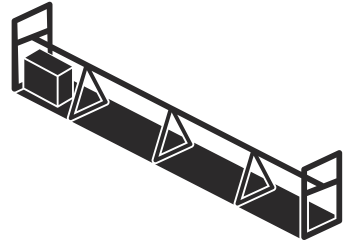




 **Husqvarna**[®]



BT 90

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Introduction

Product description

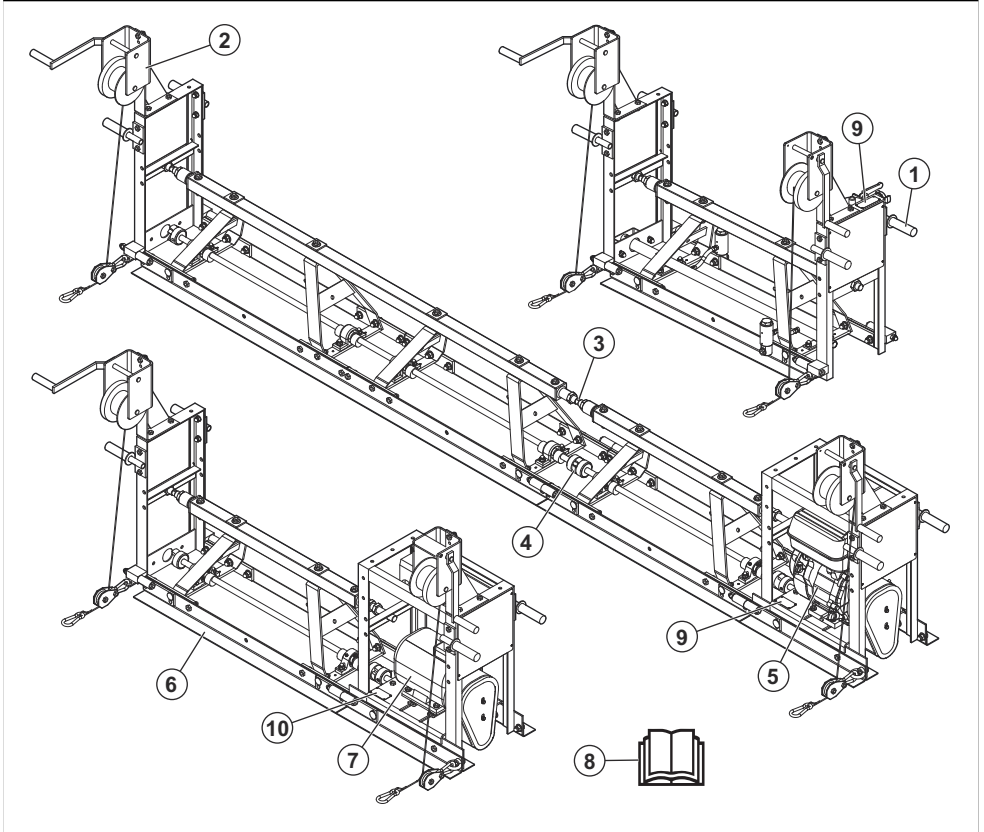
The product is a modular truss vibrating beam system for concrete placement of large surfaces. The truss screed sections are available in different dimensions. The stretching screw adjusts the angle of the concrete surface: flat, with an angle that points up or with an angle that points down. The product is powered by an electric (BT 90 E), gasoline (BT 90 G) or pneumatic drive unit (BT 90 P).

Intended use

The product is for professional operation only. The product is used for compaction of concrete, to make areas of concrete level and to make the surface smooth. Examples of such work are concrete floors, driveways and bridges.

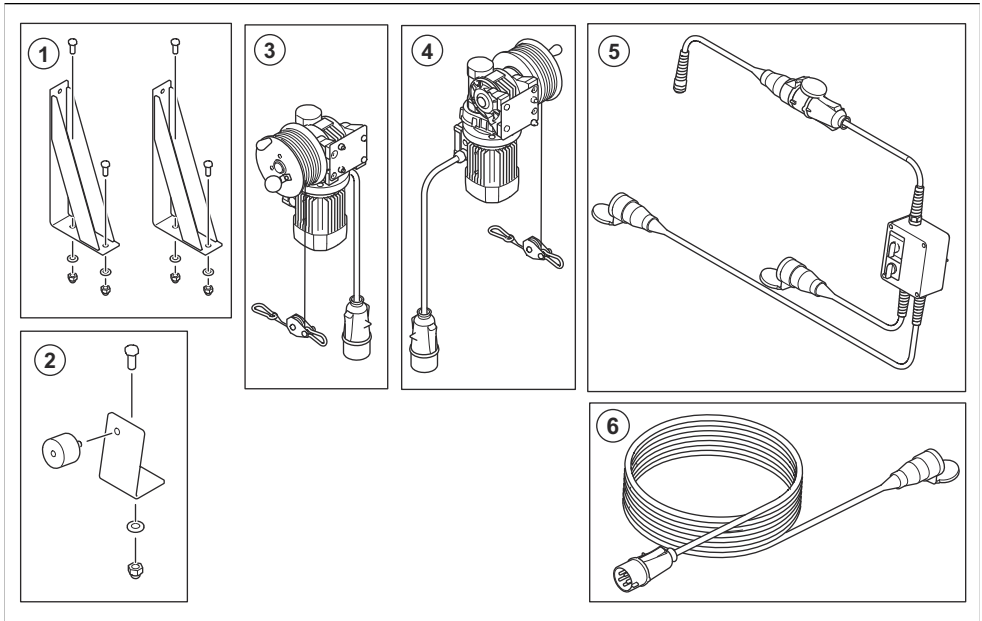
Do not use the product for other tasks.

Product overview



- 1. Handle
- 2. Winch
- 3. Stretching screw
- 4. Coupling
- 5. Engine (BT 90 G)
- 6. Truss screed section
- 7. Motor (BT 90 E)
- 8. Operator's manual
- 9. Type plate
- 10. Rating plate

Electric winches overview



1. Assembly plates for EWL and EWR including screws, washers and nuts
2. Control board assembly kit (plates, screw, nut, washer, bracket)
3. Electrical Winch Left (EWL)
4. Electrical Winch Right (EWR)
5. Control board and rubber damper
6. Extension kit (length 10 m) to connect EW to control board



Use protective gloves.



Keep all body parts away from rotating parts.



Fuel: Unleaded gasoline with a maximum of 10% ethanol.



This product is in compliance with applicable EC directives.

Symbols on the product



WARNING: This product can be dangerous and cause serious injury or death to the operator or others. Be careful and use the product correctly.



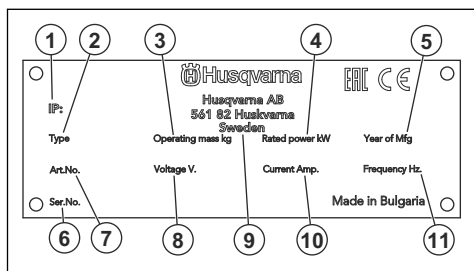
Read the manual carefully and make sure that you understand the instructions before you use the product.



Use hearing protection.

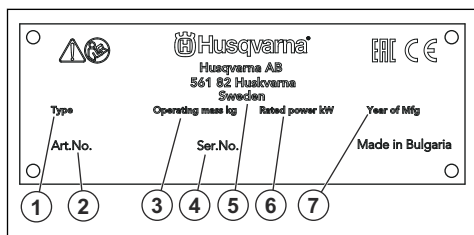
Note: Other symbols/decals on the product refer to special certification requirements for some markets.

Type plate



1. IP classification
2. Product type
3. Product weight
4. Rated power
5. Production year
6. Serial number
7. Product number
8. Voltage, V
9. Manufacturer
10. Current, A
11. Frequency, Hz

Type plate



1. Product type
2. Product number
3. Product weight
4. Serial number
5. Manufacturer
6. Rated power
7. Production year

Product damage

We are not responsible for damages to our product if:

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

Safety

Safety definitions

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



WARNING: Used if there is a risk of injury or death for the operator or bystanders if the instructions in the manual are not obeyed.



CAUTION: Used if there is a risk of damage to the product, other materials or the adjacent area if the instructions in the manual are not obeyed.

Note: Used to give more information that is necessary in a given situation.

General safety instructions



WARNING: Read the warning instructions that follow before you use the product.

- This product is a dangerous tool if you are not careful or if you use the product incorrectly. This product can cause serious injury or death to the operator or others. Before you use the product, you must read and understand the contents of this operator's manual.

- This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.
 - 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 product.
 - Do not let a person operate the product unless they read and understand the contents of the operator's manual.
 - Do not operate the product unless you receive training before use. Make sure that all operators receive training.
 - Do not let a child operate the product.
 - Only let approved persons operate the product.
 - The operator is responsible for accidents that occur to other persons or their property.
 - Do not use the product if you are tired, ill, or under the influence of alcohol, drugs or medicine.
 - Always be careful and use your common sense.
 - This product 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 product.
 - Keep the product clean. Make sure that you can clearly read signs and decals.
 - Do not use the product if it is damaged.
 - Do not make modifications to this product.
 - Do not operate the product if it is possible that other persons have made modifications to the product.
- Make sure that there is no grease or oil on the handle.
 - Do not use the product in areas where fire or explosions can occur.
 - The product can cause objects to eject at high speed. Make sure that all persons in the work area use approved personal protective equipment. Remove loose objects from the work area.
 - Before you go away from the product, stop the engine and make sure that there is no risk of accidental start.
 - Make sure that clothes, long hair and jewelry do not get caught in moving parts.
 - Do not sit on the product.
 - Do not hit the product.
 - Always operate the product from behind with your hands on the handle.
 - Do not operate the product near electrical cables. The product does not have electrical insulation and injury or death can occur.
 - Before you operate the product, find out if there are hidden wires, cables and pipes in the work area. If the product hits a hidden object, stop the engine immediately and examine the product and the object. Do not start to operate the product again until you know that it is safe to continue.

Vibration safety



WARNING: Read the warning instructions that follow before you use the product.

- During operation of the product, vibrations go from the product to the operator. Regular and frequent operation of the product can cause or increase the degree of vibration-related 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 occur during operation of the product or at other times. If you have symptoms and continue to operate the product, the symptoms can increase or become permanent. If these or other symptoms occur, get medical aid:
 - Numbness, loss of feeling, tingling, pricking, pain, burning, throbbing, stiffness, clumsiness, loss of strength, changes in skin color or condition.
- Symptoms can increase in cold temperatures. Use warm clothing and keep your hands warm and dry when you operate the product in cold environments.
- Do maintenance on and operate the product as given in the operator's manual to keep correct vibration levels.

Safety instructions for operation



WARNING: Read the warning instructions that follow before you use the product.

- Make sure that you know how to stop the engine quickly in an emergency.
- The operator must have the physical strength that is necessary to operate the product safely.
- Do not operate the product without all protective covers installed.
- Use personal protective equipment. Refer to *Personal protective equipment on page 7*.
- Make sure that only approved persons are in the work area.
- Keep the work area clean and bright.
- Make sure that you are in a safe and stable position during operation.
- Make sure that there is no risk that you or the product can fall from a height.

- Gently guide the product to do the work. Do not push the product with force. Hold the product at the handles securely, but make sure that you control the product 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.
- Stop the product immediately if strong vibrations suddenly occur. Do not continue the operation before the cause of the increased vibrations is removed.

Dust safety



WARNING: Read the warning instructions that follow before you use the product.

- Operation of the product 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
 - 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 the respiratory protection is applicable for the dangerous materials in the work area.
- Make sure that the airflow is sufficient in the work area.
- If it is possible, point the exhaust of the product where it cannot cause dust to go into the air.

Exhaust fumes safety



WARNING: Read the warning instructions that follow before you use the product.

- The exhaust fumes from the engine contain carbon monoxide which is an odourless, poisonous and very dangerous gas. To breathe carbon monoxide can cause death. Because carbon monoxide is odourless and cannot be seen, it is not possible to sense it. An early symptom of carbon monoxide poisoning is dizziness, but sufficient quantity or concentration of carbon monoxide may cause loss of consciousness, especially in an enclosed space or area without adequate ventilation.

- Exhaust fumes also contain unburned hydrocarbons including benzene. Long-term inhalation can cause health problems.
- Exhaust fumes that you can see or smell also contain carbon monoxide.
- Do not use a combustion engine product indoors or in areas that do not have sufficient airflow.
- Do not breathe the exhaust fumes.
- Make sure that the airflow in the work area is sufficient. This is very important when you operate the product in trenches or other small work areas where exhaust fumes can easily collect.

Noise safety



WARNING: Read the warning instructions that follow before you use the product.

- 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 product as described in the operator's manual.
- Examine the muffler for damage. Make sure that the muffler is correctly attached to the product.
- Use approved hearing protection while you operate the product.
- Listen for warning signals and voices when you use hearing protection. Remove the hearing protection when the product is stopped, unless hearing protection is necessary for the noise level in the work area.

Personal protective equipment



WARNING: Read the warning instructions that follow before you use the product.

- Always use approved personal protective equipment when you operate the product. 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 toe-cap and non-slip sole.
- Use approved work clothing or equivalent close-fitting clothing that has long sleeves and long legs.

Fire extinguisher

- Keep a fire extinguisher near during operation.
- Use a powder fire extinguisher of "ABE" class or a carbon dioxide fire extinguisher of "BE" type.

Safety devices on the product



WARNING: Read the warning instructions that follow before you use the product.

- Do not use the product if the safety devices are not in proper working order.
- Do a check of the safety devices daily. If your safety devices are not in proper working order or are damaged, speak to your Husqvarna service agent.
- Do not make modifications on safety devices

Fuel safety



WARNING: Read the warning instructions that follow before you use the product.

- Fuel is flammable and the fumes are explosive. Be careful with fuel to prevent injury, fire and explosion.
- Do not breathe in the fuel fumes. The fuel fumes are poisonous and can cause injury. Make sure that the airflow is sufficient.
- Do not remove the fuel tank cap or fill the fuel tank when the engine is on.
- Make sure that the engine is cool before you refuel.
- Do not fill fuel in an indoor area. Insufficient airflow can cause injury or death because of asphyxiation or carbon monoxide poisoning.
- Do not smoke near the fuel or the engine.
- Do not put hot objects near the fuel or the engine.
- Do not fill fuel near sparks or flames.
- Before you refuel, open the fuel tank cap slowly and release the pressure carefully.
- Fuel on your skin can cause injury. If you get fuel on your skin, use soap and water to remove the fuel.
- If you spill fuel on your clothing, change clothing immediately.
- Do not fill the fuel tank fully. Heat causes the fuel to expand. Keep a space at the top of the fuel tank.
- Tighten the fuel tank cap fully. If the fuel tank cap is not tightened, there is a risk of fire.
- Before you start the product, move the product to a minimum of 3 m/10 ft from where you refueled.
- Do not start the product if there is fuel or engine oil on the product. Remove the unwanted fuel and engine oil and let the product dry before you start the engine.
- Examine the engine for leaks regularly. If there are leaks in the fuel system, do not start the engine until the leaks are repaired.

- Do not use your fingers to examine the engine for leaks.
- Keep fuel in approved containers only.
- When the product and fuel is in storage, make sure that fuel and fuel fumes cannot cause damage.
- Drain the fuel in an approved container outdoors and away from sparks and flames.

Electrical safety



WARNING: Read the warning instructions that follow before you use the product.

- The power plug must agree with the power outlet. Do not do modifications to the plug. Do not use adapter plugs with grounded products. Power plugs without modifications, and correct power outlets decrease the risk of electrical shock.
- Do not pull the power cord to move the product.
- Pull the power plug to disconnect the power cord. Do not pull the power cord.
- Make sure that the power cord does not catch in doors, fences or equivalent obstacles that can cause damage to the power cord.
- Do a check that the power cord and the power plug are in good condition and not damaged.
- Do not connect a damaged power cord to the product.
- Do not touch the power cord if it becomes damaged during operation of the product. Disconnect the power cord from the power outlet.
- Keep the power cord away from water, oil, sharp edges and moving parts.
- Keep the product away from rain and wet conditions. The risk of electrical shock increases if water goes into the product.
- Use a power supply with RCD (residual-current device) protection if you operate the product in a moist environment. An RCD decreases the risk of electrical shock.

Safety instructions for pneumatic air hoses



WARNING: A loose pneumatic air hose can move around randomly and with force. There is a risk of injury or death if the operator or bystanders are hit by a pneumatic air hose. Read the warning instructions that follow before you use the product.

- Examine the pneumatic air hose and the connectors for damage. Replace damaged parts immediately.
- Make sure that all connectors for the pneumatic air hose are correctly installed.
- Make sure that the pneumatic air hose is correctly connected.

- Do not hold the pneumatic air hose to lift or move the product.
- Do not disconnect a pneumatic air hose that is pressurized. Before you disconnect the pneumatic air hose, stop the air compressor and then operate the start and stop function on the product to release the remaining pressure.
- Do not point the airflow in the direction of your body or other persons. Air can go into the blood circulation and cause death.
- Do not use compressed air to remove dirt from your clothing.
- If you use claw couplings, install lockpins and use safety cables. Lockpins and safety cables prevent failure in the connections between pneumatic air hoses and between a pneumatic air hose and a tool.
- Clean the product to remove dangerous material before you do the maintenance.
- Disconnect the spark plug cap before you do the maintenance.
- The exhaust fumes from the engine are hot and can contain sparks. Do not operate the product in indoor areas or near flammable material.
- Do not change the product. Modifications that are not approved by the manufacturer, can cause serious injury or death.
- Always use original accessories and spare parts. Accessories and spare parts that are not approved by the manufacturer, can cause serious injury or death.
- Replace damaged, worn or broken parts.
- Only do the maintenance as given in this operator's manual. Let an approved service center do all other servicing.
- Remove all tools from the product before you start the engine after maintenance. Loose tools or tools attached to rotating parts can eject and cause injury.
- After maintenance, do a check of the vibration level in the product. If it is not correct, speak to an approved service center.
- Let an approved service center do servicing on the product regularly.

Safety instructions for maintenance



WARNING: Read the warning instructions that follow before you use the product.

- If the maintenance is not done correctly and regularly, the risk of injury and damage to the product increases.
- Use personal protective equipment. Refer to *Personal protective equipment on page 7*.
- Stop the engine and make sure that all parts of the product are cool before you do the maintenance.

- Let an approved service center do servicing on the product regularly.

Assembly

Introduction



WARNING: Read and understand the safety chapter before you assemble the product.



CAUTION: Vibrations in the product can cause the truss screed sections to become loose. This causes damage to the screed. Tighten the fasteners again after some minutes of operation.

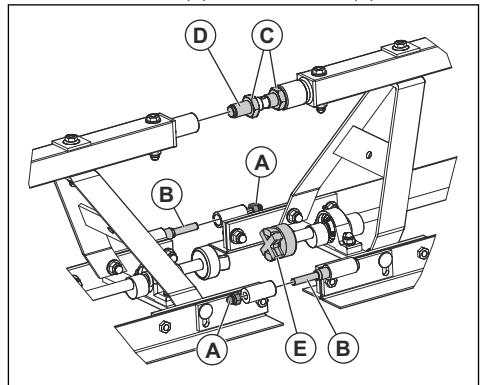
Note: For the nuts (A) and the screws (B): torque 81Nm for a M12 class 8.8.

Note: For the nuts (C): 36 mm wrench.

To install the BT 90 E and BT 90 G truss screed sections

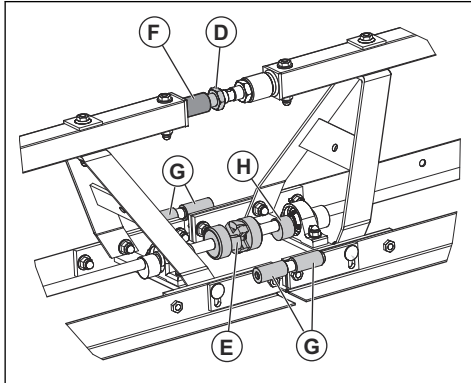
To prevent vibration, install the shortest truss screed sections near to the drive unit. Then install the longer truss screed sections.

1. Put the truss screed sections on level ground.
2. Remove the nuts (A) from the screws (B).



3. Move the nuts (C) near the center of the bolt (D).
4. Make sure that the rubber cross at the coupling (E) is in good condition.

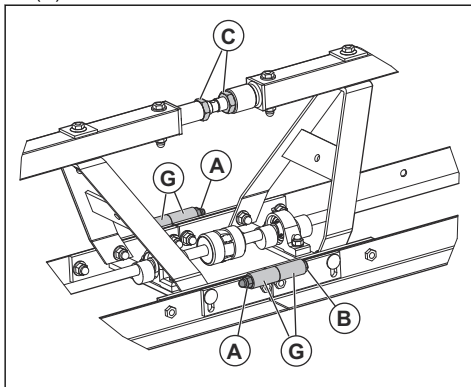
5. Move the truss screed sections together until the bolt (D) goes into the holder (F).



6. Insert a screwdriver with the correct size into the hole in the bolt (D). Use the screwdriver to rotate the bolt (D).

Note: The bolt has a right hand thread.

7. Make sure that the plugs (G), couplings (E) and eccentric elements (H) are aligned.
8. Tighten the bolt (D) fully.
9. Tighten the nuts (A) and the screws (B) on the plugs (G) with 2 flat 19 mm wrenches.



10. Do the necessary angle adjustment with the bolt (D).
11. Tighten the nuts (C) with a 36 mm wrench.

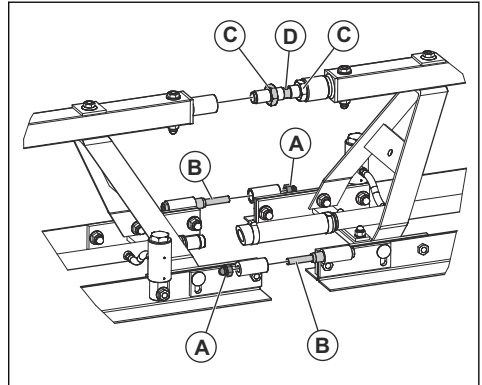
To install the end sections

- Do the same procedure as in *To install the BT 90 E and BT 90 G truss screed sections on page 9.*

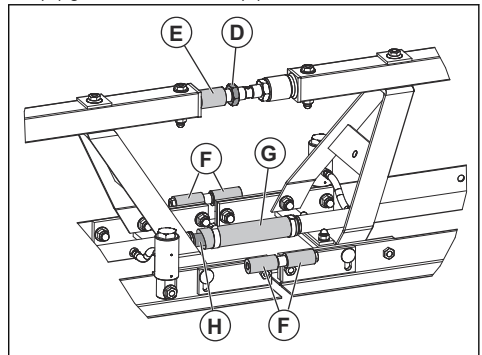
To install the BT 90 P truss screed sections

To prevent resonance, install the shortest truss screed sections near to the drive unit if the screed configuration allows it. Then install the longer truss screed sections.

1. Put the truss screed sections on level ground.
2. Remove the nuts (A) from the screws (B).



3. Move the nuts (C) near the center of the bolt (D).
4. Move the truss screed sections together until the bolt (D) goes into the holder (E).

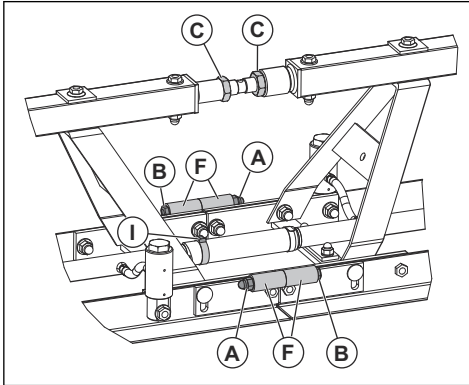


5. Turn the bolt (D) with a 36 mm wrench.

Note: The bolt has a right hand thread.

- a) Make sure that the plugs (F) are aligned.
 - b) Make sure that the rubber hose (G) goes into the air connector (H) and that the rubber hose and air connector align.
6. Tighten the bolt (D) fully.

7. Tighten the nuts (A) and the screws (B) on the plugs (F) with two 19 mm flat wrenches.



8. Install the clamp (I) and tighten it with a screwdriver.
 9. Do the necessary angle adjustment with the stretching screw.
 10. Tighten the nuts (C).
 11. If you use 1 m truss screed section and if it is possible, install the section near to the drive unit. Do not install the 1 m truss screed section on the end of the product.

Use of BT 90 P truss screed sections longer than 15 m/49 ft

When you use BT 90 P truss screed sections that are longer than 15 m/49 ft, you must install two drive units, one at each end of the sections. Then you must to connect one compressor to one of the drive units, and one compressor to the other drive unit.

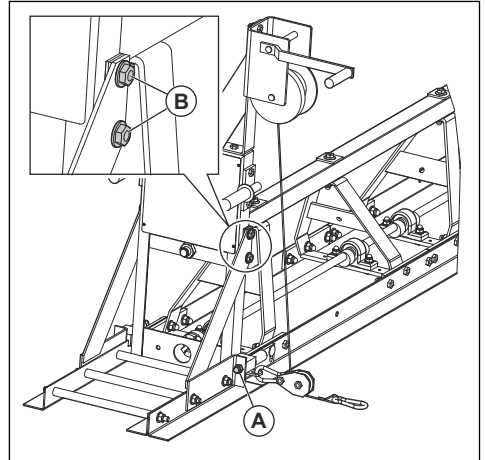
This is necessary to ensure that every pistons will receive enough air flow to vibrate properly. Otherwise, a part of the BT 90 P will not be vibrating.

To install the end sections

1. Do the same procedure as in *To install the BT 90 P truss screed sections on page 10*.
2. The pneumatic drive unit has a plug at the end of the rubber hose. Remove the plug from the rubber hose and put the plug on the end of the opposite truss screed section.

To install the truss screed extension

1. Remove the nuts (A).



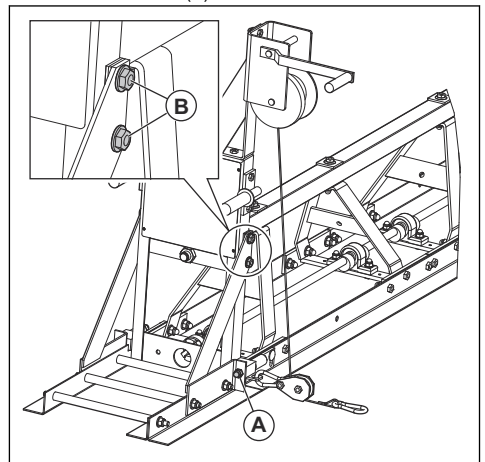
2. Put the truss screed extension against the free end of the truss screed section.

Note: The truss screed extension cannot be installed on the drive unit.

3. Tighten the screws (B) and the nuts (A).

To install the non-vibrating extension

1. Remove the nuts (A).



2. Put the non-vibrating extension against the free end of the non-vibrating section.

Note: The non-vibrating extension cannot be installed on the drive unit.

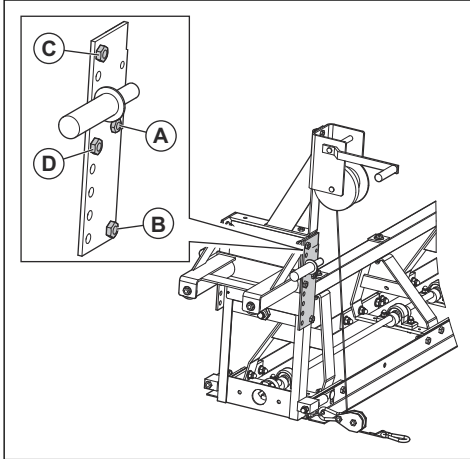
3. Tighten the screws (B) and the nuts (A).

To install the outrigger

The outrigger is available as an optional accessory. Use the outrigger when the product is on support rails. The outrigger can be installed on the 2 ends of the product.

Note: The outrigger cannot be used together with an extension.

1. Remove the handles.
2. Install the outrigger with the nuts (A) and (B).



3. Adjust the outrigger with the nuts (C) and (D). The adjustable distance is given in the table below.

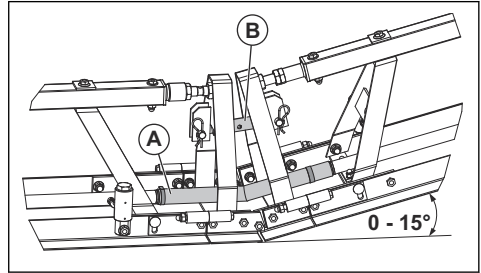
Hole position for nut (C) and (D)	Adjustable distance, mm
1 and 5	0
2 and 6	32.5
3 and 7	65
4 and 8	97.5
5 and 9	130

To install the pneumatic crown invert bracket

The pneumatic crown invert bracket is available as an optional accessory. The pneumatic crown invert bracket can only be installed on the pneumatic truss screed sections. The pneumatic crown invert bracket adjusts the angle to a maximum of 15°.

1. Install the pneumatic crown invert bracket between 2 pneumatic truss screed sections.

2. Connect the rubber hose (A) to the 2 pneumatic truss screed sections.

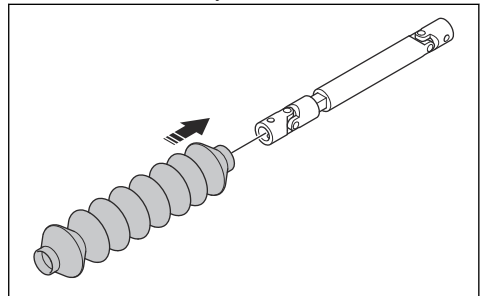


3. Adjust the angle with the stretching screw (B).

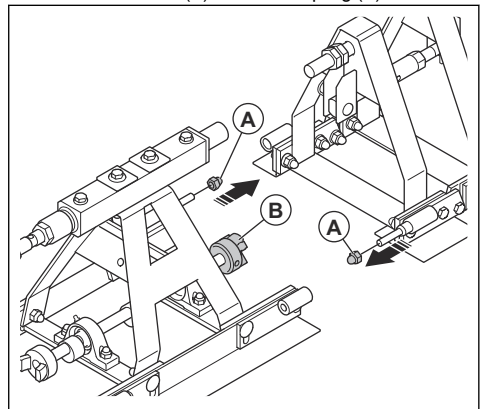
To install the mechanical crown invert bracket

The mechanical crown invert bracket is available as an optional accessory. The mechanical crown invert bracket can only be installed between 2 mechanical truss screed sections.

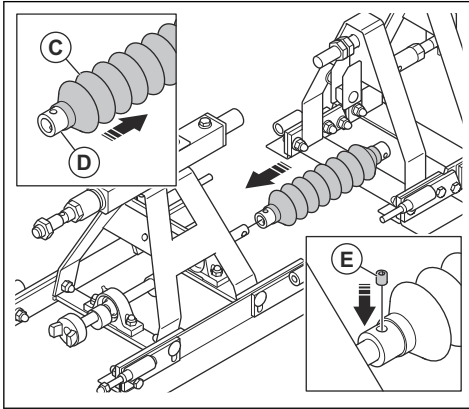
1. Install the bellows on joint.



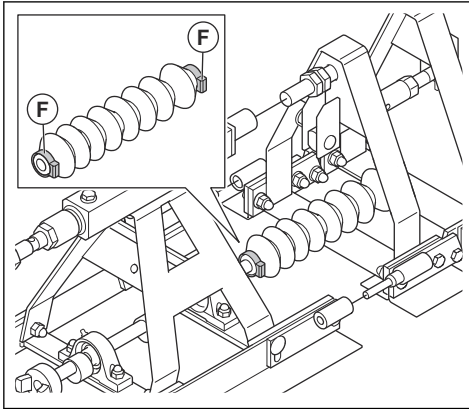
2. Remove the nuts (A) and the coupling (B).



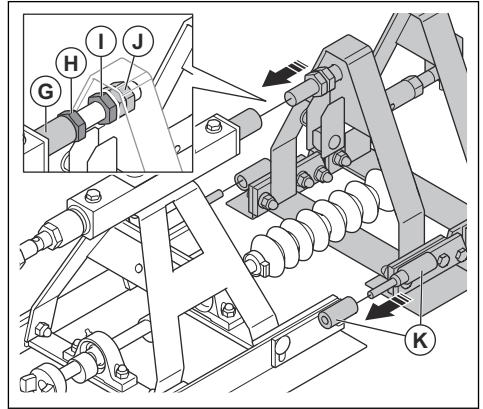
- Adjust the bellows (C) until the end of the joint (D) shows.



- Install the joint to the product and install the screw (E).
- Install the clamps (F).



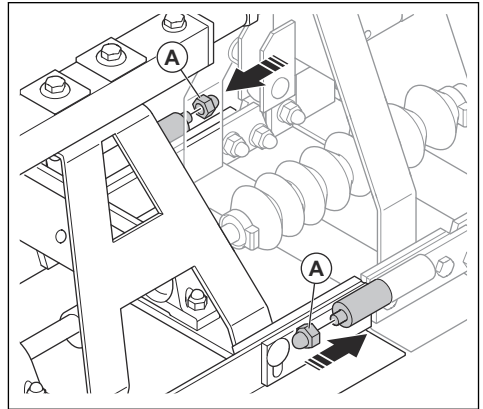
- Move the truss screed sections together until nut (H) goes into the holder (G).



- Turn the nut (H) with a 36 mm wrench.

Note: The nut has a right hand thread.

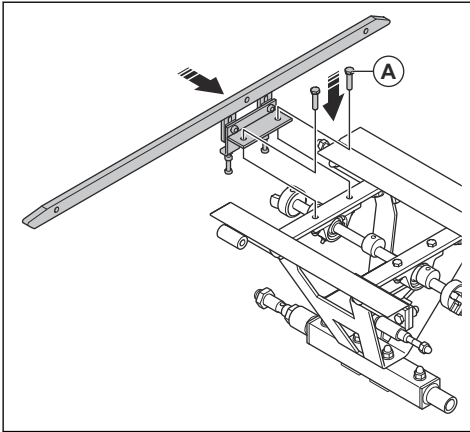
- Make sure that the plugs (K) are aligned.
- Tighten the nut (H) fully
- Tighten the nuts (I and J) with a 36 mm wrench.
- Tighten the nuts (A) with 2 flat 19 mm wrenches.



To install the skates (optional)

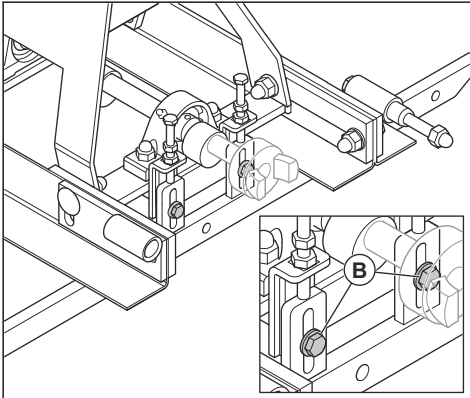
- Put the product with the top side down.

2. Install the skate and the 2 screws (A) to the product.

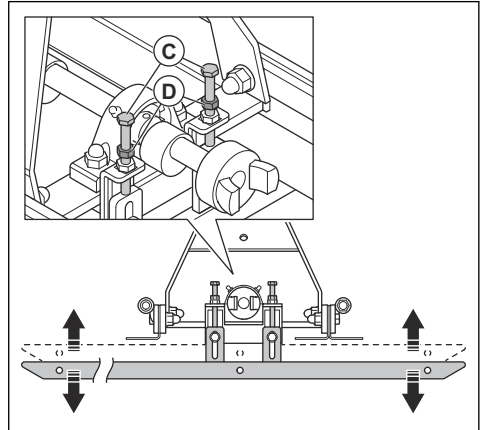


3. Put the product with the bottom side down.

4. To adjust the height of the skate, loosen the 2 screws (B).



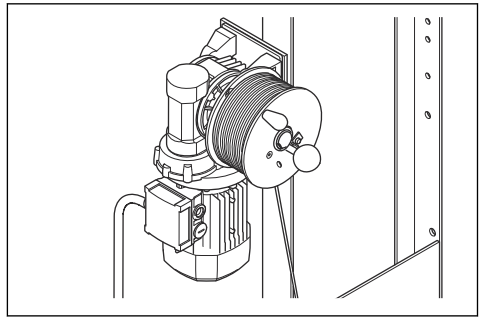
5. Turn the 2 screws (C) and the 2 nuts (D) to adjust the height of the skate.



6. When the adjustment is done, tighten the 2 screws (C), the 2 nuts (D) and the 2 screws (B).

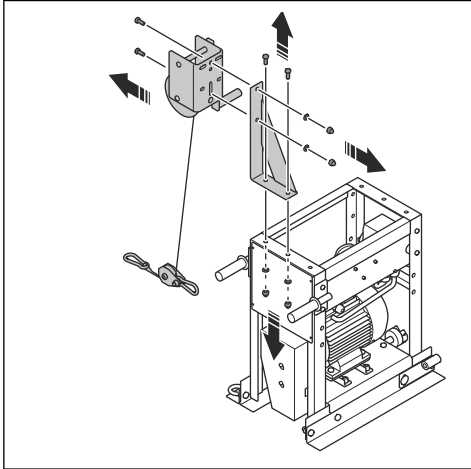
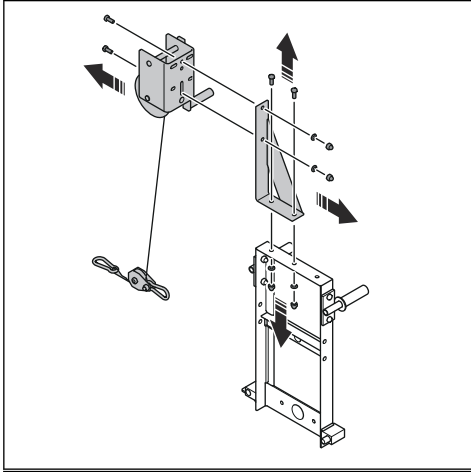
To install the electric winches

The electric winches are used to pull the product on rails during operation on horizontal concrete surfaces. The electric winches are attached to the end section and the drive unit section with supplied screws and nuts. The electric winches have a worm gear motor, a 40 m/131 ft cable with carabiners and a cable drum that can be removed.

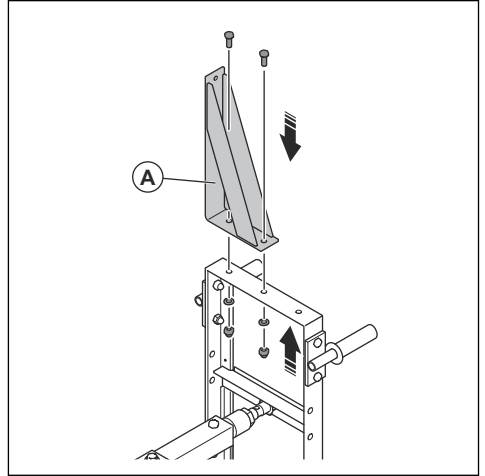


WARNING: Do not lift the product or other objects with the electric winches. The electric winches do not meet the safety requirements. It is very dangerous to hang a heavy load from the electric winches.

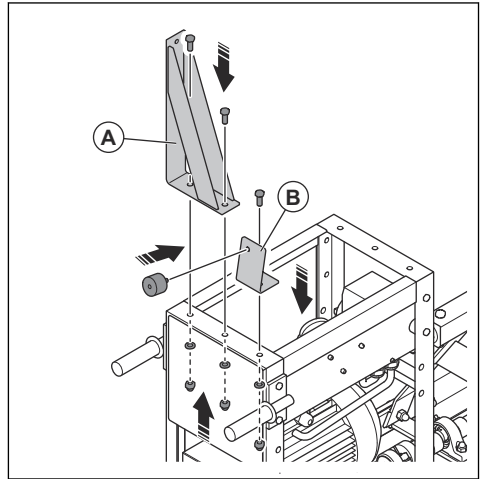
1. Remove the manual winches, the screws, the washer, the nuts and the assembly plates.



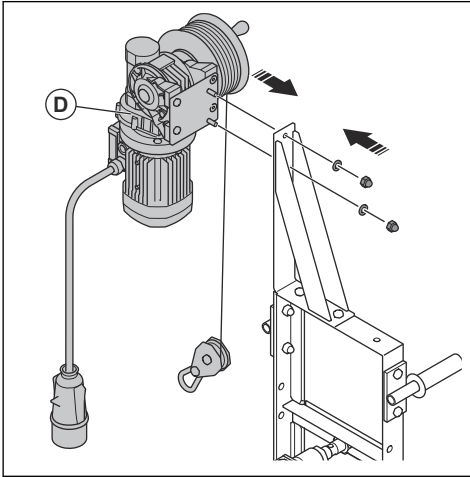
2. Attach the left assembly plate (A). Use the screws, the washers and the nuts.



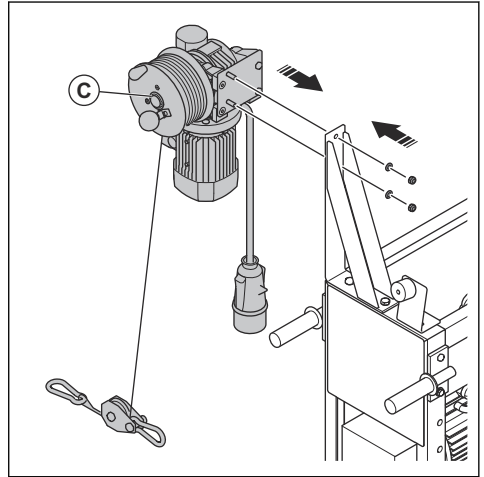
3. Attach the right assembly plate (A) and the assembly plate for the control board (B). Use the screw, the washers and the nuts.



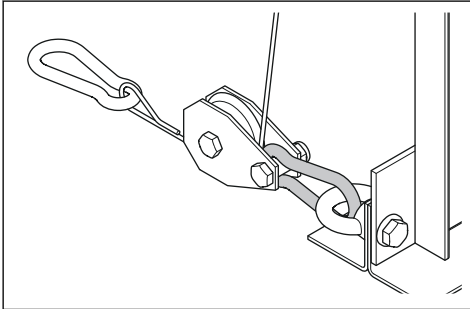
4. Attach the left electric winch (D) to the left assembly plate. Use the screws, the washers and the nuts.



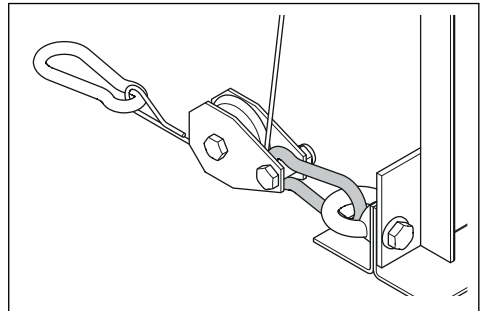
6. Attach the right electric winch (C) to the right assembly plate. Use the screws, the washers and the nuts.



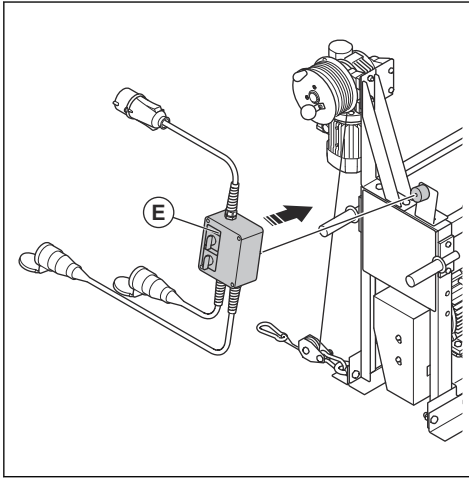
5. Connect the left safety hook to the left loop.



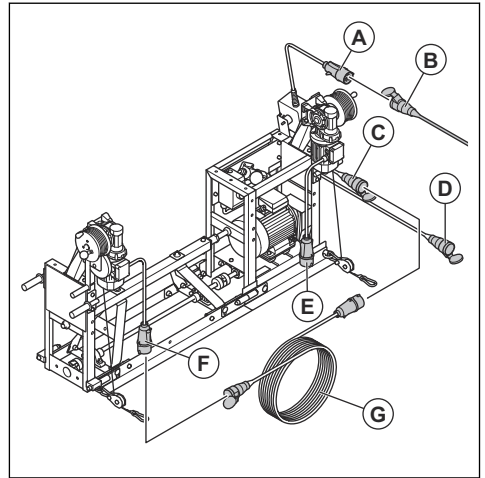
7. Connect the right safety hook to the right loop.



8. Attach the control board (E) to the control board assembly plate. Use the screws, the washers and the nuts.



9. Connect according to the description.



- Connect cable socket F to the socket on one end of cable G.
- Connect cable socket D to the socket on the other end of cable G.
- Connect cable socket C to cable socket E.
- Connect the cable socket A to the wall socket B.

Operation

Introduction



WARNING: Read and understand the safety chapter before you use the product.

To do before you operate the product



WARNING: Do not touch the shaft during operation of the product. The shaft rotates and can cause serious injury.

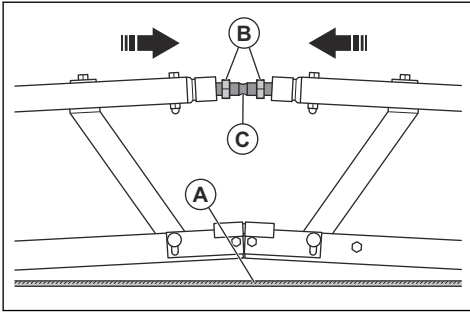
- Read the operator's manual carefully and make sure that you understand the instructions.
- Read the engine manual that is supplied by the engine manufacturer.
- Do the daily maintenance. Refer to *Maintenance on page 21*.
- Make sure that there are no objects near the product that can get caught in the shaft during operation.
- Make sure that the bottom edge of the product is straight. Adjust with the stretching screws as necessary and make sure that the locknuts are fully tightened.
- Make sure that the direction of rotation of the shaft is correct for the operation.

- Make sure that the rails are stable. Rails that are not stable can cause the product to tilt or prevent correct movement of the product.
- Make sure that the rails are in line. Rails that are not in line can make marks on the concrete.

To make the bottom edge of the product straight

- When the product is assembled, put the ends on trestles to free the bottom edge of the product.
- Attach a string (A) along the bottom edge of the product.
- Apply tension to the string to make it straight.

- Loosen the locknuts (B).



- Adjust the tension at each joint with the stretching screw (C) until the full length of the product is straight.
- Tighten the locknuts (B).
- Look at the bottom edge of the product and the string to make sure that the product is straight.

Direction of rotation

You get the best results if the shaft rotates in the opposite direction of the operation direction. The tension in the winch cables are kept and it is easier to control the movement of the product.

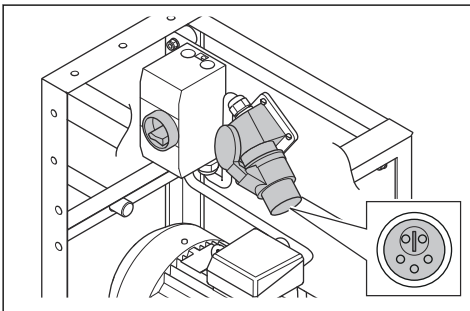
If the product has a fuel drive unit, it is necessary to lift and turn the product around to change the direction of rotation.

If the product has an electric drive unit, refer to *To set the direction of rotation for the BT 90 E drive unit on page 18*.

To set the direction of rotation for the BT 90 E drive unit

The direction of rotation is set with the phase selector in the electrical connection on the product.

- Put a screwdriver in the slot.



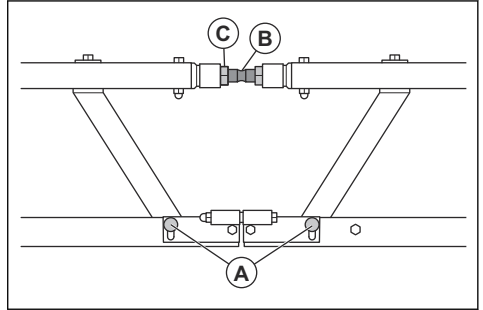
- Push in the screwdriver and turn the screwdriver a 1/2 turn.

To adjust the angle between the truss screed sections



CAUTION: Do not increase the angle to more than $\pm 3\%$ as this decreases the life of the shaft coupling.

- Assemble the truss screed sections. Refer to *Assembly on page 9*.
- Loosen the 4 nuts for the screws (A) at the joint between the truss screed sections.



- Make sure that the thread of the screws are clean and there is no concrete.
- Turn the stretching screw (B) to adjust the angle.
- Tighten the nuts for the screws (A).
- Tighten the locknut (C) to lock the stretching screw.

To start the product

First time start of the product after installation

You must do maintenance on the BT90P when it has run for one hour, if it is the first time it is started after it has been installed. See *Maintenance schedule on page 21*.

To start the electric drive unit (BT 90 E)

- Make sure that the frequency and voltage shown on the rating plate is the same as the power supply voltage.
- Connect the power plug of the drive unit to the power supply.
- Start the drive unit.
- Examine the direction of rotation of the vibration shaft. If the direction is incorrect, change to the opposite direction. Refer to *To set the direction of rotation for the BT 90 E drive unit on page 18*.

To start the fuel drive unit (BT 90 G)

- Fill engine oil. Refer to the engine manual.
- Fill fuel.
- Open the fuel valve.
- Set the choke control in the correct position.
 - If the engine is cold, close the choke.

- b) If the engine is warm or the ambient temperature is high, open the choke.
5. Set the engine ON/OFF switch to ON.
 6. Start the engine.
 7. Let the engine operate at idle speed for 2–3 minutes and then increase to full speed.



CAUTION: Do not operate the engine at too high speed. Refer to *Technical data on page 26* for maximum engine speed.

To start the pneumatic drive unit (BT 90 P)

The first time you start the pneumatic drive unit you must make sure that all the piston keeping screws on the screed are well tightened after one hour drive.

1. Fill the automatic lubricator with oil. Refer to *Technical data on page 26* for the correct type of oil.
2. Connect the air supply.
3. Open the valve fully to start the vibration.
4. Close the valve slowly until the vibration speed is correct.
5. Adjust the flow of oil from the automatic lubricator. Correct oil flow is 2–3 drops each second.



CAUTION: Do not operate the product without oil.

To operate the product



WARNING: Do not touch the shaft during operation of the product. The shaft rotates and can cause serious injury.

2 operators are necessary to operate the product safely and correctly. 2 more operators are necessary to make sure that the result is satisfactory.

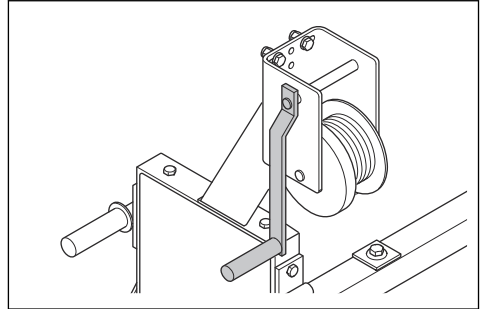
- Let 1 operator walk on the drive unit side of the product. This operator operates the start and stop functions and the winch on that side.
- Let 1 operator walk on the opposite side and operate the winch on that side.
- Let 2 operators walk in front of the product and remove unwanted concrete with a flat concrete spreader. Concrete collects in front of the product. If the unwanted concrete becomes higher than 2-3 cm, the concrete surface does not become flat.
- During operation, do a check of the stretching screws and the locknuts at regular intervals. Tighten the stretching screws and the locknuts if it is necessary. The vibrations can cause the stretching screws and the locknuts to loosen.

- If the product is lifted and moved, do a check of the stretching screws and the locknuts before the operation continues. Tighten the stretching screws and the locknuts if it is necessary. The transport can cause the stretching screws and the locknuts to loosen.

To pull out the winch cable

The 30 m/98 ft winch cable can be pulled out freely if the winches are disengaged.

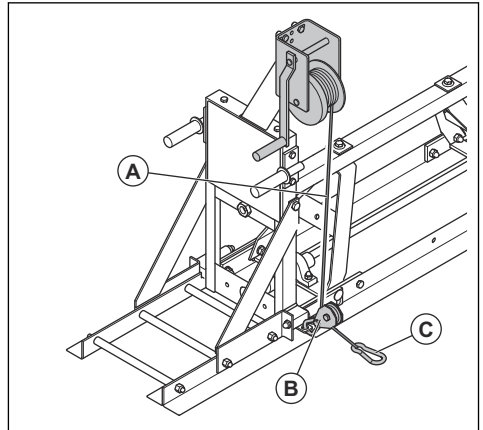
1. Turn the winch handle rearward 2 turns without load.



2. Remove the winch handle.
3. Pull the cable to unwind it.
4. Put the winch handle back.

To move the product forward

1. Put the winch cable (A) through the pulley (B).

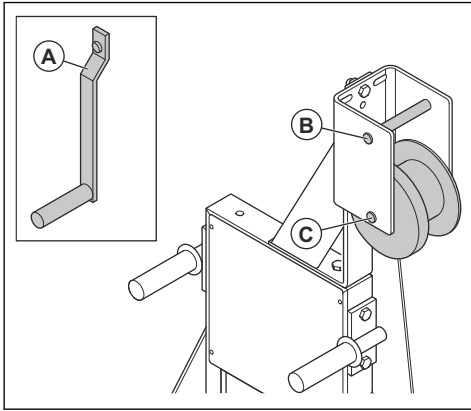


2. Pull out the winch cable and attach the carabiner (C) at the remote end of the work area.
3. Turn the winches at each end of the product.
4. Make sure that the winch cable is perpendicular to the product. If not, the product moves laterally during operation.

To set the speed of the forward movement

There are 2 different shafts on the winches. The speed of the forward movement is different for the 2 shafts.

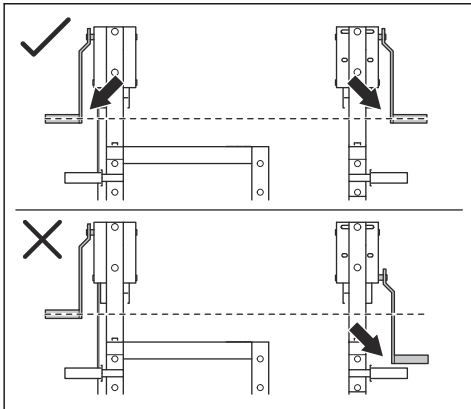
- Put the winch handles (A) at the top shafts (B) for higher speed.



- Put the winch handles (A) at the bottom shafts (C) for lower speed.

Note: Use high speed for high or medium slump concrete and low speed for medium or low slump concrete.

- Make sure that the winches on the 2 ends of the product are at the same shaft position. If the winches are not at the same position, the product does not move at equal speed on the 2 ends.



Note: If you want to operate a circular area, the winches can be put in different positions since the product then will move in a circle.

To stop the product

To stop the electric drive unit (BT 90 E)

- Set the power switch to OFF.
- Disconnect the power cord from the power source.



WARNING: Always disconnect the power cord from the power source when the product is not in operation.

To stop the gasoline drive unit (BT 90 G)

- Move the throttle control to the idle speed position.
- Set the engine ON/OFF switch to OFF. The engine stops.
- Move the fuel valve to the OFF position.

To stop the pneumatic drive unit (BT 90 P)



WARNING: Do not disconnect the air compressor if there is air pressure in the hose. There is a risk of injury if compressed air goes into eyes or onto skin.

- Close the valve on the air compressor fully.
- If the valve on the drive unit is closed, open it.
- Wait until the air pressure is gone.
- Disconnect the air compressor.

Maintenance

Introduction



WARNING: Read and understand the safety chapter before you do maintenance on the product.

Maintenance schedule

Note: If more than 1 time interval is identified in a table row, the shortest time interval is for the first maintenance only.

Maintenance	At the first start after the first hour	Daily
Examine all the screws keeping the pistons on the screed. If it is necessary, tighten the screws.	X	X
Examine all nuts. If it is necessary, tighten them correctly.		X
Examine all screws of type M10. If it is necessary, tighten them correctly to 47 Nm.		X
Examine all screws of type M12. If it is necessary, tighten them correctly to 81 Nm.		X
Clean the product. <i>To clean the product on page 21</i>		X
Make sure the winches operate correctly.		X
Examine the cables for damage. Replace damaged cables		X
Make sure that the cables are wound correctly around the cable drum without knots and with correct tension.		X
For gasoline drive units and electric units: a) Lubricate the bearings of the truss screed sections. b) Examine the drive belt tension. c) Examine the engine/motor speed. <i>Technical data on page 26</i>		X
For gasoline drive units, do a check of the fuel level and the engine oil level. Refer to the engine manual.		X
For pneumatic drive units: <i>To clean and lubricate a concrete vibrator on the pneumatic sections on page 22</i> a) Fill the automatic lubricator and make sure that the oil flow is 2-3 drops each second. b) Examine the concrete vibrator. If it has stopped, clean the concrete vibrator.		X

To clean the product

- Remove concrete from the surfaces of the product after each operation before the concrete becomes hard. Spray with concrete form oil or concrete release agent.
- Use a high-pressure washer to clean the product.



CAUTION: Do not point the water directly at the motor of an electric drive unit.



CAUTION: Before you clean a gasoline drive unit with a high-pressure washer, put a cover on the engine. No

water must come on the carburetor, the fuel tank or the generator.

- Clean the external surfaces of the engine of a gasoline drive unit with water, but not a high-pressure washer.
- Clean the shafts but do not point the water at the bearings.
- Tilt the product to clean the bottom side.
- Remove grease and oil from the handle.

3. Clean the piston and the concrete vibrator body.
4. Lubricate the piston with oil.
5. Assemble the concrete vibrator.



CAUTION: The top plug of the concrete vibrator must be attached with LOCTITE® N243™.

6. Torque the top plug to 350 Nm.

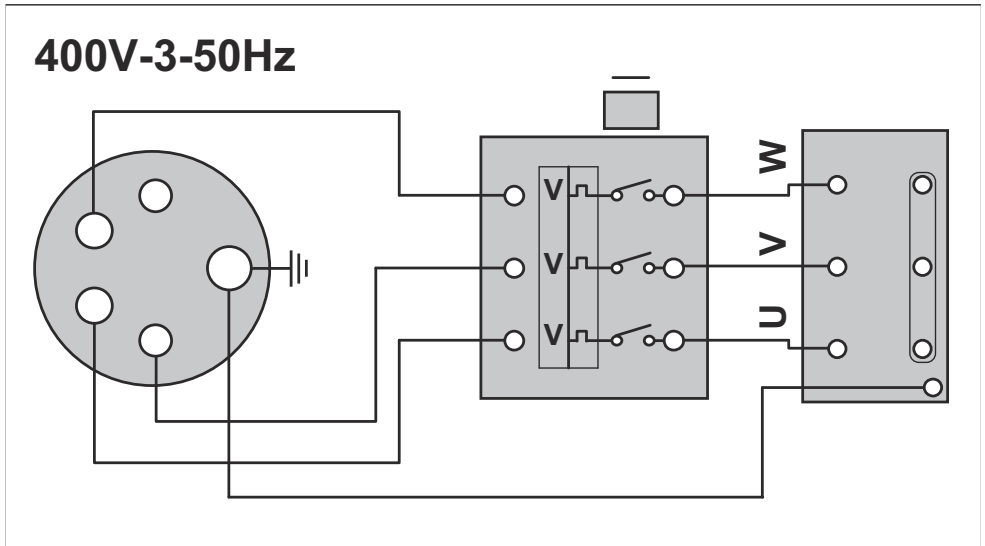
To clean and lubricate a concrete vibrator on the pneumatic sections

1. Remove the concrete vibrator from the product.
2. Remove the top plug on the concrete vibrator and remove the piston.

To adjust the drive belt tension

1. Remove the 4 screws that hold the engine.
2. Move the engine manually to tighten the drive belts.
3. Install the 4 screws.

Electrical diagram



Breaker adjustment

6.3 A	400 V
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Troubleshooting

Problem	Drive unit	Cause	Solution
The product does not start.	BT 90 P	No air pressure.	Do a check of the air pressure.
		No air.	Do a check of the air flow.
		The air lever is in the OFF position.	Set the air lever to the ON position.
		The pistons are blocked by ice.	Set the air on. Use a rubber hammer to gently knock the ice of each blocked piston.
	BT 90 E	The motor ON/OFF switch is in the OFF position.	Set the motor ON/OFF switch to the ON position.
		No power in the power outlet.	Replace or repair the power outlet.
	BT 90 G	No fuel.	Fill fuel.
		The engine ON/OFF switch is in the OFF position.	Set the engine ON/OFF switch to the ON position.
The product starts but there is no vibration.	BT 90 E	The drive belt is not sufficiently tightened.	Tighten the drive belt.
		The drive belt is worn.	Replace the drive belt.
	BT 90 G	The clutch linings are worn out.	Replace the clutch linings.
		The drive belt is not sufficiently tightened.	Tighten the drive belt.
		The drive belt is worn.	Replace the drive belt.

Problem	Drive unit	Cause	Solution
The vibration speed is too low.	BT 90 P	Too low air pressure.	Adjust the air pressure to the given values.
		Too low air flow.	Adjust the air flow to the given values.
		There are leaks in the pneumatic air hoses.	Examine the pneumatic air hoses. Replace them if it is necessary and tighten the clamps fully.
		The product assembly is longer than 15 m/49 ft.	Install a pneumatic drive unit also on the other end of the assembly. This gives a sufficient air flow along the full length of the assembly.
	BT 90 E	Too low voltage.	Do a check of the power supply voltage.
		Too high friction in the bearings.	Examine the bearings and lubricate if it is necessary.
		The product assembly is too large.	The length must not be more than 20 m/65.6 ft.
	BT 90 G	The engine speed is too low.	Adjust the engine speed. Refer to <i>Technical data on page 26</i> for correct engine speed.
		Too high friction in the bearings.	Examine the bearings and lubricate if it is necessary.
		The product assembly is too large.	The length must not be more than 20 m/65.6 ft.
The noise level is too high.	BT 90 P	There are leaks in the pneumatic air hoses.	Examine the pneumatic air hoses. Replace them if it is necessary and tighten the clamps fully.
	All drive unit types.	There is vibration in the nuts and screws.	Make sure that all nuts and screws are correctly tightened.
The vibrations are not equal along the concrete surface.	BT 90 P	The product assembly is between 15 m/49 ft and 25 m/82 ft long.	Make sure that you have installed two pneumatic drive units to the assembly. Each drive unit must be connected to an air compressor. This gives a sufficient air flow along the full length of the assembly.
		The product assembly is more than 25 m/82 ft long.	The length must not be more than 25 m/82 ft.
		The pistons are blocked or worn out.	Make sure the pistons are not blocked. Change pistons if they are worn out.
The circuit breaker opens.	BT 90 E	Incorrect voltage.	Do a check of the power supply voltage and adjust it if it is necessary.
		There is not sufficient power in the power supply.	Do a check of the amperage in the power supply.
		The product assembly is too large.	The length must not be more than 20 m/65.6 ft.
		Too high friction in the bearings.	Examine the bearings and lubricate if it is necessary.

Transportation, storage and disposal

Transportation



WARNING: Be careful during transportation. The product is heavy and can cause injury if it falls.

To lift the product



WARNING: Make sure that the lifting equipment has the correct specification to lift the product safely. The rating plate on the product shows the product weight.



WARNING: Do not lift a damaged product.



WARNING: Do not walk or stay below or near a lifted product.

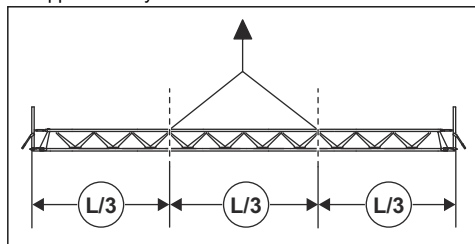


WARNING: Do not lift the product with the winches on the product. The winches do not meet the safety requirements. It is very dangerous to hang a heavy load from the winches.



CAUTION: Do not lift the product in the middle only. That can cause the product to bend. Use 2 or more straps to lift the product.

- Attach the ends of the straps at a distance of approximately $\frac{1}{3}$ of the balance.



CAUTION: Put the straps where they balance also the weight of the drive unit. The balance will not be correct if the straps are put at a distance of $\frac{1}{3}$ of the length.

Storage

- Clean the product before storage.
- Keep the product in a dry and frost-free area.
- Keep the product in a locked area to prevent access for children or persons that are not approved.

Disposal

- Obey the local recycling requirements and applicable regulations.
- Discard all chemicals, such as engine oil or fuel, at a service center or at an applicable disposal location.
- When the product is no longer in use, send it to a Husqvarna dealer or discard it at a recycling location.

Technical data

Technical data

	BT 90 E	BT 90 G	BT 90 P
Voltage, V	400	N/A	N/A
Phases	3	N/A	N/A
Frequency, Hz	50	N/A	N/A
Power, kW/hp @rpm	3/4.1 @2865	5/7.5 @2900 ¹	–
Full load current, A	6.5	N/A	N/A
Engine brand, type	N/A	Honda, GX270	N/A
Maximum length, m/ft	20/65.6	20/65.6	25/82
Operation air pressure, bar	N/A	N/A	3–6
Air consumption for each truss screed meter, m ³ /min	N/A	N/A	0.26

* = For further information and questions about this specific engine, refer to the engine manual or the web site of the engine manufacturer.

Noise emissions	BT 90 E	BT 90 G
Sound power level, measured dB (A) ²	89.2	98
Sound pressure level at the operator's ear, L _p , dB (A) ³	75	84

Weights and dimensions

	Height, mm/in.	Total length, mm/in.	Operation length, mm/in.	Total width, mm/in.	Weight, kg/lb
BT 90 E	980/38.6	720/28.3	560/22	535/21.1	78/172
BT 90 G	980/38.6	720/28.3	560/22	620/24.4	75/165.3
BT 90 P	970/38.2	278/10.9	0/0	585/23	22/48.5
Free end section	970/38.2	200/7.9	0/0	520/20.5	18/39.7
0.5 m truss screed section, electric/gasoline	376/14.8	595/23.4	500/19.6	420/16.5	24/52.9

¹ As specified by the engine manufacturer. The power rating of the engine indicated is the average net output (at specified rpm) of a typical production engine for the engine model measured to SAE standard J1349/ISO1585. Mass production engines may differ from this value. Actual power output for the engine installed on the final product will depend on the operating speed, environmental conditions and other values.

² Measured sound power level L_W according to EN 12649. EN ISO 3744. Uncertainty K_{WA} 1.1 dB (A).

³ Sound pressure level L_p according to EN 12649. EN ISO 11203. Uncertainty K_{PA} 1.1 dB (A).

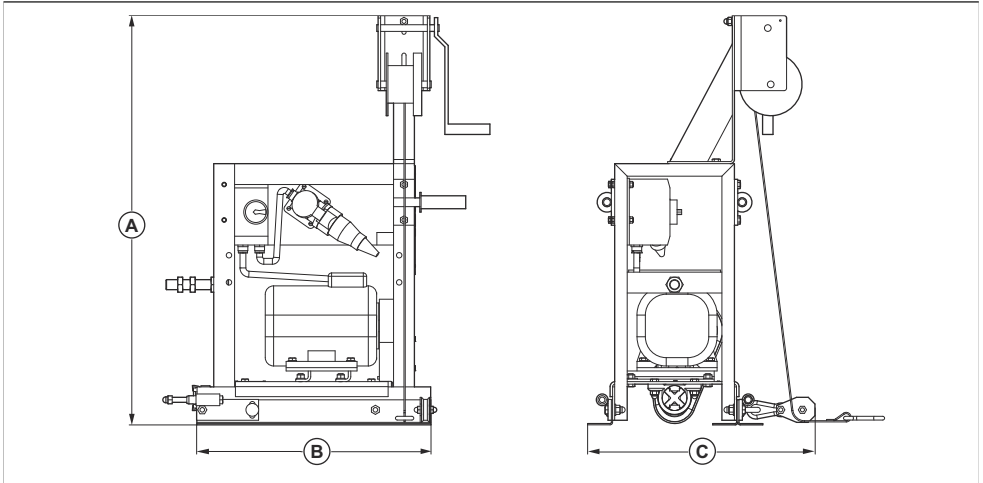
	Height, mm/in.	Total length, mm/in.	Operation length, mm/in.	Total width, mm/in.	Weight, kg/lb
0.75 m truss screed section, electric/gasoline	378/14.9	845/33.2	750/29.5	420/16.5	420/16.5
1 m truss screed section, electric/gasoline	378/14.9	1095/43.1	1000/39.4	420/16.5	32/70.5
2 m truss screed section, electric/gasoline	378/14.9	2095/82.5	2000/78.7	420/16.5	57/125.7
3 m truss screed section, electric/gasoline	378/14.9	3095/82.5	3000/118.1	420/16.5	82/180.8
1 m truss screed section, pneumatic	378/14.9	1095/43.1	1000/39.4	420/16.5	32/70.5
2 m truss screed section, pneumatic	378/14.9	2095/82.5	2000/78.7	420/16.5	57/125.7
3 m truss screed section, pneumatic	378/14.9	3095/82.5	3000/118.1	420/16.5	82/180.8

Noise and vibration declaration statement

These declared values were obtained by laboratory type testing in accordance with the stated directive or standards and are suitable for comparison with the declared values of other products tested in accordance with the same directive or standards. These declared values are not suitable for use in risk assessments and values measured in individual work places may be higher. The actual exposure values and risk of harm experienced by an individual user are unique and depend upon the way the user works, in what material the product is used, as well as upon the exposure time and the physical condition of the user, and the condition of the product.

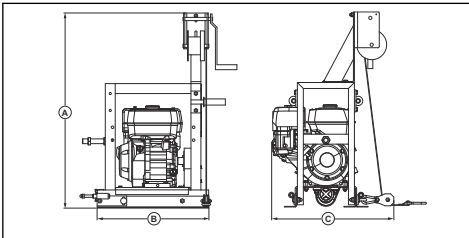
Product dimensions

BT 90 E



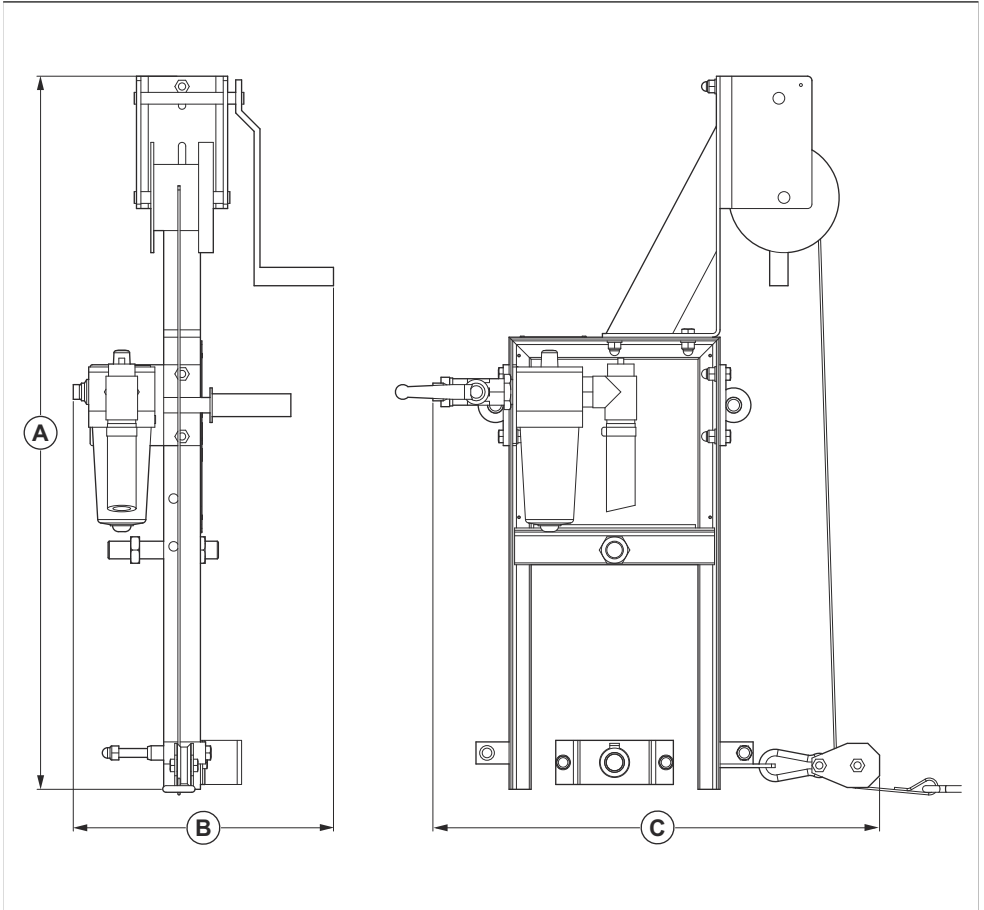
A	980 mm/38.6 in.	B	560 mm/22 in.	C	545 mm/21.5 in.
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BT 90 G



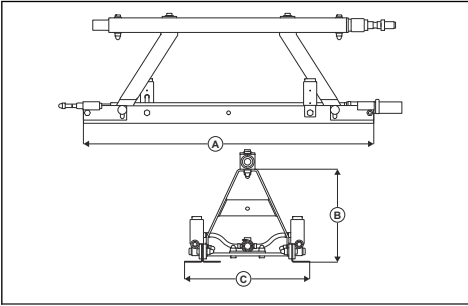
A	980 mm/38.6 in.	B	560 mm/22 in.	C	610 mm/24 in.
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BT 90 P



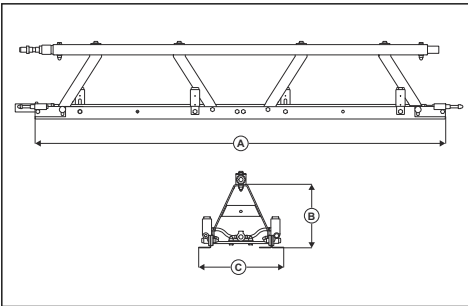
A	970 mm/38 in.	B	355 mm/14 in.	C	610 mm/24 in.
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BT 90 P 1 m/3.3 ft.



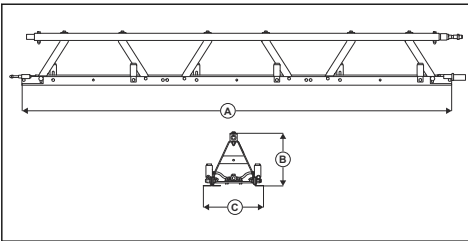
A	1000 mm/39.4 in.	B	378 mm/14.9 in.	C	420 mm/16.5 in.
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BT 90 P 2 m/6.6 ft.



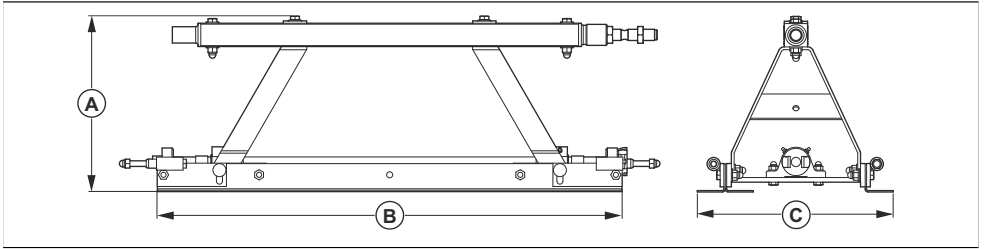
A	2000 mm/78.7 in.	B	378 mm/14.9 in.	C	420 mm/16.5 in.
----------	------------------	----------	-----------------	----------	-----------------

BT 90 P 3 m/9.8 ft.



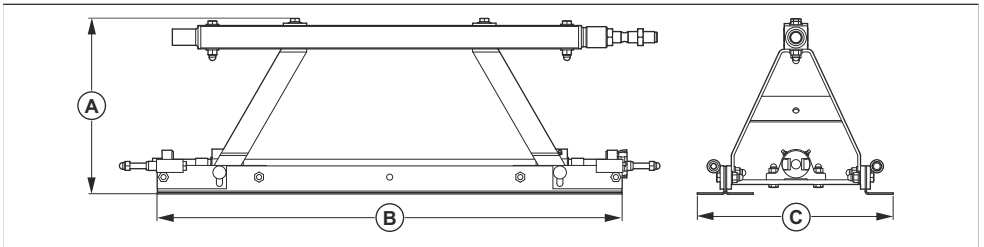
A	3000 mm/118.1 in.	B	378 mm/14.9 in.	C	420 mm/16.5 in.
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Truss screed section, 0.5 m/1.6 ft.



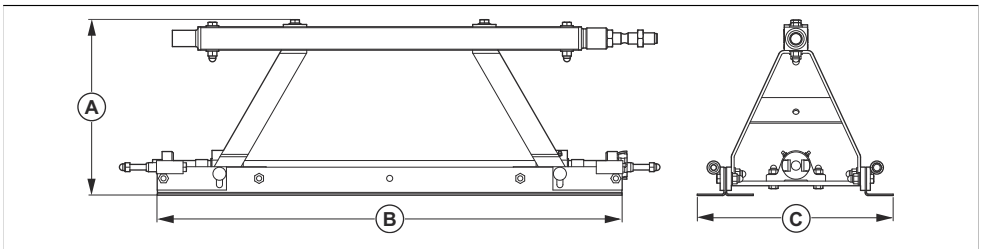
A	378 mm/14.9 in.	B	497 mm/19.5 in.	C	420 mm/16.5 in.
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Truss screed section, 0.75 m/2.4 ft.



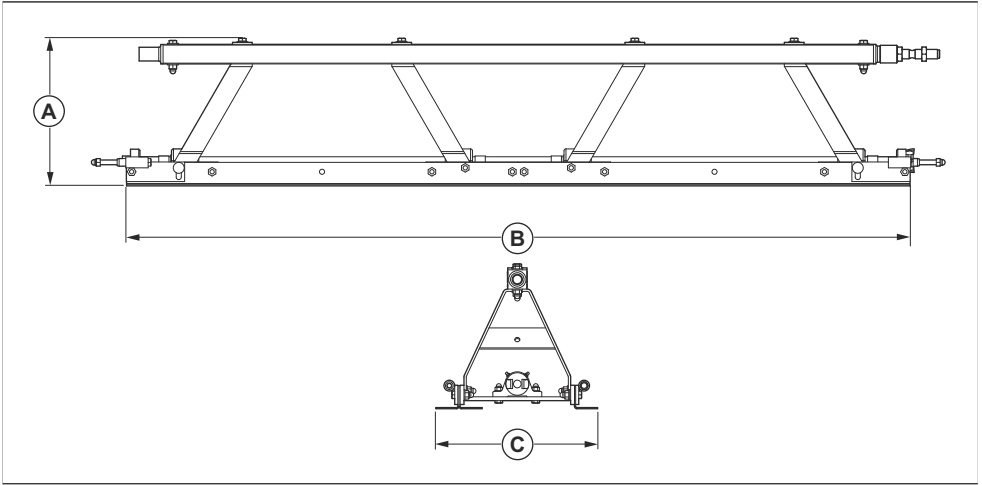
A	378 mm/14.9 in.	B	746 mm/29.3 in.	C	420 mm/16.5 in.
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Truss screed section, 1 m/3.2 ft.



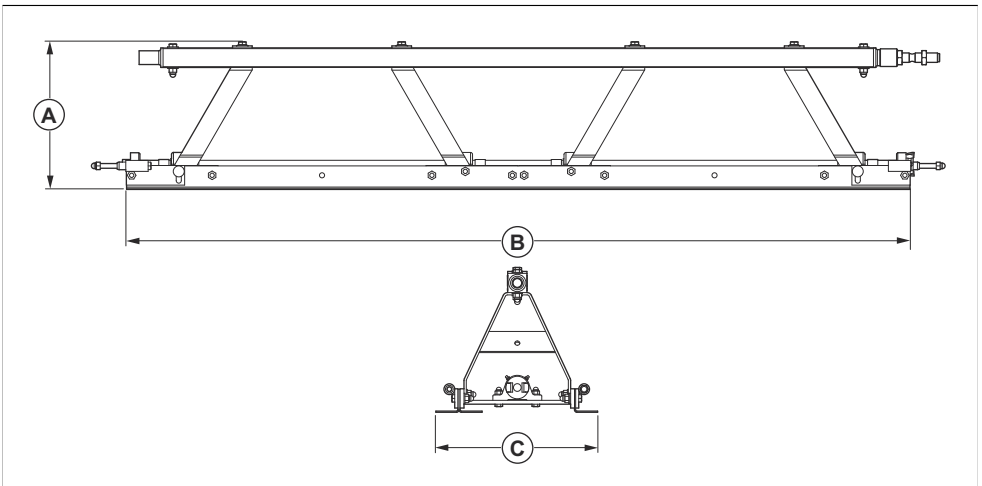
A	378 mm/14.9 in.	B	1000 mm/39.4 in.	C	420 mm/16.5 in.
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Truss screed section, 2 m/6.5 ft.



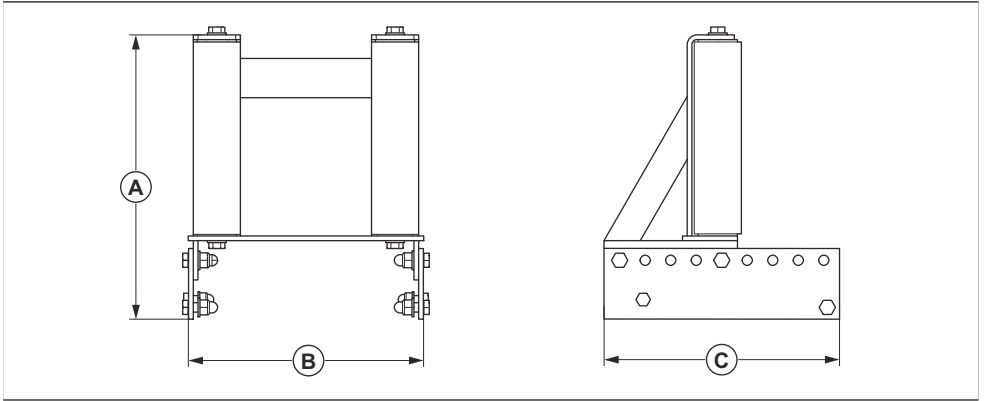
A	378 mm/14.9 in.	B	2000 mm/78.7 in.	C	420 mm/16.5 in.
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Truss screed section, 3 m/9.8 ft.



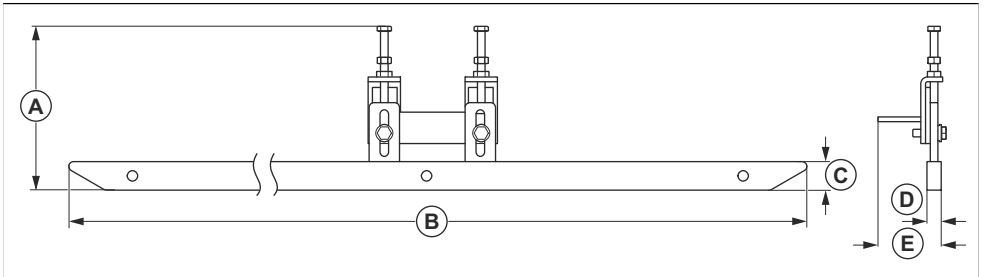
A	378 mm/14.9 in.	B	3000 mm/118.1 in.	C	420 mm/16.5 in.
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Outrigger



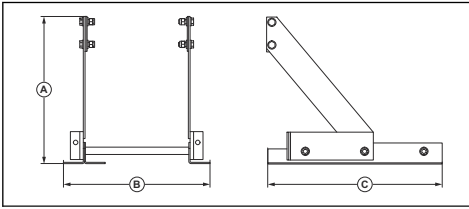
A	362 mm/14.25 in.	B	B-299 mm/11.8 in.	C	300 mm/11.8 in.
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Skate



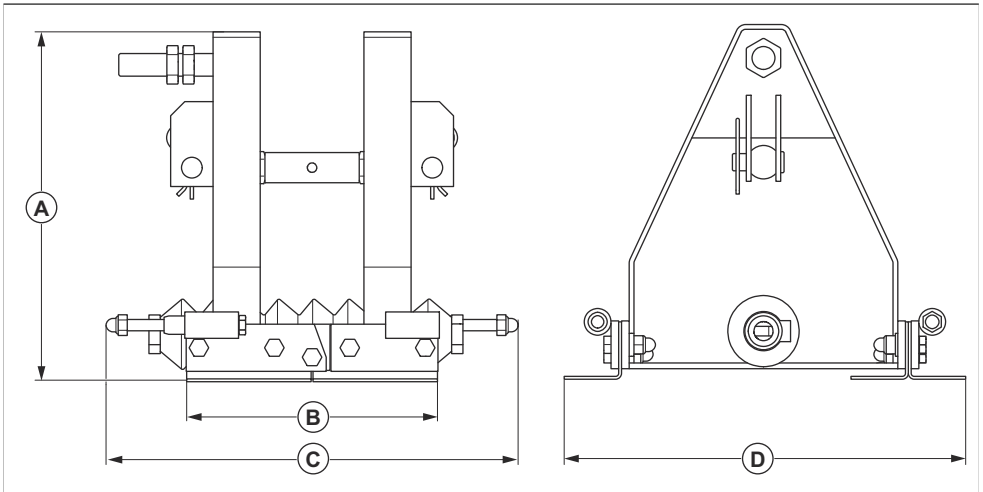
A	Min 119 mm/4.69 in.	C	30 mm/1.18 in.	E	66.5 mm/2.62 in.
	Max 157 mm/6.18 in.				
B	1000 mm/39.37 in.	D	15 mm/0.59 in.		

Non-vibrating extension



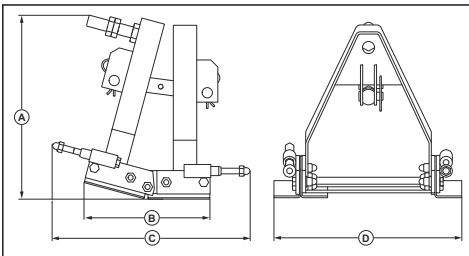
A	421 mm/15.79 in.	B	420 mm/15.79 in.	C	500 mm/19.69 in.
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Crown invert bracket



A	371 mm/14.6 in.	C	430 mm/16.93 in.
B	267 mm/10.51 in.	D	420 mm/16.53 in.

Pneumatic crown invert bracket



A	371 mm/14.6 in.	C	430 mm/16.93 in.
B	267 mm/10.51 in.	D	420 mm/16.53 in.

Declaration of Conformity

EC Declaration of Conformity

We, **Husqvarna AB**, SE-561 82 Huskvarna, Sweden, tel:
+46-36-146500, declare on our sole responsibility that
the product:

Description	Concrete Compactor, Vibrating Beam
Brand	Husqvarna
Type/Model	BT 90G, BT 90P
	+ BT 90G/E-, BT 90P-screed section
Identification	Serial numbers dating from 2021 and onwards

complies fully with the following EU directives and
regulations:

Directive/Regulation	Description
2006/42/EC	"relating to machinery"
2014/30/EU	"relating to electromagnetic compatibility"

and that the following harmonized standards and/or
technical specifications are applied;

EN 12649:2011

Partille, 2021-06-28



Martin Huber
R&D Director, Concrete Surfaces & Floors
Husqvarna AB, Construction Division
Responsible for technical documentation



Declaration of Conformity

EC Declaration of Conformity

We, **Husqvarna AB**, SE-561 82 Huskvarna, Sweden, tel: +46-36-146500, declare on our sole responsibility that the product:

Description	Concrete Compactor, Vibrating Beam
Brand	Husqvarna
Type/Model	BT 90E
	+ BT 90G/E-screed section
Identification	Serial numbers dating from 2021 and onwards

complies fully with the following EU directives and regulations:

Directive/Regulation	Description
2006/42/EC	"relating to machinery"
2014/30/EU	"relating to electromagnetic compatibility"
2011/65/EU	"relating to restriction of hazardous substances"

and that the following harmonized standards and/or technical specifications are applied;

EN 12649:2011

Partille, 2021-06-28



Martin Huber

R&D Director, Concrete Surfaces & Floors

Husqvarna AB, Construction Division

Responsible for technical documentation



Trademarks

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Original instructions



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