushes

Remove and check the carbon brushes regularly. Replace when they wear down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only identical carbon brushes.

004705



- Screwdriver
- Brush holder cap

Use a screwdriver to remove the brush holder caps. Take out the worn carbon brushes, insert the new ones and secure the brush holder caps.

To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by Makita Authorized Service Centers, always using Makita replacement parts.

ACCESSORIES

⚠ CAUTION:

- These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. Only use accessory or attachment for its stated purpose.

If you need any assistance for more details regarding these accessories, ask your local Makita service center.

- Blades
- Hex wrench

Makita Corporation Anjo, Aichi, Japan