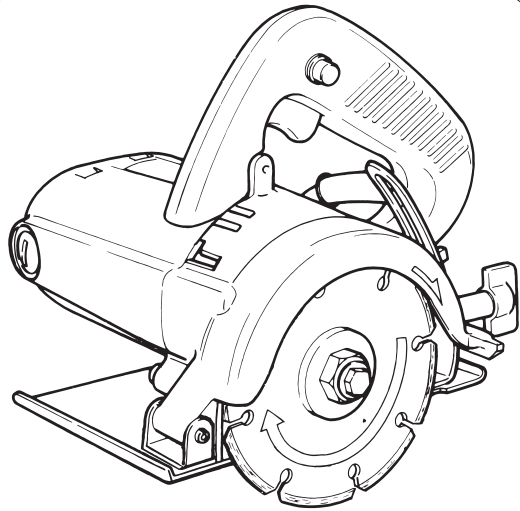


Cutter Model CM 4ST

Handling instructions

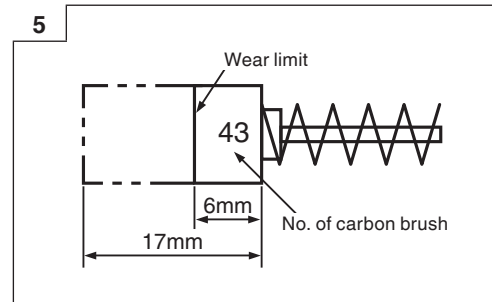
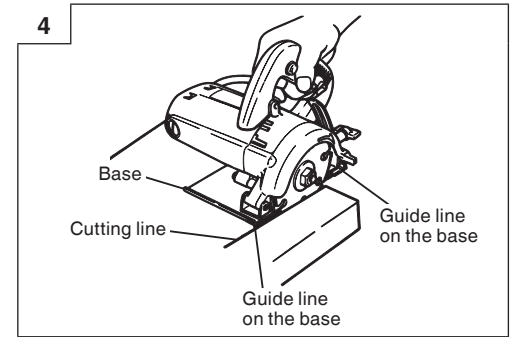
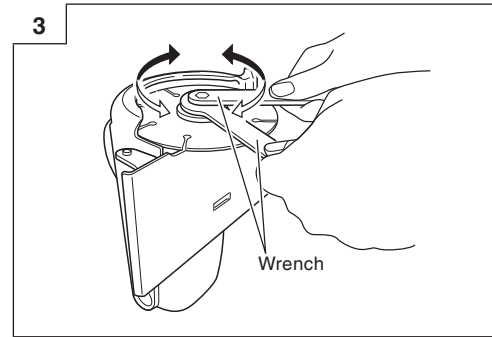
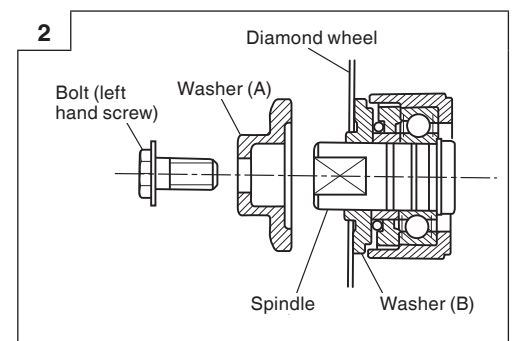
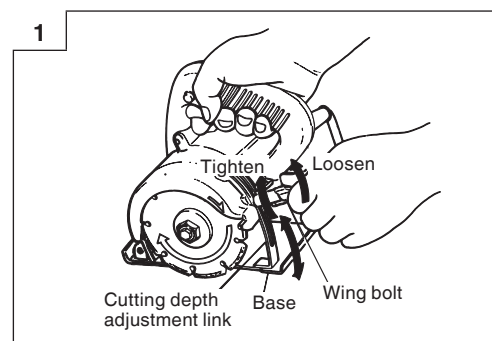


(Diamond wheel is not supplied.)

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



Hitachi Koki



GENERAL SAFETY RULES

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

- 1) Work area
 - a) Keep work area clean and well lit. Cluttered and dark areas invite accidents.
 - b) 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 of fumes.
 - c) Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.
- 2) Electrical safety
 - a) 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.
 - b) 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.
 - c) Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
 - d) 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.
 - e) 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.
- 3) Personal safety
 - a) 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.
 - b) 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.
 - c) 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.

- d) 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.
 - e) Do not overreach. Keep proper footing and balance at all times.
This enables better control of the power tool in unexpected situations.
 - f) 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.
 - g) 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.
 - 4) Power tool use and care
 - a) 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.
 - b) 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.
 - c) Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.
Such preventive safety measures reduce the risk of starting the power tool accidentally.
 - d) 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.
 - e) 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.
 - f) Keep cutting tools sharp and clean.
Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
 - g) 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 intended could result in a hazardous situation.
 - 5) Service
 - a) 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.
- PRECAUTION**
Keep children and infirm persons away.
When not in use, tools should be stored out of reach of children and infirm persons.

CUT-OFF MACHINE SAFETY WARNINGS

- a) The guard provided with the tool must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator. Position yourself and bystanders away from the plane of the rotating wheel. The guard helps to protect operator from broken wheel fragments and accidental contact with wheel.
- b) Use only diamond cut-off wheels for your power tool. Just because an accessory can be attached to your power tool, it does not assure safe operation.
- c) The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool. Accessories running faster than their rated speed can break and fly apart.
- d) The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool. Incorrectly sized accessories cannot be adequately guarded or controlled.
- e) The arbour size of wheels and flanges must properly fit the spindle of the power tool. Wheels and flanges with arbour holes that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.
- f) Do not use damaged wheels. Before each use, inspect the wheels for chips and cracks. If power tool or wheel is dropped, inspect for damage or install an undamaged wheel. After inspecting and installing the wheel, position yourself and bystanders away from the plane of the rotating wheel and run the power tool at maximum no load speed for one minute. Damaged wheels will normally break apart during this test time.
- g) Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and shop apron capable of stopping small abrasive or workpiece fragments. The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.
- h) Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment. Fragments of workpiece or of a broken wheel may fly away and cause injury beyond immediate area of operation.
- i) Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord. Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.
- j) Position the cord clear of the spinning accessory. If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning wheel.
- k) Never lay the power tool down until the accessory has come to a complete stop. The spinning wheel may grab the surface and pull the power tool out of your control.
- l) Do not run the power tool while carrying it at your side. Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.

- m) Regularly clean the power tool's air vents. The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.
- n) Do not operate the power tool near flammable materials. Sparks could ignite these materials.
- o) Do not use accessories that require liquid coolants. Using water or other liquid coolants may result in electrocution or shock.

KICKBACK AND RELATED WARNINGS

Kickback is a sudden reaction to a pinched or snagged rotating wheel. Pinching or snagging causes rapid stalling of the rotating wheel which in turn causes the uncontrolled power tool to be forced in the direction opposite of the wheel's rotation at the point of the binding.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

- a) Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up. The operator can control torque reactions or kickback forces, if proper precautions are taken.
- b) Never place your hand near the rotating accessory. Accessory may kickback over your hand.
- c) Do not position your body in line with the rotating wheel. Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.
- d) Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory. Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.
- e) Do not attach a saw chain, woodcarving blade, segmented diamond wheel with a peripheral gap greater than 10 mm or toothed saw blade. Such blades create frequent kickback and loss of control.
- f) Do not "jam" the wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut. Overstressing the wheel increases the loading and susceptibility to twisting or binding of the wheel in the cut and the possibility of kickback or wheel breakage.
- g) When wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold the power tool motionless until the wheel comes to a complete stop. Never attempt to remove the wheel from the cut while the wheel is in motion otherwise kickback may occur. Investigate and take corrective action to eliminate the cause of wheel binding.
- h) Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully re-enter the cut. The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.

- i) **Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback.** Large workpieces tend to sag under their own weight. Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.
- j) **Use extra caution when making a "pocket cut" into existing walls or other blind areas.** The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.

PRECAUTIONS ON USING CUTTER

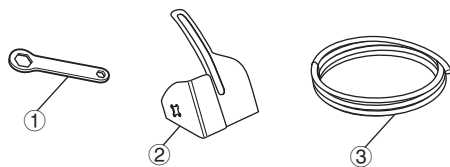
1. Do NOT use any cutting tool other than a diamond wheel.
2. Don't use it for cutting of metallic materials. Diamond wheel may be broken or its service life may be remarkably reduced when it is used for cutting of metallic materials. Be sure not to use the wheel for cutting of metals.
3. Connect machines that are used in the open via a residual current device (RCD).

SPECIFICATIONS

Voltage	230 V ~
Power Input	1300 W
No-Load Speed	13000 /min
Max. cutting depth	34 mm (wheel dia. 110 mm) 31.5 mm (wheel dia. 105 mm)
Diamond wheel	110 mm external dia. x 20 mm internal dia.
Weight (without cord)	2.9 Kg

STANDARD ACCESSORIES

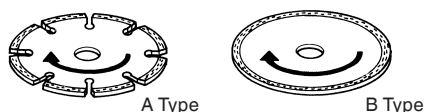
- ① Wrench.....2
- ② Tube Adapter.....1
- ③ Vinyl Hose.....1



Standard accessories are subject to change without notice.

OPTIONAL ACCESSORIES (sold separately)

- ① Diamond Wheel



Blade type	Diameter (mm)			Hole (mm)	Thickness (mm)
	A (Dry)	106	20		
B (wet)	110	20	1		

4. Pour on water while cutting or scribing concrete, tile or stone.
5. Keep the motor interior free of water.
6. Wear protective glasses to protect your eyes while cutting.
7. Prior to use, be sure to check the diamond wheel in such details as crack, broken part, bent part and the like. Don't use a diamond wheel if any of the above defect is found on the wheel. Also confirm that no abnormality exists by actual test running.
8. Proceed with cutting operation when full speed has been reached.
9. Do NOT apply excessive force.
10. When cutting concrete, tile, or stone, the maximum cutting depth should be held to within 20mm.
11. Never touch diamond wheel while operating.
12. Never lay down the cutter while the diamond wheel is revolving.
13. Exercise care to position the cutter at a safe, stable spot when cutting.
14. Take good care of the power tool and keep it clean.

- ② Water Plug (with machine screw)
- ③ Rubber Connector



Optional accessories are subject to change without notice.

APPLICATIONS

- Cutting and scribing of concrete.
- Cutting and scribing various types of stones.
- Cutting and scribing various types of tiles.

PRIOR TO OPERATION

1. **Confirming the earth leakage breaker or isolating transformer**
Before using this Cutter, confirm that an earth leakage breaker or isolating transformer as electric shock preventive measures is installed at the power supply to which the Cutter is connected.

2. **Power source**
Ensure that the power source to be utilized conforms to the power requirements specified on the product nameplate.
3. **Power switch**
Ensure that the power switch is in the OFF position. If the plug is connected to a receptacle while the power switch is in the ON position, the power tool will start operating immediately, and can cause serious injury.
4. **Extension cord**
When the work area is far away from the power source, use an extension cord of sufficient thickness and rated capacity. The extension cord should be kept as short as practicable.
5. **Mounting the diamond wheel**
For details, refer to the item "Mounting and dismounting the diamond wheel".
6. Confirm that the cutting depth adjusting lever is securely clamped.
7. **Cutting depth adjustment (Fig. 1)**
○ Loosen the cutting depth adjusting wing bolt and move the base to adjust the depth.
○ Tighten the wing bolt securely after adjusting the cutting depth.

CAUTION

- Leaving the wing bolt loosened may result in injury. Securely tighten the wing bolt after adjusting the cutting depth.
- When the cutting depth exceeds 20mm, concrete, and so on must be cut in two steps. Never try to cut in one step; otherwise, the motor is liable to be overloaded and damaged may result. Also, cutting efficiency will be lower in such an instance.

MOUNTING AND DISMOUNTING THE DIAMOND WHEEL

CAUTION

- Be sure to disconnect the attachment plug from the power receptacle to avoid serious trouble.
- Stop pouring water and select a moisture-free location for the operation mentioned above.

1. Mounting the diamond wheel

- (1) Thoroughly remove dust accumulated on the spindle and washers.
- (2) As shown in Fig. 2, the concave portions of washers (A) and (B) must be on the diamond wheel side.
- (3) Thoroughly clamp the bolt.

2. Dismounting the diamond wheel

Use the provided wrenches to remove the bolt. (Fig. 3)

CAUTION

A diamond wheel for mounting on this equipment must have 20mm internal diameter. No other sized diamond wheel should be used.

CUTTING PROCEDURES

1. Set the machine body (base) on the material to be cut; use the side on the base to align the diamond wheel with the cutting line. (Fig. 4)
2. Turn the switch ON with the diamond wheel initially kept off the material to be cut.
The power switch is turned ON when the trigger is pulled by one's finger, and is turned OFF when the trigger is released. The stopper is designed to prevent inadvertent operation of the machine and the trigger will not operate unless the stopper has first been pushed in.

Turn the machine ON with the diamond wheel initially kept off the material to be cut. The power switch is turned ON by first depressing and holding down the stopper, and then pulling the trigger with one's finger. Once the trigger is ON, the stopper may be released and the tool may be operated by continuing to hold the trigger. The power switch is turned OFF when the trigger is released.

CAUTION

- Do NOT use the diamond wheel for cutting along curves or at angles; otherwise, it may be damaged, resulting in extremely shortened service life.
- Before starting to cut, confirm that the diamond wheel has attained full-speed revolution.
- Should the diamond wheel stop or make an abnormal noise while operating, promptly turn OFF the switch.
- Always take care in preventing the power cord from coming near to the revolving diamond wheel.
- When finished with a job, pull out the plug from the power receptacle.

MAINTENANCE AND INSPECTION

CAUTION

Be sure to switch power OFF and disconnect the plug from the receptacle during maintenance and inspection. Using cracked, deformed or damaged wheels can lead to wheel breakage and resulting serious injury.

1. Inspecting the diamond wheel

Since use of a dull diamond wheel will cause motor malfunctioning and degraded efficiency, replace with a new one without delay when abrasion is noted.

2. Inspecting the mounting screws

Regularly inspect all screws and ensure that they are fully tightened. Should any of the screws be loosened, 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. Exercise due care to ensure the winding does not become damaged and/or wet with oil or water.

4. Inspecting the carbon brushes (Fig. 5)

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

5. Replacing carbon brushes

Remove the brush caps and carbon brushes. After replacing the carbon brushes, do not forget to tighten the brush caps properly.

6. Service parts list

CAUTION

Repair, modification and inspection of Hitachi Power Tools must be carried out by an Hitachi Authorized Service Center. This Parts List will be helpful if presented with the tool to the Hitachi authorized Service Center when requesting repair or other maintenance. In the operation and maintenance of power tools, the safety regulations and standards prescribed in each country must be observed.

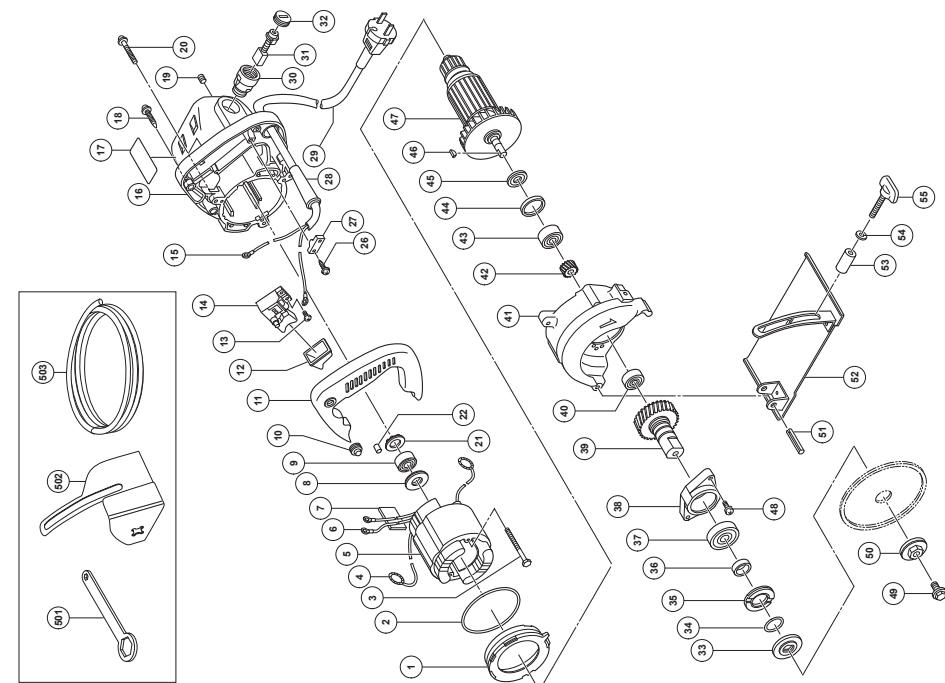
MODIFICATION

Hitachi Power Tools are constantly being improved and modified to incorporate the latest technological advancements. Accordingly, some parts may be changed without prior notice.

NOTE

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

Item No.	Part Name	QTY
1	FAN GUIDE	1
2	O-RING	1
3	HEX. HD. TAPPING SCREW D5 x 05	2
4	BRUSH TERMINAL	2
5	STATOR ASSY	1
6	TERMINAL	2
7	SEAL PACKING	1
8	DUST SEAL	1
9	BALL BEARING 608VV	1
10	RUBBER COVER (B)	1
11	ANGLE COVER ASSY	1
12	ANGLE COVER COVER	1
13	MACHINE SCREW (W/WASHER) M3.5 x 6	4
14	TRIGGER SWITCH	1
15	TERMINAL	2
16	HOUSING ASSY	1
17	NAME PLATE (BLACK)	1
18	TAPPING SCREW (W/FLANGE) D4 x 20	3
19	HEX. SOCKET SET SCREW M5 x 8	2
20	WASHER (W/WASHER) M5 x 25	3
21	THRUST WASHER	1
22	BEARING LOCK	1
26	TAPPING SCREW (W/FLANGE) D4 x 16	2
27	CORD CLIP	1
28	CORD ARMOR	1
29	CORD	1
30	BRUSH HOLDER	2
31	CARBON BRUSH	2
32	BRUSH CAP	2
33	WASHER (B)	1
34	WASHER (C)	1
34	O-RING (TAP-20)	1
35	BEARING CAP	1
36	DISTANCE PIECE	1
37	BALL BEARING 6002VCOM	1
38	BEARING HOLDER	1
39	SPINDLE AND GEAR SET	1
40	BALL BEARING 608VV2	1
41	GEAR COVER	1
42	PINION	1
43	BALL BEARING 629VV2	1
44	RUBBER RING	1
45	WASHER (A)	1
46	WOODRUFF KEY 2.5 x 8	1
47	ARMATURE SCREW (W/SP. WASHER) M5 x 25	2
48	BOLT (LEFT HAND) M7 x 15	1
50	WASHER (A)	1
51	ROLL PIN D8 x 32 (10 PCS.)	1
52	BASE	1
53	SLEEVE	1
54	SPRING WASHER M6 (10 PCS.)	1
55	WING BOLT M6 x 37	1
501	WRENCH	2
502	TUBE ADAPTER	1
503	VINYL HOSE	1



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