

# **尚Husqvarna**®



ΕN

Operator's manual

2-14

Contents				
Introduction2	Storage and disposal1	1		
Safety3	Technical data1	2		
Operation7	Service1	3		
Maintenance8	EC Declaration of Conformity1	4		
Troubleshooting10				

# Introduction

# **Product description**

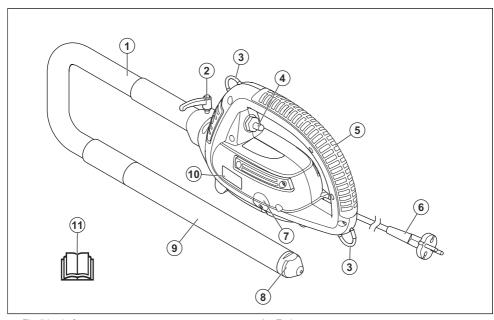
The product is a concrete vibrator with a built-in electrical drive unit.

#### Intended use

The product is for professional operation only. The product, together with the HA concrete vibrator, is used

### **Product overview**

# for concrete vibration. Do not use the product for other tasks.



- 1. Flexible shaft
- 2. Release handle
- 3. Lift rings
- 4. Power switch
- 5. Handle
- 6. Power plug and cable
- 7. Carbon brush cover

- 8. End cap
- 9. Vibrator head
- 10. Drive unit
- 11. Operator's manual

### 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 approved protective gloves.



Use hearing protection.



Double insulation.



The product or package of the product is not domestic waste.



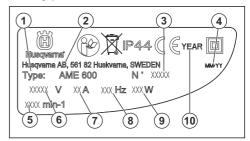
Protection against solid objects that are larger than 1mm and water splashing from all directions.



This product is in compliance with applicable EC directives.

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

### Rating plate



- 1. Product type
- Manufacturer
- 3. Product number
- 4. Production month/year
- 5. Motor speed, rpm
- 6. Voltage, V
- 7. Current, A
- 8. Frequency, Hz
- 9. Rated power
- 10. Production year

### **Product liability**

As referred to in the product liability laws, we are not liable for damages that our product causes 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 power tool safety warnings



WARNING: Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Note: Save all warnings and instructions for future reference. The term "power tool" in the warnings refers

to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

### Work area safety

- Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

### **Electrical safety**

- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.
   Unmodified plugs and matching outlets will reduce risk of electric shock.
- Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- Do not expose power tools to rain or wet conditions.
   Water entering a power tool will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of a RCD reduces the risk of electric shock.

### Personal safety

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.
   Carrying power tools with your finger on the switch

- or energising power tools that have the switch on invites accidents
- Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- Dress properly. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts. Loose clothes, jewellery or long hair can be caught in moving parts.
- If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.
- Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles. A careless action can cause severe injury within a fraction of a second.

#### Power tool use and care

- Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.
   Power tools are dangerous in the hands of untrained users
- Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- Keep cutting tools sharp and clean. Properly
  maintained cutting tools with sharp cutting edges are
  less likely to bind and are easier to control.
- Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.
- Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and

**1**135 - 003 - 24.02.2020

grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

#### Service

 Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

### 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.
- · 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 defective.
- Do not do modifications to this product.
- Do not operate the product if it is possible that other persons have done modifications to the product.

### 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 product quickly in an emergency.
- The operator must have the physical strength that is necessary to operate the product safely.
- Use personal protective equipment. Refer to Personal protective equipment on page 6.
- 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.
- 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 product and disconnect the power source.
- Make sure that the power outlet voltage agrees with the voltage that is given on the rating plate of the product.
- 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.
- Make sure that you or other persons cannot get caught in and fall on cables, hoses and shafts in the work area.
- Before you operate the product, find out if there are hidden wires, electrical cables or other sources of electricity. Do not operate the product unless you know that it is in a safe work area.

#### 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 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 a correct vibration level.
- The product has a vibration damping system that decreases the vibrations from the handles to the operator. Let the product do the work. Do not push the product with force. Hold the product at the handles lightly, 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.
   Keep all other body parts away from the product.
- Stop the product immediately if strong vibrations suddenly occurs. 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.

### 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 given in the operator's manual.
- 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 closefitting clothing that has long sleeves and long legs.

# 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 6.
- Clean the product to remove dangerous material before you do the maintenance.
- Disconnect the product from the power source before you do the maintenance.

- 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 agent do all other servicing.
- If the replacement of the supply cord is necessary, this has to be done by the manufacturer or his agent in order to avoid a safety hazard.
- After maintenance, do a check of the vibration level in the product. If it is not correct, speak to an approved service agent.
- Let an approved service agent do servicing on the product regularly.

# Operation

### Introduction



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

### To do before you operate the product

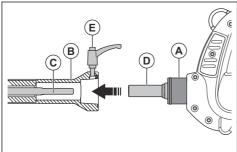
- Read the operator's manual carefully and make sure that you understand the instructions.
- Read the engine manual that is supplied by the engine manufacturer.
- Do the daily maintenance. Refer to *Maintenance* schedule on page 8.

# To connect the concrete vibrator to the drive unit



WARNING: Do not connect a concrete vibrator to a drive unit that is started

 Put the coupling of the drive unit (A) into the connector of the flexible shaft (B).



- Turn the connector of the flexible shaft. Make sure that the square connector (C) goes into the square hole (D) in the coupling of the drive unit.
- 3. Tighten the release handle (E) on the flexible shaft.

**Note:** When the release handle is lifted, it can be moved freely and does not tighten or loosen. When

the release handle is pushed down and turned, it tightens or loosens. This makes it possible to tighten fully also if the drive unit prevents a 360° turn of the release handle.

# To remove the concrete vibrator from the drive unit

- 1. Loosen the release handle on the drive unit.
- Remove the flexible shaft.

### To start the product

- Make sure that the power switch is set to "O", the OFF position.
- 2. Connect the product to an applicable power socket.
- 3. Move the power switch to "I", the ON position.
- 4. If there is no vibration in the vibrator head, hit the side of the vibrator head to start the vibration.

### To operate the product



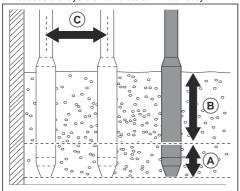
**CAUTION:** Do not make sharp bends or loops on the flexible shaft. Sharp bends and loops increase the wear and decrease the lifetime of the flexible shaft.



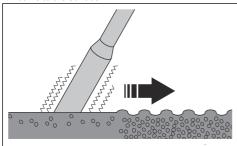
**CAUTION:** Do not use the product to move the concrete to the side.

 Fill concrete in equally thick layers, 30–50 cm / 12– 19 in. (B).

 Put the vibrator head approximately 15 cm / 6 in. (A) down into the nearest lower layer of concrete. This causes the layers of concrete to mix correctly.



Wait approximately 10–20 seconds until the surface around the vibrator head is shiny and no air bubbles come to the surface.



- 4. Remove the vibrator head slowly to let the concrete fill the hole from the vibrator head.
- Put the vibrator head down into the concrete at a distance of 30–50 cm / 12–19 in. (C) from where you put it before.
- Do step 4 and 5 again and again. Continue until the air bubbles are fully removed from the area of concrete.

### To stop the product

- Move the power switch to "O", the OFF position, to stop the product.
- 2. Disconnect the product from the power socket.

# Maintenance

#### Introduction



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

#### Maintenance schedule

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

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

Maintenance	Before use, each 10h	Each 2 weeks, 100h	Each 5 weeks, 250h
Clean the product.	X		
Clean the cooling fins of the motor.	*		
Make sure that the controls can move smoothly.	*		
Examine the commutator and the commutator membrane for damages.		*	
Lubricate the flexible shaft.		X	
Examine the carbon brushes. Replace the carbon brushes if they are worn or damaged.		Х	

Maintenance	Before use, each	Each 2 weeks,	Each 5 weeks,
	10h	100h	250h
Replace the carbon brushes.			X

### To clean the product



**CAUTION:** Do not use a high-pressure washer to clean the product.

- Use running water from a hose to clean the product.
- Remove concrete from the surfaces of the product after each operation before the concrete becomes hard.
- · Remove grease and oil from the handle.

### To lubricate the inner shaft

- 1. Disconnect the flexible shaft from the drive unit.
- 2. Remove the flexible shaft from the vibrator head.
- 3. Pull out the inner shaft.
- Lubricate the inner shaft. Make sure that you use the correct quantity and type of grease. Refer to Technical data on page 12.



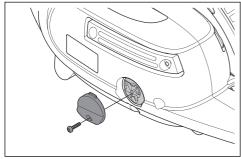
**CAUTION:** Do not use too much grease. Too much grease can cause the concrete vibrator to overload.

- 5. Assemble the parts in the opposite sequence.
- 6. Operate the concrete vibrator for 2 minutes before you put the vibrator head into concrete.

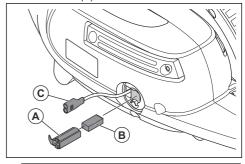
# To examine and replace the carbon brushes

The product has 2 carbon brushes, 1 on each side.

1. Remove the screw and the carbon brush cover.

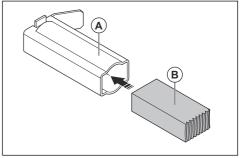


Use a small screwdriver to remove the carbon brush housing (A) and the carbon brush (B). Disconnect the connector (C).

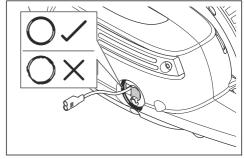


Note: Keep the connector out of the product.

- 3. Examine the carbon brush. Replace the carbon brush if it is worn or damaged.
- 4. Put the carbon brush (B) fully into the carbon brush housing (A).



Examine the O-ring. Replace the O-ring if it is worn or damaged.



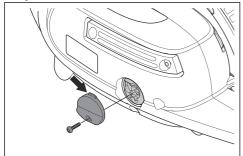
- 6. Make sure that the O-ring is correctly attached.
- 7. Install the carbon brush housing in the product.

1135 - 003 - 24.02.2020



**CAUTION:** Make sure that the carbon brush is correctly installed. If the carbon brush is incorrectly installed, it can cause damage to the product.

- 8. Connect the connector.
- Install the carbon brush cover with the pin up and tighten the screw.

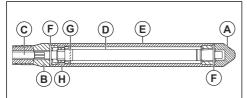


 Do the procedure again to examine or replace the opposite carbon brush.

# To do maintenance on the concrete vibrator

Maintenance is necessary after each 500 h of operation.

- 1. Put the vibrator head in a pipe vise.
- 2. Remove the end cap (A) and the end shank (B).



**Note:** The end cap and the end shank has a left hand thread.

3. Remove the flexible shaft (C) from the vibrator head shaft (D).

**Note:** The flexible shaft and the vibrator head shaft has a right hand thread.

- 4. Remove the vibrator head shaft from the front of the vibrator head housing (E).
- 5. Replace the O-rings (F), the sealing sleeve (G) and the ball bearing (H).
  - a) Lubricate the ball bearing before you install it.
- 6. Clean and lubricate the flexible shaft. Refer to *To lubricate the inner shaft on page 9.*
- 7. Assemble the vibrator head in the opposite sequence.



**CAUTION:** Do not lubricate the vibrator head housing, the vibrator head shaft or the end cap. These parts must be clean and dry when you assemble the vibrator head.

# **Troubleshooting**

Problem	Cause	Solution
The product does not start.	The plug is not connected.	Connect the electrical plug into a power socket.
	The power switch is in the OFF position.	Turn the power switch to the ON position.
	The carbon brushes are worn out.	Replace the carbon brushes.
	There is no power in the power socket.	Replace or repair the power socket.

Problem	Cause	Solution
The power switch does not operate cor-	There is overload in the vibrator head.	Lift the the vibrator head from the concrete and put it in again.
rectly.	The vibrator head is too hot because the vibration time out of the concrete is too long.	Remove the vibrator head from the concrete and let it become cool. Do not operate the vibrator head for a long time out of the concrete.
	The electric motor is too hot because the electric motor fan is broken.	Replace the fan at an approved service center.
The product stops.	There is overload in the electric motor because there is too much grease on the flexible shaft.	Do not use more grease than 20 g/m on the flexible shaft.
	There is overload in the electric motor be- cause the torque is too high and the bearings in the vibrator head are worn out.	Replace the bearings in the vibrator head.
The flexible shaft becomes too hot.	Too much friction in the flexible shaft.	Lubricate the flexible shaft in the hose.
The vibration frequency is too low.	The bearings of the vibrator head are worn out.	Replace the bearings in the in the vibrator head.
	Too much friction in the flexible shaft.	Lubricate the flexible shaft in the hose.
The product starts but the vibrator head has no vibration.	The bearings in the vibrator head are broken.	Replace the bearings in the in the vibrator head.
nas no vioration.	The flexible shaft is broken.	Replace the flexible shaft.

# Storage and disposal

### 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 of the product

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

# Technical data

### **Technical data**

	AME 600
Voltage, V, EU/US	230/115
Phases	1
Frequency, Hz	50/60
Motor power, kW/hp	0.6/0.8 @3000 rpm
Amperage, A, EU/US	11/5.5
Protection	IP44
Dimensions, L x W x H, mm	357x95x180
Cable length, m/ft	5/16
Weighted effective acceleration, m/s²/Uncertainty (K) <sup>1</sup>	1.72/0.38
Operating weight, kg/lbs	1.9/6.2
Noise emissions	
Sound pressure level L <sub>p</sub> at the operators ear, dB(A) <sup>2</sup>	82

	HA25-1	HA25-2	HA25-3	HA35-1	HA35-2	HA35-3	HA45-1	HA45-2
Vibrator head diameter, mm/in.	26/1	26/1	26/1	36/1.4	36/1.4	36/1.4	45/1.8	45/1.8
Vibrator head length, mm/in.	295/11.6	295/11.6	295/11.6	330/13	330/13	330/13	375/14.8	375/14.8
Length of sheath, m/ft	1/3.3	2/6.5	3/9.8	1/3.3	2/6.6	3/9.8	1/3.3	2/6.6
Total weight, kg/lbs	2.8/6.2	4.0/8.8	5.2/11.5	4.4/9.7	6.0/13.2	7.6/16.8	5.9/13	7.5/16.6
Speed, rpm	12000	12000	12000	12000	12000	12000	12000	12000

Lubrication	
Туре	Quantity
SHELL HDX2 RETINAX or equivalent	20 g/m

1135 - 003 - 24.02.2020

Weighted effective acceleration measured in water with HA35-1 (m/s²), according to EN ISO 5349 and EN 500-4:2011.

 $<sup>^2</sup>$  Sound pressure level  $L_p$  according to EN ISO 11201, EN 500-4. Uncertainty  $K_{pA}$  3.0 dB(A).

# 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.

# Service

### Approved service center

To find your nearest Husqvarna Construction Products approved service center, go to the web site www.husqvarnacp.com.

# **EC 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 vibrator
Brand	Husqvarna
Type/Model	AME 600
	+
	HA25/35/45
Identification	Serial numbers dating from 2019 and onwards

complies fully with the following EU directives and regulations:

Directive/Regulation	Description
2006/42/EC	"relating to machinery"

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

Millel

EN 60745-1:2009

EN 60745-2-12:2009

Partille, 2019-10-10

Martin Huber

R&D Director, Concrete Surfaces & Floors

Husqvarna AB, Construction Division

Responsibe for technical documentation



www.husqvarnacp.com

Original instructions

1142164-26



2020-02-25