



CS-320E

with Double Control Panels

----- Version 1.1

Table of Contents

1. Instruction	1
1.1 Summary	1
1.2 Liability	1
1.3 Warranty	1
2. Safety	1
2.1 General safety instructions	1
2.2 Safety instructions for operation	2
2.3 Vibration safety	3
2.4 Dust safety	3
2.5 Noise safety	4
2.6 Personal protection	4
2.7 Work area safety	4
2.8 Electrical safety	5
2.9 Safety devices on the machine	5
2.10 Safety instructions for maintenance	6
3. General information	7
3.1 Description	7
3.2 Standard delivery	7
3.3 General description	7
3.4 Control panel	8
3.5 Machine name plate	8
3.6 Symbols on the machine	9
4. Operation	9
4.1 Diamond blade drum	9
4.2 Connect a dust collector	12
4.3 Connect the product to a power source	12
4.4 To set the speed of rotation of the motor	12
4.5 To start the machine	12
4.6 To stop the machine	13

5. Maintenance	13
5.1 Maintenance schedule	13
5.2 To clean the machine	14
5.3 To lubricate the machine	14
5.4 To do a check of the drive belt tension.....	14
6. Transportation, Storage and Disposal	15
6.1 Transportation	15
6.2 To move the product up and down a ramp	15
6.3 To lift the machine	16
6.4 To attach the product to a transportation vehicle	16
6.5 Storage	16
6.6 Disposal of the product.....	16
7. Troubleshooting	17
8. Technical data	18

1. Introduction

1.1 Summary

XINGYI Machine are used for processing the floor surface. The scope of use of the machine depends on the choice of tools. In addition to the use and general functions, this manual describes information on the use, repair, and maintenance of the grinder. Contact your local dealer for further information.

1.2 Liability

As referred to in the machine liability laws, we are not liable for damages that our machine causes if:

- The machine is incorrectly repaired.
- The machine is repaired with parts that are not from the manufacturer or not approved by the manufacturer.
- The machine has an accessory that is not from the manufacturer or not approved by the manufacturer.
- The machine is not repaired at an approved service center or by an approved authority

1.3 Warranty

This warranty only covers manufacturing defects. XINGYI bears no responsibility for damage that arises or occurs during transportation, unpacking or use. In no instance and under no circumstances shall the manufacturer be held responsible for damage and defects caused by incorrect use, corrosion or use outside the prescribed specifications. The manufacturer is not responsible for indirect damage or costs under any circumstances. For complete information on the manufacturer's warranty period, see XINGYI MACHINE USA's current warranty terms. Local distributors may have special warranty terms specified in their terms of sale, delivery and warranty. If there is any uncertainty regarding warranty terms, please contact your dealer.

2. Safety

Warnings, cautions and notes are used to point out especially important parts of the manual.

2.1 General safety instructions

Read the warning instructions that follow before you use the machine.

- This machine is a dangerous tool if you are not careful or if you use the machine incorrectly. This machine can cause serious injury or death to the operator or others. Before you use the machine, you must read and understand the contents of this operator's manual.
- Save all warnings and instructions.
- Comply with all applicable laws and regulations.
- The operator and the employer of the operator must know and prevent the risks during

operation of the machine.

- Do not let a person operate the machine unless they read and understand the contents of the operator's manual.
- Do not operate the machine unless you receive training before use. Make sure that all operators receive training.
- Do not let a child operate on the machine.
- Only let approved person operate the machine.
- The operator is responsible for accidents that occur to other people or their property.
- Do not use the machine if you are tired, ill, or under the influence of alcohol, drugs or medicine.
- Always be careful and use your common sense.
- This machine produces an electromagnetic field during operation. This field can under some circumstances interfere with active or passive medical implants. To decrease the risk of serious injury or death, we recommend persons with medical implants to speak to their physician and the medical implant manufacturer before operating this machine.
- Keep the machine clean. Make sure that you can clearly read signs and decals.
- Do not use the machine if it is defective.
- Do not modify this machine.
- Do not operate the machine if it is possible that other people have done modifications to the machine.

2.2 Safety instructions for operation

- Use personal protective equipment. Refer to Personal Protection on page 4.
- Overexposure to vibration can cause circulatory damage or nerve damage to persons with decreased blood circulation. Get medical aid if you have symptoms of overexposure to vibration. These symptoms include numbness, loss of feeling, tingling, pricking, pain, loss of strength, changes in skin color or condition. These symptoms usually show in the fingers, hands or wrists.
- Do not operate the machine without all protective covers installed.
- Make sure that you know how to stop the motor quickly in an emergency.
- Before you go away from the machine, stop the motor and disconnect the power cord. Make sure that there is no risk of accidental start.
- Make sure that clothing, long hair and jewelry do not get caught in moving parts • Make sure that you are in a safe and stable position during operation.
- Only operate the machine on horizontal surfaces.
- Do not operate the machine unless you can get aid if an accident occurs
- Always use approved accessories. Speak to your XINGYI dealer for more information.
- If vibrations occur in the machine or the noise level from the machine is unusually high, stop the machine immediately. Examine the machine for damages. Repair damages or let an approved service agent do the repair.

- Connect the machine to a dust extractor for removal of the dust.
- Keep the dust extractor on until the motor stops fully.
- Only operate the machine from behind with your hands on the handlebar.
- Make sure that there is no grease or oil on the handles.

2.3 Vibration safety

- During operation of the machine, vibrations go from the machine to the operator. Regular and frequent operation of the machine can cause or increase the degree of injuries to the operator. Injuries can occur in fingers, hands, wrists, arms, shoulders, and/or nerves and blood supply or other body parts. The injuries can be debilitating and/or permanent, and can increase gradually during weeks, months or years. Possible injuries include damage to the blood circulation system, the nervous system, joints, and other body structures.
- Symptoms can increase in cold temperatures. Use warm clothing and keep your hands warm and dry when you operate the machine in cold environments.
- Do maintenance on and operate the machine as given in the operator's manual, to keep a correct vibration level.
- The machine has a vibration damping system that decreases the vibrations from the handles to the operator. Let the machine do the work. Do not push the machine with force. Hold the machine at the handles lightly, but make sure that you control the machine and operate it safely. Do not push the handles into the end stops more than necessary.
- Keep your hands on the handle or handles only. Keep all other body parts away from the machine.
- Stop the machine immediately if strong vibrations suddenly occur. Do not continue the operation before the cause of the increased vibrations is removed.

2.4 Dust safety

- Operation of the machine can cause dust in the air. Dust can cause serious injury and permanent health problems. Silica dust is regulated as harmful by several authorities. These are examples of such health problems: The fatal lung diseases chronic bronchitis, silicosis and pulmonary fibrosis, cancer and birth defects skin inflammation.
- Use correct equipment to decrease the quantity of dust and fumes in the air and to decrease dust on work equipment, surfaces, clothing and body parts. Examples of controls are dust collection systems and water sprays to bind dust. Decrease dust at the source where possible. Make sure that the equipment is correctly installed and used, and that regular maintenance is done.
- Use approved respiratory protection. Make sure that respiratory protection is applicable for the dangerous materials in the work area.
- Make sure that the airflow is sufficient in the work area.

2.5 Noise safety

- High noise levels and long-term exposure to noise can cause noise-induced hearing loss.
- To keep the noise level to a minimum, do maintenance on and operate the machine as given in the operator's manual.
- Use approved hearing protection while you operate the machine.
- Listen to warning signals and voices when you use hearing protection. Remove the hearing protection when the machine is stopped, unless hearing protection is necessary for the noise level in the work area.

2.6 Personal protection

- Always use approved personal protective equipment when you operate the machine. Personal protective equipment cannot fully prevent injury, but it decreases the degree of injury if an accident does occur. Let your dealer help you select the correct personal protective equipment.
- Regularly do a check of the condition of the personal protective equipment.
- Use an approved protective helmet.
- Use approved hearing protection.
- Use approved respiratory protection.
- Use approved eye protection with side protection.
- Use protective gloves.
- Use boots with steel toecap and non-slip sole.
- Use approved work clothing or equivalent closefitting clothing that has long sleeves and long legs.

2.7 Work area safety

- Do not use the machine in fog, rain, strong winds, cold weather, risk of lightning or other bad weather conditions.
- Do not use the machine in areas where fire or explosions can occur.
- Keep children, bystanders and animals away from the work area and at a safe distance from the machine.
- Make sure that only approved persons are in the work area.
- Keep the work area clean and sufficiently illuminated.
- Remove objects such as screws, bolts, wires and stones from the work area before you use the machine.
- Make sure that there are no cables or hoses in the operation direction of the machine.
- Make sure that there is sufficient airflow in the work area.

2.8 Electrical safety

- **WARNING:** There is always a risk of shocks from electrical machines. Do not use the machine in bad weather conditions. Do not touch lightning conductors and metal

- objects. Always use the machine as given in this operator's manual to prevent injury.
- **WARNING:** Always use a power supply with RCD (residual-current device). An RCD decreases the risk of electrical shock.
 - **WARNING:** High voltage. There are unprotected parts in the power unit. Always disconnect the power plug before you open the door to the electrical box.
 - **CAUTION:** The power supply from the machine or generator must be sufficient and constant to make sure that the motor operates without problems. Incorrect voltage causes the power consumption and the temperature of the motor to increase until the safety circuit releases. The dimension of the power cord must agree with national and local regulations. The dimension of the mains socket must match the amperage for the electrical socket and extension cable of the machine. If the power mains have higher system resistance, a short voltage drop can occur when the machine is started. This can influence the operation of other machines, for example a flicker on the lights.
 - Make sure that the power, fuse and mains voltage are the same as the voltage shown on the rating plate of the machine.
 - Always stop the machine before you disconnect the power plug.
 - Do not use the machine if the power cord or power plug is damaged. Hand it in to an approved service center for repair. A damaged power cord can cause serious injury and death.
 - Use the power cord correctly. Do not use the power cord to move, pull or disconnect the machine. Pull the power plug to disconnect the power cord. Do not pull the power cord.
 - Do not operate the machine in water depths where the equipment of the machine gets wet. The equipment can become damaged, and the machine can become live and cause injury.
 - Do not get more moisture into the machine than the water supplied by the water system. Keep the machine away from rain. Water that goes into the machine increases the risk of electrical shock.
 - Always disconnect the power cord before you connect or disconnect the connection for the motor cable and the electrical enclosure.

2.9 Safety devices on the machine

- Do not use a machine with defective safety devices.
- Do checks of the safety devices regularly. If the safety devices are defective, speak to your XINGYI service agent.

1) Emergency stop button

The emergency stop button is used to quickly stop the motor.

To do a check of the emergency stop button

Refer to the control panel overview on page 8 for information about where the emergency stop button is on your machine.

1. Turn the emergency stop button clockwise to make sure that the emergency stop button is disengaged.
2. Start the machine. Refer to To start the machine on page 12.
3. Push the emergency stop button.
4. Make sure that the motor stops.
5. Turn the emergency stop button clockwise to disengage.

2) Deadman switch

When the Deadman switch key is removed, the machine stops.

To do a check of the Deadman switch

1. Start the machine. Refer to To start the machine on page 12.
2. Pull out the Deadman switch key. If the motor does not stop in 3 seconds, speak to an approved XINGYI service agent.

2.10 Safety instructions for maintenance

- Use personal protection. Refer to Personal Protection on page 4.
- Only do the maintenance as given in this operator's manual. Let an approved service agent do all other servicing.
- If the maintenance is not done correctly and regularly, the risk of injury and damage to the machine increases.
- Clean the machine to remove dangerous material before you do the maintenance.
- Before you do the maintenance, stop the motor, pull out the operator presence control and disconnect the power plug.
- Do the maintenance of the machine on stable level ground.
- Do not do modifications to the machine. Modifications that are not approved by the manufacturer can cause serious injury or death.
- Replace damaged, worn or broken parts.
- Always use original accessories and spare parts. Accessories and spare parts that are not approved by the manufacturer, can cause serious injury or death.
- After maintenance, do a check of the vibration level in the machine. If it is not correct, speak to an approved service agent.
- Let an approved service agent do servicing on the machine regularly.

3. General Introduction

3.1 Description

The machine is an electric shaver for concrete, stone and asphalt surfaces. The CS-320E is self-propelled and can be changed into a scarifier.

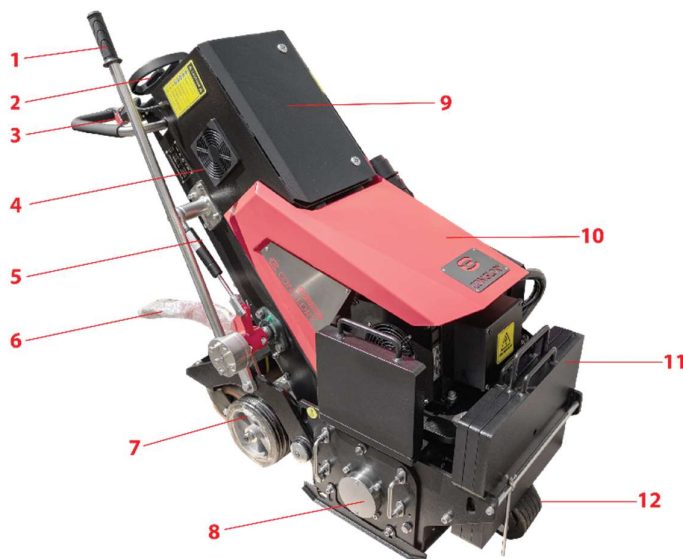
The machine is used to remove the top layer on concrete, stone and asphalt surfaces at a specified sawing depth. When the machine is used as a scarifier, it is used to make surfaces rough, and to remove layers and road marks.

3.2 Standard delivery

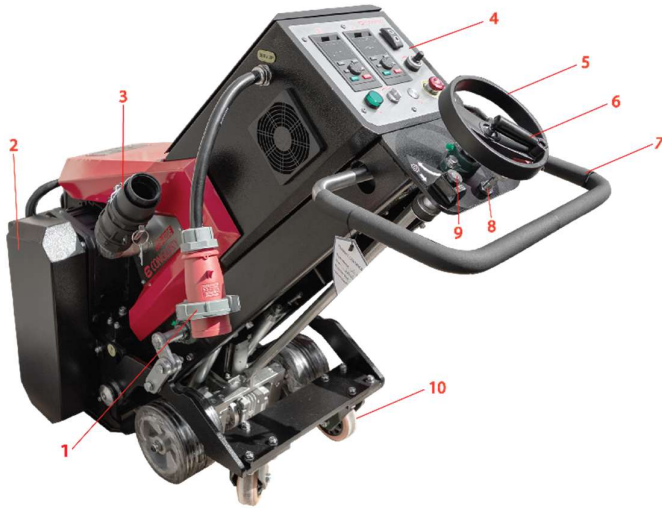
The machine will go with the following items. If anything is lost, please contact your dealer.

- A shaving drum equipped with a full diamond blade setup.
- A scarifying drum equipped with full TCT blades setup.
- female power connector, 1 (male connector on the machine)
- A keyway shaft for replacing the drum.
- A lifting strap.
- A tool bag.

3.3 General description



1. Lift lever
2. Depth adjustment wheel
3. Deadman switch
4. Vent
5. Air spring
6. Foot pedal
7. Working wheel
8. Drum housing
9. Electric cabinet
10. Motor cover
11. Extra Weights, 3 total
12. Front wheel



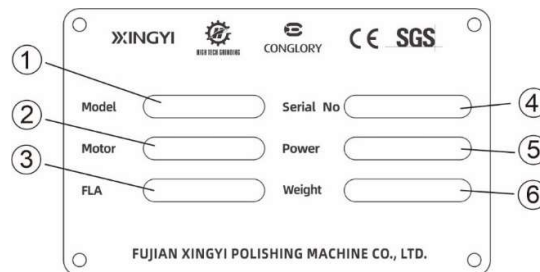
1. Power plug
2. Belt housing
3. Connector for dust extractor
4. Control panel
5. Depth adjustment wheel
6. Wheel handle
7. Operating handle
8. Lockpin for depth adjustment wheel
9. Indicator for depth adjustment
10. Transportation wheel

3.4 Control Panel



1. ON/OFF switch
2. Switch for shaving or scarifying
3. Power Indicator
4. Shaving Motor Monitor
5. Drive Motor Monitor
6. Rocker Switch, Forward/Neutral/backward
7. Travel speed potentiometer
8. Emergency stop button

3.5 Machine name plate



1. Model name	2. Rated power
3. Full load amps	4. Serial number
5. Rated voltage, phase, frequency	6. Weight

3.6 Symbols on the machine



Warning: This machine can be dangerous and cause serious injury or death to the operator or others. Be **description** careful and use the machine correctly.



High voltage.



Lifting point



Use approved hearing protection.



Use approved eye protection.



Use approved protective boots.



Read the manual carefully and make sure that you understand the instructions before you use the machine.

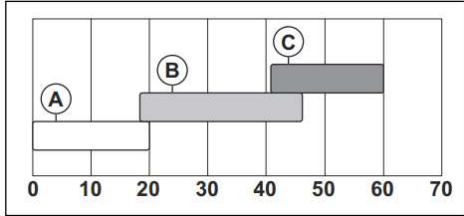


This product follows applicable EU directives.

4. Operation

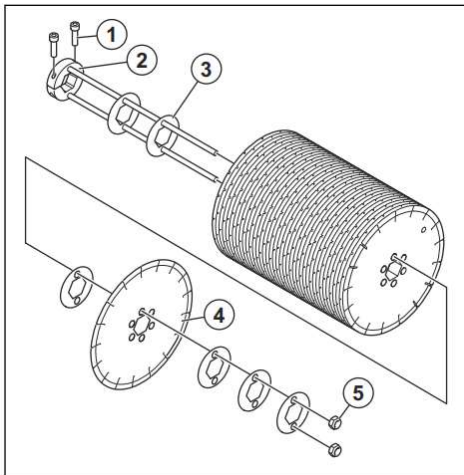
4.1 Diamond blade drum

- **To select the correct diamond blades for the operation**
 1. Examine the hardness of the floor with a sclerometer.
 2. Refer to the diagram to select type of diamond blade. The X axis shows the strength of the floor in MPa



- a) A: Green diamond blade.
- b) B: Blue diamond blade.
- c) C: Red diamond blade

• **Assembly of the diamond blade drum**



- 1. Socket head cap screw
- 2. Diamond blade drum
- 3. Spacer
- 4. Diamond blade
- 5. Locknut

WARNING: Install a minimum of 1 spacer between each diamond blade.

WARNING: Do not install more than 81 diamond blades on the drum.

CAUTION: Put a minimum of 2 spacers on the axle after the last diamond blade and install the

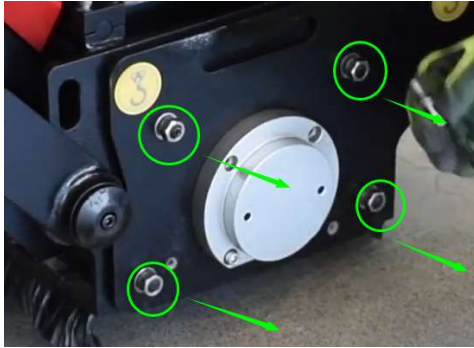
locknuts.

• **To install the diamond blade drum**

- 1. Remove the support plate.



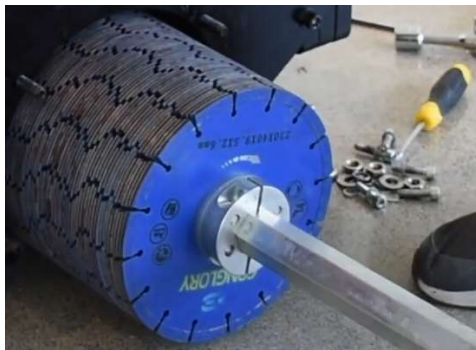
- 2. Remove the screws and washers from the side cover.



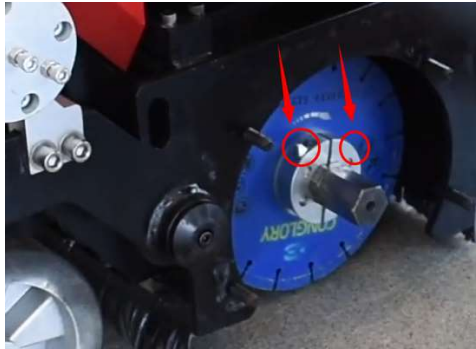
3. Take the side cover off.



4. Align the keyway shaft: The keyway helps ensure the drum is positioned correctly. Make sure the key is in place before sliding the drum onto the axle.
5. Slide the drum onto the axle while ensuring the keyway aligns properly to avoid misalignment or damage.



6. Fasten the two socket head cap screws.



7. Install the side cover.
8. Install the support plate.
9. Do a check of the drive belt tension. Refer to To do a check of the drive belt tension on page 14.

4.2 Connect a dust collector

1. Examine the dust extractor hose for damages.
2. Make sure that the filters in the dust extractor are clean and not damaged.
3. Connect the dust extractor hose to the connection for dust extractor. Refer to Product overview on page 3 for information about where the connection for dust extractor is on your product.

4.3 Connect the product to a power source

1. Connect the power plug of the product to an applicable extension cable
2. Connect the extension cable to a mains outlet

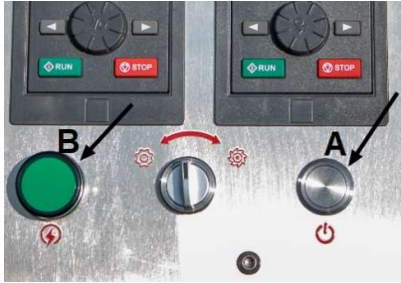
4.4 To set the speed of rotation of the motor



- For standard operation with diamond blades, turn the switch for shaving (turn right), the speed of motor is 3,000 RPM.
- If the product is used as a scarifier, turn the switch for scarifying (turn left), the speed of motor is 1,500 RPM.

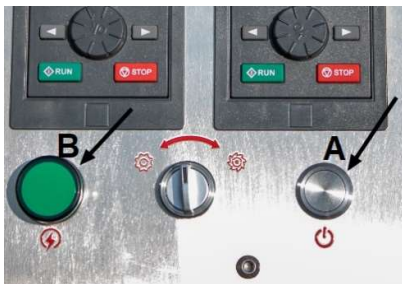
4.5 To start the machine

1. Start the dust extractor.
2. Put the cord of Deadman switch around your right wrist.
3. Turn the emergency stop button on the control panel clockwise to make sure that the emergency stop button is disengaged.
4. Set the rocker switch in neutral position.
5. Set the travel speed potentiometer to “0”.



6. Press the ON/OFF button for the drum motor (A). The light (B) comes on when the drum motor has power.
7. Push the lift lever while simultaneously stepping on the foot pedal with your right foot to slowly lower the tool drum to the floor.
8. Turn the depth adjustment wheel clockwise until the depth is correct for the operation.
9. Push the lockpin for the depth adjustment wheel to lock the operation depth. Pull the lockpin to unlock the depth adjustment wheel again for more adjustments of the operation depth.
10. Press the rocker switch to move the machine forward.
11. Turn the travel speed potentiometer to set the travel speed.
12. Adjust the depth if it is necessary. One full revolution of the depth adjustment wheel adjusts the depth 2.5 mm. The max depth is 6 full revolutions (15mm).
13. Monitor the ammeter during the operation. The maximum amperage for each motor type is as follows:
 - a) For motor type 3x240V, 60 Hz: 45 A.
 - b) For motor type 3x480V, 60 Hz: 23 A.

4.6 To stop the machine



1. Pull the lift lever while simultaneously stepping on the foot pedal with your right foot to slowly lift the tool drum away from the floor.
2. Turn the depth adjustment wheel until the tool drum does not touch the ground
3. Push the ON/OFF button (A) for the drum motor.
4. Wait until all moving parts are fully stopped and the light (B) comes off.
5. Press the emergency stop button.
6. Stop the dust extractor.
7. Disconnect the power plug.

5. Maintenance

For all servicing and repair work on the product, special training is necessary. We guarantee the availability of professional repairs and servicing. If your dealer is not a service agent, speak to them for information about the nearest service agent.

5.1 Maintenance schedule

✓= General maintenance done by the operator. The instructions are not given in this operator's manual

× = The instructions are given in this operator's manual.

! = The instructions are not given in this operator's manual. Let an approved service agent do the maintenance.

General product maintenance	Daily	Each 3 months	Yearly
Clean the product.	×		
Do a check of all safety devices.	×		
Make sure that nuts and screws are tight.	✓		
Examine the tool drum, the drum axle, the tools and the housing for wear.	✓		
Make sure that the power plug and extension cable are in good condition and not damaged.	✓		
Do a check of the RCD.	✓		
Do a check of the electrical components, the cables and the connections for wear and damages.	✓		
Do a check of the drive belt tension.	×	×	
Make sure that the dust hose is not damaged and free of blockage.	✓		
Empty the dust extractor.	✓		
Lubricate the bearing.		×	
Examine the brushes below the drum housing for wear.		✓	
Do complete servicing and cleaning of the product.			!

5.2 To clean the machine

- Always clean all the equipment after use. Use a vacuum cleaner.
- Do not use a high-pressure washer to clean the product.
- Keep the air opening clean and clear to make sure that the product always has sufficiently cool temperature.
- Clean the tool drum after operation on moist surfaces.

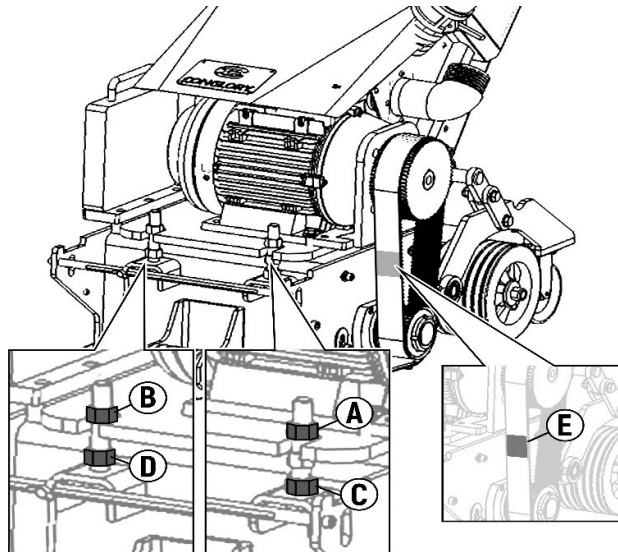
5.3 To lubricate the machine

1. Remove the drive belt cover.
2. Push 5–10 g of grease into the grease nipple with a grease gun.

5.4 To do a check of the drive belt tension

- Press down in the center of the drive belt span (E) with moderate force. Typically, there should be about **½ inch (12mm) of deflection**.
- If it is necessary to adjust the drive belt tension, take these steps:
 - a) Loosen the upper nuts (A and B).
 - b) Adjust the tension.
 - Turn the nut (C) clockwise to tighten the drive belt.

- Turn the nut (C) counterclockwise to loosen the drive belt.
- c) Secure the adjustment:
- Tighten nut (A) once the desired tension is achieved.
 - Adjust nut (D) accordingly to match nut C.
 - Tighten nut (B) to secure the adjustment.



6. Transportation, Storage and Disposal

6.1 Transportation

- Pull the lift lever up before transportation. The tools must not be against the ground during transportation.
- The wheels let you move the product shorter distances. For longer distances, lift the product to move it or put the machine on a vehicle.
- Put some type of protection on the machine during transportation. The protection keeps natural elements such as rain and snow away from the product.

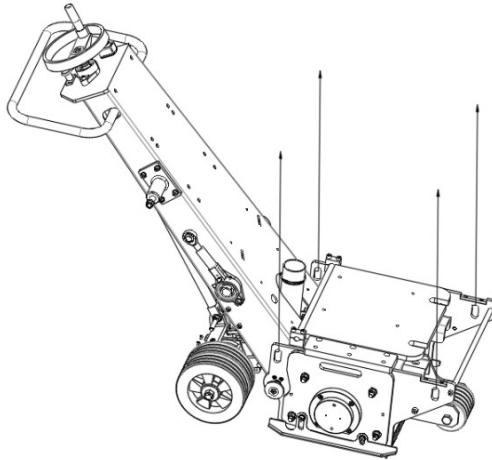
6.2 To move the product up and down a ramp

WARNING: Be very careful when you move the machine up and down ramps. The machine is heavy and there is a risk of injury if the machine falls or moves too quickly.

WARNING: For ramps with a steep slope, always use a winch. Do not walk or stay below or near the machine.

1. To move the product down a ramp, operate the product forward slowly.
2. To move the product up a ramp, operate the product rearward slowly.
3. Do not turn the product to the left or to the right more than 30° on a ramp.

6.3 To lift the machine



1. Attach the lifting equipment at the lifting eyes.
2. Lift the machine safely.

6.4 To attach the product to a transportation vehicle

1. Make sure that the working wheels are against the ground.
2. Attach tie-down straps in the lifting eye and tighten the tie-down straps to the transportation vehicle.

6.5 Storage

- Keep the machine in a dry and frost-free area.
- Clean the machine and do a complete servicing before you put the product in storage.

6.6 Disposal of the product

- Obey the local recycling requirements and applicable regulations.
- When the product no longer is used, send it to XINGYI dealer or discard it at a recycling location.

7. Troubleshooting

Problem	Possible Cause	Solution
Too much vibration and/or unusual noises.	The tools are worn or damaged.	Replace parts that are worn or damaged.
	The bearing is damaged.	Do a check of the bearing on the axle drive shaft and replace it if necessary.
	Incorrect tension of the drive belt.	Do a check of the drive belt tension. Refer to To do a check of the drive belt tension on page 14.
	The motor is damaged.	Replace the motor.
	The tool drum is set too deep for operation.	Decrease the operation depth.
Decreased or no performance.	The tools are worn or damaged.	Replace the worn parts.
	The type of tools is incorrect for the surface.	Replace the tools with correct tools for the surface.
The motor does not start.	A phase of the power supply is missing.	Do a check of the power supply.
	The phase of the power supply is incorrect.	Adjust the phase.
	A component is damaged.	Replace the damaged component.
	The Deadman switch is not installed.	Install the Deadman switch.
	The extension cable is disconnected or damaged.	Connect the extension cable or if it is necessary, replace the extension cable.
The product stops after a while.	The emergency stop button is engaged.	Turn the emergency stop button clockwise to disengage.
	The motor protection switch releases because of overload.	Decrease the cutting depth.
	The motor is damaged.	Do a check of the motor.

8. Technical Data

CS-320E		
Motor power	11KW / 15 HP	15KW / 20 HP
Rated voltage	3P 240V	3P 480V
Rated AMPS	48 A	26 A
Input hertz	50HZ / 60HZ	
Inverter power	18.5KW / 25HP	
Working width	320mm / 12.6 in	
Rotation speed of diamond blade drum	3,000 rpm	
Rotation speed of scarifier drum	1,500 rpm	
Weight + ext. weight (excl. drum)	350 + 3 x 30 kg / 772 + 3 x 66 lb.	
Weight incl. full drum with blades + ext. weight	410 + 3 x 30 kg / 904 + 3 x 66 lb.	
Weight incl. full drum with TCT + ext. weight	373 + 3 x 30 kg / 822 + 3 x 66 lb.	
Maximum shaving depth	15 mm/ ½ "	
Dimensions	1370x680x1115mm/54x27x44in	
Ambient temperature, °C/°F	-5-40/23-104	
Sound power level ²	102	