

Huskvarna, 2018-03-12

## **Safety and Operating Instructions**

Dear customer,

thank you for choosing a Husqvarna quality product. We hope that you will genuinely enjoy it.  
Please note that the enclosed manual contains Atlas Copco references.

The Husqvarna Group is vouching for the quality of this product.

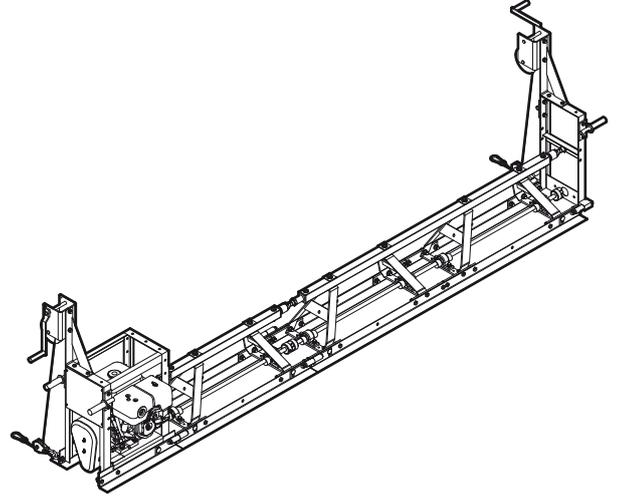
If you have any questions, please do not hesitate to contact our local sales or service point.

Husqvarna AB  
561 82 Huskvarna, Sweden

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## Safety and operating instructions

### Vibrating screeds





# Contents

Introduction.....	5
About the Safety and operating instructions.....	5
<b>Safety instructions.....</b>	<b>6</b>
<b>Safety signal words.....</b>	<b>6</b>
<b>Personal precautions and qualifications.....</b>	<b>6</b>
Personal protective equipment.....	6
Drugs, alcohol or medication.....	6
<b>Operation, precautions.....</b>	<b>6</b>
<b>Transport, precautions.....</b>	<b>10</b>
<b>Maintenance, precautions.....</b>	<b>10</b>
<b>Storage, precautions.....</b>	<b>11</b>
<b>Overview.....</b>	<b>12</b>
<b>Design and function.....</b>	<b>12</b>
<b>Main parts.....</b>	<b>12</b>
<b>Labels.....</b>	<b>12</b>
Data plate.....	12
Safety label.....	13
<b>Warning label.....</b>	<b>13</b>
<b>Assembly.....</b>	<b>13</b>
<b>Electric and petrol.....</b>	<b>13</b>
Screed section.....	13
End section.....	14
<b>Pneumatic.....</b>	<b>14</b>
Screed section.....	14
End section.....	14
<b>Options.....</b>	<b>15</b>
0.5 meter (1.6 ft.) extension.....	15
Outrigger.....	15
Crown invert bracket.....	15
<b>Operation.....</b>	<b>15</b>
<b>Starting.....</b>	<b>16</b>
Electrical drive.....	16
Petrol drive.....	16
Pneumatic drive.....	16
<b>When taking a break.....</b>	<b>16</b>
<b>Maintenance.....</b>	<b>16</b>
<b>Petrol and electric drive units.....</b>	<b>16</b>
<b>Pneumatic drive unit.....</b>	<b>17</b>
<b>Every 10 hours of operation (daily).....</b>	<b>17</b>
Electric diagram.....	17
<b>Storage.....</b>	<b>17</b>
<b>Disposal.....</b>	<b>17</b>
<b>Troubleshooting.....</b>	<b>18</b>
<b>Technical data.....</b>	<b>19</b>
<b>Machine data.....</b>	<b>19</b>
<b>Weights and dimensions.....</b>	<b>19</b>
<b>Noise and vibration declaration statement.....</b>	<b>19</b>

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Noise data.....	20
Dimensions.....	21
EC Declaration of Conformity.....	27
EC Declaration of Conformity .....	27

## Introduction

Thank you for choosing a product from Atlas Copco. Since 1873, we have been committed to finding new and better ways of fulfilling our customers' needs. Through the years, we have developed innovative and ergonomic product designs that have helped customers improve and rationalize their daily work.

Atlas Copco has a strong global sales and service network, consisting of customer centers and distributors worldwide. Our experts are highly trained professionals with extensive product knowledge and application experience. In all corners of the world, we can offer product support and expertise to ensure that our customers can work at maximum efficiency at all times.

For more information please visit: [www.atlascopco.com](http://www.atlascopco.com)

Construction Tools EOOD

7000 Rousse

Bulgaria

## About the Safety and operating instructions

The aim of the instructions is to provide you with knowledge of how to use the machine in an efficient, safe way. The instructions also give you advice and tell you how to perform regular maintenance on the machine.

Before using the machine for the first time you must read these instructions carefully and understand all of them.

## Safety instructions

To reduce the risk of serious injury or death to yourself or others, read and understand the Safety and operating instruction before installing, operating, repairing, maintaining, or changing accessories on the machine.

Post this Safety and operating instruction at work locations, provide copies to employees, and make sure that everyone reads the Safety and operating instruction before operating or servicing the machine. For professional use only.

In addition, the operator or the operator's employer must assess the specific risks that may be present as a result of each use of the machine.

Additional instructions for the engine can be found in the manufacturer's engine manual.

Save all warnings and instructions for future reference.

## Safety signal words

The safety signal words Danger, Warning and Caution have the following meanings:

<b>DANGER</b>	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
<b>WARNING</b>	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
<b>CAUTION</b>	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

## Personal precautions and qualifications

Only qualified and trained persons may operate or maintain the machine. They must be physically able to handle the bulk, weight, and power of the machine. Always use your common sense and good judgement.

### Personal protective equipment

Always use approved protective equipment. Operators and all other persons in the working area must wear protective equipment, including at a minimum:

- Protective helmet
- Hearing protection
- Impact resistant eye protection with side protection
- Respiratory protection when appropriate

- Protective gloves
- Proper protective boots
- Appropriate work overall or similar clothing (not loose-fitting) that covers your arms and legs.

### Drugs, alcohol or medication

#### ▲ **WARNING** Drugs, alcohol or medication

Drugs, alcohol or medication may impair your judgment and powers of concentration. Poor reactions and incorrect assessments can lead to severe accidents or death.

- ▶ Never use the machine when you are tired or under the influence of drugs, alcohol or medication.
- ▶ No person who is under the influence of drugs, alcohol or medication may operate the machine.

## Operation, precautions

#### ▲ **DANGER** Explosion hazard

If a warm machine or exhaust pipe comes into contact with explosives, an explosion could occur. During operating with certain materials, sparks and ignition can occur. Explosions will lead to severe injuries or death.

- ▶ Never operate the machine in any explosive environment.
- ▶ Never use the machine near flammable materials, fumes or dust.
- ▶ Make sure that there are no undetected sources of gas or explosives.
- ▶ Avoid contact with the warm exhaust pipe or the bottom of the machine.

#### ▲ **DANGER** Fire hazard

If a fire starts in the machine, it can cause injury.

- ▶ If possible use an ABE-class powder extinguisher, otherwise use a BE-type carbon dioxide fire extinguisher.

**▲ DANGER Fuel hazard**

The fuel is flammable and fuel fumes can explode when ignited, causing serious injury or death.

- ▶ Protect your skin from contact with the fuel. If fuel has penetrated the skin, consult a qualified health professional.
- ▶ Never remove the filler cap, or fill the fuel tank when the machine is hot.
- ▶ Fill the fuel tank outdoors or in a clean and well ventilated place, free from sparks and open flames. Fill the fuel tank at least ten meters (30 feet) from the place where the machine is to be used.
- ▶ Release the filler cap slowly to let pressure escape.
- ▶ Never overfill the fuel tank.
- ▶ Make sure the filler cap is screwed on when the machine is used.
- ▶ Avoid spilling fuel on the machine, wipe off any spilled fuel.
- ▶ Check regularly for fuel leaks. Never use the machine if it is leaking fuel.
- ▶ Never use the machine in the proximity of material that can generate sparks. Remove all hot or spark-generating devices before starting the machine.
- ▶ Never smoke when filling the fuel tank or when working with the machine or servicing it.
- ▶ Only store fuel in a container that is specially constructed and approved for the purpose.
- ▶ Consumed fuel and oil containers must be taken care of and returned to the retailer.
- ▶ Never use your fingers to check for fluid leaks.

**▲ WARNING Unexpected movements**

The machine is exposed to heavy strains during operation. If the machine breaks or gets stuck, there may be sudden and unexpected movement that can cause injuries.

- ▶ Always inspect the machine prior to use. Never use the machine if you suspect that it is damaged.
- ▶ Make sure that the handle is clean and free of grease and oil.
- ▶ Keep your feet away from the machine.
- ▶ Never sit on the machine.
- ▶ Never strike or abuse the machine.
- ▶ Pay attention and look at what you are doing.

**▲ WARNING Dust and fume hazard**

Dusts and/or fumes generated or dispersed when using the machine may cause serious and permanent respiratory disease, illness, or other bodily injury (for example, silicosis or other irreversible lung disease that can be fatal, cancer, birth defects, and/or skin inflammation).

Some dusts and fumes created by compaction work contain substances known to the State of California and other authorities to cause respiratory disease, cancer, birth defects, or other reproductive harm. Some examples of such substances are:

- Crystalline silica, cement, and other masonry products.
- Arsenic and chromium from chemically-treated rubber.
- Lead from lead-based paints.

Dust and fumes in the air can be invisible to the naked eye, so do not rely on eye sight to determine if there is dust or fumes in the air.

To reduce the risk of exposure to dust and fumes, do all of the following:

- ▶ Perform site-specific risk assessment. The risk assessment must include dust and fumes created by the use of the machine and the potential for disturbing existing dust.
- ▶ Use proper engineering controls to minimize the amount of dust and fumes in the air and to minimize build-up on equipment, surfaces, clothing, and body parts. Examples of controls include: exhaust ventilation and dust collection systems, water sprays, and wet drilling. Control dusts and fumes at the source where possible. Make sure that controls are properly installed, maintained and correctly used.
- ▶ Wear, maintain and correctly use respiratory protection as instructed by your employer and as required by occupational health and safety regulations. The respiratory protection must be effective for the type of substance at issue (and if applicable, approved by relevant governmental authority).
- ▶ Work in a well ventilated area.
- ▶ If the machine has an exhaust, direct the exhaust so as to reduce disturbance of dust in a dust filled environment.
- ▶ Operate and maintain the machine as recommended in the operating and safety instructions
- ▶ Wear washable or disposable protective clothes at the worksite, and shower and change into clean clothes before leaving the worksite to reduce exposure of dust and fumes to yourself, other persons, cars, homes, and other areas.

- ▶ Avoid eating, drinking, and using tobacco products in areas where there is dust or fumes.
- ▶ Wash your hands and face thoroughly as soon as possible upon leaving the exposure area, and always before eating, drinking, using tobacco products, or making contact with other persons.
- ▶ Comply with all applicable laws and regulations, including occupational health and safety regulations.
- ▶ Participate in air monitoring, medical examination programs, and health and safety training programs provided by your employer or trade organizations and in accordance with occupational health and safety regulations and recommendations. Consult with physicians experienced in relevant occupational medicine.
- ▶ Work with your employer and trade organization to reduce dust and fume exposure at the worksite and to reduce the risks. Effective health and safety programs, policies and procedures for protecting workers and others against harmful exposure to dust and fumes must be established and implemented based on advice from health and safety experts. Consult with experts.

#### **▲ DANGER Exhaust gas hazard**

The exhaust gas from the machine's combustion engine contains carbon monoxide which is poisonous, and chemicals known to the State of California and other authorities to cause cancer, birth defects, or other reproductive harm. Inhalation of exhaust fumes can cause serious injury, illness, or death.

- ▶ Never inhale exhaust fumes.
- ▶ Ensure good ventilation (extraction of air by fan if necessary).

#### **▲ WARNING Projectiles**

Failure of the work piece, of accessories, or even of the machine itself may generate high velocity projectiles. During operating, splinters or other particles from the compacted material may become projectiles and cause personal injury by striking the operator or other persons. To reduce these risk:

- ▶ Use approved personal protective equipment and safety helmet, including impact resistant eye protection with side protection.
- ▶ Make sure that no unauthorised persons trespass into the working zone.
- ▶ Keep the workplace free from foreign objects.

#### **▲ WARNING Motion hazards**

When using the machine to perform work-related activities, you may experience discomfort in the hands, arms, shoulders, neck, or other parts of the body.

- ▶ Adopt a comfortable posture while maintaining secure footing and avoiding awkward off-balanced postures.
- ▶ Changing posture during extended tasks may help avoid discomfort and fatigue.
- ▶ In case of persistent or recurring symptoms, consult a qualified health professional.

#### **▲ WARNING Vibration hazards**

Normal and proper use of the machine exposes the operator to vibration. Regular and frequent exposure to vibration may cause, contribute to, or aggravate injury or disorders to the operator's fingers, hands, wrists, arms, shoulders and/or nerves and blood supply or other body parts, including debilitating and/or permanent injuries or disorders that may develop gradually over periods of weeks, months, or years. Such injuries or disorders may include damage to the blood circulatory system, damage to the nervous system, damage to joints, and possibly damage to other body structures.

If numbness, persistent recurring discomfort, burning sensation, stiffness, throbbing, tingling, pain, clumsiness, weakened grip, whitening of the skin, or other symptoms occur at any time, when operating the machine or when not operating the machine, stop operating the machine, tell your employer and seek medical attention. Continued use of the machine after the occurrence of any such symptom may increase the risk of symptoms becoming more severe and/or permanent.

Operate and maintain the machine as recommended in these instructions, to prevent an unnecessary increase in vibration.

The following may help to reduce exposure to vibration for the operator:

- ▶ If the machine has vibration absorbing handles, keep them in a central position, avoid pressing the handles into the end stops.
- ▶ When the percussion mechanism is activated, the only body contact with the machine you must have are your hands on the handle or handles. Avoid any other contact, for example supporting any part of the body against the machine or leaning onto the machine trying to increase the feed force.
- ▶ Make sure that the machine is well-maintained and not worn out.

- ▶ Immediately stop working if the machine suddenly starts to vibrate strongly. Before resuming the work, find and remove the cause of the increased vibrations.
- ▶ Participate in health surveillance or monitoring, medical exams and training programs offered by your employer and when required by law.
- ▶ When working in cold conditions wear warm clothing and keep hands warm and dry.

See the "Noise and vibration declaration statement" for the machine, including the declared vibration values. This information can be found at the end of these Safety and operating instructions.

#### **▲ WARNING Trapping hazard**

There is a risk of neck ware, hair, gloves, and clothes getting dragged into or caught by rotating machine parts. This may cause choking, scalping, lacerations, or death. To reduce the risk:

- ▶ Never grab or touch a rotating machine part.
- ▶ Avoid wearing clothing, neck ware or gloves that may get caught.
- ▶ Cover long hair with a hair net.

#### **▲ DANGER Whipping air hose**

A compressed air hose that comes loose can lash around and cause personal injury or death. To reduce this risk:

- ▶ Check that the compressed air hose and the connections are not damaged, replace if necessary.
- ▶ Check that all compressed air connections are properly attached.
- ▶ Never carry a pneumatic machine by the air hose.
- ▶ Never attempt to disconnect a compressed air hose that is pressurized. First switch off the compressed air at the compressor and then bleed the machine by activating the start and stop device.
- ▶ Never point a compressed air hose at yourself or anyone else. To avoid the risk of getting injured, never use compressed air to blow for example dust, dirt etc. from your clothes.
- ▶ Whenever universal twist couplings (claw couplings) are used, we recommend that lock pins are installed and whipcheck safety cables are used to safeguard against possible hose to tool and hose to hose connection failure.

#### **▲ DANGER Electrical hazard**

The machine is not electrically insulated. If the machine comes into contact with electricity, serious injuries or death may result.

- ▶ Never operate the machine near any electric wire or other source of electricity.
- ▶ Make sure that there are no concealed wires or other sources of electricity in the working area.

#### **▲ WARNING Concealed object hazard**

During operating, concealed wires and pipes constitute a danger that can result in serious injury.

- ▶ Check the composition of the material before operating.
- ▶ Watch out for concealed cables and pipes for example electricity, telephone, water, gas, and sewage lines.
- ▶ If the machine seems to have hit a concealed object, switch off the machine immediately.
- ▶ Make sure that there is no danger before continuing.

#### **▲ WARNING Electrical safety**

There is a risk of electrical shock if the electrical cable is not treated correctly, if the machine is damaged or modified. This can lead to serious injuries or death.

- ▶ The electrical plug on the machine must match the socket.
- ▶ Never modify the electrical plug to match the socket.
- ▶ Do not use adapter plugs with earthed (grounded) machines.  
Unmodified plugs and matching sockets will reduce the risk of electrical shock.
- ▶ Never move the machine by dragging the electrical cable.
- ▶ Disconnect the cable only by pulling the plug, never pull the electrical cable.
- ▶ Make sure the electrical cable is not pinched in doors, fences or similar.
- ▶ Check that the electrical cable and cable plug are intact and in good condition.
- ▶ Never connect a damaged electrical cable to the machine.
- ▶ Never touch the electrical cable if it becomes damaged during the work. Disconnect the electrical cable plug from the socket.
- ▶ Always make sure that the electrical cable is kept away from water, oil and sharp edges.

- ▶ Do not expose the power tool to rain or wet conditions.  
If water enters the machine, there is an increased risk of electrical shock.
- ▶ Use a residual current device (RCD) protected supply, if the machine must be operated in a damp location.  
The use of an RCD reduces the risk of electrical shock.

### ▲ **WARNING Involuntary start**

Involuntary start of the machine may cause injury.

- ▶ Keep your hands away from the start and stop device until you are ready to start the machine.
- ▶ Learn how the machine is switched off in the event of an emergency.

### ▲ **WARNING Noise hazard**

High noise levels can cause permanent and disabling hearing loss and other problems such as tinnitus (ringing, buzzing, whistling, or humming in the ears). To reduce risks and prevent an unnecessary increase in noise levels:

- ▶ Risk assessment of these hazards and implementation of appropriate controls is essential.
- ▶ Operate and maintain the machine as recommended in these instructions.
- ▶ If the machine has a silencer, check that it is in place and in good working condition.
- ▶ Always use hearing protection.

## Transport, precautions

### ▲ **WARNING Loading and unloading hazard**

When the machine is lifted by a crane and similar appliance, this can lead to injury.

- ▶ Use marked lifting points.
- ▶ Make sure that all lifting devices are dimensioned for the weight of the machine.
- ▶ Never remain under or in the immediate vicinity of the machine.

## Maintenance, precautions

### ▲ **DANGER Electrical cable hazard**

There is a risk of electrical shocks if the electrical cable is not treated correctly, this can lead to serious injuries or death.

- ▶ Never move the machine by dragging the electrical cable.
- ▶ Disconnect the cable only by pulling the socket, never pull the electrical cable.
- ▶ Always make sure that the electrical cable is kept away from water, oil and sharp edges.
- ▶ Make sure the electrical cable is not pinched in doors, fences or similar.
- ▶ Check that the electrical cable and cable plug are intact and in good condition.
- ▶ Never connect a damaged electrical cable to the machine.
- ▶ Never touch the electrical cable if it becoming damaged while working. Disconnect the electrical cable plug from the socket.

### ▲ **WARNING Machine modification**

Any machine modification may result in bodily injuries to yourself or others.

- ▶ Never modify the machine. Modified machines are not covered by warranty or product liability.
- ▶ Always use original parts and accessories approved by Atlas Copco.
- ▶ Change damaged parts immediately.
- ▶ Replace worn components in good time.

### ▲ **WARNING Accessory hazards**

Accidental engagement of accessories during maintenance or installation can cause serious injuries, when the power source is connected.

- ▶ Never inspect, clean, install, or remove accessories while the power source is connected.

### ▲ **CAUTION High temperature**

The machine's engine exhaust pipe, and bottom become hot during operation. Touching them can lead to burns.

- ▶ Never touch a hot machine.
- ▶ Never touch the bottom of the machine when its hot.
- ▶ Wait until the engine, exhaust pipe, and bottom of the machine have cooled down before carrying out maintenance work.

## Storage, precautions

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- ◆ Keep the machine in a safe place, out of the reach of children and locked up.

# Overview

To reduce the risk of serious injury or death to yourself or others, read the Safety instructions section found on the previous pages of this manual before operating the machine.

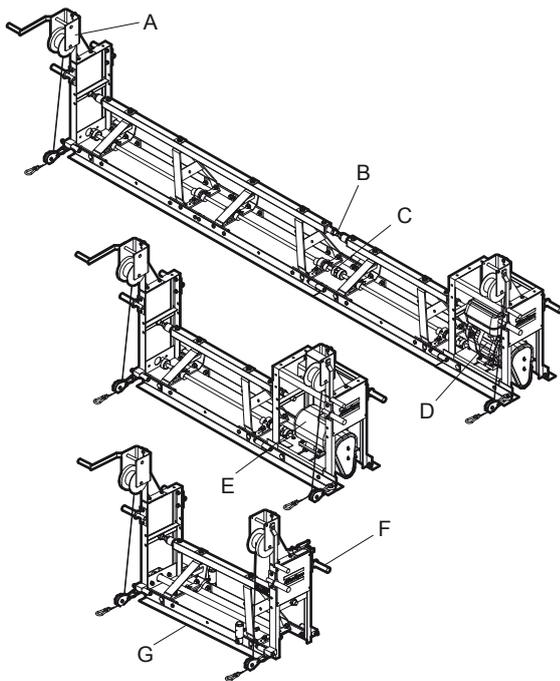
# Design and function

BT90 is a modular screed system.

BT90 are used for compaction, levelling and finishing of large concrete floors, pavements, roads, runways and bridges. Slabs with slumps in the concrete can be finished flat, parabolic, rooftop or inverted with the unique adjusting system of the screed.

BT90 is powered by either a electric, petrol or pneumatic drive unit.

# Main parts

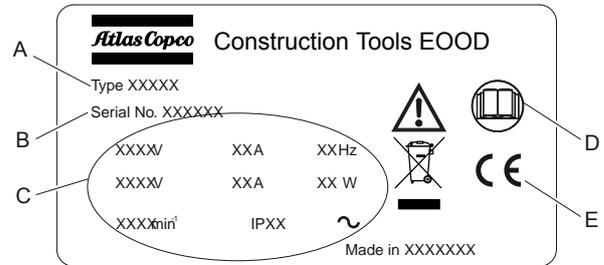


- A. Winch
- B. Crown
- C. Coupling
- D. Petrol engine
- E. Electric motor
- F. Handle
- G. Screed section

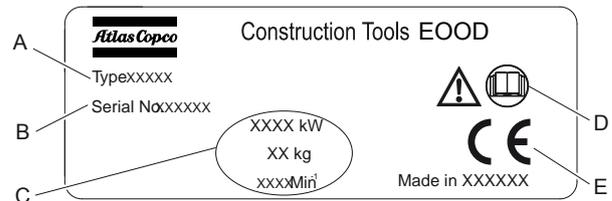
# Labels

The machine is fitted with labels containing important information about personal safety and machine maintenance. The labels must be in such condition that they are easy to read. New labels can be ordered from the spare parts list.

## Data plate



## Electrical drive unit



## Petrol drive unit

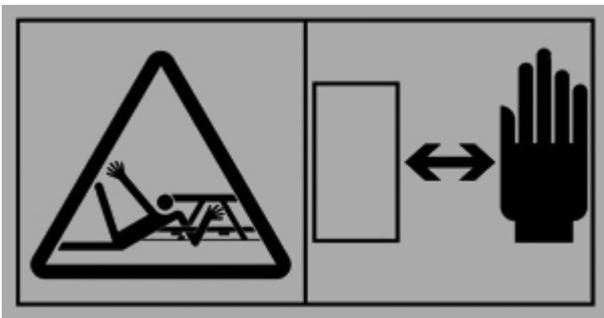
- A. Machine type.
- B. Product identification number.
- C. Technical characteristics of the machine.
- D. The warning symbol associated with the symbol of a book means that the user must read the Safety instructions before using the machine for the first time.
- E. The CE symbol means that the machine is EC-approved. See section EC Declaration of Conformity which is delivered with the machine for more information.

**Safety label**



- ◆ Instruction manual. The operator must read the Safety and operating instructions before operating the machine.
- ◆ Use protective gloves.
- ◆ Use ear protectors.

**Warning label**



**Assembly**

**NOTICE** Loosen screed section, broken shaft and bearing

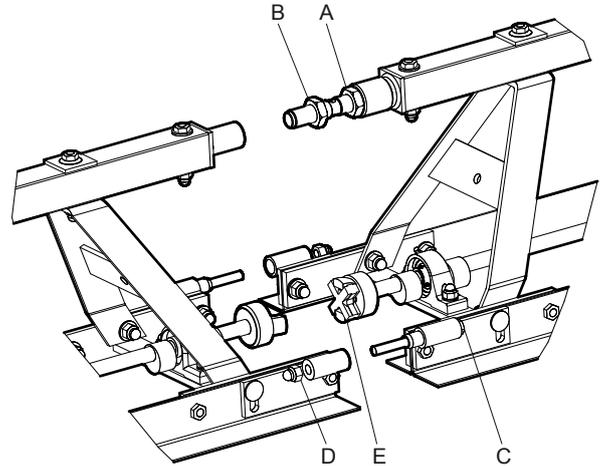
Screed section can loose during vibration. Shaft and bearing may get broken.

- ▶ Before fitting the different length types of the Screed Sections with the Drive unit, you should start with fitting of the shortest section, going to the longest one.

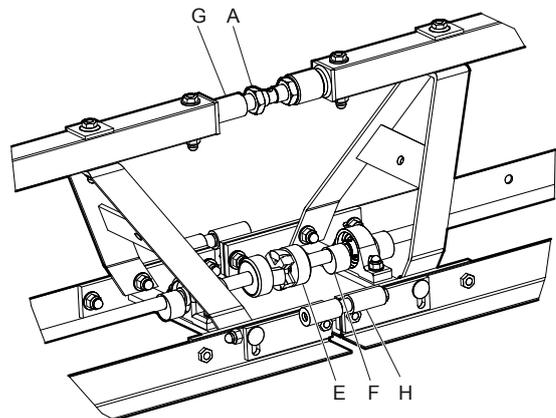
**Electric and petrol**

**Screed section**

1. Place the screed sections on a flat surface. It makes the assembly easier.
2. Unscrew the nuts (D) from the screws (C).

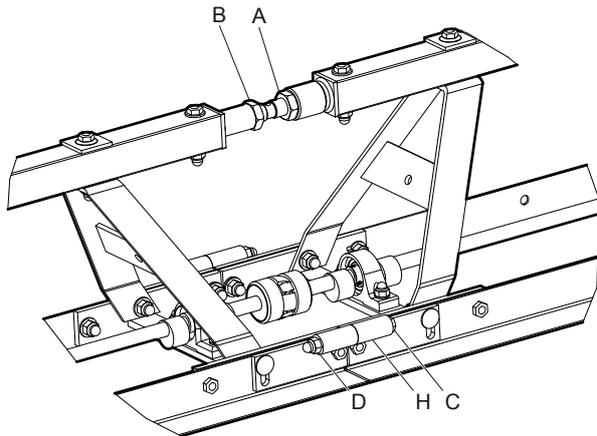


3. Place the nuts (A) near the centre of the bolt (B).
4. Take off the plastic band from the coupling (E).
5. Slide the beams together in order to get the bolt (B) into the screed hold (G) then use a 10 mm diameter spanner and start to screw bolt (B) (right hand thread).



6. Make sure that the guides (H), couplings (E) and the eccentric masses (F) stays in line.

- When the bolt (B) is tightened, secure the screed guides (H) using two 19 mm flat spanners on the nuts (D) and the screws (C).



- The nuts (A) will be tightened after the crown adjustment is done.

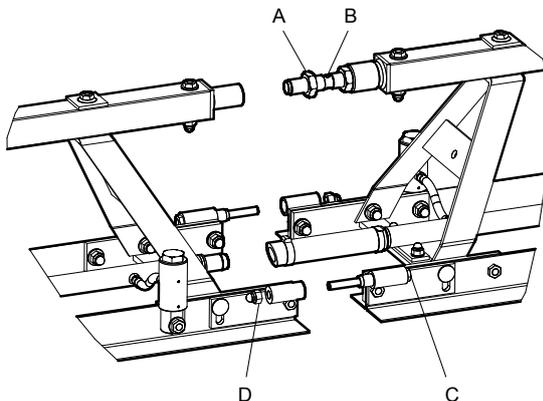
### End section

- Follow the same instructions as for the screed sections.

## Pneumatic

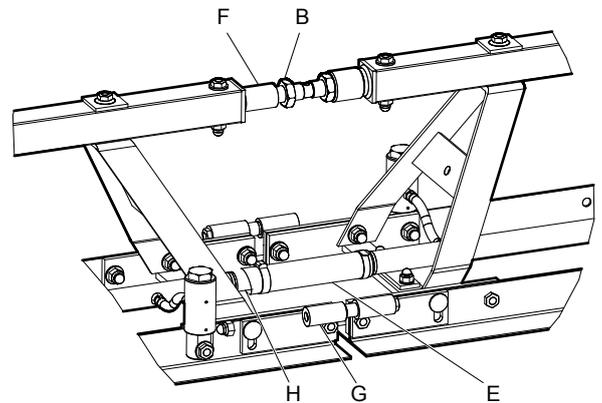
### Screed section

- Place the screed sections on a flat surface. It makes the assembly easier.

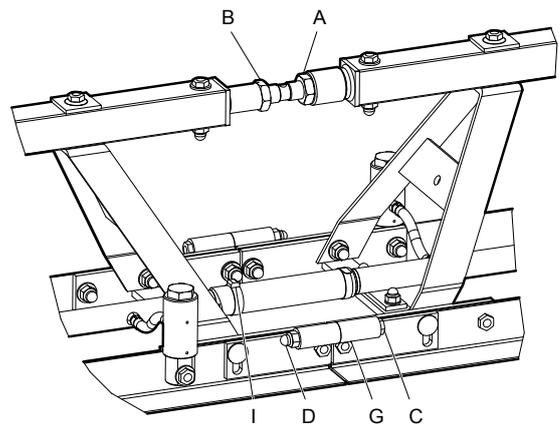


- Unscrew the nuts (D) from the screws (C).
- Place the nuts (A) near the centre of the bolt (B).

- Slide the beams together in order to get the bolt (B) into the screed hold (F). Use a 10 mm diameter spanner and start to screw bolt (B) (right hand thread).



- Make sure that the guides (G) merge and the rubber hose (E) merges with the screed air nipple (H) and that they stay in line.
- When the bolt (B) is tightened, secure the screed guides (G) using two 19 mm flat spanners on the nuts (D) and the screws (C).



- Position the clamp (I) and use a screwdriver to tighten it.
- The nuts (A) will be tighten after the crown adjustment is done.

### End section

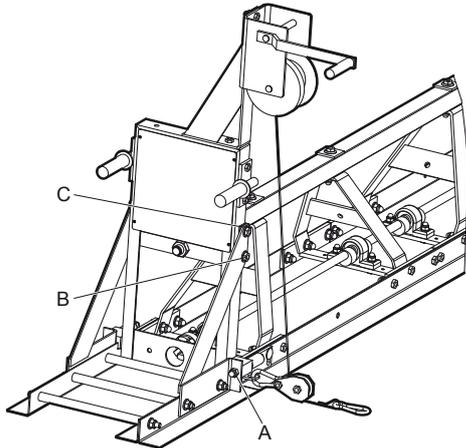
- Follow the same instructions as for the screed sections.
- The pneumatic drive section is delivered with a plug at the end of the main rubber hose. Remove the plug from the hose and use the plug on the end of the opposite screed section.

## Options

### 0.5 meter (1.6 ft.) extension

The extension is used to extend the beam by 0.5 meter (1.6 ft.). It can be fitted on all versions of the screed. It can only be mounted on the section with a free end. It is not possible to mount the extension on the driving unit.

1. Unscrew the nuts (A).



2. Place the extension on the free end of the section.
3. Secure the extension with the screws (B) and the nuts (A). Place two plates (C) on the double beam side.

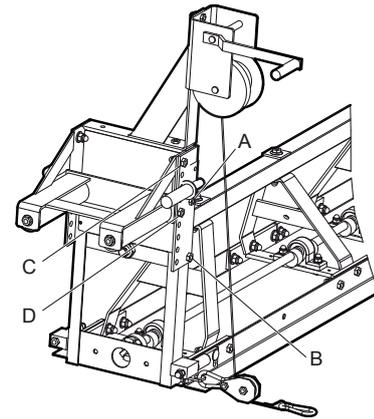
### Outrigger

Use the outrigger when the beam is on support rails.

**NOTICE** The outrigger cannot be used with the 0.5 m (1.6 ft.) extension.

The outrigger can be used on both ends of the beam. In order to equip both ends of the beam two outriggers must be ordered.

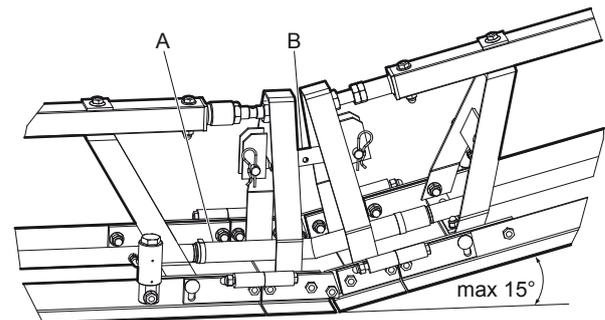
1. Dismantle the two handles.



2. Mount the outrigger with the nuts (A) and (B).
3. Use the nuts (C) and (D) to adjust the outrigger.

### Crown invert bracket

The crown invert bracket is only available for the pneumatic screed sections. It is possible to increase the angular adjustment by up to 15° with the bracket.



1. Mount the crown invert bracket between two screed sections.
2. Connect the rubber hose (A) between the screed sections.
3. Adjust the angle with the turnbuckle (B).

**NOTICE** The maximum angle is 15°.

## Operation

### ▲ WARNING Engine running hazard

Vibrations from the engine can cause material changes, this can cause the machine to move and cause injuries.

- ▶ Never leave the machine with the engine running.
- ▶ Ensure that only authorized personnel operate the machine.

**NOTICE** When operating the machine, follow the instructions in the manual; never sit or stand on the machine when it is working.

## Starting

### Electrical drive

1. Make sure that the power outlet voltage matches the specification of the motor. For more information, see the electric equipments label.
2. Check that the power outlet is undamaged, insert the power plug and switch on the power.
3. Check the direction of rotation for the vibrating shaft. If the direction is wrong it is necessary to inverse the direction of rotation. This is done by inverting the switch on the 230V versions or by turning the phase inverter situated on the plug on the 400V versions.

### Petrol drive

1. Check that the engine oil level reaches up to the maximum level. Top up with oil if needed (for more information about oil quality see the provided manual for the engine).
2. Check the petrol level in the tank.
3. Turn on the fuel by setting the fuel control to open position.
4. Turn the engine's ON/OFF switch to ON position.
5. Start the engine at idle speed and let it warm up for a few minutes, then increase to full speed.
6. In cold conditions, close the starter before starting.

**NOTICE** The engine speed is set at 2850 r.p.m. Do not overspeed the engine.

### Pneumatic drive

1. Fill the lubricator with SHELL torcula 32 or equivalent.
2. Connect the air supply.
3. Open the valve fully in order to start the vibrators and then close the valve slowly until the desired vibrator speed has been reached.
4. Adjust the lubricator to have a flow of 2-3 drops per second.

**NOTICE** Do not use the vibrating beam without oil. It will damage the vibrator beam.

## When taking a break

- ◆ Stop the machine during breaks.
- ◆ During all breaks, put the machine away so that there is no risk for unintentional start.

## Maintenance

Regular maintenance is a basic requirement for the continued safe and efficient use of the machine. Follow the maintenance instructions carefully.

- ◆ Before starting maintenance on the machine, clean it in order to avoid exposure to hazardous substances. See "Dust and fume hazard".
- ◆ Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by warranty or product liability.
- ◆ When cleaning mechanical parts with solvent, comply with appropriate health and safety regulations and ensure there is satisfactory ventilation.
- ◆ For major service of the machine, contact the nearest authorised workshop.
- ◆ After each service, check that the machine's vibration level is normal. If not, contact the nearest authorised workshop.

## Petrol and electric drive units

1. Keep the machine clean. Spray with form oil or concrete release agent to prevent concrete accumulation. Clean the machine directly after use.
2. Check the engine oil level. If necessary change the engine oil. See the engine's maintenance manual.
3. Ensure that the winches are fully operational and check the cables for damage, replace if necessary.
4. Check the engine speed is 2850 r.p.m.
5. Belt tensioning or replacement: unscrew the four screws that hold the engine and slide the engine by hand in order to tighten the belts. Secure the engine with the four screws.

## Pneumatic drive unit

1. Clean the machine directly after use, keep the machine clean. Spray with form oil or concrete release agent to prevent concrete accumulation.
2. If a vibrator stops vibrating, it may need to be cleaned. Remove the vibrator from the screed, unscrew the top plug on the vibrator and remove the piston. Clean the piston and the vibrator body. Lubricate the piston with oil and reassemble the vibrator. The vibrator top plug must be glued with LOCTITE® N243™. (LOCTITE is a registered trademark of Henkel Corporation. N243 is a trademark of Henkel Corporation). Tightening torque for the top plug is 350 Nm.
3. Ensure that the winches are fully operational and check the cables for damage, replace if necessary.
4. Fill the lubricator and check the flow (2-3 drops per second). Adjust the flow if necessary.

## Every 10 hours of operation (daily)

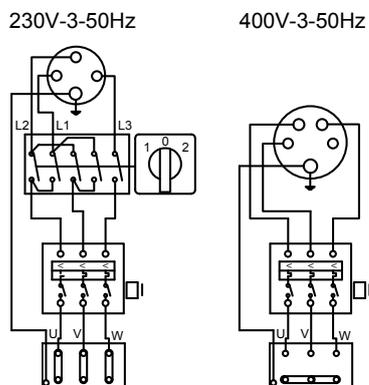
Maintenance routines:

Check the tightening of the screws and nuts.

Type of screw:	Tightening torque:
M10	47 Nm
M12	81 Nm

Grease the screed bearings (only for petrol and electric).

### Electric diagram



Breaker adjustment:

Ampere:	Voltage:
10A	230V
6.3A	400V

## Storage

- Clean the machine properly before storage, in order to avoid hazardous substances. See "Dust and fume hazard".
- If the machine is stored in the service position, the fuel tank must not be filled more than half full. Otherwise there is a risk that the fuel can come out through the ventilation hole in the fuel tank cap.
- Always store the machine in a dry place.

## Disposal

A used machine must be treated and disposed of in such a way that the greatest possible portion of the material can be recycled and any negative influence on the environment is kept as low as possible, and in accordance with local restrictions.

Before a fuel driven machine is deposited it must be emptied and cleaned of all oil and fuel. Remaining oil and fuel must be dealt with in a way that does not adversely affect the environment.

Always send used filters, drained oil and fuel remnants to environmentally correct disposal.

# Troubleshooting

Problem	Screed type	Cause	Solution		
The screed does not start	Pneumatic screed	No pressure.	Check the pressure.		
		No air.	Check the air flow.		
		Air lever in off position.	Turn the lever on.		
	Electric screed	Start switch in off position.	Turn the start switch on.		
		No power in the power outlet.	Replace or repair the power outlet.		
	Petrol screed	No petrol.	Fill up the tank.		
The screed starts but does not vibrate	Electric screed	The start switch in off position.	Turn the start switch on.		
		The clutch does not work.	The clutch brushes are worn out. Replace the brushes.		
		The belt is not tightened enough.	Tighten the belt.		
	Petrol screed	The belt is worn.	Replace the belt.		
		The clutch does not work.	The clutch brushes are worn out. Replace the brushes.		
		The belt is not tighten enough.	Tighten the belt.		
The screed vibrates at low speed	Pneumatic screed	The belt is worn.	Replace the belt.		
		Too low pressure.	The pressure must comply with the stated values.		
		Too low air flow.	The air flow must comply with the stated values.		
	Electric screed	Leaking hoses.	Check the hoses, replace the hoses if necessary and make sure that the clamps are tightened.		
		Too low voltage.	Check the mains voltage.		
		Too high friction in the bearings.	Check the bearings and grease the bearings if necessary.		
	Petrol screed	The assembly is too large.	The length must not exceed a length of 20 meters (65.6 ft.).		
		Too low engine speed.	Adjust the engine speed to a minimum of 2850 r.p.m.		
		Too high friction in the bearings.	Check the bearings and grease the bearings if necessary.		
		The assembly is too large.	The length must not exceed a length of 20 meters (65.6 ft.).		
		The noise level is too high	Pneumatic screed	Leaking hoses.	Check the hoses, replace the hoses if necessary and make sure that the clamps are tightened.
			All screeds	The screws and nuts are vibrating.	Check and if necessary tighten the screws and nuts.
Unevenly distributed vibrations	Pneumatic screed	The assembly is too large.	The length must not exceed a length of 25 meters (82 ft.).		
The breaker is tripped	Electric screed	The voltage is not correct.	Check the voltage in the mains and adjust the voltage if necessary.		
		Not enough power in the mains.	Check the amperage of the mains.		
		The assembly is too large.	The length must not exceed a length of 20 meters (65.6 ft.).		
		Too high friction in the bearings.	Check the bearings and grease the bearings if necessary.		

## Technical data

### Machine data

	Electric		Petrol	Pneumatic
Engine			Honda GX270	
Voltage (V)	230	400	-	-
Phases	3	3	-	-
Frequency (Hz)	50	50	-	-
Power, kW (hp)	3 (4.1)	3 (4.1)	5 (7.5) at 2900 r.p.m.	
Full load current (A)	10	6.15	-	-
Speed, r.p.m.	2865	2865	2900	-
Maximum screed length, m (ft)	20 (65.6)	20 (65.6)	20 (65.6)	25 (82)
Working pressure, Bar	-	-	-	3 - 6
Air consumption per screed meter, m <sup>3</sup> / min	-	-	-	0.26

### Weights and dimensions

	Height, mm (in.)	Total length, mm (in.)	Working length, mm (in.)	Total width, mm (in.)	Weight, kg (lb)
Electrical drive unit	980 (38.6)	720 (28.3)	560 (22)	535 (21.1)	78 (172)
Petrol drive unit	980 (38.6)	720 (28.3)	560 (22)	620 (24.4)	75 (165.3)
Pneumatic drive unit	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 Screed section electric/petrol	376 (14.8)	595 (23.4)	500 (19.6)	420 (16.5)	24 (52.9)
0,75 m Screed section electric/petrol	376 (14.8)	845 (33.2)	750 (29.5)	420 (16.5)	28 (61.7)
1 m screed section electric/petrol	376 (14.8)	1095 (43.1)	1000 (39.4)	420 (16.5)	32 (70.5)
2 m screed section electric/petrol	376 (14.8)	2095 (82.5)	2000 (78.7)	420 (16.5)	57 (127.8)
3 m screed section electric/petrol	376 (14.8)	3095 (121.8)	3000 (118.1)	420 (16.5)	82 (180.8)
1 meter screed section pneumatic	376 (14.8)	1095 (43.1)	1000 (39.4)	420 (16.5)	32 (70.5)
2 meter screed section pneumatic	376 (14.8)	2095 (82.5)	2000 (78.7)	420 (16.5)	58 (127.8)
3 meter screed section pneumatic	376 (14.8)	3095 (121.8)	3000 (118.1)	420 (16.5)	83 (183.0)

### Noise and vibration declaration statement

Guaranteed sound power level **L<sub>w</sub>** according to EN ISO 3744 in accordance with directive 2000/14/EC.

Sound pressure level **L<sub>p</sub>** according to EN ISO 11201, EN 500-4.

Vibration value determined according to EN 500-4. See table "Noise and vibration data" for the values etc.

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 machines 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 machine is used, as well as upon the exposure time and the physical condition of the user, and the condition of the machine.

We, Construction Tools EOOD, cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation over which we have no control.

This machine may cause hand-arm vibration syndrome if its use is not adequately managed. An EU guide to managing hand-arm vibration can be found at <http://www.humanvibration.com/humanvibration/EU/VIBGUIDE.html>

We recommend a programme of health surveillance to detect early symptoms which may relate to vibration exposure, so that management procedures can be modified to help prevent future impairment.

## Noise data

<b>Noise</b>			
<b>Declared emission values in accordance with EN ISO 4871:2009</b>			
<b>Type</b>	<b>A-weighted sound power level, <math>L_{WA}</math>, dB</b>	<b>Measured A weighted emission sound pressure level, <math>L_{pAd}</math> dB</b>	
		Operator's position 1*	Operator's position 2**
BT90 electric	100	89	79
BT90 petrol	100	89	79

\* Position 1 is an operators position close to the engine.

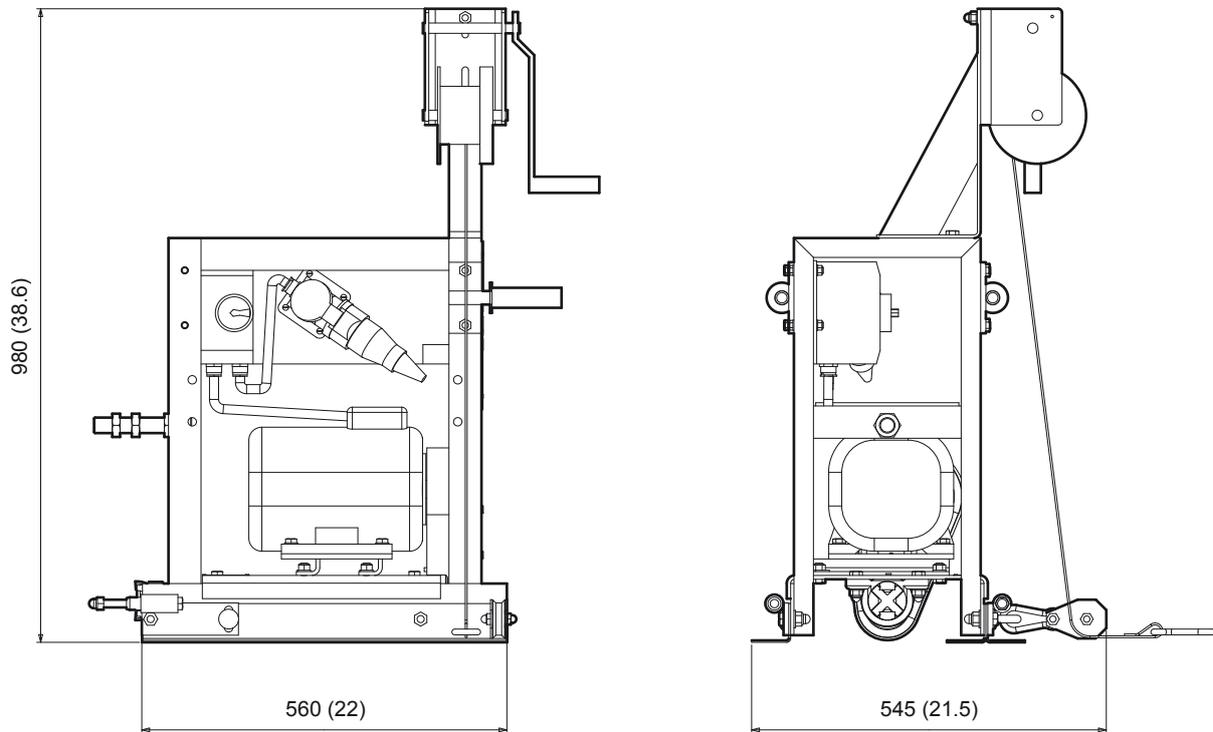
\*\* Position 2 is the operators position far away from the engine.

The tested assembly was a drive unit with a three meter screed and a free end.

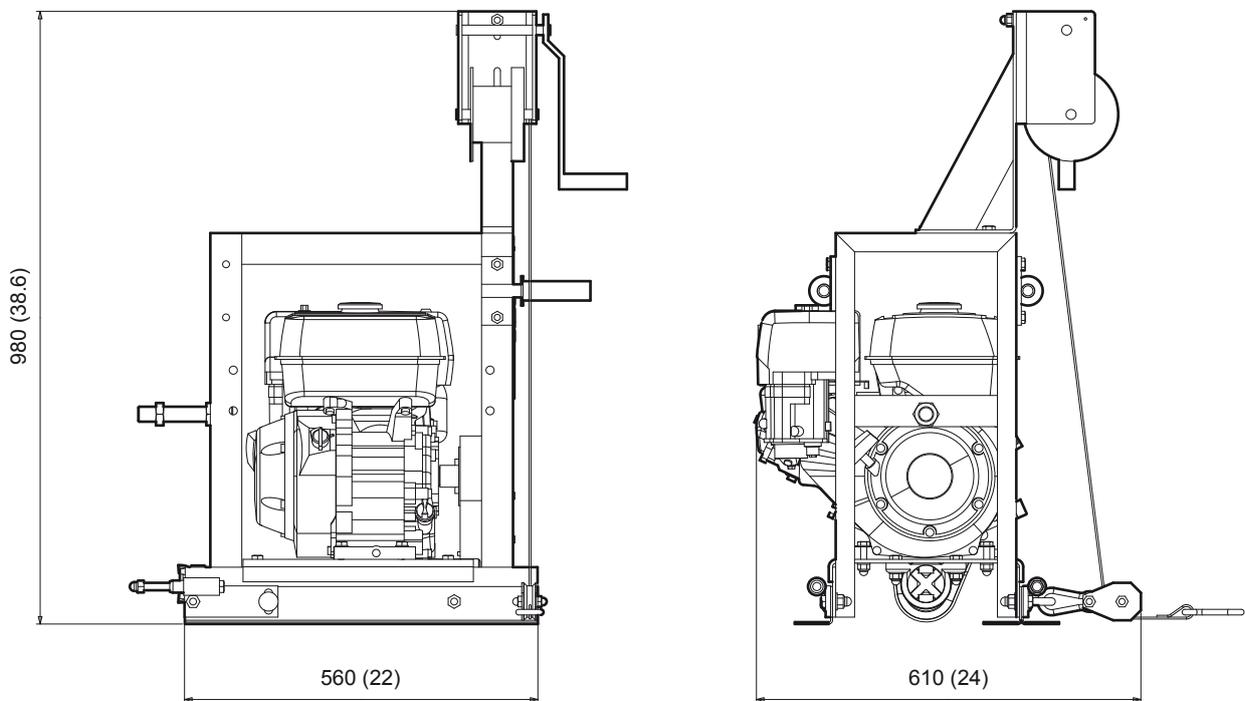
# Dimensions

mm (in.)

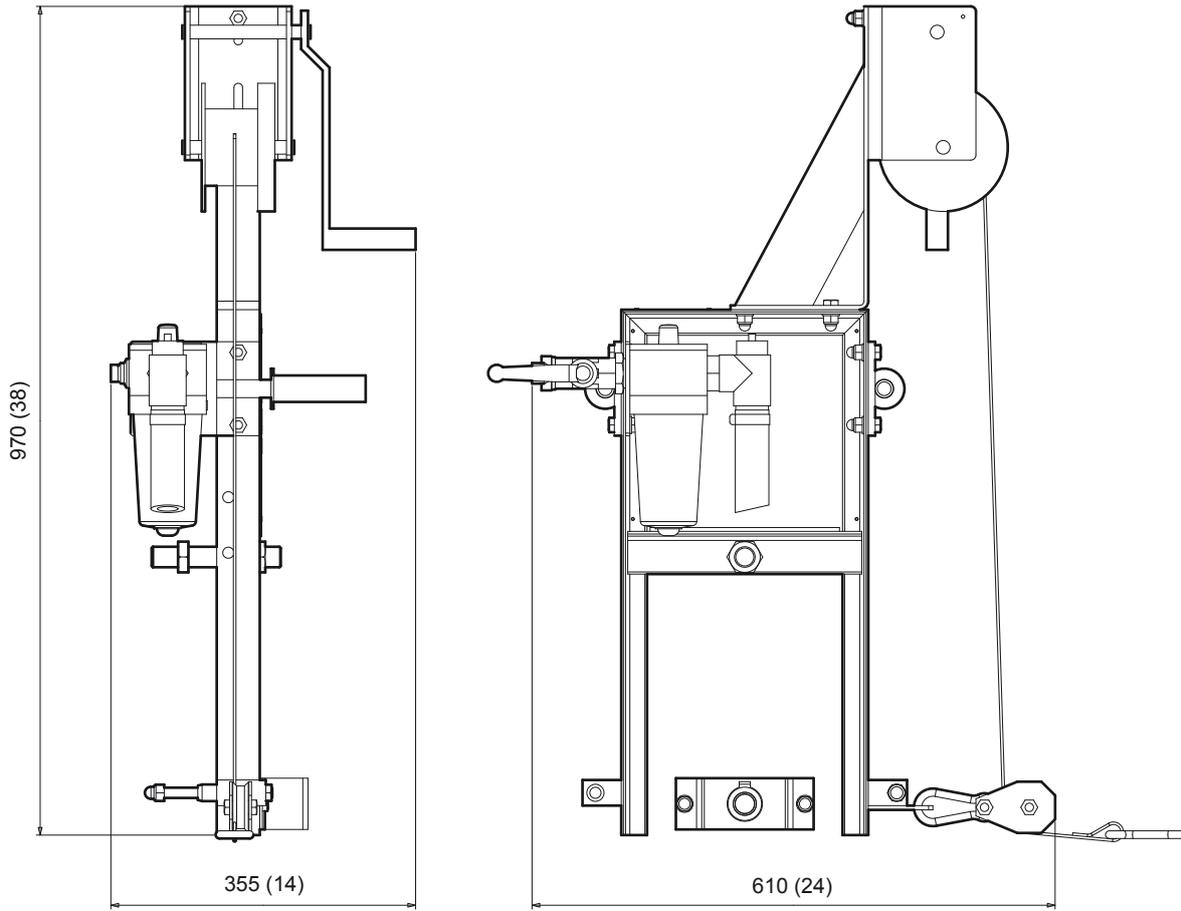
## Electric drive unit



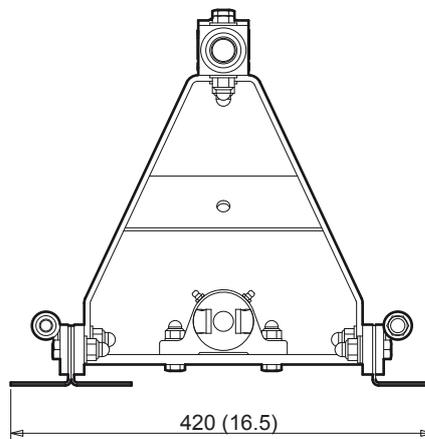
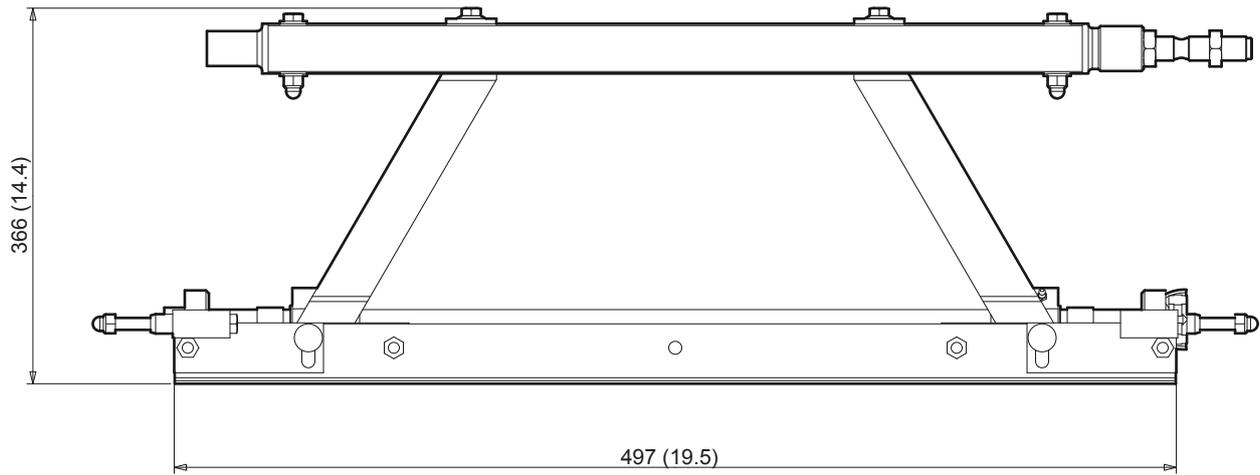
## Petrol drive unit



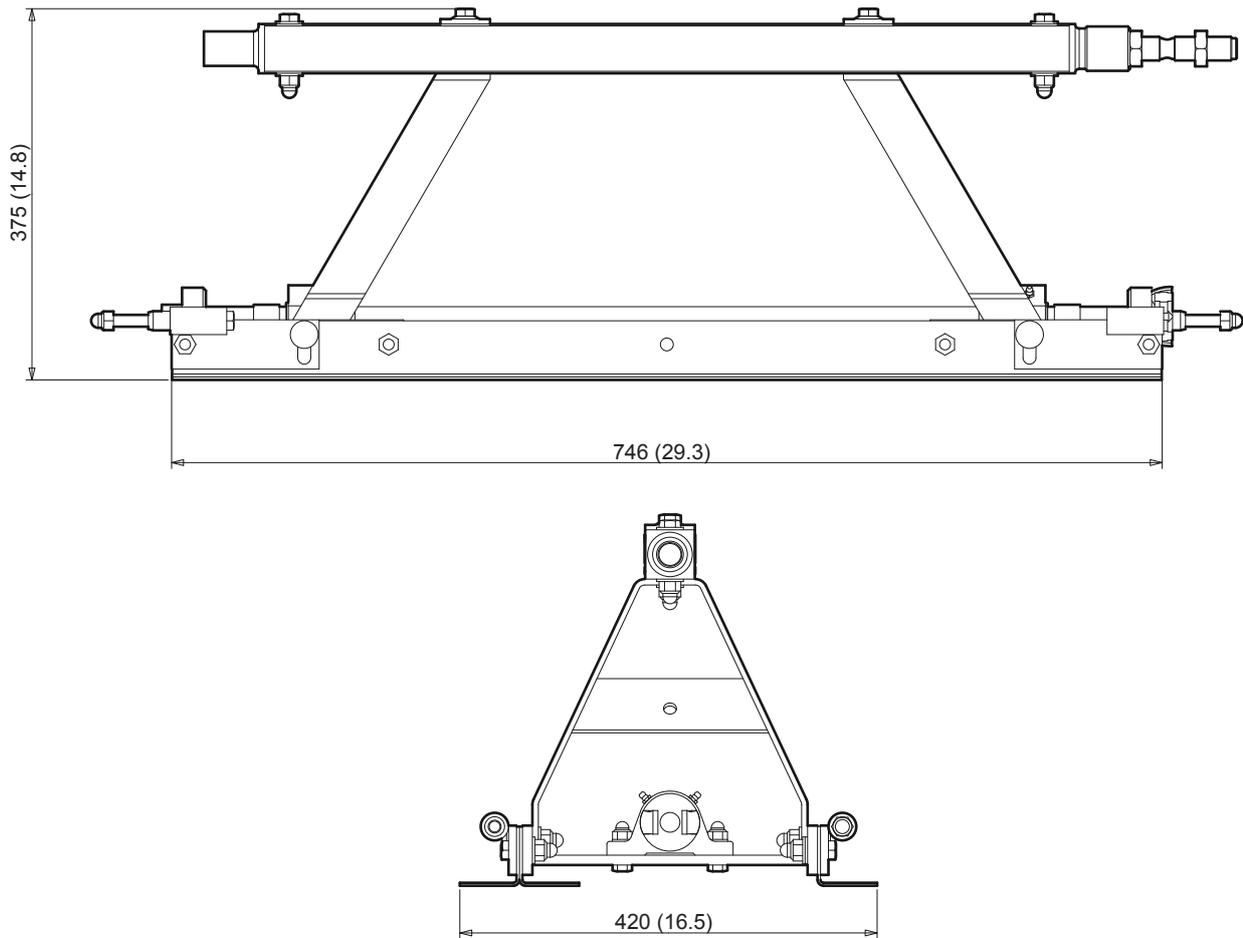
## Pneumatic drive unit



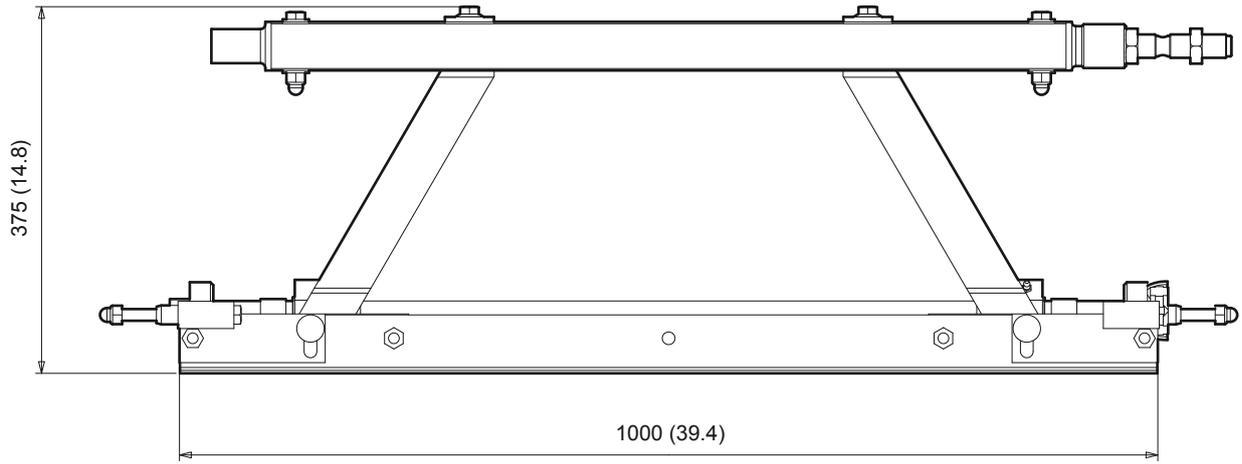
**0,5 meter (1.6 ft.) extension**



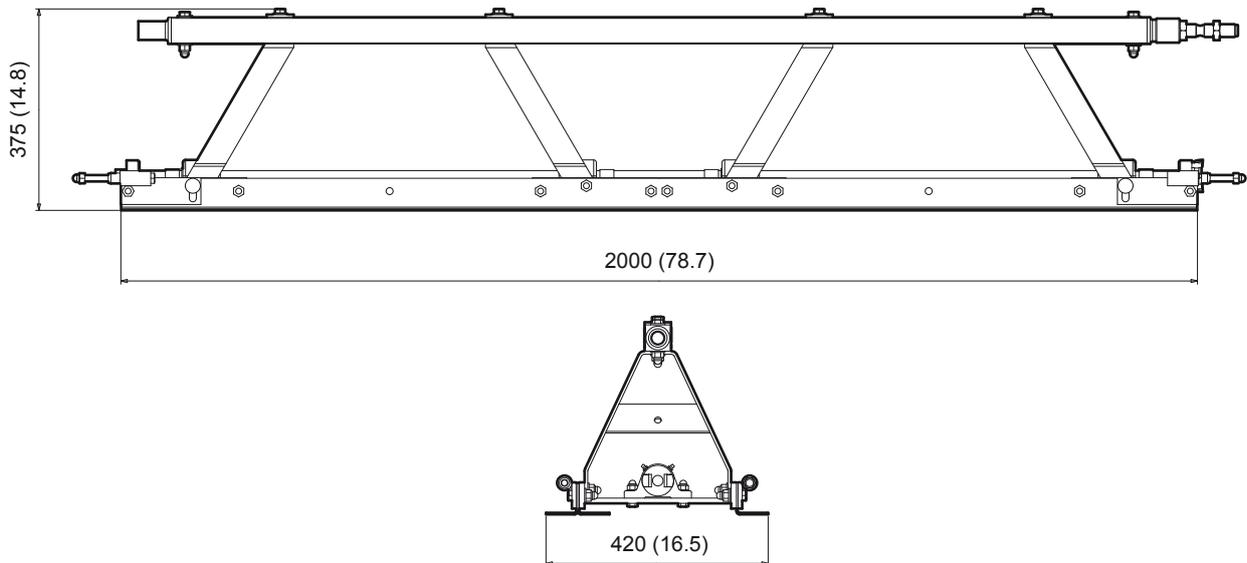
**0,75 meter (2.4 ft.) extension**



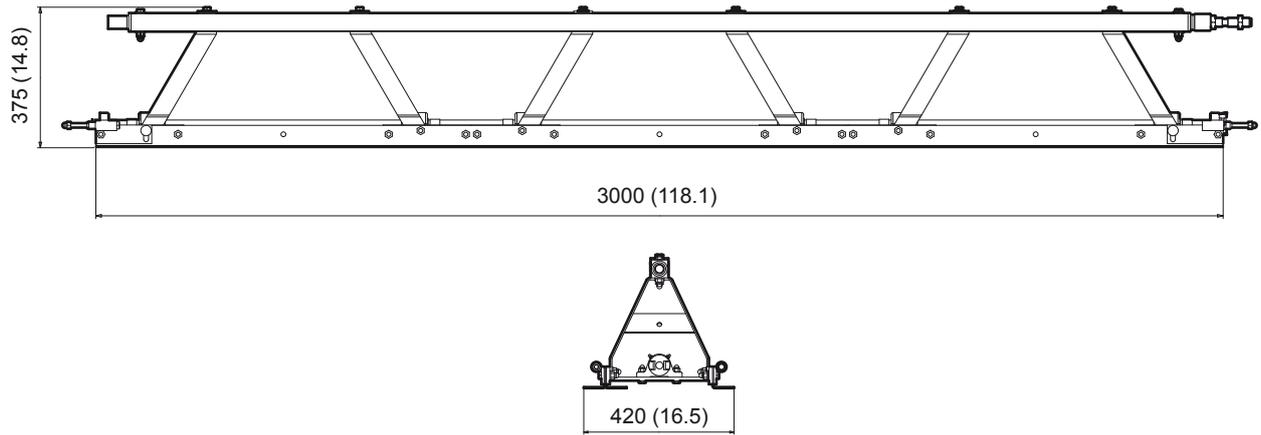
**1 meter (3.2 ft.) extension**



**2 meter (6.5 ft.) extension**



**3 meter (9.8 ft.) extension**



# EC Declaration of Conformity

## EC Declaration of Conformity

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We, Construction Tools EOOD, hereby declare that the machines listed below conform to the provisions of EC Directive 2006/42/EC (Machinery Directive), 2006/95/EC (Low voltage), 2004/108/EC (EMC) and the harmonised standards mentioned below.

Drive unit	Input power	Rotation	Weight
BT90 electric	3 kW	3000 min <sup>-1</sup>	78 kg
BT90 petrol	5.5 kW	3000 min <sup>-1</sup>	75 kg
BT90 pneumatic	3-6 bars	0.26 m <sup>3</sup> /min/m	22 kg

### Following harmonised standards were applied:

- ◆ EN 12649:2011

### Technical Documentation authorised representative:

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### General Manager:

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### Manufacturer:

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### Place and date:

Rousse, 2012-12-12









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