

INSTRUCTION MANUAL

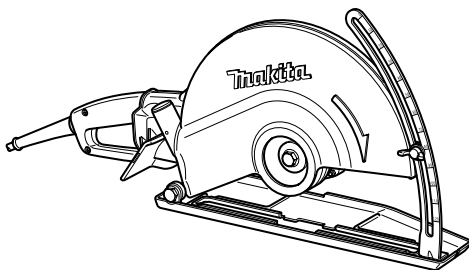


Angle Cutter

4112HS

4112S

4114S



007130

 DOUBLE INSULATION

⚠WARNING:

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

ENGLISH SPECIFICATIONS

Model	4112S	4112HS	4114S
Wheel diameter	305 mm		355 mm
Max cutting capacity	100 mm		125 mm
No load speed (min ⁻¹)	3,500	5,000	3,500
Overall length	648 mm		675 mm
Net weight	11.4 kg		12.8 kg
Safety class	II/III		

- Due to our continuing programme 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

END202-6

Symbols

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



- Read instruction manual.



- DOUBLE INSULATION



- Wear safety glasses.



- 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.

ENE026-1

Intended use

The tool is intended for cutting tracks in concrete walls or cutting in ferrous materials or concrete drainage channels with a diamond wheel but without using water.

ENF002-1

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 Model 4112S

ENG102-3

Noise

The typical A-weighted noise level determined according to EN60745:

Sound pressure level (L_{pA}) : 102 dB(A)

Sound power level (L_{WA}) : 113 dB(A)

Uncertainty (K) : 3 dB(A)

Wear ear protection

ENG229-2

Vibration

The vibration total value (tri-axial vector sum) determined according to EN60745:

Work mode : concrete cutting

Vibration emission (a_h) : 4.0 m/s²

Uncertainty (K) : 1.5 m/s²

For Model 4112HS

ENG102-3

Noise

The typical A-weighted noise level determined according to EN60745:

Sound pressure level (L_{pA}) : 101 dB(A)

Sound power level (L_{WA}) : 112 dB(A)

Uncertainty (K) : 3 dB(A)

Wear ear protection

ENG229-2

Vibration

The vibration total value (tri-axial vector sum) determined according to EN60745:

Work mode : concrete cutting

Vibration emission (a_h) : 2.5 m/s²

Uncertainty (K) : 1.5 m/s²

For Model 4114S

ENG102-3

Noise

The typical A-weighted noise level determined according to EN60745:

Sound pressure level (L_{pA}) : 103 dB(A)

Sound power level (L_{WA}) : 114 dB(A)

Uncertainty (K) : 3 dB(A)

Wear ear protection

ENG229-2

Vibration

The vibration total value (tri-axial vector sum) determined according to EN60745:

Work mode : concrete cutting

Vibration emission (a_h) : 3.0 m/s²

Uncertainty (K) : 1.5 m/s²

ENH101-13

For European countries only

EC Declaration of Conformity

We Makita Corporation as the responsible manufacturer declare that the following Makita machine(s):

Designation of Machine:
Angle Cutter

Model No./ Type: 4112HS,4112S,4114S
are of series production and

Conforms to the following European Directives:

98/37/EC until 28th December 2009 and then with
2006/42/EC from 29th December 2009

And are manufactured in accordance with the following
standards or standardised documents:

EN60745

The technical documentation is kept by our authorised
representative in Europe who is:

Makita International Europe Ltd,
Michigan, Drive, Tongwell,
Milton Keynes, MK15 8JD, England

30th January 2009



000230

Tomoyasu Kato
Director

Makita Corporation
3-11-8, Sumiyoshi-cho,
Anjo, Aichi, JAPAN

GEA005-3

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 residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.
10. **Use of power supply via a RCD with a rated residual current of 30mA or less is always recommended.**

Personal safety

11. **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.
12. **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.

13. **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.
14. **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.
15. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
16. **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.
17. **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

18. **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.
19. **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.
20. **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.
21. **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.
22. **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.
23. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
24. **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

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

GEB042-2

ANGLE CUTTER SAFETY WARNINGS

Safety Warnings Common for Abrasive Cutting-Off Operations:

1. **This power tool is intended to function as a cut-off tool. Read all safety warnings, instructions, illustrations and specifications provided with this power tool.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.
2. **Operations such as grinding, wire brushing, polishing are not recommended to be performed with this power tool.** Operations for which the power tool was not designed may create a hazard and cause personal injury.
3. **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.
4. **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.
5. **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.
6. **The arbour size of wheels, flanges, backing pads or any other accessory must properly fit the spindle of the power tool.** Accessories 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.
7. **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or**

accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute. Damaged accessories will normally break apart during this test time.

8. **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop 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.
9. **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 accessory may fly away and cause injury beyond immediate area of operation.
10. **Hold 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 shock the operator.
11. **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 accessory.
12. **Never lay the power tool down until the accessory has come to a complete stop.** The spinning accessory may grab the surface and pull the power tool out of your control.
13. **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.
14. **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.
15. **Do not operate the power tool near flammable materials.** Sparks could ignite these materials.
16. **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, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory'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 the area where power tool will move if kickback occurs.** 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 or toothed saw blade.** Such blades create frequent kickback and loss of control

Safety Warnings Specific for Abrasive Cutting-Off Operations:

- a) **Use only wheel types that are recommended for your power tool and the specific guard designed for the selected wheel.** Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.
- b) **The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.** The guard helps to protect operator from broken wheel fragments and accidental contact with wheel.

c) **Wheels must be used only for recommended applications. For example: do not grind with the side of cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.

d) **Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.** Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.

e) **Do not use worn down wheels from larger power tools.** Wheel intended for larger power tool is not suitable for the higher speed of a smaller tool and may burst.

Additional Safety Warnings Specific for Abrasive Cutting-Off Operations:

a) **Do not “jam” the cut-off 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.

b) **Do not position your body in line with and behind the rotating wheel.** When the wheel, at the point of operation, is moving away from your body, the possible kickback may propel the spinning wheel and the power tool directly at you.

c) **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 cut-off 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

d) **Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully reenter the cut.** The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.

e) **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.

f) **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.

Additional Safety Warnings:

17. **When using depressed centre grinding wheels, be sure to use only fiberglass-reinforced wheels.**
18. **Be careful not to damage the spindle, the flange (especially the installing surface) or the lock nut. Damage to these parts could result in wheel breakage.**
19. **Make sure the wheel is not contacting the workpiece before the switch is turned on.**
20. **Before using the tool on an actual workpiece, let it run for a while. Watch for vibration or wobbling that could indicate poor installation or a poorly balanced wheel.**
21. **Use the specified surface of the wheel to perform the grinding.**
22. **Watch out for flying sparks. Hold the tool so that sparks fly away from you and other persons or flammable materials.**
23. **Do not leave the tool running. Operate the tool only when hand-held.**
24. **Do not touch the workpiece immediately after operation; it may be extremely hot and could burn your skin.**
25. **Always be sure that the tool is switched off and unplugged or that the battery cartridge is removed before carrying out any work on the tool.**
26. **Observe the instructions of the manufacturer for correct mounting and use of wheels. Handle and store wheels with care.**
27. **Do not use separate reducing bushings or adaptors to adapt large hole abrasive wheels.**
28. **Use only flanges specified for this tool.**
29. **For tools intended to be fitted with threaded hole wheel, ensure that the thread in the wheel is long enough to accept the spindle length.**
30. **Check that the workpiece is properly supported.**
31. **Pay attention that the wheel continues to rotate after the tool is switched off.**
32. **If working place is extremely hot and humid, or badly polluted by conductive dust, use a short-circuit breaker (30 mA) to assure operator safety.**
33. **Do not use the tool on any materials containing asbestos.**
34. **Do not use water or grinding lubricant.**
35. **Ensure that ventilation openings are kept clear when working in dusty conditions. If it should become necessary to clear dust, first disconnect the tool from the mains supply (use non metallic objects) and avoid damaging internal parts.**

36. When use cut-off wheel, always work with the dust collecting wheel guard required by domestic regulation.
37. Cutting discs must not be subjected to any lateral pressure.

SAVE THESE INSTRUCTIONS.

⚠WARNING:

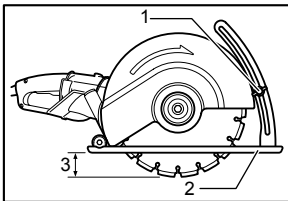
DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to safety rules for the subject product. MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.

FUNCTIONAL DESCRIPTION

⚠CAUTION:

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

Adjusting the depth of cut

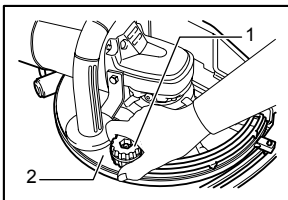


004013

1. Wing bolt
2. Base
3. Cutting depth

Loosen the wing bolt on the depth guide and move the base up or down. At the desired depth of cut, secure the base by tightening the wing bolt.

Securing wheel guard



004014

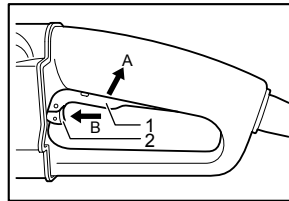
1. Clamping nut
2. Wheel guard

⚠CAUTION:

- The wheel guard must be adjusted on the tool so that the closed side of the guard always points toward the operator.

The wheel guard can be adjusted about 80 degrees, after you loosen the clamping nut. Adjust to the desired angle, then secure the clamping nut.

Switch action



004015

1. Switch trigger
2. Lock lever

⚠CAUTION:

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

For tool with the lock-on switch

To start the tool, simply pull the switch trigger (A direction). Release the switch trigger to stop.

For continuous operation, pull the switch trigger (A direction) and then push in the lock lever (B direction).

To stop the tool from the locked position, pull the switch trigger (A direction) fully, then release it.

For tool with the lock-off switch

To prevent the switch trigger from accidentally pulled, a lock lever is provided.

To start the tool, push in the lock lever (B direction) and then pull the switch trigger (A direction). Release the switch trigger to stop.

For tool with the lock on and lock-off switch

To prevent the switch trigger from accidentally pulled, a lock lever is provided.

To start the tool, push in the lock lever (B direction) and then pull the switch trigger. (A direction) Release the switch trigger to stop.

For continuous operation, push in the lock lever, (B direction) pull the switch trigger (A direction) and then push the lock lever (B direction) further in.

To stop the tool from the locked position, pull the switch trigger (A direction) fully, then release it.

ASSEMBLY

⚠CAUTION:

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

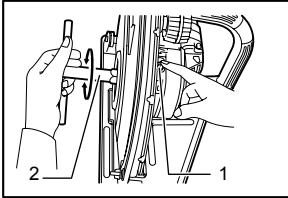
Installing or removing the wheel

To remove the wheel, depress the shaft lock to hold the shaft stationary, then loosen the hex bolt clockwise with

the socket wrench.

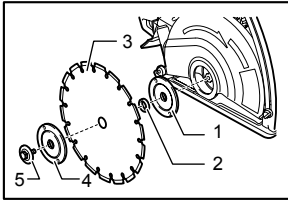
To install a wheel, place flange with its partly elevated side facing the tool, and then place ring before installing a wheel onto the spindle (shaft) and another flange with partly elevated side facing outward.

Be sure to fully tighten the hex bolt counterclockwise after mounting the new wheel, or operation will be dangerous.



004016

1. Shaft lock
2. Socket wrench



004017

1. Flange
2. Ring
3. Wheel
4. Flange
5. Hex bolt

⚠ CAUTION:

- Use only the Makita wrench to install or remove the wheel.

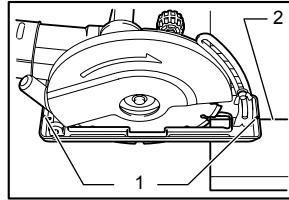
OPERATION

⚠ CAUTION:

Be sure to pull the tool when cutting a workpiece.

- Use this tool for straight line cutting only. Cutting curves can cause stress cracks or fragmentation of the diamond wheel and abrasive cut-off wheel resulting in possible injury to persons in the vicinity.
- After operation, always switch off the tool and wait until the wheel has come to a complete stop before putting the tool down.
- When cutting concrete blocks, tiles or masonry materials, do not make a cut in depth more than 60 mm. When you need to cut a workpiece over 60 mm up to 100 mm, make more than two passes of cuts. The depth of the most efficient cut is about 40 mm.

Hold the tool firmly with both hands. First keep the wheel without making any contact with a workpiece to be cut. Then turn the tool on and wait until the wheel attains full speed.



004019

1. Notch
2. Cutting line

The cut is made by pulling the tool toward you (not by pushing away from you). Align the notch on the base with your cutting line when performing a cut.

Switch off the tool in the position posed when finishing a cut. Raise the tool after the wheel comes to a complete stop.

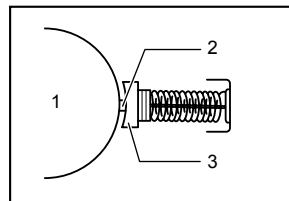
MAINTENANCE

⚠ 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 like. Discoloration, deformation or cracks may result.

If the cutting action of the diamond wheel begins to diminish, use an old discarded coarse grit bench grinder wheel or concrete block to dress the diamond wheel. To do this, tightly secure the bench grinder wheel or concrete block and cut in it.

Replacing carbon brushes



001146

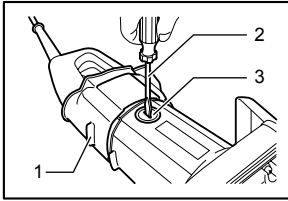
1. Commutator
2. Insulating tip
3. Carbon brush

When the resin insulating tip inside the carbon brush is exposed to contact the commutator, it will automatically shut off the motor. When this occurs, both carbon brushes should be replaced. 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.

Pick up an end of the dust cover slightly with hands so that brush holder cap appears.

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.



1. Dust cover
2. Screwdriver
3. Brush holder cap

004020

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

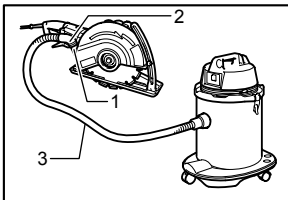
⚠ CAUTION:

- 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.

- Diamond wheels (Dry type)
- Abrasive cut-off wheels
- Socket wrench 17
- Safety goggle
- Ring 20
- Elbow joint

Connecting to vacuum cleaner



1. Dust nozzle
2. Elbow joint
3. Hose

004018

When you wish to perform cleaner operation, connect a vacuum cleaner to your tool. Connect a hose of vacuum cleaner to the dust nozzle via an elbow joint (accessory).

Makita Corporation Anjo, Aichi, Japan