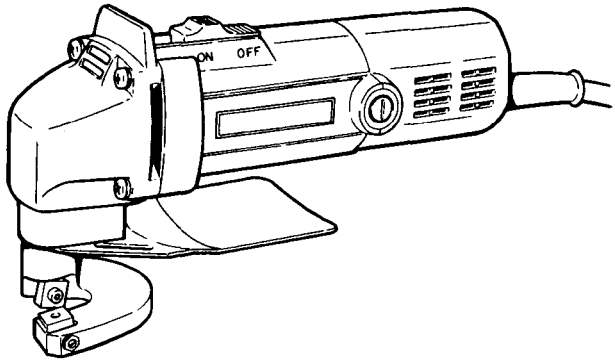
HITACHI

HAND SHEAR
MODEL CE 16

INSTRUCTION MANUAL



Note:
Before using this Electric Power Tool, carefully read through this INSTRUCTION MANUAL to ensure efficient, safe operation. It is recommended that this MANUAL be kept readily available as an important reference when using this power tool.

DOUBLE INSULATION

We sincerely thank you for selecting a HITACHI ELECTRIC POWER TOOL.
To operate this electric power tool safely and efficiently, please read this INSTRUCTION MANUAL carefully to get a good understanding of the precautions in operation, capacity of the electric power tool, use and the like.

IMPORTANT INFORMATION: SAFETY RULES FOR POWER TOOLS

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

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **CONSIDER WORK AREA ENVIRONMENT.**
   Don't expose power tools to rain.
   Don't use power tools in damp or wet locations.
   Keep work area well lit.
   Don't use tool in presence of flammable liquids or gases.
   Power tools produce sparks during operation. They also spark when switching ON/OFF. Never use power tools in dangerous sites containing lacquer, paint, benzine, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.
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 or extension cord. All visitors should be kept away from work area.
5. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place — out of reach of children.
6. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
7. **USE RIGHT TOOL.** Don't force small tool or attachment 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. **DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts.
   Rubber gloves and non-skid footwear are recommended when working outdoors.
   Wear protective hair covering to contain long hair.
9. **USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.
   All persons in the area where power tools are being operated should also wear safety eye protectors and face or dust masks.
10. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil and sharp edges.
11. **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.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.

13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance.
    Follow instructions for lubricating and changing accessories.
    Inspect tool cords periodically and if damaged, have repaired by authorized service facility.
    Inspect extension cords periodically and replace if damaged.
    Keep handles dry, clean, and free from oil and grease.
14. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
18. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its 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 unless otherwise indicated elsewhere in this instruction manual.
    Have defective switches replaced by authorized service center.
    Do not use tool if switch does not turn it on and off.
20. **AVOID USING A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED.** Never use a power tool for applications other than those specified in the instruction manual.
21. **ENSURE SAFE OPERATION THROUGH CORRECT HANDLING.** Secure safe operation through correct handling by observing the instructions described herein.
    Do not employ accessories other than those specified herein; otherwise, a hazardous condition may be created.
    Never allow a power tool to be used by persons not familiar with correct handling (such as children) or by those who cannot handle the tool correctly.
22. **CONFIRM THAT NO ITEMS SUCH AS AN ELECTRIC CABLE OR CONDUIT ARE BURIED INSIDE.** In places where live wiring may be hidden behind a wall, floor, ceiling, etc. do not hold or contact any metal parts of the tool. In such cases, metal parts could become electrically live and present a serious shock hazard.
23. **KEEP THE RIGHT PARTS IN THE RIGHT POSITIONS.** Do not remove covers and screws which have been factory-mounted. They perform important respective roles. Keep them in the right positions.

24. **SHOULD THE PLASTIC HOUSING OR HANDLE OF A POWER TOOL BE CRACKED OR DEFORMED, DO NOT USE IT.** Since cracked or deformed parts may lead to an operator receiving an electric shock, do not use such a power tool. Immediately have it repaired.
25. **SECURELY MOUNT ACCESSORIES AND BLADES TO THE TOOL MAIN BODY.** Extra care must be taken when using tools on elevated location (such as a roof ladder, scaffold, or the like) to prevent injury to someone on a lower level in the event the tool and/or accessory should drop.
26. **ALWAYS KEEP THE MOTOR AIR VENT FULLY OPENED.** A constantly open motor air vent is necessary to allow air to come in and out for cooling the motor. Do not allow it to become clogged up, even if dust is blown through it.
27. **OPERATE POWER TOOLS AT THE RATED VOLTAGE.** Operate power tools at voltages specified on their nameplates.
28. **NEVER TOUCH THE MOVING PARTS.** Never touch the moving parts such as blades, bits, cutters and others.
29. **STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED.** Should a power tool be detected as out of order or should other abnormalities be observed during operation, stop using the tool immediately.
30. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
31. **CAREFULLY HANDLE POWER TOOLS.** Should a power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.
32. **DO NOT WIPE PLASTIC PARTS WITH SOLVENT.** Solvents such as gasoline, thinner, benzine, carbon tetrachloride, and alcohol may damage and crack plastic parts. Do not wipe them with such solvents. Wipe plastic parts with a soft cloth lightly dampened with soapy water.
33. **WHEN REPLACING A COMPONENT PART, ADOPT THE SAME TYPE.** When replacing a component part with a new one, adopt the same type of new part. Also, never attempt to repair a power tool yourself.

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations should ONLY be performed by an AUTHORIZED HITACHI POWER TOOL REPAIR SHOP.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

POLARIZED PLUGS

To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other).
This plug will fit in a polarized outlet only one way.
If the plug does not fit fully in the outlet, reverse the plug.
If it still does not fit, contact a qualified electrician to install the proper outlet.
Do not change the plug in any way.

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 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.

MINIMUM GAGE FOR CORD SETS

		Total Length of Code in Feet (Meter)			
		0-25 (0-7.6)	26-50 (7.9-15.2)	51-100 (15.5-30.5)	101-150 (30.8-45.7)
Ampere Rating 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	

DOUBLE INSULATION SYSTEM ENHANCES SAFE OPERATION

To enhance safe operation of this electric power tool, HITACHI has adopted a double insulation system. The term "double insulation" used here denotes an insulation system with two insulations physically separated and arranged between the electrically conductive material connected to the power supply and the outer frame subject to contact by the operator.

Thus, the power tool is termed double insulated and both the "⧈" mark and "Double insulation", or either one is indicated on the name plate.

While no external grounding is required with this system, normal safety precautions as outlined in this manual must still be followed.

To maintain the effectiveness of the double insulation system, follow the precautions described below:

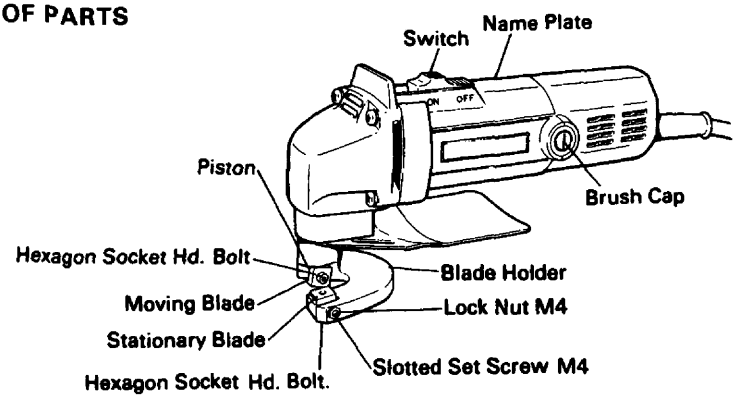
1. Always contact your dealer or an authorized HITACHI service agent when assembling, disassembling or replacing parts other than accessories or carbon brushes. Improper assembly and/or replacement with wrong parts may result in eliminating the double insulation-feature.
2. Clean the exterior of the tool with a soft cloth moistened with soapy water, and dry thoroughly. Chloric solvent, gasoline, and thinner will cause plastic components to dissolve.

PRECAUTIONS ON USING HAND SHEAR

1. Beware of sharp panel edges. The edge of the plate just cut by the hand shear is very sharp. Take care in not getting hurt by the sharp edge.
2. Start cutting only after the blade attains the proper speed. After turning on the power switch, wait until the blade attains the proper speed, then start cutting.
3. preserve the power cord. Be sure that the power cord is not abraded or cut by the sharp edge of the cut panel.

SAVE THESE INSTRUCTIONS.

NAME OF PARTS



SPECIFICATIONS

Motor		Single-Phase, series Commutator Motor
Power Source		Single-Phase 115V AC 60Hz
Input		400W
Cutting Capacity	Mild Steel Plate	1/16" (1.6 mm)
	Stainless Steel Plate	3/64" (1.2 mm)
	Aluminium Plate	3/32" (2.3 mm)
Number of strokes at no-load		4,200/min
Weight		4 lbs (1.8 kg)

APPLICATIONS

○ Shearing steel plate, brass plate, copper plate, aluminium plate, stainless steel plate, tin plate, and other metal plates; also leather and fiberboard.

PRIOR TO OPERATION

1. **Power source**
   Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.
2. **Power switch**
   Ensure that the power switch is in the OFF position. If the plug is connected to a power receptacle while the power switch is in the ON position, the power tool will start operating immediately, inviting serious accident.
3. **Extension cord**
   When the work area is removed from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.

4. Adjusting the horizontal gap between the shearing blades

Adjust the horizontal gap between the shearing blades (A in **Fig. 2**) at approximately 1/10 the steel plate thickness to be sheared, according to the following procedures. (**Fig. 3**)

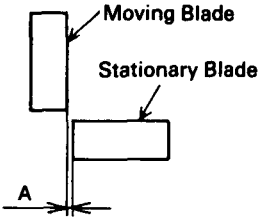


Fig. 2

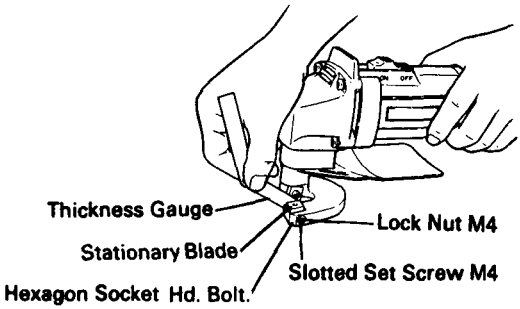


Fig. 3

(1) Loosen the hexagonal socket bolts fastening the stationary blade. Loosen the M4 lock nut, and push back the M4 slotted set screws slightly.

(2) From the supplied thickness gauges, select one that is 1/10 the thickness of the panel to be cut. Thickness of each thickness gauge is marked thereon. Insert the gauge in between the blades, then tighten the hexagonal socket bolts very loosely. Next, use a screwdriver to turn the M4 slotted set screws to position the stationary blade until it hits the thickness gauge.

(3) If the space between blades is larger than the thickness of the panel to be cut, there will be burrs for a less than clean cut.
If the space between blades is too narrow, cutting speed will be affected. For cutting in a curved line, making the space a little bigger will make the cutting easier.

(4) After adjustment, tighten the M4 nuts securely so they will not loosen during operation.

(5) Securely tighten the hexagonal socket bolts fastening the stationary blade.

CUTTING

CAUTION:

- Do not attempt to cut panels of thicknesses that are beyond the capability of the hand shear. Doing so will result in premature breakage of the hand shear.
- Perform the cutting operation only after the panel is fixed securely.

When cutting thin panels, level the unit horizontally, as shown in **Fig. 4**.

To facillitate smooth cutting of thick panels, if the cut-off side goes toward the left, (**Fig. 4**) raise the rear of the unit slightly. And if the cut-off side goes toward the right, lower the rear of the unit slightly.

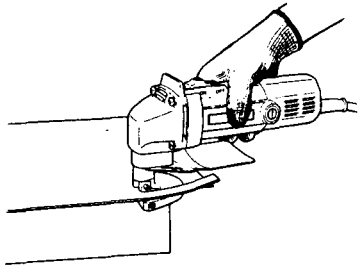


Fig. 4

BLADE REPLACEMENT

The hand shear uses disposable blades. Each blade has 8 cutting edges, as shown in **Fig. 5**.

After a cutting edge cuts 1300 ft. (400m) of panel, cutting performance will fall. In such a case, turn the blade toward another direction to use another cutting edge. After all 8 cutting edges are used and worn, replace the blade.

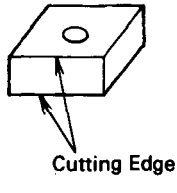


Fig. 5

MAINTENANCE AND INSPECT5ION

CAUTION: Be sure to disconnect the plug during maintenance and inspection.

1 Inspecting the blade

Using a worn or chipped blade will put an excessive burden on the motor and affect work performance. Therefore, always use a well-cutting blade.

2 Inspecting the mounting screws

Regularly inspect all mounting screws and ensure that they are properly tightened. Should any of the screws be loose, retighten them immediately. Failure to do so could result in serious hazard.

3 Maintenance of the motor

The motor unit winding is the very "heart" of the power tool. Excercise due care to ensure the winding does not become damaged and/or wet with oil or water.

4 Inspecting the carbon brushes (Fig. 6)

The motor employs carbon brushes which are consumable parts. Since an excessively worn carbon brush could result in motor trouble, replace the carbon brush with a new one which has the same carbon brush No. shown in the figure when it becomes worn to or near the "wear limit." In addition, always kekep carbon brushes clean and ensure that they slide freely within the brush holders.

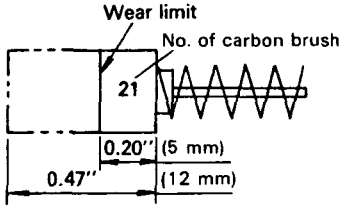


Fig. 6

5 Replacing a carbon brush

Disassemble the brush cap with a minus-head screwdriver. The carbon brush can then be easily removed.

NOTE:

Due to HITACHI's continuing program of research and development, the specifications herein are subject to change without prior notice.

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