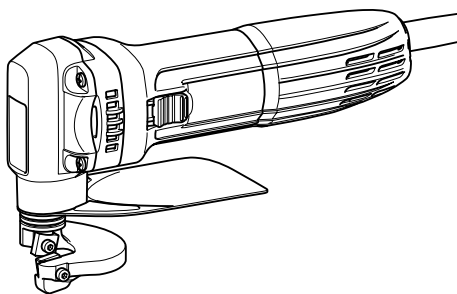


INSTRUCTION MANUAL

Metal Shear

JS1602



013076



DOUBLE INSULATION

IMPORTANT: Read Before Using.

ENGLISH (Original instructions)

SPECIFICATIONS

Model		JS1602
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 (1-3/16")
Strokes per minute		4,000/min
Overall length		255 mm (10")
Net weight		1.6 kg (3.4 lbs)

- Due to our continuing program of research and development, the specifications herein are subject to change without notice.
- Specifications may differ from country to country.
- Weight according to EPTA-Procedure 01/2003

GEA008-2

General Power Tool Safety

Warnings

⚠ WARNING Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

Work area safety

1. **Keep work area clean and well lit.** Cluttered or 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.
9. **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of an GFCI reduces the risk of electric shock.

Personal Safety

10. **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.
11. **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
12. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
13. **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.

14. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
15. **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.
16. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

Power tool use and care

17. **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.
18. **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.
19. **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.
20. **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.

21. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
22. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
23. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, 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

24. **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.
25. **Follow instruction for lubricating and changing accessories.**
26. **Keep handles dry, clean and free from oil and grease.**

USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table 1 shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

Table 1: Minimum gage for cord

Ampere Rating		Volts		Total length of cord in feet			
		120V		25 ft.	50 ft.	100 ft.	150 ft.
		220V - 240V		50 ft.	100 ft.	200 ft.	300 ft.
More Than	Not More Than	AWG					
0	6	/	18	16	16	14	
6	10		18	16	14	12	
10	12		16	16	14	12	
12	16		14	12	Not Recommended		

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SHEAR SAFETY WARNINGS

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.
10. Do not operate the tool at no-load unnecessarily.

SAVE THESE INSTRUCTIONS.



⚠WARNING:

DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to safety rules for the subject product. MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

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Symbols

The followings show the symbols used for tool.

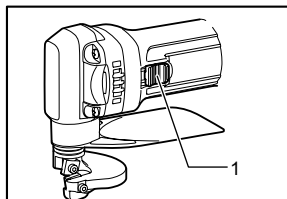
V	• volts
A	• amperes
Hz	• hertz
	• alternating current
n_0	• no load speed
	• Class II Construction
... /min r/min	• revolutions or reciprocation per minute

FUNCTIONAL DESCRIPTION

⚠CAUTION:

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

Switch action



1. Slide switch

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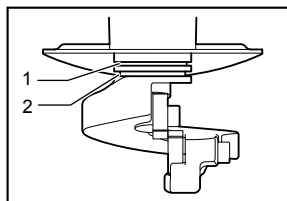
⚠CAUTION:

- Before plugging in the tool, always check to see that the slide switch actuates properly and returns to the "OFF" position when the rear of the slide switch is depressed.
- Switch can be locked in "ON" position for ease of operator comfort during extended use. Apply caution when locking tool in "ON" position and maintain firm grasp on tool.

To start the tool, slide the slide switch toward the "I (ON)" position. For continuous operation, press the front of the slide switch to lock it.

To stop the tool, press the rear of the slide switch, then slide it toward the "O (OFF)" position.

Permissible shearing thickness



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

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The groove in 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.

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)

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ASSEMBLY

⚠ CAUTION:

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

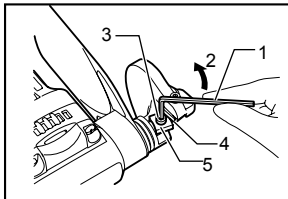
Blade inspection

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.

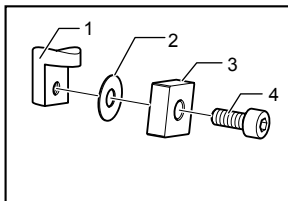
When all eight edges are dull on both the upper and lower blades, replace both blades with new ones. Each time blades are rotated or replaced, proceed as follows.



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

Some tools have one washer between the upper blade and the blade holder. When the tool has the washer, be sure to use the thin washer when reassembling.

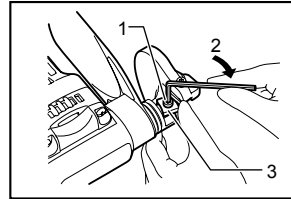


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1. Blade holder
2. Thin washer
3. Upper blade
4. Upper blade securing bolt

NOTE:

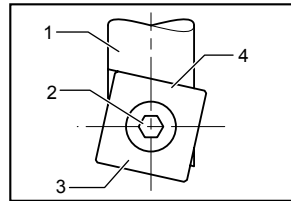
- No thin washers are used for the lower blade.
- Install the upper blade and tighten the upper blade securing bolt with the hex wrench. Press up on the upper blade while tightening it.



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

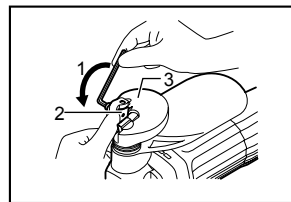
1. Upper blade securing bolt
2. Tighten
3. Upper blade



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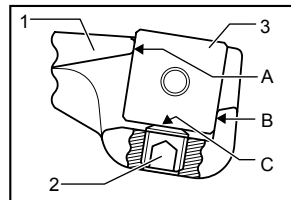
1. Blade holder
2. Upper blade securing bolt
3. Upper blade
4. No gap allowed

When installing the lower blade onto the yoke, the lower blade should be pressed against the yoke so as to be contacting the beveled 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.



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1. Tighten
2. Lower blade
3. Yoke



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

NOTE:

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

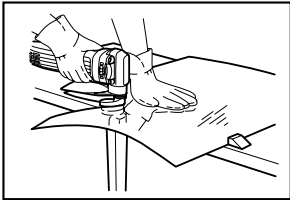
OPERATION

Holding material and shearing method

⚠WARNING:

- Before operating the tool, be sure to firmly tighten the upper blade securing bolt and the lower blade securing bolt. Loosen bolts may cause blades coming off, resulting in a serious injury.
- When cutting, always place the shear on the workpiece so that the material cut away is positioned on the right side to the operator.

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

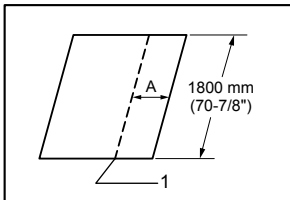


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Always hold the tool firmly with one hand on housing. Do not touch the metal part.

Keep the shear moving parallel with the material.

Maximum cutting width



1. Cutting line

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Stay within the specified maximum cutting width (A): Case of length 1,800 mm (70-7/8").

Mild steel (thickness)	1.6 mm (16 ga)	Under 1.2 mm (18 ga)
Max. cutting width (A)	100 mm (4")	No limit
Stainless (thickness)	1.2 mm (18 ga)	Under 1.0 mm (20 ga)
Max. cutting width (A)	80 mm (3-1/8")	No limit

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Minimum cutting radius

Minimum cutting radius is 30 mm (1-3/16") when cutting 1.0 mm (20 ga.) mild steel.

MAINTENANCE

⚠CAUTION:

- Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.
- Never use gasoline, benzine, thinner, alcohol or the like. Discoloration, deformation or cracks may result.

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

OPTIONAL 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.

- Shear blades
- Hex wrench
- Wrench holder

NOTE:

- Some items in the list may be included in the tool package as standard accessories. They may differ from country to country.

< USA only >

WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.