

 **Husqvarna**<sup>®</sup>



**AME 1600**

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## Introduction

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### Product description

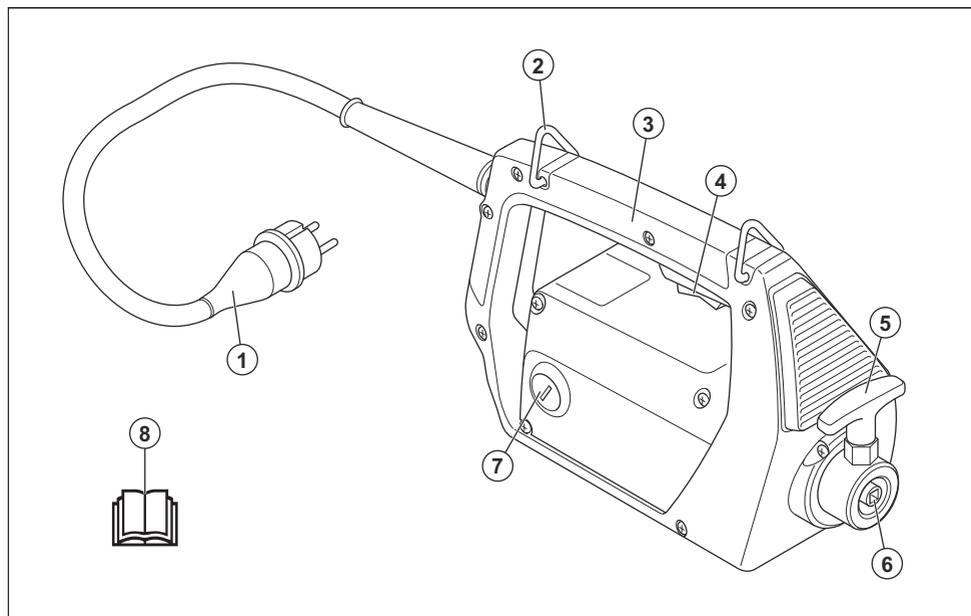
The product is a concrete vibrator with a built-in electrical drive unit.

### Intended use

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

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

### Product overview



1. Power plug and cable
2. Belt loop
3. Handle
4. Power switch
5. Lockpin
6. Coupling for the concrete vibrator
7. Carbon brush cover
8. 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.





**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 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.
- **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

## 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

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**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

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**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

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**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

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**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.

## 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 do modifications to 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.
- 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

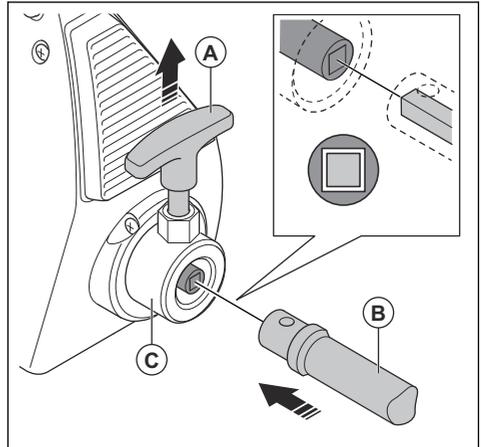
- Read the operator's manual carefully and make sure that you understand the instructions.
- Read the engine manual that is supplied by the engine manufacturer.
- Do the daily maintenance. Refer to *Maintenance schedule on page 8*.

### To connect the concrete vibrator to the drive unit



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

1. Lift the lockpin (A) on the drive unit.



2. Put the connector of the flexible shaft (B) into the coupling of the drive unit (C). Make sure that the square connector goes into the square hole in the coupling of the drive unit.
3. Release the lockpin on the drive unit.
4. Make sure that the lockpin goes back to its initial position.

### To remove the concrete vibrator from the drive unit

1. Make sure that the power switch is in the OFF position.
2. Lift the lockpin on the drive unit.
3. Remove the flexible shaft.

## To start the product

1. Make sure that the power switch is set to the OFF position.
2. Connect the product to an applicable power socket.
3. Move the power switch to the ON position.
4. If there is no vibration in the vibrator head, refer to *Troubleshooting on page 10*.

## To operate the product

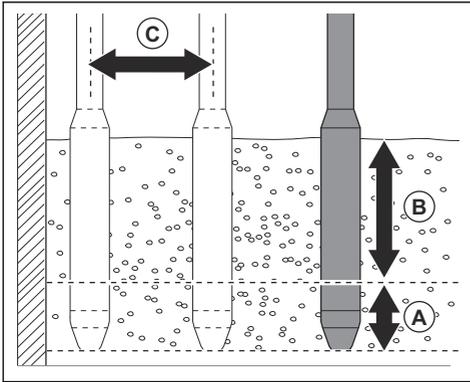


**CAUTION:** Do not make sharp bends or loops on the flexible shaft. Sharp bends and loops increase the wear and decrease the lifetime of the flexible shaft.

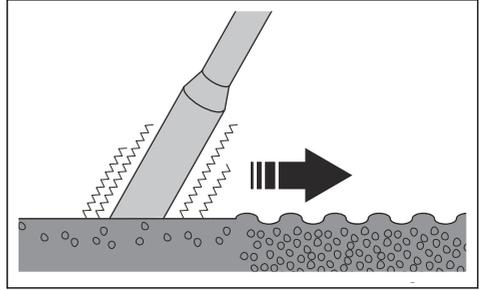


**CAUTION:** Do not use the product to move the concrete to the side.

1. Fill concrete in equally thick layers, 30–50 cm / 12–19 in. (B).
2. 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.



3. 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.
5. 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.
6. 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

1. 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	Monthly, each 150h
Clean the product.	X		
Clean the cooling fins of the motor.	*		

Maintenance	Before use, each 10h	Each 2 weeks, 100h	Monthly, each 150h
Make sure that the controls can move smoothly.	*		
Examine the commutator and the commutator membrane for damages.		*	
Lubricate the inner shaft of the flexible shaft.		X	
Examine the carbon brushes. Replace the carbon brushes if they are worn or damaged.		X	
Clean the air filter. Replace it if it is damaged or if it is clogged with concrete.		X	
Replace the carbon brushes.			X

## To clean the product



**WARNING:** Disconnect the product from the power socket before you 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.
4. Lubricate the inner shaft. Make sure that you use the correct quantity and type of grease. Refer to *Technical data on page 12*.



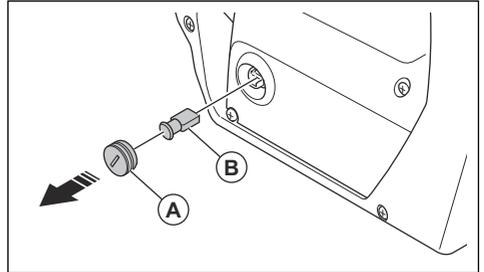
**CAUTION:** Do not use too much grease. Too much grease can cause the concrete vibrator to overload.

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 of the product.

1. Use a large flat screwdriver to remove the carbon brush cover (A) and the carbon brush (B).



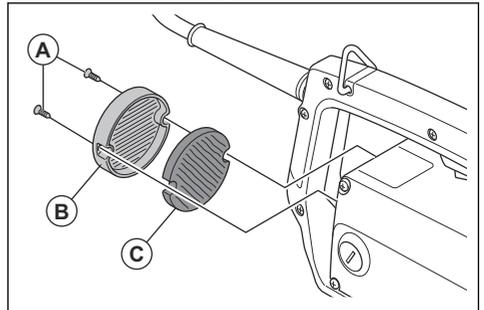
2. Examine the carbon brush. Replace the carbon brush if it is worn or damaged.
3. Install the carbon brush in the opposite sequence.



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

## To clean and replace the air filter

1. Remove the screws (A).

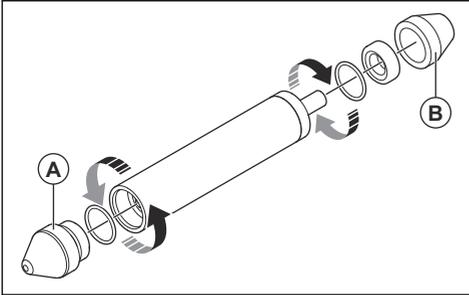


2. Remove the air filter cover (B).
3. Clean the air filter (C). Replace the air filter if it cannot be fully cleaned or if it is damaged.
4. Install the air filter.

5. Install the air filter cover with the screws.

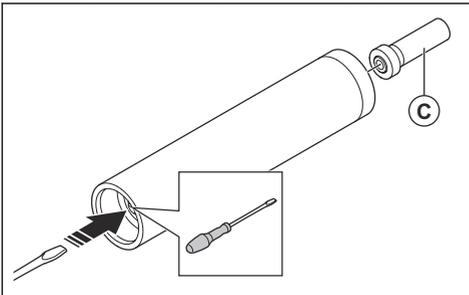
## To disassemble and assemble the vibrator head

1. Remove the end cap (A) and the tube connector (B) from the tube.

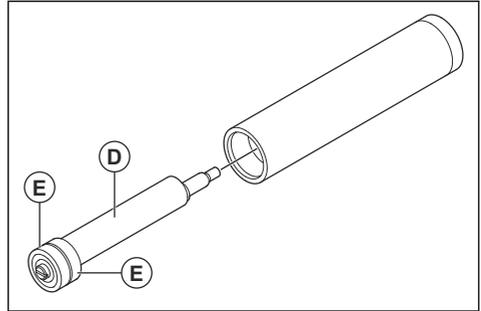


**Note:** The end cap has a right hand thread. The tube connector has a left hand thread.

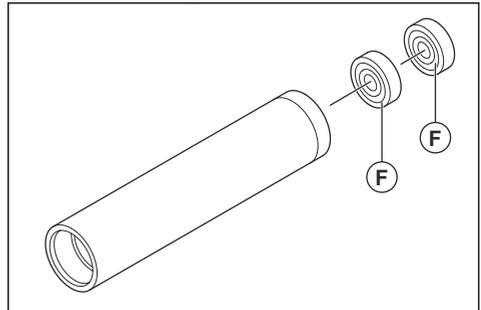
2. Use a screwdriver to lock the eccentric element, put the screwdriver into the groove at the end with the end cap. Loosen the square screw cap (C).



3. Remove the eccentric element (D) and the 2 bearings (E) from the tube.



4. Push the 2 bearings (F) out of the tube.



5. Examine the 4 bearings, replace the bearings that are worn or damaged.
6. Assemble the vibrator head in the opposite sequence.

## Troubleshooting

Problem	Cause	Solution
The product does not start.	The power plug is not connected.	Connect the power 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.
	The power switch is defective.	Replace the power switch.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
The power switch disengages.	There is overload in the vibrator head.	Lift the vibrator head from the concrete and put it in again.
	The vibrator head is too hot because the air intake or air outlet is clogged.	Remove blockage in the air intake or the air outlet.
	The vibrator head is too hot because the electric motor fan is broken.	Replace the fan at an approved service center.
	The nuts and bolts that hold the outer casing are loose.	Tighten the nuts and bolts.
	There is too much friction on the flexible shaft.	Lubricate the inner shaft of the flexible shaft.
	There is too much grease on the flexible shaft.	Do not use more grease than 20 g/m on the flexible shaft.
	The bearings in the vibrator head are worn out.	Replace the bearings in the vibrator head.
The flexible shaft becomes too hot.	There is too much friction on the flexible shaft.	Lubricate the inner shaft of the flexible shaft.
The product has too much vibration.	The bearings in the vibrator head are worn out.	Replace the bearings in the vibrator head.
	There is too much friction on the flexible shaft.	Lubricate the inner shaft of the flexible shaft.
The vibrator head makes much noise.	The bearings in the vibrator head are worn out or broken.	Replace the bearings in the vibrator head.
	The rotor touches the stator.	Let an approved service center replace the rotor.
	The outer casing is broken or has loose bolts.	Examine the outer casing and tighten the bolts.
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.
	The flexible shaft is broken.	Replace the flexible shaft.

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## Storage and disposal

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### 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

	EU	UK/US-CAN
Voltage, V	230	110
Phases	1	1
Frequency, Hz	50/60	50/60
Power, kW/hp	1.6/2.25 @12000 rpm	1.6/2.25 @12000 rpm
Amperage, A	7	14
Protection	IP44	IP44
Insulation class <sup>1</sup>	II	I
Dimensions, L×W×H, mm/in.	371.7×140.8×204.6/ 14.6×5.54×8.05	371.7×140.8×204.6/ 14.6×5.54×8.05
Cable length, m/ft	5/16	5/16
Weighted effective acceleration uncertainty (K), m/s <sup>2</sup> or ft/s <sup>2</sup> , <sup>2</sup>	4.16 or 0.71	4.16 or 0.71
Operating weight, kg/lbs	6.1/13.45	6.1/13.45

<b>Noise emissions</b>	
Sound pressure level $L_p$ at the operators ear, dB(A) <sup>3</sup>	77

<b>Vibrator head</b>	<b>AT 29</b>	<b>AT 39</b>	<b>AT 49</b>	<b>AT 59</b>
Tube diameter, mm/in.	29/1.125	39/1.5	49/2	59/2.375
Tube length, mm/in.	332/13	315/12.375	311/12.25	306/12
Tube weight, kg/lbs	1.30/2.875	2.10/4.625	2.70/6	3.90/8.625
Amplitude peak, mm/in.	0.80/0.03	1/0.04	1.20/0.05	1.20/0.05
Speed, rpm	12000	12000	12000	12000
Weighted effective acceleration uncertainty (K)	12.09	8.86	9.74	10.29

<sup>1</sup> Class I with ground connection, Class II double insulation

<sup>2</sup> Weighted effective acceleration measured in water with Superflex 10 and AT29 (m/s<sup>2</sup>), according to EN ISO 5349 and EN ISO 20643.  $k = 1,5 \text{ m/s}^2$

<sup>3</sup> Sound pressure level  $L_p$  according to EN ISO 11201, EN 500-4. Uncertainty  $K_{pA}$  3.0 dB(A).

<b>Flexible shaft</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>30</b>	<b>40</b>
Shaft length, m/ft.	1/3.25	1.50/5	2.00/6.5	3.00/10	4.00/13
Shaft weight, kg/lbs	2.40/5	3.00/6.625	3.80/8.375	5.60/12.375	7.30/16
Grease type	KLUBER GBU Y131 grease or equivalent				
Grease quantity	Approximately 15 grams per meter of the shaft				

## **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.

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# EC Declaration of Conformity

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## EC Declaration of Conformity

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

<b>Description</b>	<b>Concrete vibrator</b>
<b>Brand</b>	Husqvarna
<b>Type/Model</b>	AME 1600 + AT 29, AT 39, AT 49, AT 59
<b>Identification</b>	Serial numbers dating from 2019 and onwards

complies fully with the following EU directives and regulations:

<b>Directive/Regulation</b>	<b>Description</b>
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 60745-1:2009

EN 60745-2-12:2009

EN 12649:2008+A1:2011

EN 55014-1:2017

EN 55014-2:2015

EN 61000-3-2:2014

EN 61000-3-3:2013

Partille, 2020-02-20



Martin Huber

R&D Director, Concrete Surfaces & Floors

Husqvarna AB, Construction Division

Responsible for technical documentation





[www.husqvarnacp.com](http://www.husqvarnacp.com)

Original instructions

1140470-26



2020-03-12