Our associates will ensure the tool works properly before you leave the store. If you experience issues with the tool while completing your project, simply bring it back to the Tool Rental Center to get a replacement. If you purchase Damage Protection at the time of your rental, you are not responsible for repair costs for tools that break due to normal use.

Need it? Chances are, we've got it!
HOUST
Hardware & Rentals
homegrown since 1932
woodstock, new york

ORIGINAL INSTRUCTIONS

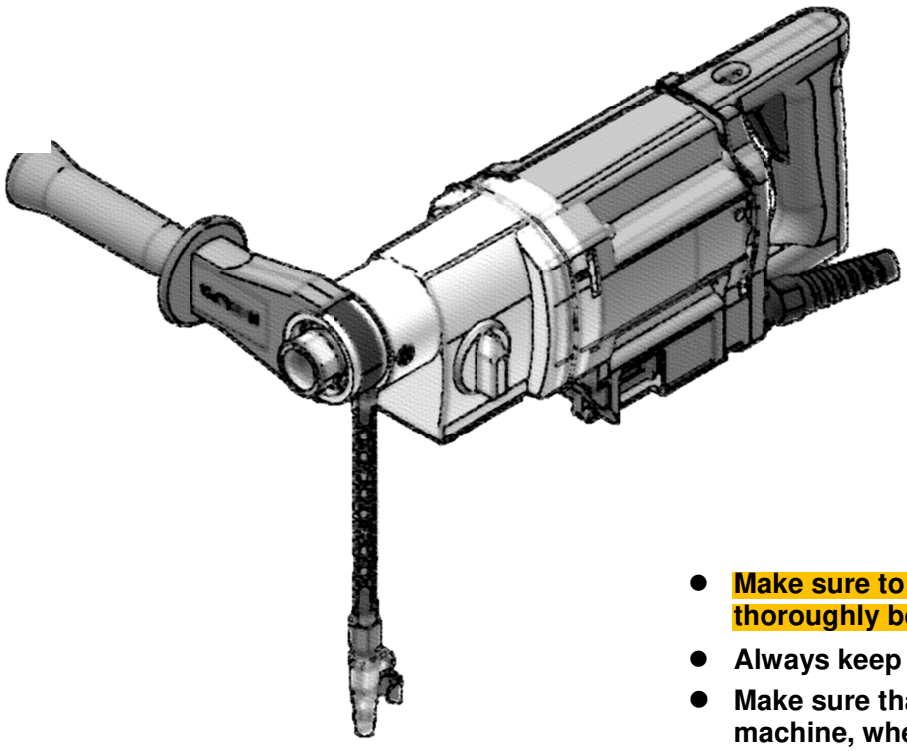
SHIBUYA

DIAMOND CORE DRILLING MACHINE OPERATOR'S INSTRUCTION MANUAL

WITH PARTS LISTS & DRAWINGS

DRILL MOTOR MODEL: HH1531

DRILL STAND MODEL: TS-165 800L with Carriage Block and Clamp Ring Spacer
TS-165 800L with Carriage Block and Bolt-on Spacer
TS-165(AB52) 1000L with Carriage Block and Clamp Ring Spacer
TS-165(AB52) 1000L with Carriage Block and Bolt-on Spacer



- **Make sure to read and understand this manual thoroughly before starting the operation.**
- **Always keep this manual with the machine.**
- **Make sure that this manual is with the machine, when it is given and/or sold to other people.**

SHIBUYA COMPANY, LTD.

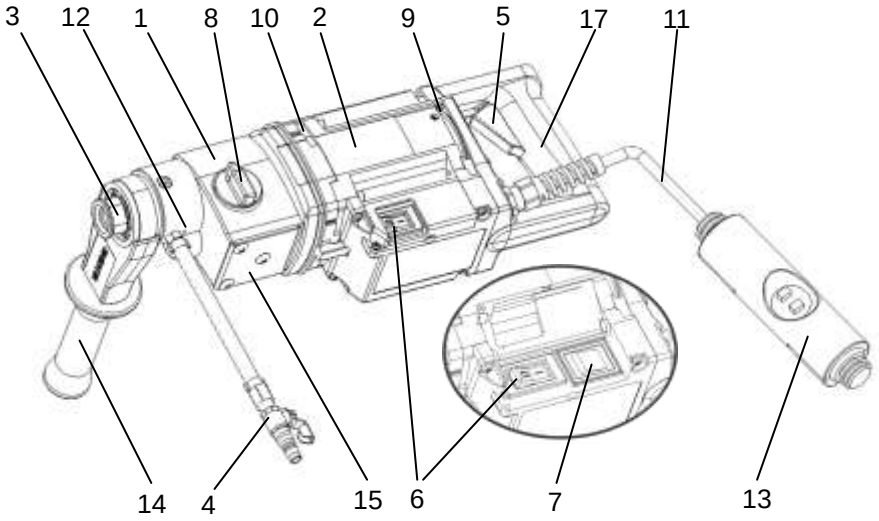
5-86 MOKUZAIKO-KITA, HATSUKAICHI
HIROSHIMA 738-0021
JAPAN
TEL: +81-829-34-4510

HH1531-2021

NAME OF EACH PART

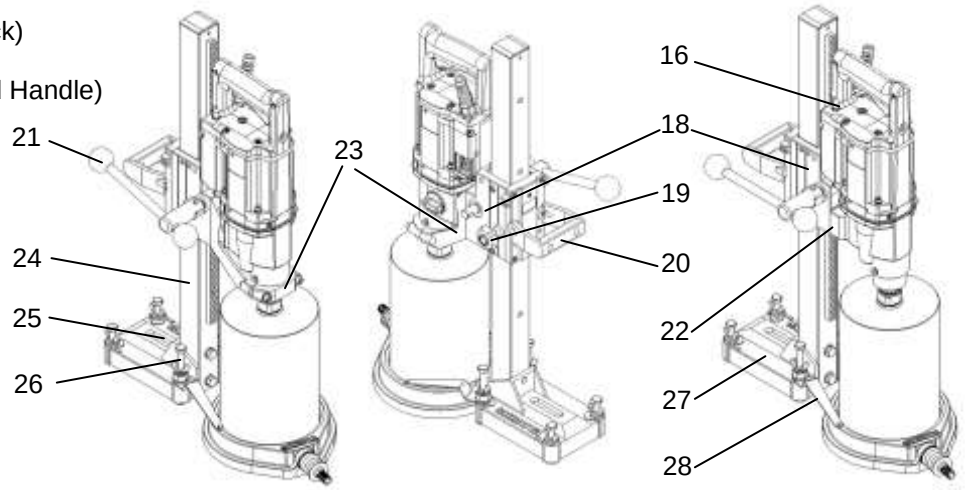
HH1531 Drill Motor

1. Gear Box
2. Motor
3. Spindle
4. GARDENA Connector / Water Cock
5. Trigger Switch (Hand-held)
6. Rocker Switch (Rig-mounted)
7. Mode Switch
8. Gear Change Knob
9. Air Inlet
10. Air Outlet
11. Power Cord
12. Water Leakage Hole
13. PRCD
14. Side Handle
15. Plastic Cover
16. Overload Switch
17. Grip

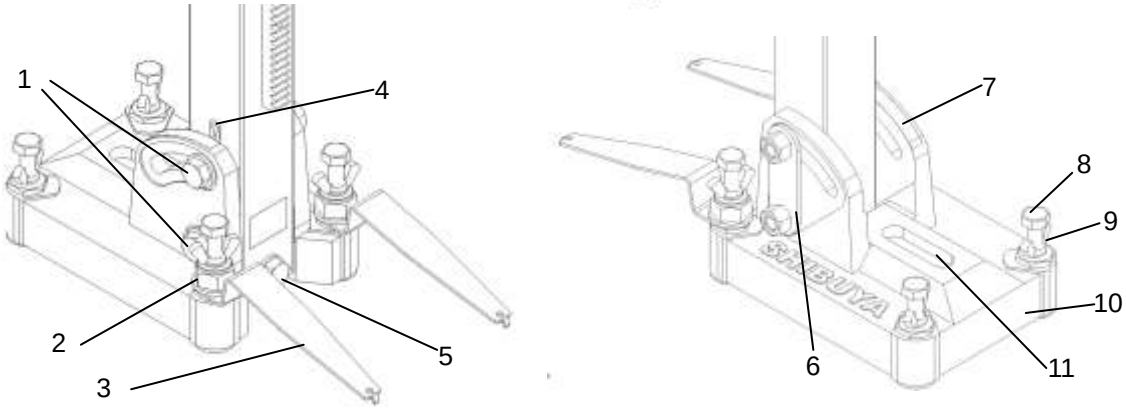


TS-165 Drill Stand

18. Carriage Block
19. Stopper-Knob (Carriage Block)
20. Grip Handle
21. Quick Release Handle (Feed Handle)
22. Bolt-on Spacer
23. Clamp Ring Spacer
24. Column
25. Anchor Slot
26. Leveling Bolt
27. Base
28. Beam



TS-165(AB52) Drill Stand



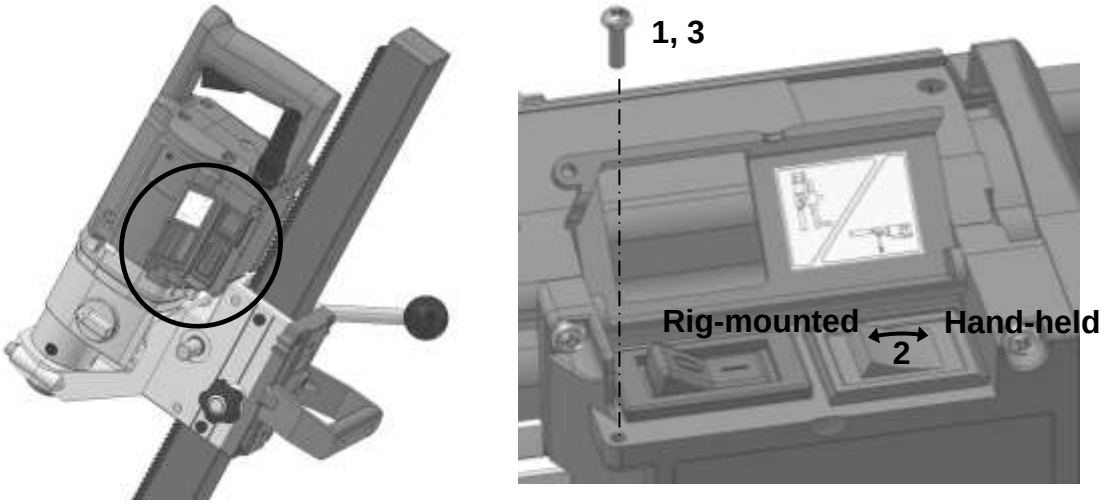
1. Hex Bolt M12x90
2. U-Nut
3. Beam
4. Indication label
5. Hex Bolt M12x70
6. Plate
7. Angle Scale
8. Leveling Bolt
9. Flange Nut
10. Base
11. Anchor Slot

Refer to the schematic drawings and parts lists attached at the end of this manual for names of more specific parts.

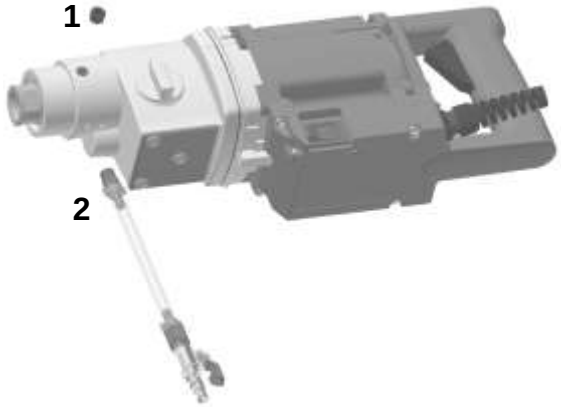
ILLUSTRATIONS OF OPERATION

(The numbers in the figure correspond to the same heading number in the writing sections.)

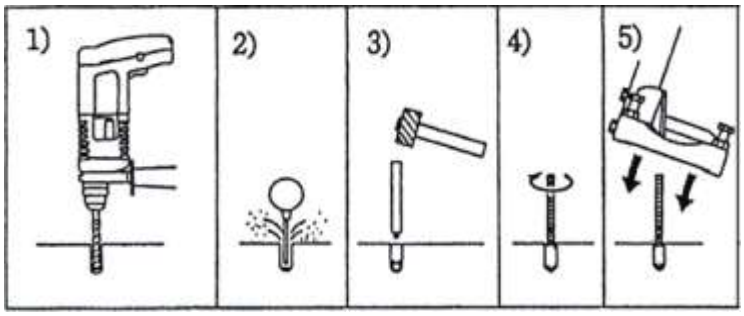
7.1



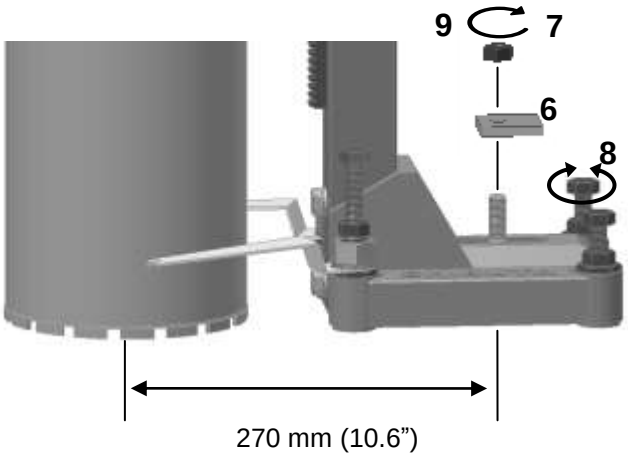
7.2



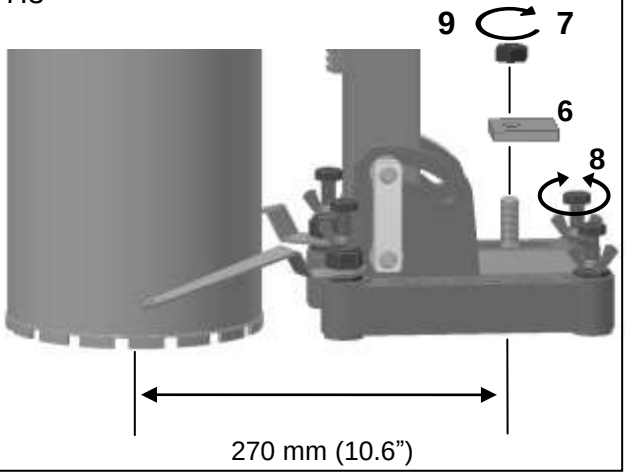
7.3



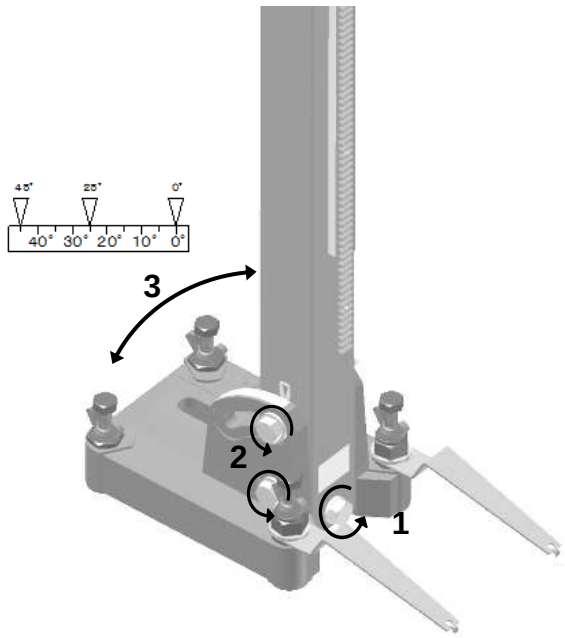
7.3



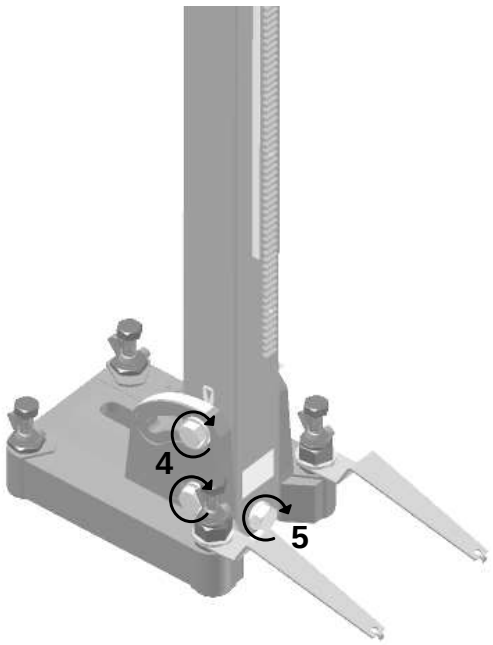
7.3



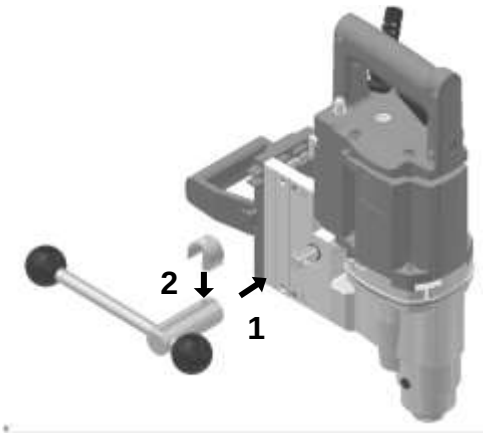
7.4



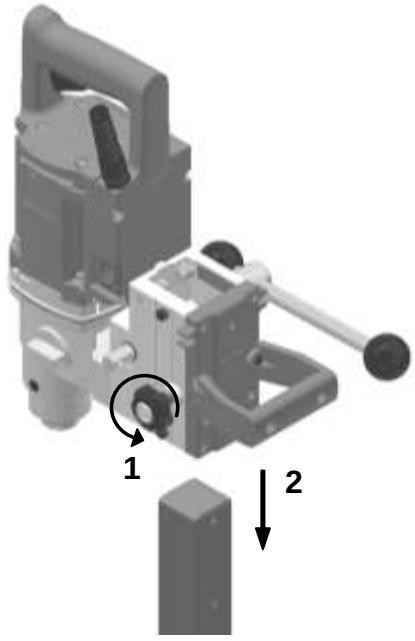
7.4



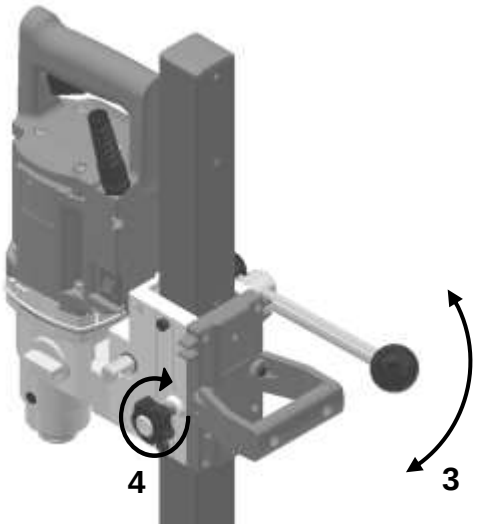
7.5.1



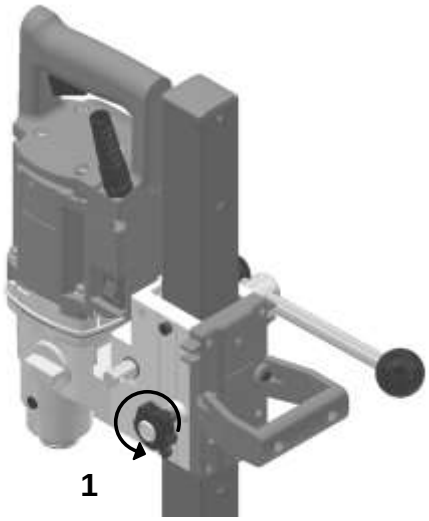
7.5.2



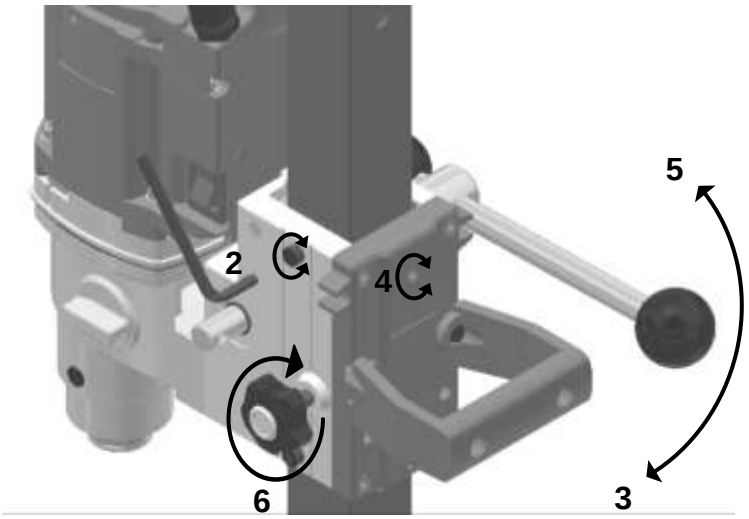
7.5.2



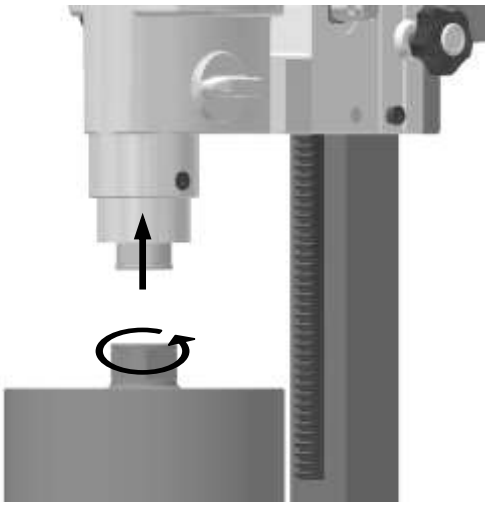
7.5.3



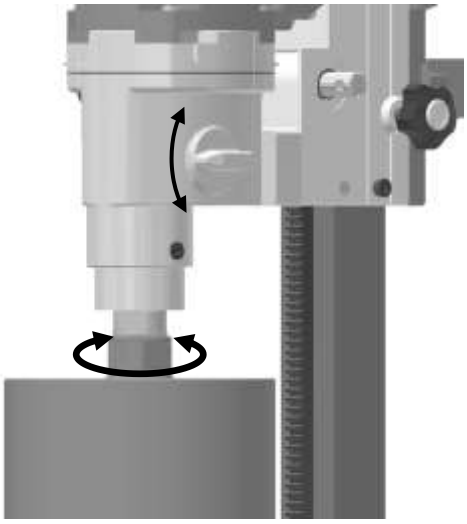
7.5.3



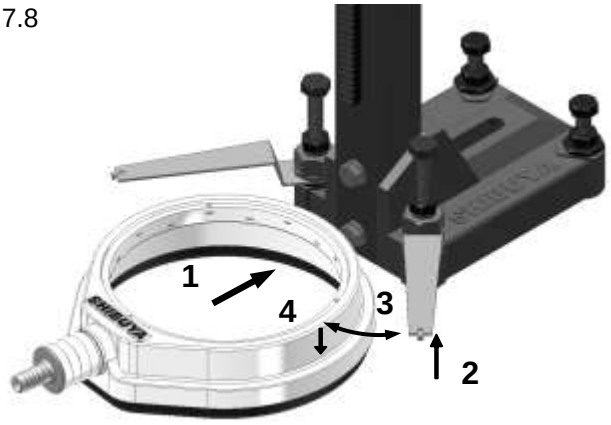
7.6



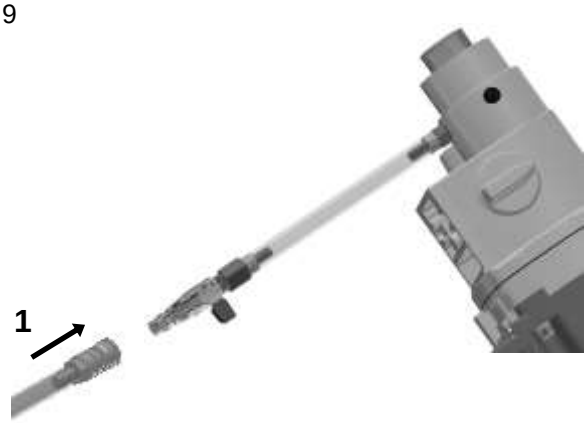
7.7



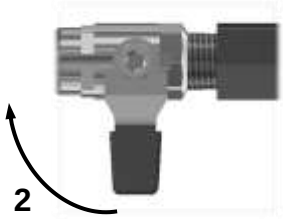
7.8



7.9

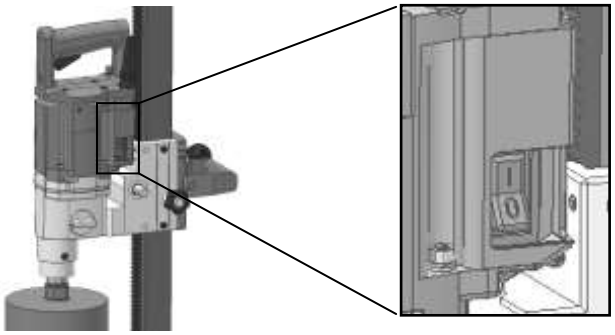


8.2.1.1 / 8.2.2.1

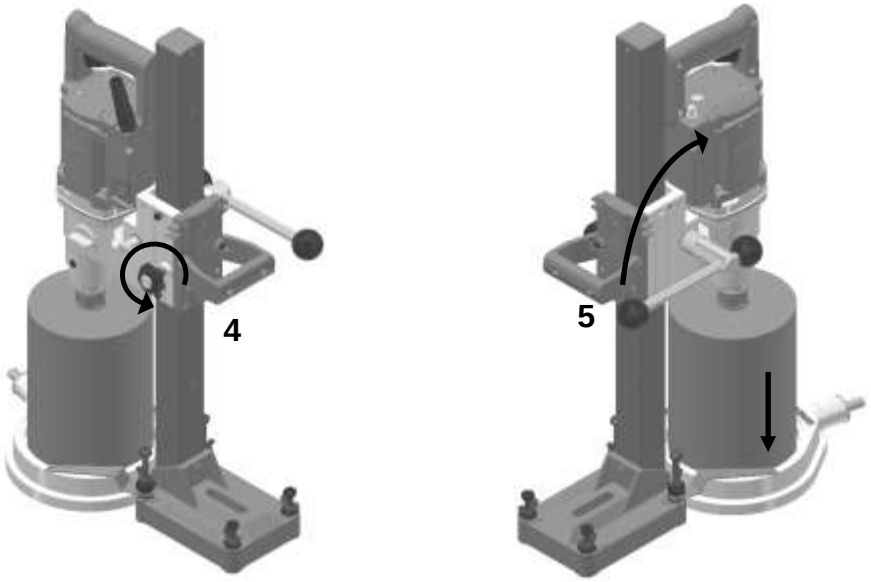


8.2.1.2

8.2.2.1



8.2.2.1



STANDARD ACCESSORIES

Check that all of the following items are supplied with the package.

HH1531

Item	Size	Qty.
Single-End Spanner	32 mm	1

TS-165

Item	Size	Qty.
Clamp Ring Spacer Set / Bolt-on Spacer Set		1
Water Collection Ring	WCR-180	1

Item in the tool bag	Size	Qty.
Double-End Spanner	13x17 mm	1
Allen Key	4 mm	1
Allen Key	5 mm	1
Allen Key	6 mm	1
Square Washer	W3/8	1
Core Removal Lasso		1

TS-165 (AB52)

Item	Size	Qty.
Clamp Ring Spacer Set / Bolt-on Spacer Set		1
Water Collection Ring	WCR-180	1

Item in the tool bag	Size	Qty.
Double-End Spanner	17x19 mm	1
Allen Key	4 mm	1
Allen Key	5 mm	1
Allen Key	6 mm	1
Square Washer	W3/8	1
Core Removal Lasso		1

OPTIONAL ACCESSORIES

HH1531

Item	Size	Qty.
Single-End Spanner	36 mm	1
Adaptor	G1/2 - UNC 1 1/4”-7 / A-Rod	1
Adaptor	G1/2 - 5/8-11	1

CONTENTS

1. GENERAL INFORMATION

1.1 Safety notes and their meanings

In this manual, warning signs are classified into four levels based on the level of potential risks.

⚠ **DANGER**	This symbol indicates the imminent risks that lead to death or serious injury to the operators and others, unless the safety instructions are observed.
⚠ **WARNING**	This symbol indicates the potential risks that may lead to death or serious injury to the operators and others, unless the safety instructions are observed.
⚠ **CAUTION**	This symbol indicates the potential risks that lead to injury to the operators and others, unless the safety instructions are observed.
NOTE	This symbol is used for the information that is necessary for you to know.

1.2 Pictograms

Make sure to read and understand this manual thoroughly before starting the operation.

The machine can be a dangerous tool if it is not used correctly. Incorrect and careless use can lead to death or serious injury to the operators and/or others.

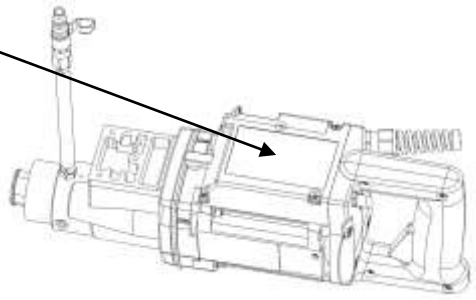
Do not dispose of this machine with domestic waste. Follow your national law.

When you dispose of concrete slurry, ask your local authorities for applicable regulations.

1.3 Model name plate label

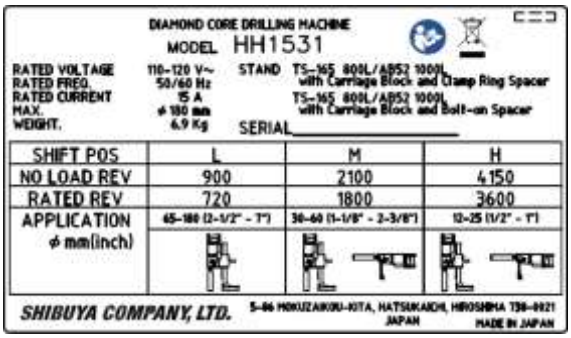
This machine has a label as shown in the figures below. When the label is illegible or lost, contact a Shibuya authorized dealer to get a new one.
The serial number on the model name plate indicates the production year and month of the drill motor as shown in the sample below.

Model Name Plate Label



SERIAL (sample): 18 Z 0001

- 0001 — Serial No.
- Z — Month (Jan.-Sep.= 1-9, Oct.=X, Nov.=Y, Dec.=Z)
- 18 — Year (2018)



DIAMOND CORE DRILLING MACHINE
MODEL HH1531

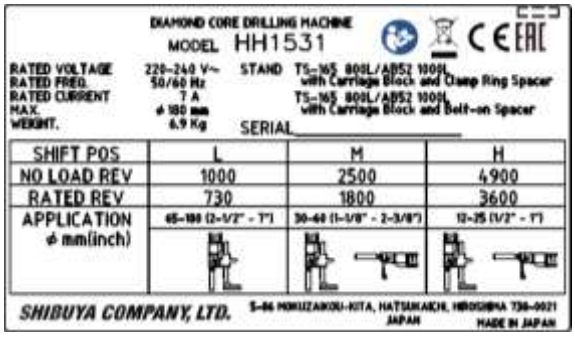
RATED VOLTAGE	110–120 V~
RATED FREQ.	50/60 Hz
RATED CURRENT	15 A
MAX.	ϕ 180 mm
WEIGHT.	6.9 Kg

STAND TS-165 800L/AB52 100JL with Carriage Block and Clamp Ring Spacer
TS-165 800L/AB52 100JL with Carriage Block and Bolt-on Spacer
SERIAL_____

SHIFT POS	L	M	H
NO LOAD REV	900	2100	4150
RATED REV	720	1800	3600
APPLICATION ϕ mm(inch)	65–180 (2-1/2" – 7")	30–60 (1-1/8" – 2-3/8")	12–25 (1/2" – 1")

SHIBUYA COMPANY, LTD. 5-86 MOKUZAIKOU-KITA, HATSUKAICHI, HIROSHIMA 738-0021 JAPAN MADE IN JAPAN

110-120 V model



DIAMOND CORE DRILLING MACHINE
MODEL HH1531

RATED VOLTAGE	220–240 V~
RATED FREQ.	50/60 Hz
RATED CURRENT	7 A
MAX.	ϕ 180 mm
WEIGHT.	6.9 Kg

STAND TS-165 800L/AB52 100JL with Carriage Block and Clamp Ring Spacer
TS-165 800L/AB52 100JL with Carriage Block and Bolt-on Spacer
SERIAL_____

SHIFT POS	L	M	H
NO LOAD REV	1000	2500	4900
RATED REV	730	1800	3600
APPLICATION ϕ mm(inch)	65–180 (2-1/2" – 7")	30–60 (1-1/8" – 2-3/8")	12–25 (1/2" – 1")

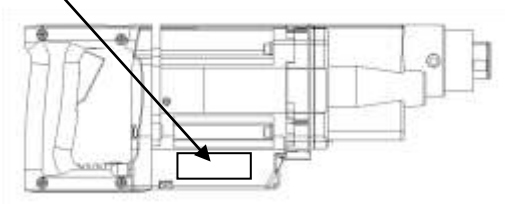
SHIBUYA COMPANY, LTD. 5-86 MOKUZAIKOU-KITA, HATSUKAICHI, HIROSHIMA 738-0021 JAPAN MADE IN JAPAN

220-240 V model

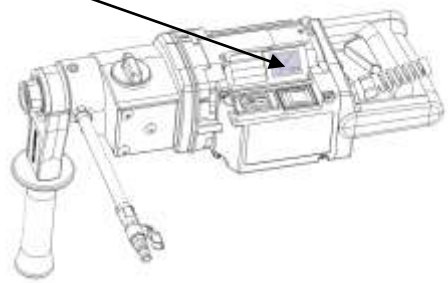
1.4 Other label

This machine has labels as shown in the figures below. When the label is illegible or lost, contact a Shibuya authorized dealer to get a new one.

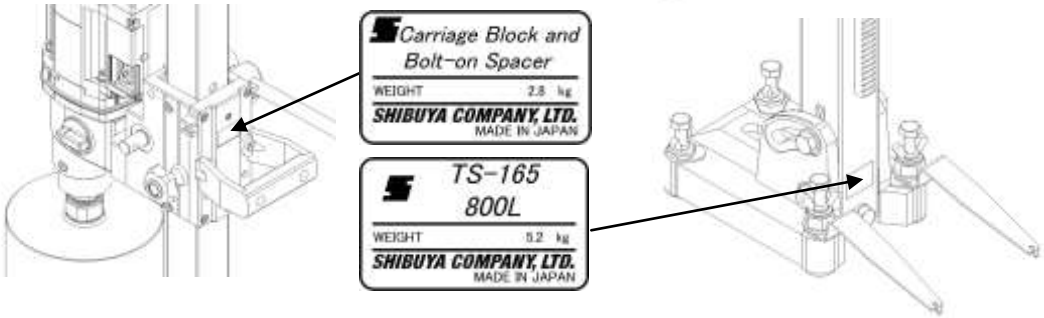
Dealer Label (CE and US version only)



Indication Label



Weight Label



2. DESCRIPTION

This machine is designed for wet drilling in walls and floors made of concrete, natural stone and other mineral building materials using diamond core bits (diamond tools). The drill motor can be mounted on a Shibuya drill stand: TS-165 800L/(AB52) 1000L with Carriage Block and Clamp Ring Spacer or TS-165 800L/(AB52) 1000L with Carriage Block and Bolt-on Spacer.

2.1 Applications of the machine

- Drilling reinforced concrete for piping works
- Extracting concrete cores for strength testing
- Overall drilling in reinforced concrete, except drilling upwards

3. IMPORTANT NOTICE

⚠ DANGER

- **Improper use of the diamond core drilling machine may lead to serious or fatal injuries. Read, understand and follow this manual carefully before the operation.**
- **This machine is designed for core drilling operations. Never use it for any other purposes.**

⚠ WARNING

- **This machine is intended for industrial applications by experienced operators.**
- **Always use common sense and plan your work to avoid injuries. It is not possible to cover all risks which may occur during the operations in this manual. Therefore, enough care must be taken to ensure the safe operation of this machine.**

NOTE

- Shibuya Company, Ltd. reserves the right to change specifications of products without any prior notices.
-

4. SAFETY

4.1 Safety precautions

The safety precautions given in the following section contain all general safety precautions for power tools which, in accordance with the applicable standards, require to be listed in the operating instructions.
Accordingly, some of the rules listed may not be relevant to this power tool.

4.1.1 General power tool safety warnings

⚠ **WARNING**
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.

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.

1) Work area safety

a) **Keep work area clean and well lit.** Cluttered or 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 or 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.
f) **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.

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 personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
c) **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.
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 and clothing 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 dust collection can reduce dust-related hazards.
h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.** A careless action can cause severe injury within a fraction of a second.

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 and/or remove the battery pack, if detachable, 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.
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 and accessories. 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.
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, 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.
h) **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

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.

4.1.2 Diamond drill safety warnings

a) **When performing drilling that requires the use of water, route the water away from the operator's work area or use a liquid collection device.** Such precautionary measures keep the operator's work area dry and reduce the risk of electrical shock.
b) **Operate power tool by insulated grasping surfaces, 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.
c) **Wear hearing protection when diamond drilling.** Exposure to noise can cause hearing loss.
d) **When the bit is jammed, stop applying downward pressure and turn off the tool.** Investigate and take corrective actions to eliminate the cause of the bit jamming.
e) **When restarting a diamond drill in the workpiece check that the bit rotates freely before starting.** If the bit is jammed, it may not start, may overload the tool, or may cause the diamond drill to release from the workpiece.
f) **When securing the drill stand with anchors and fasteners to the workpiece, ensure that the anchoring used is capable of holding and restraining the machine during use.** If the workpiece is weak or porous, the anchor may pull out causing the drill stand to release from the workpiece.
g) **When drilling through walls or ceilings, ensure to protect persons and the work area on the other side.** The bit may extend through the hole or the core may fall out on the other side.

h) **Do not use this drill tool for overhead drilling with water supply.** Water entering the power tool will increase the risk of electric shock.

4.1.3 Additional safety precautions

Personal safety

- Tampering with or modification of the machine is **not** permitted.
- The machine is **not intended for use by inexperienced persons** who have received no special training.
- Keep the machine out of reach of children.
- **Avoid touching rotating parts.** Switch the machine on only after it is in the position at the workpiece. Touching rotating parts, especially rotating accessory tools, may lead to injury.
- Avoid skin contact with drilling slurry.
- Dust from materials, such as paint containing lead, some kinds of wood, concrete / masonry / stone containing silica, and minerals as well as metal, may be injurious to health. Contact with or inhalation of the dust may cause allergic reactions and/or respiratory or other diseases to the operator or bystanders. Certain kinds of dust are classified as carcinogenic such as oak and beech dust, especially in conjunction with additives for wood conditioning (chromate, wood preservative). Material containing asbestos must only be handled by specialists. Use a dust removal system that is as effective as possible. Accordingly, use a suitable vacuum cleaner of the type recommended by **specialists** for wood dust and/or mineral dust and which is designed for use with this power tool. Ensure that the workplace is well ventilated. The use of a dust mask suitable for the particular type of dust is recommended. Observe national regulations applicable to the materials on which you intend to use the machine.
- The diamond core drilling machine and the diamond core bit are heavy pieces of equipment. There is a risk of crushing parts of the body. **The user and any other persons in the vicinity must wear suitable eye protection, a hard hat, ear protection, protective gloves and safety footwear while the machine is in use.**
- **Make sure that the side handle is fitted correctly and tightened securely. Always hold the tool firmly with both hands on the grips provided.**

Careful handling and use of electric tools

- Make sure that the drill motor is correctly fastened in the drill stand.
- Ensure that the accessory tools used have a spindle thread that is compatible with the drilling machine and that they are secured in the spindle correctly.

Electrical safety

- **Avoid using extension cords with multiple power outlets** and the simultaneous use of several machines connected to one extension cord.
- Never plug into the socket that is not equipped with an earth (ground) conductor.
- Before beginning work, **check the working area (e.g. using a metal detector) to ensure that no concealed electric cables or gas and water pipes** are present. External metal parts of the machine may become live, for example, when an electric power line is damaged accidentally. This presents a serious risk of electric shock.
- Make sure that the supply cord is not pinched and damaged as the carriage block advances.
- **Never operate the machine without the PRCD.** Never operate machines without an isolating transformer if PRCD is not equipped. Test the PRCD each time before use.
- **Check the machine's supply cord at regular intervals** and have it replaced by a qualified specialist if found to be damaged. If the machine's supply cord is damaged it must be replaced by Shibuya authorized dealer. Check extension cords at regular intervals and replace them if found to be damaged. Do not touch the supply cord or extension cord if it is damaged while working. Disconnect the supply cord plug from the power outlet. Damaged supply cords or extension cords present a risk of electric shock.

Workplace

- **Approval must be obtained from the site engineer or architect prior to beginning drilling work.** Drilling work on buildings and other structures may influence the static equilibrium of the structure, especially when steel reinforcing bars or load-bearing components are cut through.
- If the drill stand has not been fastened correctly, always move the drill motor mounted on the drill

stand all the way down in order to prevent the stand from falling over.

- Keep the supply cord, extension cord, water hose and vacuum hose away from rotating parts of the machine.

4.2 Safety devices

Circuit protector (Rocker Switch) / Overload Switch

⚠ WARNING

Do not modify the circuit protector and the overload switch.

This machine is equipped with a circuit protector and an overload switch for safer operation, avoiding overload of the drill motor which may cause fire or smoke.

Clutch system

⚠ CAUTION

Do not tighten the clutch by yourself.

This machine is equipped with clutch system to reduce the risks when the core bit is jammed. This system also plays a role in protecting the power train.

5. TECHNICAL DATA

5.1 Diamond core drilling machine

When powered by a generator or transformer, the generator or transformer's power output must be at least 2.4 kVA. The operating voltage of the transformer or generator must always be the voltage stated on the model name plate label.
The specification may vary for country-specific versions. Please refer to the model name plate label for details of its voltage, frequency, current and input power ratings.
Information for users as per EN 61000-3-11: Switching on causes a brief drop in voltage. Other appliances may be negatively affected on mains supplies where conditions are unfavorable. No malfunctions are to be expected in mains supplies with an impedance of less than 0.308 ohms (220-240 V).

Motor Model		**HH1531**	
Rated Voltage	(V)	110-120	220-240
Rated Frequency	(Hz)	50/60	
Rated Input	(W)	1600	1600
Rated Current	(A)	15	7
Spindle Rev. at No Load	(min^{-1})	900/2100/4150	1000/2500/4900
Spindle Rev. at Rated Load	(min^{-1})	720/1800/3600	730/1800/3600
Spindle Thread		G 1/2" (BSPP 1/2")	
Weight (excl. Plug and Cord)	(kg)	6.9 (15 lbs.)	

Drill Stand Model		**TS-165**	**TS-165(AB52)**
		800L	**1000L**
Overall Height	(mm)	803 (31.6")	1011 (40")
Base Size	(mm)	146 x 205 (5.7" x 8.1")	146 x 205 (5.7" x 8.1")
Total Stroke	(mm)	545 (21.5")	715 (28.1")
Max. Column Tilt Angle	(°)	-	45
Weight (excl. Carriage Block and Spacer)	(kg)	5.2 (12 lbs.)	7.5 (17 lbs.)
Weight (incl. Carriage Block and Clamp Ring Spacer)	(kg)	8.5 (18.7 lbs.)	10.8 (23.8 lbs.)
Weight (incl. Carriage Block and Bolt-on Spacer)	(kg)	8 (17.6 lbs.)	10.3 (22.7 lbs.)

Speed Range		**L**	**M**	**H**
Spindle rev. at No Load	**110-120 V**	**900 min-1**	**2100 min-1**	**4150 min-1**
	220-240 V	**1000 min-1**	**2500 min-1**	**4900 min-1**
Core Bit Diameter (Hand-held)	(mm)	Not Permissible	30 to 60 (1.2" to 2.3")	12 to 25 (0.47" to 1")
Core Bit Diameter (Rig-mounted)	(mm)	65 to 180 (2.6" to 7")	30 to 60 (1.2" to 2.3")	12 to 25 (0.47" to 1")

⚠ DANGER

- **Never use L speed range at hand-held operation. The drill motor generates highest torque at Low gear range, especially at the moment when core bit gets stuck. Failure to obey this instruction may result in serious injuries.**

NOTE
Never use the machine at the place where the ambient temperature is below 0 degrees C (32 degrees F) or above 40 degrees C (104 degrees F).

5.2 Noise information and vibration values determined in accordance with EN 62841

The sound pressure and vibration values given in these instructions have been measured in accordance with a standardized test and may be used to compare one power tool with another. They may be used for a preliminary assessment of exposure. The data given represents the main applications of the power tool. However, if the power tool is used for different applications, with different accessory tools, or is poorly maintained, the data may vary. This may significantly increase exposure over the total working period. An accurate estimation of exposure should also take into account the times when the power tool is switched off, or when it is running but not actually being used for a job. This may significantly reduce exposure over the total working period. Identify additional safety measures to protect the operator from the effects of noise and/or vibration, for example: maintain the tool and the accessories and organization of work patterns.

Noise emission and total vibration values determined in accordance with EN 62841

	Noise Emission		Total Vibration	
Operation Style	Hand-held	Rig-mounted (Clamp Ring Spacer)	Hand-held	Rig-mounted (Clamp Ring Spacer)
Speed Range	H	L	M	L
Motor Load	No Load	Rated	Rated	Rated
Core Bit Diameter	N/A	140 mm	52 mm	140 mm
Concrete Formulation	N/A	The water/cement mass ratio: 0.56 Compressive strength: 44 N/mm^2		
Voltage	240 V (for 220-240V model)			
Sound (power) level (L_{WA})	100 dB(A)	101.1 dB(A)		
Uncertainty for the sound power level (K_{WA})	5 dB(A)	3 dB(A)		
Sound pressure level (L_{pA})	89.0 dB(A)	86.1 dB(A)		
Uncertainty for the sound pressure level (K_{pA})	5 dB(A)	3 dB(A)		
Total Vibration ($a_{h,\ DD}$)			3.2 m/s^2	1.1 m/s^2
Uncertainty (K)			1.5 m/s^2	1.5 m/s^2

6. BEFORE USE

6.1 Rig-mounted operation

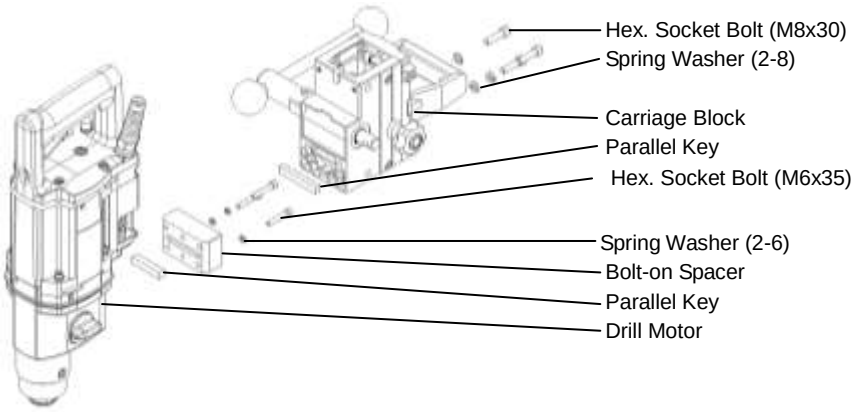
6.1.1 Installing the bolt-on spacer to the carriage block and HH1531

⚠ WARNING

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Comply with the tightening torque stated on this manual. Inadequate torque may lead to death or serious injury to the operators and others.**

1. Use 3 pieces of hex. socket bolt (M6x35) and 3 pieces of the spring washer (2-6) to connect the drill motor to the bolt-on spacer after taking out the plastic cover on the drill motor. The tightening torque is 10 Nm (7.4 lbf･ft) each.
2. Use 3 pieces of hex. socket bolt (M8x30) and 3 pieces of the spring washer (2-8) to connect the bolt-on spacer to the carriage block. The tightening torque is 35 Nm (25 lbf･ft) each..

Refer to the figure below.



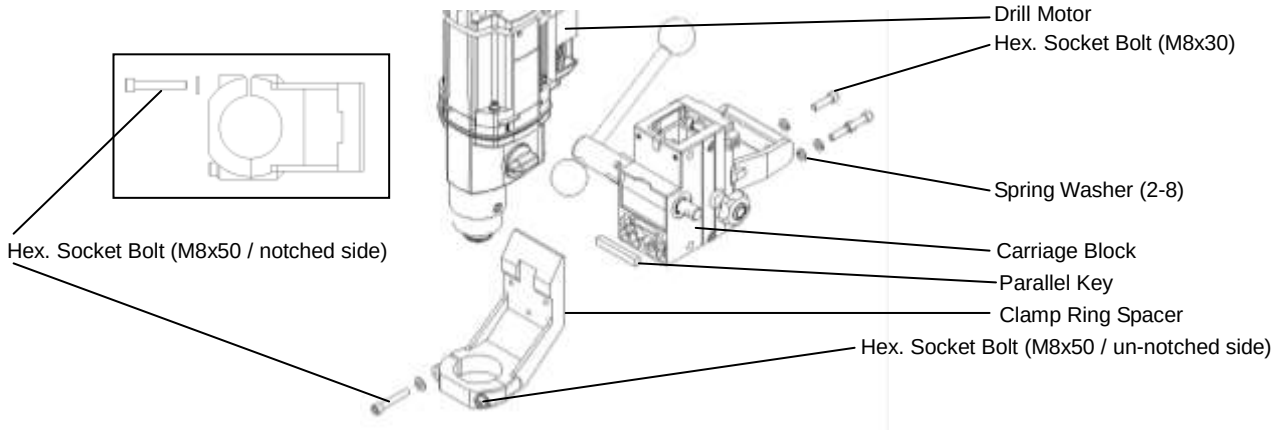
6.1.2 Installing the clamp ring spacer to the carriage block and HH1531

⚠ WARNING

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Comply with the tightening torque stated on this manual. Inadequate torque may lead to death or serious injury to the operators and others.**

1. Use 3 pieces of hex. socket bolt (M8x30) and 3 pieces of the spring washer (2-8) to connect the clamp ring spacer to the carriage block. The tightening torque is 35 Nm (25 lbf･ft) each. Mount the carriage block on the drill stand and tighten the stopper-knob.
2. Tighten the hex. socket bolt (M8x50 / un-notched side). The tightening torque is 35 Nm (25 lbf･ft). Insert the drill motor into the clamp ring. Tighten the hex. socket bolt (M8x50 / notched side).

Refer to the figure below.



6.2 PRCD, GFCI and RCD

⚠ WARNING

Always use a Portable Residual Current Device (PRCD) also known as a Ground Fault Circuit Interrupter (GFCI).

Test and reset the PRCD before each use.

1. Plug into an earthed/grounded power outlet.
2. Press the "I" or "RESET" button on the PRCD.
   The indicator lights up.
3. Press the "0" or "TEST" button on the PRCD.
   The indicator goes out.

6.3 Extension cords

⚠ CAUTION

- **For 220-240 V model, use only extension cords of a type approved for the application and with conductor cross section 1.5 mm^2 or larger, and the maximum allowable length of the cord is 45 meters (148 ft).**
- **For 110-120 V model, use only extension cords of a type approved for the application and with conductor cross section 2 mm^2 (14AWG) or larger, and the maximum allowable length of the cord is 35 meters (115 ft).**
-
- **Never turn on the drill motor while the extension cords are circularly bundled. The circularly bundled extension cords may act as a coil which generates a magnetic field and heat.**

7. SETTING UP

7.1 Mode changing

⚠ DANGER

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Never use L speed range at hand-held operation.**
- **Never operate the drill motor in Rig-mounted Mode at hand-held operation.**
- **Before staring the operation, ensure that the switch cover is closed and fixed with the screw.**

Change the mode from Hand-held Mode to Rig-mounted Mode when HH1531 is used with a specified drill stand. There is no need to keep pressing down the trigger switch during Rig-mounted operation.

1) Unscrew the screw with a Phillips screwdriver to open the switch cover.
2) Turn the mode switch to left to choose Rig-mounted Mode.
3) Close the switch cover, and screw with the screwdriver.
4) Use the rocker switch to start and stop HH1531 at Rig-mounted operation.

7.2 Changing the water hose position

⚠ DANGER

Make sure the drill motor is switched off and disconnected from the power supply.

NOTE

If you find water leakage from the hose joint or the hex. socket plug, stop the leakage with a seal tape.

Change the water hose position when necessary.

1) Unscrew the hex. socket plug with 6mm Allen key.
2) Remove the hose with spanner.
3) Attach the hose and screw the hex. socket plug.

7.3 Fastening the drill stand with an anchor

⚠ DANGER

Fasten the drill stand firmly on the material to be drilled, otherwise the machine may become unstable during the operation and it may lead to death or serious injury to the operators and others.

⚠ WARNING

- **Read and follow the instruction manual of the anchor bolts used with the machine.**
- **Use anchor bolts which tensile strength is greater or equal to 24.5 kN (5.5 klbf).**
- **When fastening the drill stand to a wall, countermeasures must be taken to avoid falling hazards.**
- **Never fasten the drill stand to a ceiling.**

1) Drill a hole for Drop-In anchor, using a hammer drill.
   The ideal distance between the center of the hole to be drilled and the anchor hole;

   TS-165 fixed base drill stand: 270 mm (10.6”)

   TS-165(AB52) swivel base drill stand: 270 mm (10.6”)

2) Clean out the anchor hole.

3) Insert the anchor into the hole, and hammer a setting tool to fasten the anchor firmly.
4) Screw a threaded bolt into the anchor.
5) Set the drill stand, passing the bolt through the anchor slot.
6) Insert the W3/8 square washer (standard accessory) to the bolt.
7) Insert a hex. nut to the bolt. Then, tighten the nut temporarily.
8) Adjust the leveling bolts to stabilize the base. Tighten the nut on the leveling bolts to fix the leveling bolts firmly.
9) Tighten the hex. nut firmly using a spanner.

7.4 Adjusting the angle of the drill stand with AB52

⚠ CAUTION

- **Before tilting the column, ensure that the drill stand is firmly fastened by an anchor bolt to the material to be drilled, and the drill motor with the carriage block is removed from the column.**
- **Take care not to pinch fingers between the column and the base.**
- **Wear protective gloves.**

NOTE

The angle scale indicates approximate angle degrees. If higher precision is required, alternative measuring method should be used**.**

Follow the procedure below.

1) Loosen and remove hex. bolt (M12x70) which fixes the column to the base on the front side of the base. Also, remove the spring washers (2-12). Keep them for the future use.
2) Loosen 2 pieces of hex. bolts (M12x90) on the side of the column so that the column tilts.
3) Tilt the column to a desired angle.
4) Tighten 2 pieces of the hex. bolts (M12x90) on the side of the column. The tightening torque is 60 Nm (44 lbf・ft) each.
5) When using it as a fixed drill stand, ensure to re-attach hex. bolt (M12x70) and spring washers (2-12) and tighten the bolt. The tightening torque is 60 Nm (44 lbf・ft).

7.5 Mounting the drill motor with the carriage block and the spacer on the drill stand

⚠ WARNING

Make sure the drill motor is switched off and disconnected from the power supply.

7.5.1 Attaching the quick release handle to the carriage block

⚠ CAUTION

Take care not to pinch fingers between the retainer and the quick release handle (feed handle).

Follow the procedure below.

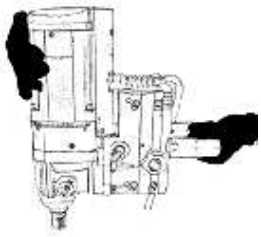
1) Attach the quick release handle (feed handle) to either left or right side of the carriage block.
2) Insert the retainer (pin) to fix the quick release handle to the carriage block.
   Make sure that the handle is firmly-fastened.

7.5.2 Attaching the drill motor with the carriage block and the spacer to the drill stand

⚠ **CAUTION**

- **Take care not to pinch fingers between the carriage block and the column when mounting the motor.**
- **Hold the motor tightly with both hands as below when mounting the motor on the drill stand.**
- **The quick release handle (feed handle) starts turning once the pinion gear of the carriage block and the rack gear of the column are engaged. Take care not to hit the handle against your body when the carriage block is sliding.**
- **Tighten the stopper-knob (carriage block) to prevent unintentional sliding down of the carriage block.**

Follow the procedure below.



1) Loosen the stopper-knob.
2) Mount the drill motor with the carriage block on the drill stand.
3) Turn the quick release handle to feed the drill motor to a suitable position.
4) Tighten the stopper-knob.

7.5.3 Adjusting the carriage block

NOTE

Adjustment of the carriage block plays an important role in core drilling operations. Unacceptable play of the carriage block will cause a radial runout of the core bit which may lead to unsymmetrical contact of the shank and/or jamming of the core bit while the operation. If the carriage block is too tight, the resistance will increase and the carriage block does not slide smoothly along the column. Adjust the carriage block a little tight and within the operator can reasonably feed the motor.

The carriage block must be adjusted if there is play between the carriage block and the column. Follow the procedure below.

1) While holding the feed handle, loosen the stopper-knob.
2) Use a 6 mm Allen key to tighten / loosen hex. socket screws.
   2 pieces of the hex. socket screws on the left side of the carriage block are for adjusting the play of right and left.
3) Turn the feed handle back and forth while checking the play.
4) Use a 4 mm Allen key to tighten / loosen hex. socket screws.
   2 pieces of the hex. socket screws on the back side of the carriage block are for adjusting the play of back and forth.
5) Turn the feed handle back and forth while checking the play.
6) Tighten the stopper-knob.

7.6 Attaching a core bit

⚠ **WARNING**

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Never use the drill motor's power to attach a core bit.**

⚠ **CAUTION**

Wear protective gloves when changing a core bit. A core bit becomes hot as a result of use. It may have sharp edges.

NOTE

- Use core bits in conformity with EN13236 and/or EN12413.
- For safety reason, each damaged (cracked) bit must be replaced.
- Leaving a core bit attached to the spindle may cause adherence of the core bit to the spindle. Using a quick disconnect tool such as the Slider may help to avoid such adherence.

Attach a core bit to the spindle firmly and securely by rotating the core bit.

Ensure that the end surface of the core bit is aligned with the surface of the spindle, so that the core bit can not be tightened any further.

7.7 Shifting the gear

⚠ WARNING

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Never use L speed range at hand-held operation.**

⚠ CAUTION

The gear shifting must be done when the motor is completely stopped.

HH1531 drill motor has a 3-speed gearbox. “H” is a high-speed range, “M” is a middle-speed range, and “L” is a low-speed range.

Turn the gear change knob to the required position.

NOTE

If the gear does not shift well, shift the gear while rotating the spindle by hand.

According to the size or diameter of the core bit attached, a proper gear must be chosen.
Refer to the following table.

NOTE

This table is advisory only. Maximum drilling diameter depends on the hardness of the material to be drilled.

Speed Range		**L**	**M**	**H**
Spindle rev. at No Load	**110-120 V**	**900 min-1**	**2100 min-1**	**4150 min-1**
	220-240 V	**1000 min-1**	**2500 min-1**	**4900 min-1**
Core Bit Diameter (Hand-held)	(mm)	Not Permissible	30 to 60 (1.2” to 2.3”)	12 to 25 (0.47” to 1”)
Core Bit Diameter (Rig-mounted)	(mm)	65 to 180 (2.6” to 7”)	30 to 60 (1.2” to 2.3”)	12 to 25 (0.47” to 1”)

7.8 Setting a water collection ring

⚠ WARNING

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Refer to the manual of the water collection ring.**

Follow the procedure below.

1) Place a water collection ring.
2) Pull the beams.
3) Slide the beams on the ring.
4) Release the beams on the ring.

7.9 Preparation for water supply

⚠ CAUTION

- **Ensure that the water hose is not entangled with the core bit or other moving parts.**
- **Ensure that the water hose has an enough length for the working stroke of the carriage block.**
- **Ensure that the water hose is not damaged.**
- **Check the water supply system to ensure there are no leaks.**
- **Never allow water to enter the drill motor.**

NOTE

- The maximum water pressure is 3 bar.
- Use only water (tap water or fresh water).
- Maximum water temperature: 40 degrees C (104 degrees F).

Follow the procedure below.

1) Connect a water hose from a tap or a water supplying device to the Gardena connector / water cock of the drill motor.

8. OPERATION

8.1 Precautions for the drilling operation

⚠ DANGER

- **The following instructions are essential safety measures that you must follow.**
- **Improper use may lead to death or serious injury to the operators and/or others.**

Ensure the following before plugging in.

8.1.1 General

- Ensure that the operator has read and understood this manual.
- Ensure that that the operator wears proper protective clothing such as a hard hat, protective glasses, hearing protection, dust mask, protective gloves, and non-skid safety shoes. Long hair must be tied up.
- Depending on the applicable standard, take care not to stay in the environment which exceeds the allowable sound level for a long time.
- Confirm that the core bit is attached to the spindle properly. When it is misaligned or loose, attach it again.
- Take care not to get your face close to the air outlet.
- Do not insert your hands, arms, face, and other body parts in the working range of the carriage block.

8.1.2 Electrical safety

- Never use this machine without a PRCD, GFCI or RCD.
- Do not drill in an upward from the horizontal. Water may leak in the motor.
- When drilling walls, a proper water collection device must be used.
- Check that the power supply voltage is the voltage shown on the model name plate label of the power tool. If the voltage is low, the current likely increases therefore the circuit protector trips frequently.
- Secure enough current for the machine.
- Use a correctly functioning generator or transformer.
- When powered by a generator or transformer, the generator or transformer’s power output must be at least 2.4 kVA.
- Make sure that there is no damage on the power plug, cord, and power outlet. If there is any damage, contact a Shibuya authorized dealer for repair.
- Never turn on the drill motor while the extension cords are circularly bundled. The circularly bundled extension cords may act as a coil which generates a magnetic field and heat.
- Before connecting to the power supply, make sure that the rocker switch is in OFF (0) position. If the rocker switch is in ON (I) position, the drill motor unintentionally starts off when applying current, which may lead to injury to the operator or others.

8.1.3 Others

- Ensure that the following portions are firmly installed;
  a) Base and the surface of the material to be drilled.
  b) Column and carriage block.
  c) Carriage block and drill motor.
- Ensure that power cord, water hose, and operator's protective clothing are not touching the core bit.
- Ensure that the air inlet of the drill motor which is located on the top side of the motor is not blocked. Insufficient cooling may lead to damage of the motor.
- Ensure that any adjusting keys, wrenches, and spanners are not attached to the machine before starting the operation and while in operation.

8.2 Operating procedure

8.2.1 Hand-held drilling

8.2.1.1 Start and stop drilling

⚠ DANGER

- **Ensure that the operator (s) stand firmly, and keep people away from the working area before starting.**
- **For penetration works, ensure to have proper protection for the operators as well as the people and property at the opposite side of the wall or down floor.**
- **Keep your hands and other body parts away from rotating parts while the drill motor is running.**
- **Do not apply too much pressure to the core bit at the start of drilling. Rapid start of drilling may shatter segments of the core bit and the pieces may cause injuries. Gradually increase the pressure until stable feeding rate.**
- **Do not touch the metal parts of the drill motor except the grip and the side handle. It may cause electric shock.**
- **Never use L speed range at hand-held operation.**
- **Never operate the drill motor in Rig-mounted Mode at hand-held operation.**

Follow the procedure below.

1) Insert the plug into the power outlet via a PRCD, GFCI or RCD.
   For the use of a PRCD, GFCI and RCD, refer to the clause 6.2.
2) Open the water cock to start supplying water.
3) Press down the trigger switch to start the drill motor.
4) When the tip of the core bit comes into contact, apply only light pressure until the segments of core bit completely get into the material. Then, gradually increase the pressure until stable drilling status.
5) Release the trigger switch to stop drill motor.

8.2.1.2 Restart after the overload switch trips

This drill motor is equipped with an overload switch to protect the motor. The overload switch trips when it detects overcurrent during the operation.
To restart the drill motor, push the overload switch then press down the trigger switch again. Adjust the pressure so that the overload switch does not trip.

8.2.2 Rig-mounted drilling

8.2.2.1 Start drilling

⚠ DANGER

- **Ensure that the operator(s) stand firmly, and keep people away from the working area before starting.**
- **For penetration works, ensure to have proper protection for the operators as well as the people and property at the opposite side of the wall or down floor.**
- **Keep your hands and other body parts away from rotating parts while the drill motor is running.**
- **Do not apply too much pressure to the feed handle at the start of drilling. Rapid start of drilling may shatter segments of the core bit and the pieces may cause injuries. Gradually increase the pressure until stable feeding rate.**
- **Do not touch the metal parts of the feeding handle except the ball knob(s). It may cause electric shock.**

Follow the procedure below.

1) Insert the plug into the power outlet via a PRCD, GFCI or RCD.
   For the use of a PRCD, GFCI and RCD, refer to the clause 6.2.
2) Open the water cock to start supplying water.
3) Turn on the rocker switch to start the drill motor.
4) Loosen the stopper knob, and start feeding the carriage block by turning the feed handle until the core bit contact with the drilling surface.
5) When the tip of the core bit comes into contact, apply only light pressure until the segments of core bit completely get into the material. Then, gradually increase the pressure until stable feeding rate.

8.2.2.2 Restart after the circuit protector (rocker switch) trips

This drill motor is equipped with a circuit protector (rocker switch) to protect the motor. The circuit protector (rocker switch) trips when it detects overcurrent during the operation.
To restart the drill motor, turn on the rocker switch again.

8.2.2.3 Core bit jamming

⚠ WARNING

- **Make sure the drill motor is switched off and disconnected from the power supply.**

If the core bit is jammed, follow the procedure below to remove the concrete core before restarting the drill motor.

1) Close the water cock to stop water supply.
2) Unplug the drill motor from the power supply.
3) Remove the concrete core.
4) Insert the plug into the power outlet via a PRCD, GFCI or RCD again.
   For the use of a PRCD, GFCI and RCD, refer to the clause 6.2.
5) Open the water cock to start supplying water.
6) Turn on the rocker switch to restart the drill motor.

8.2.2.4 Stop drilling

⚠ WARNING
Do not let the water and/or concrete slurry splash on the drill motor, cable, plug, and the power supply.

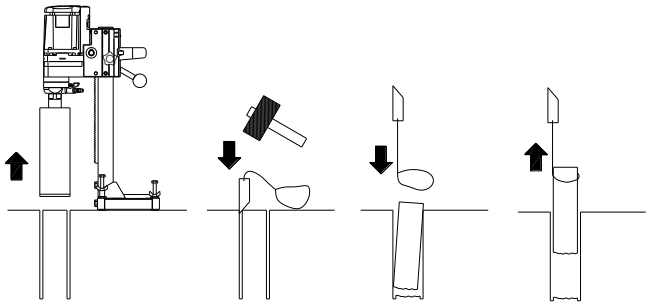
Follow the procedure below.

1) When the core bit reaches the desired depth, turn the feed handle backwards to pull out the core bit from the surface of the drilling object.
2) Tighten the stopper-knob to fix the carriage block on the column.
3) Turn off the rocker switch to stop the drill motor.
4) Close the water cock to stop water supply.
5) Unplug the drill motor, and then remove the core bit from the spindle.
6) Loosen the stopper-knob, and turn the feed handle to pull up the carriage block until the upper end of the column.
7) Lift up and remove the drill motor with the carriage block from the column.
8) Remove the drill stand from the surface of the drilling object.

8.2.2.5 Remove cores with the core removal lasso

⚠ WARNING
- **The core removal lasso is designed for concrete core removal purpose only. Never use it for any other purposes.**
- **Even though this tool has enough wire length to pull up 250 mm (10") diameter cores, the maximum applicable core size depends on the weight and length of the core, and situations.**

Follow the procedure shown in the illustration below.



9. CLEANING

⚠ WARNING
- **Always disconnect the drill motor from power supply before starting any maintenance, cleaning, and inspection.**
- **Never immerse the drill motor in water or any other kind of liquid. It may cause electric shocks to the operator and others, and short circuit of the motor.**

Cleaning procedure is following.

1) Ensure that the drill motor is unplugged from power supply, before start cleaning.
2) Wipe off each part of the drill motor with a wet towel which was tightly wrung.
3) Wipe off each part of the drill stand with a wet towel.
4) Wash away concrete slurry stuck on the base, the leveling bolts, and the column.
5) Rub each part of the machine with a dry cloth.

10. ACCESSORIES (OPTION)

Following items are available as optional accessories.

1 : Water Tank
2 : Water collection rings and fixtures

11. MAINTENANCE

⚠ WARNING

- **Make sure the drill motor is switched off and disconnected from the power supply.**
- **Use only genuine Shibuya spare parts for the maintenance written in this manual.**
- **Repairs excluding the maintenance written in this manual must be carried out by qualified, skilled personnel. The safety of the power tool can thus be maintained.**

11.1 Replacing the carbon brushes

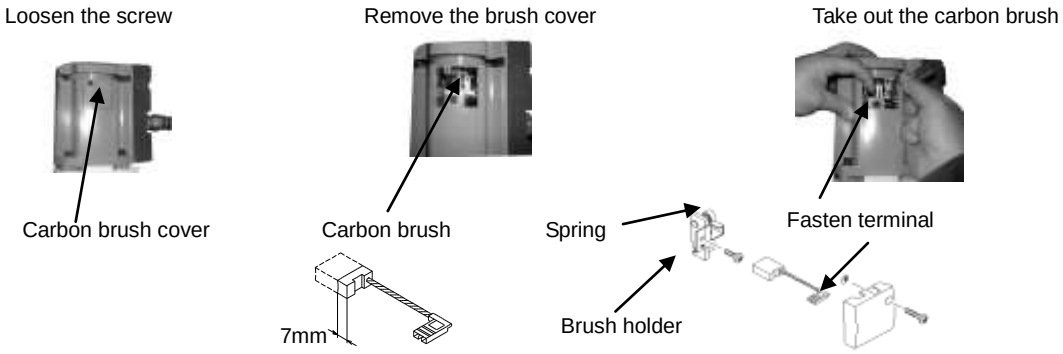
Inspect the remaining length of the carbon brushes every 100 operating hours. If the carbon brushes are worn down to 7 mm or less, replace them with new carbon brushes. Ensure to replace both sides of carbon brushes as a pair.

NOTE

Always replace both carbon brushes as a pair. Use Shibuya genuine carbon brushes (carbon brush: 049626).

Follow the procedure below.

1) Loosen the screw on the brush cover with a Phillips screwdriver, and remove the brush cover.
2) Pull out the fasten terminal of the carbon brush from the brush holder with a flat-blade screwdriver.
3) Pick up the spring, and pull out the carbon brush while holding the spring with your fingers.
4) Insert a carbon brush into the brush holder.
5) Release the spring to hold the center of the carbon brush.
6) Connect the fasten terminal to the brush holder.
7) Fix the brush cover with the screw. Pay attention not to pinch the lead wire with the brush cover.



12. TRANSPORT AND STORAGE

⚠ WARNING

Store the machine in a lockable area. Keep out of reach of children and unauthorized persons.

NOTE

- Never store the machine at the place where the ambient temperature is below 0 degrees C (32 degrees F) or above 40 degrees C (104 degrees F). Also, never store the machine where the ambient pressure is below 80 kPa (12 psi). Store the machine in dry conditions.
- Keep the feed handle and the grip handle dry, clean, and free from oil and grease.
- Transport the drill motor, the drill stand and the core bit as separate units. Hold the drill motor tightly with the grip handle.

13. TROUBLESHOOTING

Trouble	What to do first	Possible Causes	Countermeasures
The rocker switch / trigger switch does not work.	(1) Turn off the switch. (2) Turn off the PRCD and unplug the drill motor from the power supply.	Fault in the electric supply	Plug the drill motor into another power supply and check whether the drill motor works. Check the extension cord, RCD/GFCI/PRCD, power supply, and the outlet. Replace them if necessary.
		Other power tools are plugged into the power supply.	Disconnect the other power tools from the power supply. Secure at least 2.4 kVA for the drill motor.
		The power cable/plug is damaged.	Contact a Shibuya authorized dealer.
		The switch is damaged.	Contact a Shibuya authorized dealer.
		The armature/field coil is damaged.	Contact a Shibuya authorized dealer.
		The carbon brushes are worn out.	Replace the carbon brushes.
	(1) Turn off the switch. (2) Check the PRCD.	The PRCD is turned off.	Turn on the PRCD.
	(1) Turn off the switch. (2) Check the mode switch inside switch cover.	The mode switch is turned to a wrong mode.	Turn it to the correct mode.
The motor runs, but the core bit does not revolve well / abnormal noises.	(1) Turn off the switch. (2) Turn off the PRCD and unplug the drill motor from the power supply. (3) Check that the gear change knob is shifted properly. (4) Check the core bit.	The gear change knob is not shifted properly.	Shift the gear change knob to engage gears properly.
		The clutch is worn or loose.	Contact a Shibuya authorized dealer.
		Gears are worn or damaged.	Contact a Shibuya authorized dealer.
		Fragments of working materials such as rebar, concrete, stones are jammed between the core bit and the drilled material.	Remove the concrete core from the core bit.
The drill motor shuts off during the operation.	(1) Turn off the switch. (2) Turn off the PRCD and unplug the drill motor from the power supply. (3) Check whether the rocker switch/overload switch tripped.	If the rocker switch/overload switch tripped, the drill motor was overloaded due to applying too much feed pressure.	Restart the drilling, and take care not to apply too much feed pressure.
	(4) Check whether the PRCD tripped.	If the PRCD tripped, electric leakage was detected or voltage was dropped.	Contact a Shibuya authorized dealer, or an electrical engineer.
		Electric power failure	Check the electric supply with electrical engineer.
Water leaks from the water leakage hole / spindle shaft.	(1) Turn off the switch. (2) Turn off the PRCD and unplug the drill motor from the power supply. **DO NOT TOUCH the power plug with wet hands.**	Oil seals are worn.	Contact a Shibuya authorized dealer.
		Water pressure is too high.	Reduce the water pressure to less than 3 bar.
The core bit can not be attached to the spindle.	(1) Check the core bit threads and the spindle threads.	The core bit thread is blocked with dirt or damaged.	Clean the thread, or replace the bit if necessary.
		The spindle thread is blocked with dirt or damaged.	Clean the thread. If the spindle was damaged, contact a Shibuya authorized dealer.
Drilling performance goes down	(1) Turn off the switch. (2) Turn off the PRCD and unplug the drill motor from the power supply. (3) Check the drainage water from the drilling hole.	If the water contains iron powders, the machine is cutting the rebar(s).	Restart the drilling, and take care not to apply too much feeding pressure.
	(4) Check the water supply	Insufficient coolant water	Increase the amount of water supply.
	(5) Check the core bit.	The core bit is worn out, damaged, or defected.	Replace with a new core bit.
		The core bit segments are glazed.	Contact the core bit seller to ask proper sharpening methods.
		Aggregate of concrete is too hard.	Use a core bit with softer segments.
		Maximum drilling depth is reached.	Remove the core and use an extension bar for core bits.
	(6) Jolt the drill motor / stand / core bit to see if it shakes.	The base is not securely fixed to the working material.	Set up the machine again. Redo anchoring securely / Adjust the leveling bolts properly.
		There is play between the carriage block and the column.	Adjust the carriage block.
		Screws which are fastening the base and column, the carriage block and motor are loosened.	Tighten the screws.
	(7) Check for the axial runout of the spindle.	Axial runout of the spindle is observed.	Contact a Shibuya authorized dealer.

14. DISPOSAL

Do not dispose of this machine with domestic waste. Follow your national law.

With regard to environmental aspects, allowing drilling slurry to flow directly into rivers, lakes or the sewerage system without suitable pre-treatment is problematical. Ask your local authorities for applicable regulations.

15. LIMITED WARRANTY

Every Shibuya product is thoroughly inspected and tested before leaving the factory.
Should any trouble develop, return the complete machine prepaid to your nearest Shibuya authorized dealer. If inspection shows the trouble is caused by defective workmanship or material, all repairs will be made without charge and the machine will be returned.

This warranty does not apply where;

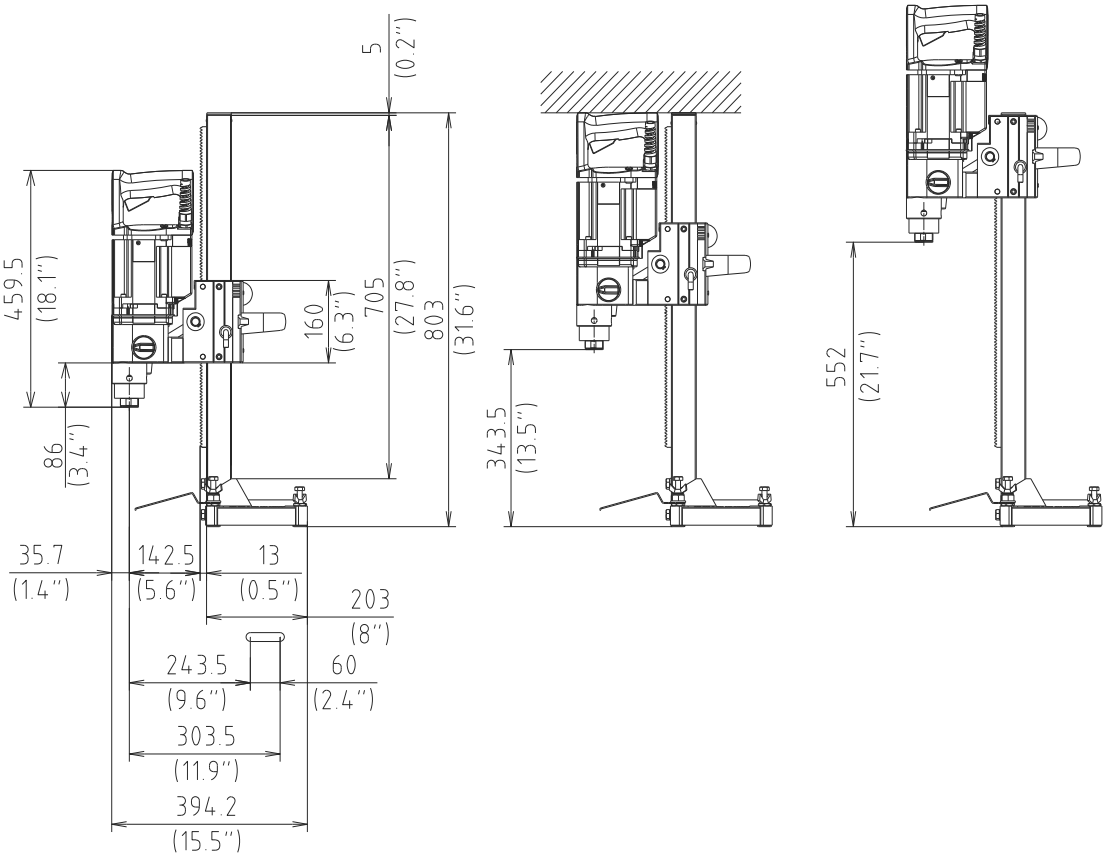
1) Repairs or attempted repairs have been made by persons other than Shibuya authorized dealer.
2) Repairs are required because of normal wear.
3) The machine has been involved in an accident.
4) The machine has been misused.
5) The machine has been used after partial failure or normal wear.
6) The machine has been modified or used with improper accessories
7) The machine expires its warranty period of 1 year upon receipt of the machine.

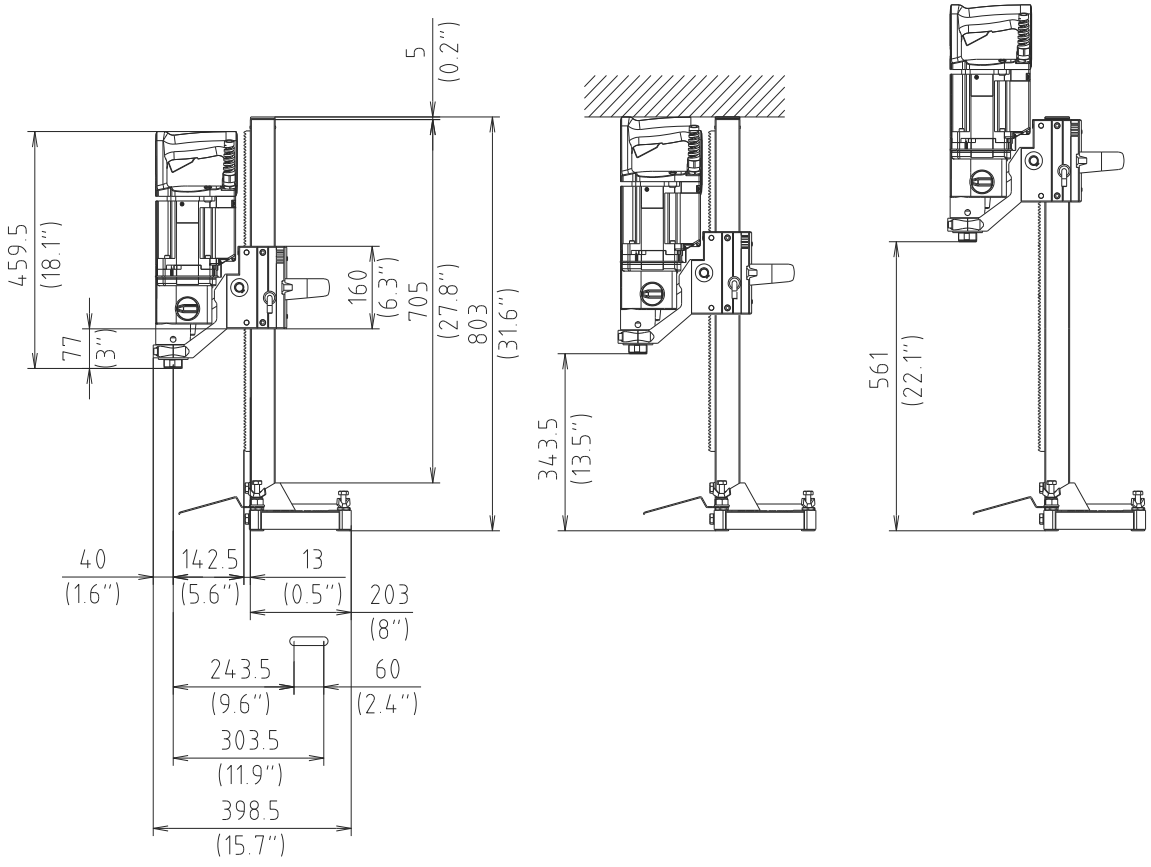
No other warranty, written or verbal is authorized.

16. DIMENSIONS

Unit: mm [inch]

TS-165 (800L)





Unit: mm [inch]

TS-165 AB52 (1000L)