

VON ARX SCARIFIER

FR 200 GENUS



EN

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arx**®
TRUE QUALITY SINCE 1941

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NOTES FOR THE USER

Before using

It is extremely important that you:

- Make sure that the package is complete and that you check for any possible damage caused during transit/transport.
- Observe the safety instructions.
- Read the Operating Manual

Reading this Operating Manual

If there are any questions on your part after reading this Operating Manual please get in touch with the manufacturer or the nearest service center. The manufacturer is not responsible for any damage or breakdown resulting from non-observance of the Operating Manual.

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The text and illustrations may not be copied or reproduced without the express permission of Von Arx EOOD.

Trade marks ®

The words "Von Arx" and the "Von Arx" logo are registered and internationally protected trade marks. Their use by third parties is prohibited!

Patents

Various components and processes listed and illustrated in this Operating Manual are patent pending or national and international patents have already been granted.

Illustrations and technical modifications

Illustrations may differ from the real machine and appear without any obligations on our part. In order to meet the rapidly changing customer demands, we reserve the right to make technical modifications without prior notice.

Translations

Solely the English version of this Operating Manual is legally binding. The English version of this manual is considered as the "Original instructions".

Safekeeping

Please keep this Operating Manual in a safe place and available for the user.

Further information

Manufacturer:
Von Arx EOOD,
4000 Plovdiv
Telefon: +359 32 94 05 53
Country of origin: Bulgaria

SAFETY INSTRUCTIONS AND MARKED PARTS

Von Arx machines and tools are state of the art technology and they are built according to the construction guidelines of the EC. They have been tested and approved and are safe to operate when used as described in the instructions.

There are dangers in using machines when the machine is used by an untrained person and when it is not used as described in the operating instructions. Each person who is involved in preparation, putting into operation, operation and maintenance must have read and understood the entire Operating Manual, especially the safety instructions.

Marked parts in this Operating Manual

Read and always observe the safety instructions in this Operating Manual! The safety instructions are marked like this:



Failing to observe an instruction marked with this sign may lead to serious injury or death.



Failing to observe an instruction marked with this sign may damage the machine or cause damage to property.



Marks any explanatory information or special instructions.

Safety instructions



Keep your workstation tidy!

- Untidiness in your work area may be a cause for accidents!



Use caution!

- Always be aware of your actions. Use common sense during work. Do not operate the machine or the tool when distracted.



Avoid an unnatural posture!

- Be sure to stand firmly on the ground while you are working and keep your balance at all times.



Wear suitable protective clothing!

- Do not wear loose fitting clothing or jewelry, it might get caught by moving parts.
- Cover long hair with a hairnet.
- The machine operator must wear goggles, gloves, ear protectors and non-slip safety shoes.
- Wear a dust mask if the work generates dust.



Take your work environment into account!

- Never use the machine or the tool near explosive materials (the electric motor may give off sparks)!
- Never use an electric tool that is damp or wet (electric shock)!
- Protect the machine or the tool from moisture, water, extreme heat, extreme cold, chemical solutions and gases.



Keep other people away!

- Keep other people - especially children - away from the machine or the tool and the power cord.
- Keep other people out of your work area while you are working!



Check the machine or tool for potential damage!

- Prior to operating, safety devices or slightly damaged parts have to be inspected and their satisfactory operating function for the intended purpose to be assured.
- Damaged safety features and switches must be repaired or replaced by an authorized service center. Do not use the electric tool if switches cannot be switched on or off.

**Do not carry!**

- For safety and health reasons, the heavy machines must not be transported by hand.

**Never leave a machine which is not in a safe state!**

- Before leaving the machine, turn the motor off.
- Secure the machine by placing chocks under the wheels of the FR 200.
- Interrupt the ignition contacts or remove the mains plug.

**Do not remove protective devices!**

- Only operate the machine when all the protective devices fitted in the factory are mounted and in good working order.

**Only use on horizontal surfaces!**

- The surface preparation machine must only be used on horizontal surfaces.
- Make sure that all the wheels rest firmly on the surface to be treated.

**Do not misuse the electrical power cord!**

- Do not use the cable to pull the plug out of the socket.
- Protect the cable against heat, oil and sharp edges.
- Lay the electric cable in such a way that it cannot be damaged by the working tools.
- In the open air, use only specially authorized and suitably marked extension cables.
- Use only electric cables with a suitable cross-section and the necessary length.
- Unroll the extension cable completely from the cable drum.

**It is essential that you comply with the internal combustion engine manufacturer's Operating Manual and the following regulations!**

- Fill up with fuel in the open air only. Never drain fuel in a confined or poorly ventilated space.
- Do not fill with fuel when the engine is running or still hot.
- Do not fill with fuel in the vicinity of an open fire. Do not drain fuel in the vicinity of naked flames.
- Do not smoke when filling and draining fuel.
- Never work with internal combustion engines in confined spaces.
- Avoid burns on the hot engine. Let the engine cool down fully before performing any maintenance work.

**Do not remove guard devices!**

- Damaged protection devices on machines must be professionally repaired or replaced by a customer service workshop.
- Operate the machine only if all the guard devices mounted in the factory are in place and in good working order!
- When work generates dust, always connect the vacuum cleaner system.
- Damaged dust aprons are prejudicial to the performance of the connected vacuum cleaner.
- Do not operate the machine unless the emergency stop switch is in working order.
- When working with the machine, always connect the fatigue switch ripcord to your wrist.
- Never work without the belt guard in place.

**Operating location and workplace**

When working with the machine, the machine operator will always stand behind the handlebar. From this position, he can permanently monitor and, if necessary, correct the work to be performed. Standing at this position, the machine operator can:

- steer the machine
- hold the machine back
- actuate all the operating and control elements (such as the parking brake and depth setting) while the machine is in use.

NOTE: Hand-arm vibrations

Working with the FR 200 leads to vibration stressing. Please follow the legal provisions as regards the permitted operating time.

Safety stickers on the machine



Warning fire hazard substances
(For internal combustion engines only)



Warning: electric shock hazard



Warning: hot surface



Warning: cutter shaft



Safety shoes must be worn



Study the Operating Manual



Ear protectors must be worn



Use protective goggles

Damaged or lost safety stickers must be replaced immediately. These stickers are obtainable from your Customer Service Center.

USE FOR THE INTENDED PURPOSE

The machines are designed exclusively to treat all kinds of horizontal surfaces. Any other use does not correspond to the intended purpose. The manufacturer declines all liability for damage caused thereby. Surface preparation machines always attack the surface to be treated. They are therefore not suitable for cleaning sensitive surfaces (such as tiled floors) (*See chapter "Field of application" on page 8*).

Residual risk

There is still a residual risk owing to differing characteristics of the floor coverings, even if the machine is used in accordance with applicable regulations. If you detect irregular cutting, you must reduce the working depth or check the cutting drum and cutters.

Safety and responsibility at work

- Make your contribution to safety at the workplace.
- Report any discrepancy deviating from normal working immediately to the responsible person.
- Perform all the work with an awareness of the need for safety.

Further safety instructions

Make sure to comply with your local or national regulations, standards and directives.

FIELD OF APPLICATION

Depending on the cutter type, hard, brittle to firm or elastic surface materials **can be worked** e.g.:

- Asphalt and cast asphalt surfaces
- Concrete and cement, synthetic stone, floor tiles
- Screeds of cement, wood cement, ceramic etc.
- Natural stone
- Metals
- Thermoplastic materials

Surfaces made of highly elastic soft materials or fabrics and fiber materials **cannot be worked, or can only be worked** with certain limitations e.g.:

- Latex, rubber, soft plastics and foam materials
- Wood, carpets and woven materials

TOOLS

The right tool for your particular application can best be determined by tests. The following description only gives guide values.

Cutters, drums

Drum (Fig. 1)

Tool drums are obtainable for each surface preparation machine (*See chapter "List of spare parts" on page 23*).

Standard cutters (Fig. 2)

The standard cutters are used most frequently as they are particularly versatile.

- For roughening concrete and asphalt
- Grooving and removal of projections
- Removal of paint from concrete
- Elimination of projections

Beam cutters (Fig. 3)

Beam cutters are made of tempered steel. They are suitable for fine flooring work.

- Removal of paint from concrete and asphalt
- Light cleaning and smoothing of concrete floors
- Removal of paint and rust from steel surfaces (e.g. ship's decks)

Milling cutters (Fig. 4)

Milling cutters are suitable for:

- Removal of thermoplastic and cold plastic marks on asphalt
- Milling floor coverings on a thermoplastic basis (milling effect)

Round cutters (Fig. 5)

Round cutters are used for the preparation of very large surfaces.

- Removal and grooving of concrete

Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

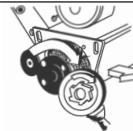


Fig. 7



Milling cutters are not suitable for milling concrete floors!



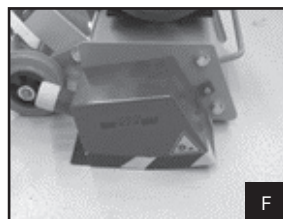
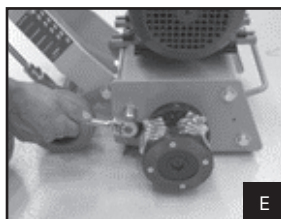
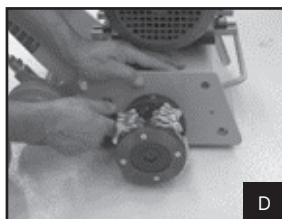
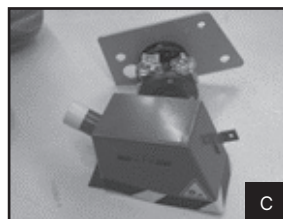
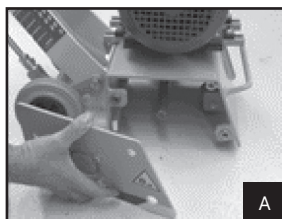
The direction of rotation must be complied with when the milling cutters are fitted (Fig. 6).

Steel brush (Fig. 7)

(fine, coarse) The brushes are suitable for light cleaning work on various materials.

Fit the side cutter (SF 60)

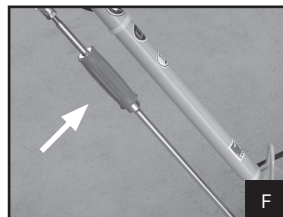
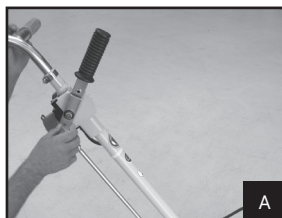
- FR 200: Undo the screw cover and detach the side cover
- SF 60: Undo the hood screw cover
- SF 60: Detach the hood
- SF 60: Fit onto the FR 200 and screw in the 3 hexagon screws into the drum casing
- SF 60: Tighten the screws with a spanner or ratchet
- SF 60: Fit the hood and tighten the two screws with an Allen spanner.



Fit the fine adjustment mechanism (FE)

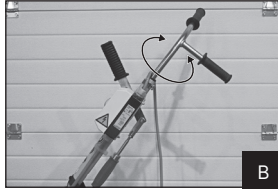
- A) Remove the adjustment rod
- B) Adjustment rod: Pull out the upper pin
- C) Adjustment rod: Pull out the lower pin
- D) Adjustment rod with FE: Fit the lower pin
- E) Adjustment rod with FE: Fit the upper pin
- F) Adjustment rod with FE: fitted

Operate the precision adjustment mechanism by turning the grey handle (see arrow - Fig. F).



Mounting the handle stopper

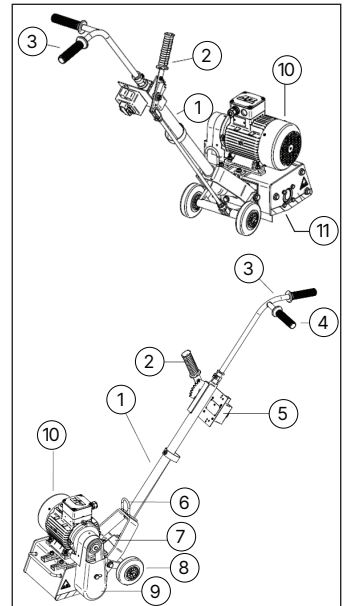
- A. Insert the handle into the rubber sealing of stick and push as far as it will go.
- B. Rotate the handle 90 degrees from the normal operating position. The hole on the back of the stick must coincide with the threaded hole of the handle.
- C. Fasten the screw thru the hole of the stick on the handle and tight it well. Use the hexagonal key SW 5 which belongs to the machine.
- D. Rotate back the handle to normal operating position and mount the plastic cap by pressing it into the hole of the stick.
- E. Regulate the height of the handle as desired and fasten the clamp on the top of the stick.



MACHINE DESCRIPTION AND BASIC MODE OF OPERATION

Construction of the machine

1. **Handle bar** Contains the controls of the machine.
2. **Adjusting lever** to raise and lower the tool drum:
 - TOP: Drum in transport and idling position
 - BOTTOM: Drum in working position
3. **Handle grip** Retaining and guide handle for the machine.
4. **Guide handle** Retaining and guide handle for the machine.
5. **Motor switch**
 - Switch for electric motor. 2 positions: (**ON I** , **OFF O**)
6. **Transport hooks**
7. **Dust extractor** Connection for the dust extraction system
8. **Supporting wheel** 2 fixed rollers to guide the machine.
9. **Belt guard**
 - The belt guard must only be removed for repair and maintenance work.
 - The machine must, under no circumstances, be operated without the belt guard in position.
10. **Drive motor** 3 drive types:
 - Single phase motor (115V, 230V)
 - Three-phase motor (400V)
 - Petrol engine



11. Tool drum with 4 flail shafts.

- The tool drum may be replaced by nylon and steel brushes to clean the surface.

12. Position of the machine operator (Fig. 8)

Function

The flail shafts can be fitted with various types of cutters for hard, brittle, solid or elastic floors (See chapter "Tools" on page 9).

The floor to be treated is exposed to heavy impacts from the loosely fitted cutters as the tool drum rotates. Depending on the type of cutter, this process results in the removal of varying quantities of material.

The tool drum can be driven by a range of motors or engines (electric or gasoline).



Fig. 8

FR 200, 115 V / 230 V

Description of function

Before starting put on your ear protectors and protective goggles.

1. **Starting (Fig. 9):** Before starting, set the depth adjuster to 0 position (Fig. 10) and then press the green button on the switch (230V) or turn the knob of the switch to position 1 (115V) (Fig. 9).
2. **Depth adjustment (Fig. 10):** Push the adjusting lever (black) forwards until the cutters strike the floor surface. (The photograph shows depth adjustment in 0 position)
- **Feed:** The machine operator must guide the machine at the two handles of the handle bar. The machine operator steers the FR 200 in cutting direction over the floor surface to be worked on. The FR 200 is pressed against the floor and the rotating drum works into the floor surfacing by its own weight.
3. **Switching off:** Set the depth adjuster to 0 position before switching off. Then press the red button on the switch (230V) or turn the knob of the switch in position 0 (115V).

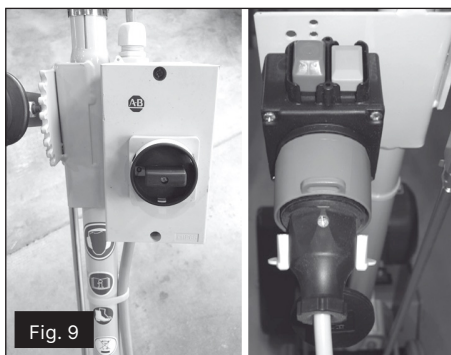


Fig. 9



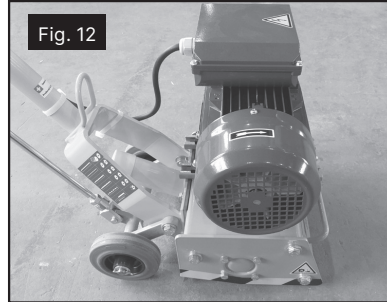
Fig. 10

FR 200, 400 V

Description of function

Before starting put on your ear protectors and protective goggles.

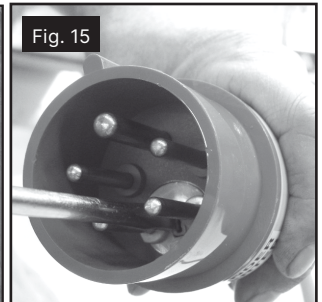
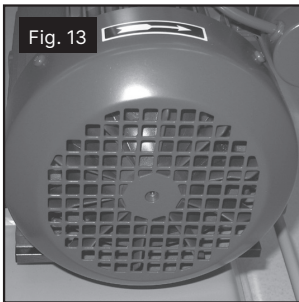
1. **Starting (Fig. 11)** Before starting, set the depth adjuster to 0 position and then press the black button on the switch.
2. **Direction of drum rotation (Fig. 12)** The cutting drum may only be rotated clockwise. Before starting cutting work, check that the direction of rotation is correct (clockwise). It is possible to correct the direction of rotation by switching over the phase inverter. Please note the following pictures.



3. **Checking the correct drum direction of rotation (Fig. 13):** The fan direction of rotation corresponds to the drum direction of rotation. The fan must turn in the direction shown by the arrow.
4. **Depth adjustment (Fig. 14):** Push the adjusting lever (black) forwards until the cutters strike the floor surface. (The photograph shows depth adjustment in 0 position)
 - **Feed:** The machine operator must guide the machine at the two handles of the handle bar. The machine operator steers the FR 200 in cutting direction over the floor surface to be worked on. The FR 200 is pressed against the floor and the rotating drum works into the floor surfacing by its own weight.
5. **Switching off** Set the depth adjuster to 0 position before switching off. Then press the red button on the switch.

Phase inverter FR 200, 400 V

1. **The mains plug (Fig. 15)** of the FR 200 features a phase inverter. When placing into operation, the machine operator must check the correct direction of rotation of the cutting drum. If necessary, change the direction of rotation by switching the phases of the phase inverter. Use a screwdriver to rotate the rotary switch in the mains plug through 180°.



FR 200 gasoline

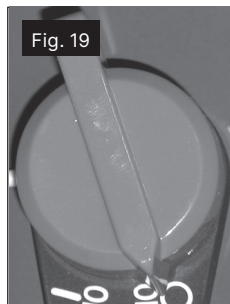
Description of function

Before starting put on your ear protectors and protective goggles.

1. **Starting (Fig. 16-Fig. 19)** Before starting, set the depth adjuster to 0 position. Set the rotary switch to „on“. Then turn the accelerator lever (metallic grey) to the position shown (full throttle). You must now turn the white rotary lever (Choke) for the air supply fully to the right (low air supply) and set the black gasoline slide to „on“. Now pull the cord in order to start the engine. You must now move back the white rotary lever for the air supply (full air supply)
2. **Depth adjustment (Fig. 14)** Push the adjusting lever (black) forwards until the cutters strike the floor surface to be worked on. (The photograph shows depth adjustment in 0 position)

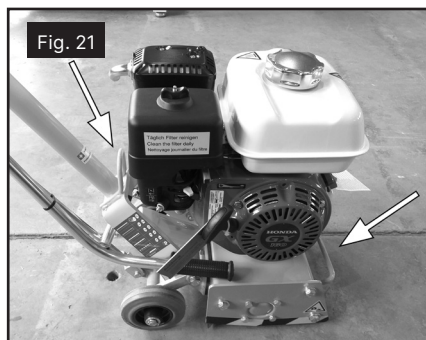
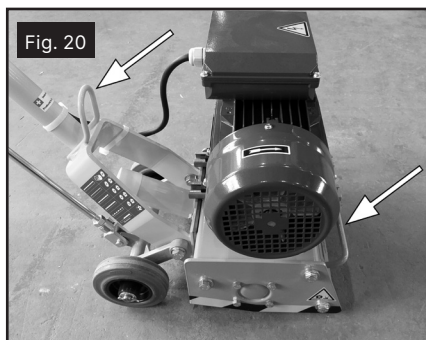


- **Feed (Fig. 8)** The machine operator must guide the machine at the two handles of the handle bar. The machine operator steers the FR 200 in cutting direction over the floor surface to be worked on. The FR 200 is pressed against the floor and the rotating drum works into the floor surfacing by its own weight.
3. **Switching off (Fig. 19)** Before switching off, set depth adjustment to 0 position. Then set the electrical rotary switch to "off" and set the gasoline slide to closed.



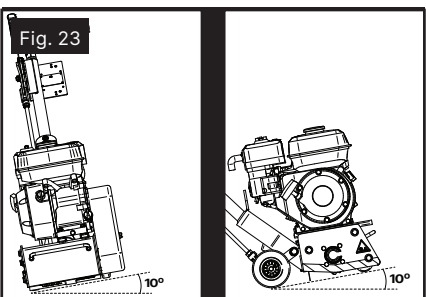
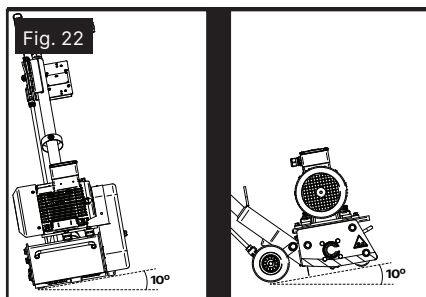
Transport hooks

115V, 230V, 400V (Fig. 20). Gasoline (Fig. 21).



Maximum permitted working inclination

115V, 230V, 400V (Fig. 22). Gasoline (Fig. 23).



OPERATION

Commissioning

Machines with internal combustion engines

For reasons of transport safety, new machines are delivered without fuel and engine oil.



Before commissioning read the engine manufacturer's Operating Manual.

- Add engine oil
- Add fuel

Machines with electric motors

- The CEE plug (16A) is also supplied for countries in which this plug system has not been introduced. 115V machines are supplied with no plug.
- An extension cable must be available for connection to the machine. Unroll the extension cable completely from the cable drum. Use only permitted extension cables (max. 30 m).
- Switch the machine on briefly and compare the direction of rotation of the motor with the arrow on the fan cover. If necessary, change the direction of rotation by phase reversal. (Changing the phase in the CEE plug).

Work preparation



Check your machine for damage.

- Check whether moving parts are in working order.
- Damaged protection devices and parts must be expertly repaired or replaced by a customer service workshop.

Changing the tool drum

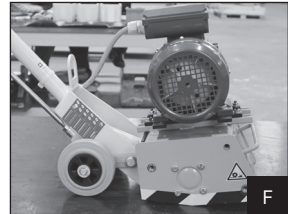
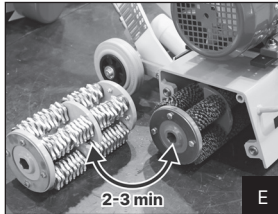
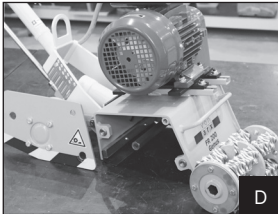
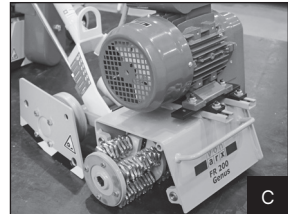
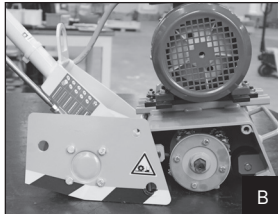
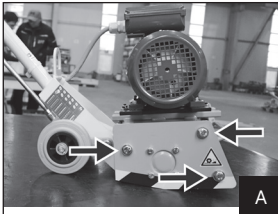


Pull out the mains plug for machines with electric motors.



Pull off the spark plug cap on machines with internal combustion engines.

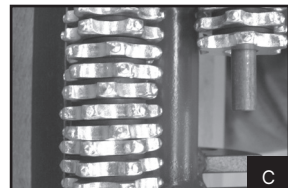
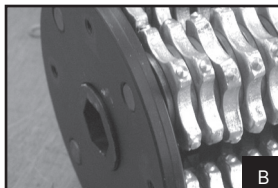
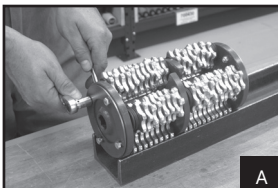
- Remove the screws from the drum cover.
- Remove the drum cover from the machine.
- Remove the tool drum from the drive shaft.
- Clean and grease the drive shaft lightly.
- Push the tool drum onto the drive shaft.
- Fasten the drum cover back on with the screws.



Fitting out the tool drum

Removing the cutters

- Undo the hexagon bolts from the tool drum retaining ring.
- Remove the retaining ring from the tool drum.
- Pull the cutter shaft off the drum core.





Choosing the type of cutter. For examples, See chapter "Tools" on page 9



Mount the same number of cutters and spacers on the flail shaft.



An improperly proportioned configuration of cutters and disks results in an imbalance of the drum and premature wear.



Use only cutters which are worn to the same extent.



The cutter tools must not be mixed on a single tool drum.



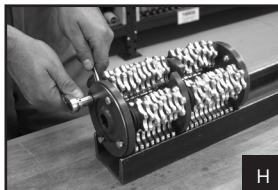
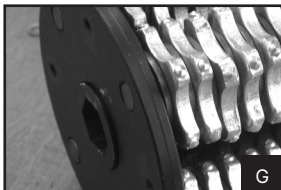
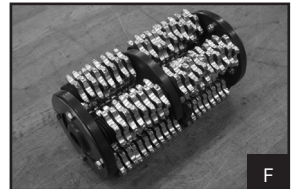
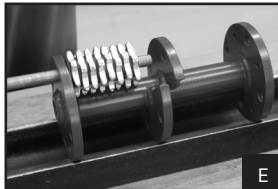
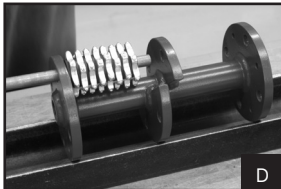
Milling cutters must not contact the drum flange and the drum segment bridges.



When fitting milling cutters or clover leaf cutters, make sure that the cutter tools rotate in the correct direction.

Fitting out the flail shafts

4. Push the flail shaft in until it is immediately in front of the segment bridge on the drum flange.
5. Fit the flail shaft with cutters and spacers.
6. Fit the next flail shaft with cutters and spacers until the tool drum has been completely fitted out.
7. Insert the retaining ring on the drum flange.
8. Secure the retaining ring with hexagon bolts on the drum flange.



Connecting the dust extraction system

The suction hose of the dust extraction system can be connected to the casing of the handle bar directly with an inside diameter of 50mm (**Fig. 24**). Fasten the hose to the handle bar with the strap.



Preparing the working surface

- If a dust extraction system cannot be connected, the surface to be worked should be moistened with water to reduce dust generation.
- Clear major obstacles from the working surface (e.g. projecting reinforcing rods, nails etc.).

Checking the machine



Check your machine for damage. The power supply must be interrupted before performing any kind of work on the machine!

- Remove the mains plug / spark plug!
- Allow the engine or motor to cool down fully!
- Check the belt guard:
 - *Is the belt guard firmly fitted?*
- Test the bolts:
 - *Are all the bolts tightened firmly?*
- Check the electrical connections on machines with an electric drive:
 - *Does the electric motor rotate in the correct direction?*
 - *Are the electrical connections damaged?*
 - *Is a permitted extension lead connected?*
 - *Has the cable been unwound completely from the drum?*
- Checking machines with internal combustion engines:
 - *Is the engine oil level within the permitted range?*
 - *Is the fuel tank full?*
 - *Is the air filter clean?*
- Checking the tool drum:
 - *Is the drum correctly fitted out for the intended work?*
 - *Has the drum with milling cutters been fitted in the direction of rotation of the cutting edges?*

Starting the machine

1. The devices must have been checked.
2. Set the adjusting lever upwards. (the tool drum lifts away from the floor).
3. Place brake chocks under the wheels of the FR 200.
4. Switch the dust extractor system on (if connected).
5. Start the tool drum drive.
6. Remove the brake chocks.

Surface treatment

Make sure that surface to be treated is free from all obstacles.

- Hold the machine firmly with the steering rod.
- Lower the adjusting lever slowly.
- Move the machine forwards or backwards at a uniform speed.
- Increase or reduce the milling speed.



Do not cut too deeply!

Cutting too deeply does not boost performance. The machine must not float on the rotating tool drum.



In the event of incorrect use, the milling capacity is reduced and the tool unnecessarily stressed and worn.



The surface quality after machining depends essentially on the chosen tools and the fitment method.



To obtain straight grooves, traces etc. a cord may be laid out on the floor or beam may help.



Levelling and coating removal work can also be performed with forward and backward movements of the machine.



Before continuing to work surfaces that have already been treated, brush them down with a broom and clean with a powerful vacuum cleaner.

Final operations

Stopping the machine

1. Set the adjusting lever upwards.
2. Switch off the drive.
3. Ensure that the machine remains stationary:
 - Place the brake chocks in position.
4. Interrupting the energy supply:
 - Interrupt the energy supply (models with electric drive).
 - Close the fuel tap (gasoline version).

Switching off the dust extraction system

1. Switch the dust extraction system off.
2. Remove the suction tube from the machine.

Storing the machine

The machine should be cleaned immediately after each use!

1. Clean the machine.
2. Pour the contents of the fuel tank into a suitable container.
3. Store the machine in a dry place.

Secure when transporting with straps or with cable hooks at the transport eyelets provided!

CARE AND MAINTENANCE

Maintenance work



Always interrupt the energy supply before performing maintenance work!

- Remove the mains plug / spark plug!
- Allow the engine or motor to cool down fully!

Wear

All tools and tool components such as brushes, cutters, flail shafts and drum cores are subject to wear and will be worn out after a given period of use. They must then be replaced. The service life of the individual components varies. Apart from wear caused by operating use, it also depends on the type and characteristics of the material of the surface to be treated and on the requisite power during use.

The service life of the drum core can be increased greatly by frequent changing of the flail shafts. The flail shafts must be replaced at the latest when the diameter of the grooves which form in the flail shafts has diminished by 1 mm in relation to the original shaft diameter. The flail shafts must be changed with each set of cutters.

The consequence of waiting too long before changing the flail shafts is the formation of „oval“ flail shaft holes in the drum core. Drum cores damaged in this way must also be replaced by new ones.



Worn flail shafts may break in use and cause serious damage to the drum core and drive!

Changing parts subject to wear



Only use original Von Arx EOOD spare parts or the replacement parts indicated in the parts lists.

Changing the dust apron

Check the dust aprons regularly and replace them in good time.

Changing the drive belt

- Remove the mains plug / spark plug!
- Allow the engine or motor to cool down fully!
- Remove the belt guard.
- Release the four screws until the drive motor can be shifted and the drive belt is no longer under tension.
- Fit a new drive belt.
- Slide the drive motor until the belt is pretensioned (make sure that motor is seated parallel!)
- Test the belt tension by applying pressure with the thumb. If necessary, adjust the tension by moving the drive motor.
- Tighten the four screws (motor fixing screws) again.
- Replace the belt guard.

Belt tension reference values

Article No	Timing belt, Hz	Tolerance	Article No	Timing belt, Hz	Tolerance
701339G	57	±2.0	707586G	50	±2.0
701426G	69	±2.0	800000G	57	±2.0
701447G	59	±2.0	800002G	67 - 69	±2.0
701995G	50	±2.0	800005G	50	±2.0
701449G	59	±2.0	800006G	50	±2.0

Maintenance plan

The machine has been specially designed to reduce the time needed for maintenance work to a minimum. However, some maintenance work is essential!

This will enable the machine to operate in a trouble-free manner and give you good service for many years.



Always interrupt the energy supply before performing maintenance work!

- Remove the mains plug / spark plug!
- Allow the engine or motor to cool down fully!

Daily or after every 10 hours of operation:

- Clean the outside of the machine. (do not use solvents)
- Check the condition of cutters, flail shafts and the spacers (remove the tool drum, replace worn parts)
- Air filter (Combustion engines). Remove, clean, replace if necessary.
- Oil level (Combustion engines). Check, refill if necessary; comply with the engine manufacturer's Operating Manual.

Weekly or after every 50 hours of operation:

- Check the bearings: Arrange for after-sales service to change damaged bearings.
- Check screwed connections: Tighten any loose screwed connections, arrange for after-sales service to change any damaged assemblies.
- Check the dust aprons: Replace damaged or worn dust aprons.
- Clean the dust extraction connection.
- Lubricate the adjusting device: Check function after cleaning and lubricating.

REPAIRS

Only use original Von Arx EOOD spares or the replacement parts indicated in the parts lists.



Alterations to the electrical wiring are prohibited!

FAULTS AND TROUBLESHOOTING

Noises from drum shaft bearing

- Ball bearing defective
 - *Exchange ball bearing*
- Toothed belt torn
 - *Exchange toothed belt*

Low removal capacity

- Cutters are worn
 - *Exchange set of cutters or entire drum*

Stones at foot height are hurled towards the machine operator when cutting

- Dust apron is worn
 - *Exchange dust apron*

Electric version:

- Switch defective
 - *Exchange switch*

Gasoline version:

- Engine running untrue
 - *Change air filter*

Engine does not start

- Engine oil level too low and the oil monitor has tripped.
- Refill with oil.

Electric motor does not start

- Are all connectors connected to the mains?
- Is the mains power available?

Internal-combustion engine does not start

- Is fuel available?
- Is the fuel supply system OK?
- Is there engine oil?
- Is the air filter OK?

If the engine or motor still cannot be started, consult an authorized dealer for your engine or motor brand or refer to your nearest Von Arx Customer Service Agency.

Dust extraction system does not function

- Is a dust apron missing or are the dust aprons worn?
- Is the dust bag full?
- Is the dust filter on the suction unit clogged?
- Is the extraction line clogged?

TECHNICAL SPECIFICATIONS

Machine data, general

Serial numbers (aaa.bb.cc.xyz)	aaa = Type, bb = Model year, cc = Month, xyz = consecutive
Weight with drum	50 – 56 kg, 110 – 123 lbs
Dimensions	1100 × 380 × 970 mm, 43 × 15 × 38"
Working width	200 mm, 8"
Distance to wall	67 mm, 2.6"
Dust cleaner connection	Ø 50 mm, 2"

Machine data, general with side attachment unit SF 60

Weight without drum	60 – 65 kg, 132 – 143 lbs
Dimensions	1100 × 460 × 970 mm, 43 × 18 × 38"
Working width	200 mm + 60 mm, 8" + 2.4"
Distance to wall	14 mm, 0.5"

With electric motor drive

Size	90 S/L, 80 S		
Power 115V 50/60Hz	1.5kW / 1.1kW		
Power 230V 50/60Hz	2.2kW / 1.5kW		
Power 3 × 400V 50/60Hz	2.2kW		
Speed	2850/3000/2910/3470 rpm		
Available as:	115 V, 230 V, 400 V		
Design	B3		
Protection type	IP 55		
Motor protection switch	14 – 20 A, 18 – 25 A / 115V	13.5 A / 230V	4 – 6.3 A / 3 × 400V
Sound pressure level	≤79.3 db(A)		
Acoustic power level	≤87.3 db(A)		
Vibration level	≤3.6 m/s ²		

With gasoline engine drive

Permitted power	3.6 kW
Speed	3600 rpm
Sound pressure level	≤90.8 db(A)
Acoustic power level	≤98.8 db(A)
Vibration level	≤10.3 m/s ²

- When changing the engine or motor, do not exceed the stated technical data for speed, power and weight!
- Change from one drive mode to the other (e.g. electric version to gasoline version) is prohibited!
- The engine or motor may only be changed by a specialist or by a Von Arx Sales and Service Center!



Noise emission values do not necessarily correspond to the various sound levels produced under operating conditions during use in practice.



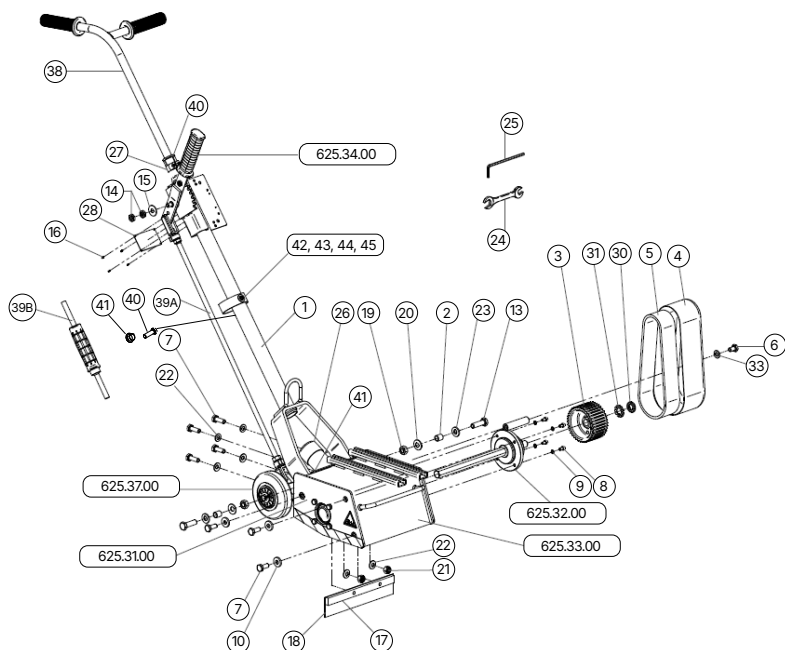
The effect of hand-arm vibrations may decrease with increasing body weight of the machine operator.

LIST OF SPARE PARTS

Basic machine

800021

No	Article No	Part Name	No	Article No	Part Name
1	701292	Handle bar	19	101823	Hexagon nut
2	701295	Spacer disk	20	113920	Rip-lock washer
3	701269	Toothed pulley	21	102287	Hexagon nut
3A	600643	Toothed pulley Gasoline	22	113919	Rip-lock washer
4	701270	Belt guard	23	108547	Washer
5	109353	Toothed belt	24	108042	Fork wrench
6	102289	Hexagon bolt	25	103022	Allen key
7	101608	Hexagon bolt	27	701059	Clamp
8	102259	Allen screw	28	703559	Type plate e / d
9	100616	Ribbed washer	30	108753	Shaft nut
10	108544	Washer	31	108333	Safety washer
13	101608	Hexagon bolt	33	106300	Washer
14	102603	Hexagon nut d= 0.5	38	600112	Handle, assy.
15	108744	Saucer spring	39A	701467	Adjustment rod complete
16	108214	Pop rivet	39B	707387	Rod complete for fine adjustment
17	701324	Pressing rail	40	900470	Hex socket cyl. head screw low
18	701325	Rubber cover	41	900469	Plastic cap D15.4

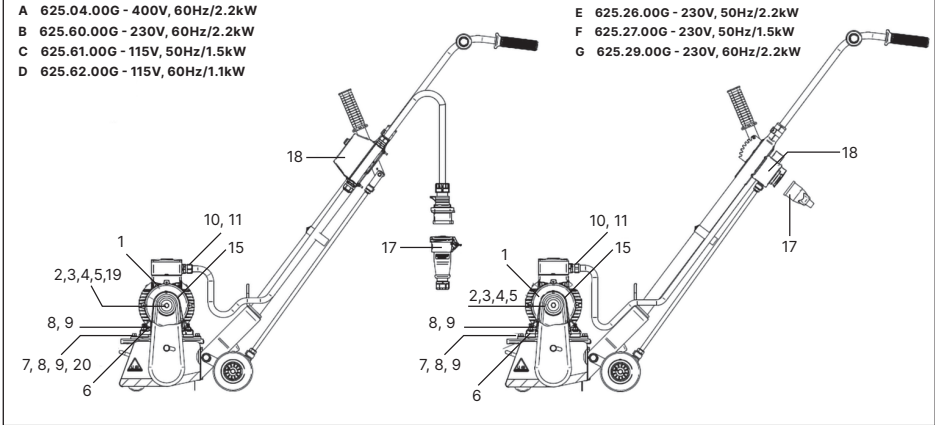


Electric versions

701449G, 701477G, 800006G, 800001G, 707588G, 800004G

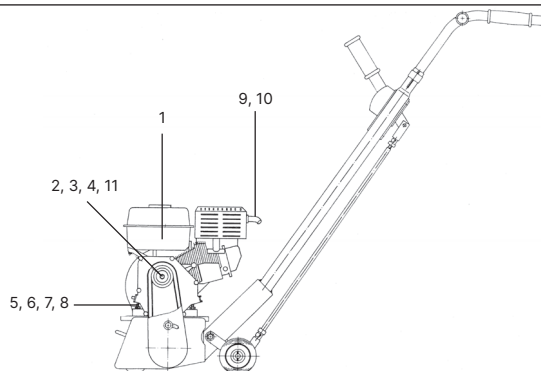
No	Article	Part Name
1A	109359	Electric motor 380V / 2.2kW / 50/60Hz
1B	900059	Electric motor 230V / 2.2kW / 60Hz
1C	900161	Electric motor 115V/1.5kW / 50Hz
1D	900060	Electric motor 115V/1.1kW / 60Hz
1E	109372	Electric motor 230V/2.2kW / 50Hz
1F	114740	Electric motor 230V/1.5kW / 50Hz
1G	114852	Electric motor 115/1.5kW / 60Hz
2	701341	Toothed belt pulley
2D	600299	Toothed pulley size 80
3F	108006	Spring key
4	106706	Hexagon bolt
4D	107923	Hexagon bolt
5	108580	Washer
6	701343	Mounting rail
6D	600298	Mounting rail size 80
7	706441	Anchor plate
8	300086	Washer
8D	113918	Rip-lock washer

No	Article	Part Name
9	900690	Hexagonal screw
10	115099	Reducing adapter
10D	900036	Expansion connector
11	114813	Screwed cable gland
11CG	114814	Screwed cable gland
15A	706200	Additional belt guard (400V)
15BCEF	706201	Additional belt guard
15D	600113	Additional belt guard
17A	109462	Electric plug CEE (380V)
17B	113893	Electric adapter cable DE-CH (230V)
18A	701469	Power switch 380V / 2,2kW
18B	900057	Power switch 230V
18C	800033	Power switch 115V
18D	800003	Power switch 115V
18EF	109373	Power switch 230V
18G	707955	Power switch 115V
19	107358	Washer
20	100618	Spring ring

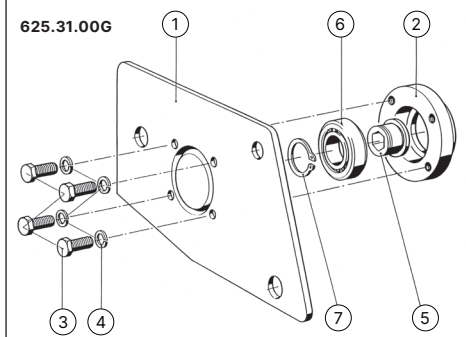


Gasoline version**701436G**

No	Article	Part Name	No	Article	Part Name
1	109370	Honda gasoline engine	7	101670	Washer
2	701331	Toothed belt pulley	8	900691	Hexagonal screw
3	107863	Hexagon bolt	9	701435	Deflector for exhaust
4	108580	Washer	10	108759	Pan-head tapping screw
5	706441	Anchor plate	11	109629	Spring key
6	100618	Spring ring	12	710534	Sticker set FR 200 gasoline engine

625.20.00G**Drum casing side cover****701460**

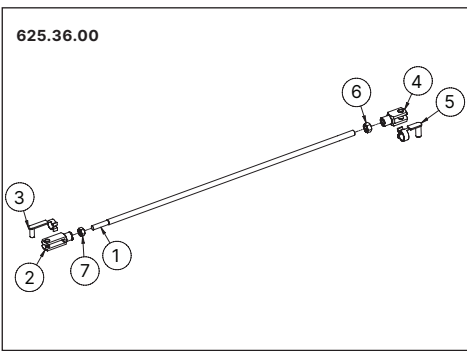
No	Article	Part Name
1	701400	Side cover drum casing
2	701401	Bearing flange
3	101599	Hexagon bolt
4	102286	Ribbed washer
5	701265	Driving bush
6	108251	Ball bearing
7	107351	Retaining ring (circlip)

625.31.00G

Adjusting rod assembled

701467

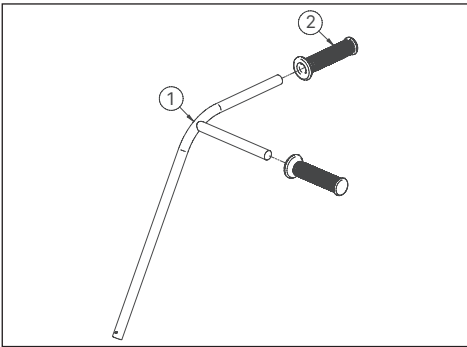
No	Article	Part Name
1	701300	Adjusting rod
2	115630	Fork joint 10 × 40
3	115636	Bolt 10 × 40
4	115631	Fork joint
5	115637	Bolt 12 × 24
6	101823	Hexagonal nut
7	102287	Hexagonal nut



Handle grip assembled

600112

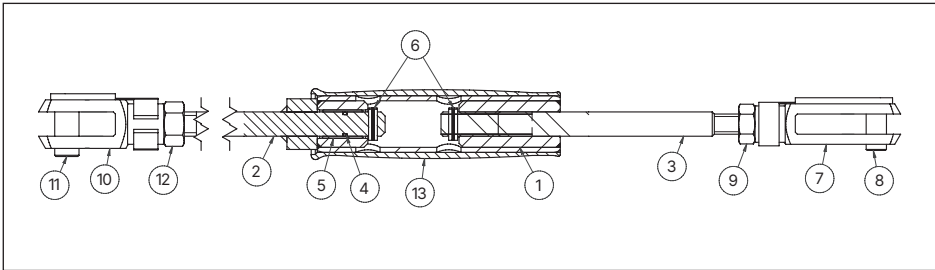
No	Article	Part Name
1	600109	Handle
2	600272	Rubber handle grip



Fine adjustment

707387 (available for 707421G, 707588G, 800004G, 800006G)

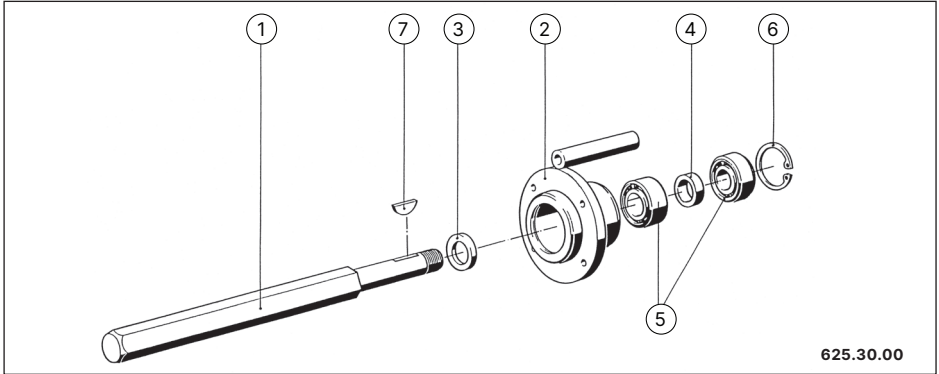
No	Article	Part Name	No	Article	Part Name
1	707386	Casting tube welded	8	115636	Bolt 10×40
2	707381	Lower adjustment rod	9	102287	Hexagonal nut
3	707382	Upper adjustment rod	10	115631	Fork joint 12×24
4	109691	O-RING ORM 0090-15	11	115637	Bolt 12×24
5	104332	Glacier -DU-BUSH	12	101823	Hexagonal nut
6	100626	Dowel pin	13	109355	Plastic grip
7	115630	Fork joint 10×40			



Drive shaft

701461

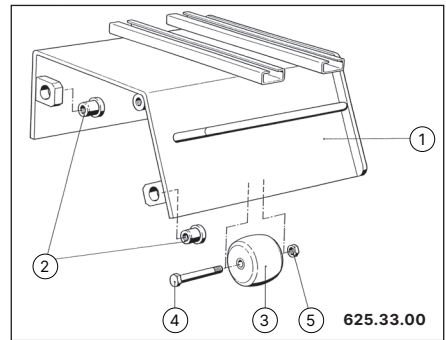
No	Article	Part Name	No	Article	Part Name
1	700014	Hexagon drive shaft	5	108274	Ball bearing
2	701264	Bearing housing	6	100623	Retaining ring (circlip)
3	701267	Spacer ring	7	108591	Washer spring
4	701268	Spacer sleeve			



Housing

701462

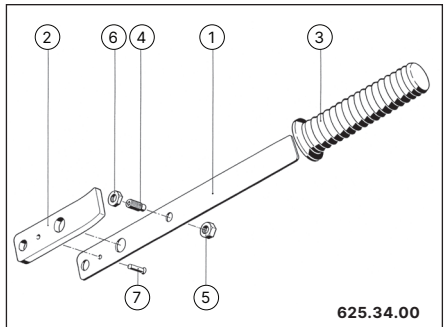
No	Article	Part Name
1	701263	Housing
2	701266	Centering bush
	708799	Roller complete
3	701271	Roller
4	102330	Hexagon bolt
5	100263	Safety nut



Adjustment lever

701465

No	Article	Part Name
1	701297	Adjustement lever
2	701298	Lever locking plate
3	109356	Rubber handle
4	108126	Setscrew
5	101822	Hexagon nut
6	110364	Hexagon nut
7	108146	Rivet with button head

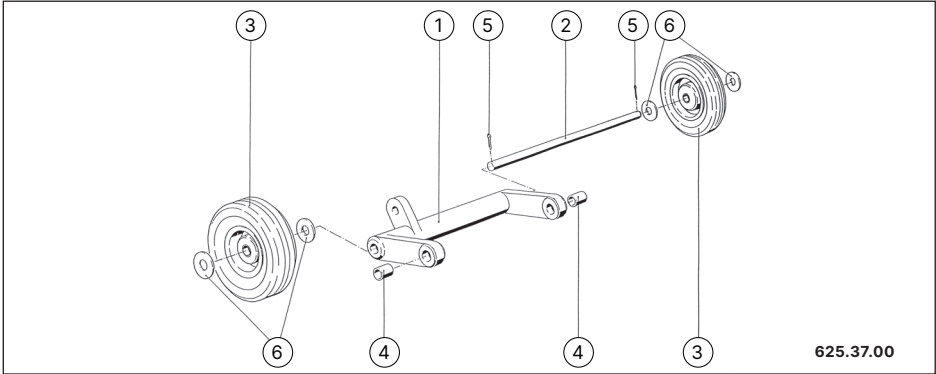


Wheel rocker

701468

No	Article	Part Name
1	701293	Wheel rocker
2	701294	Axle
3	701474	Wheel

No	Article	Part Name
5	108480	Glacier bearing
6	108364	Cotter pin
7	108557	Washer

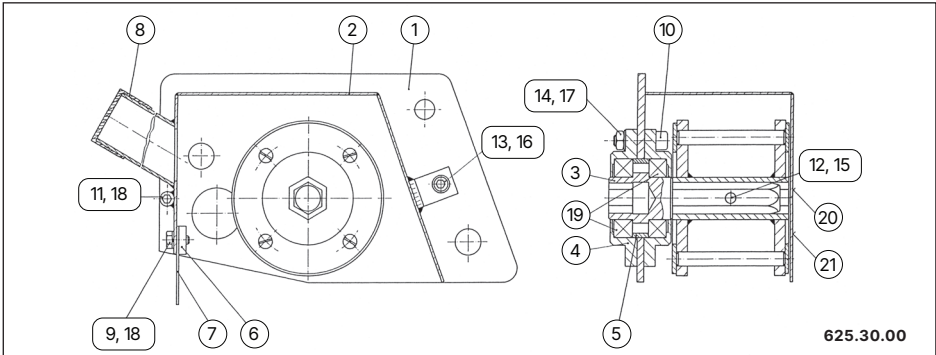


Side attachment unit SF 60

701451

No	Article	Part Name
1	701452	Cover
2	701453	Guard plate
3	701454	Hexagon head shaft
4	701455	Flange
5	701456	Centering ring
6	701457	Terminal strip
7	701458	Rubber plate
8	701459	Cap for boiler tube
9	104197	Hexagon bolt
10	105942	Screw
11	102313	Fillister-head screw

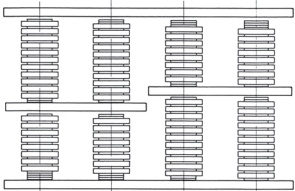
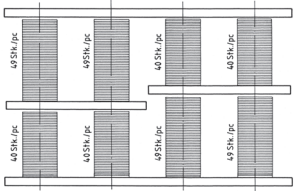
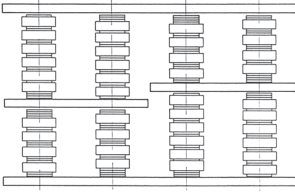
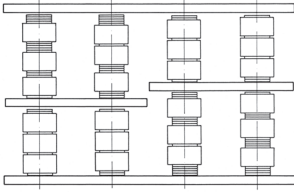
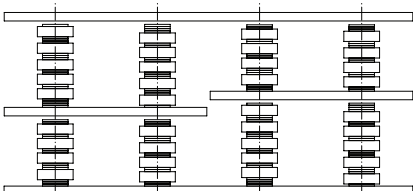
No	Article	Part Name
12	113232	Fillister-head screw
13	102199	Fillister-head screw
14	101822	Hexagon nut
15	108693	Safety nut
16	107358	Washer
17	113918	Rip-lock washer
18	100616	Ribbed washer
19	108251	Ball bearing
20	703551	Company logo
21	111339	Sticker „Caution milling shaft“



Cutters FR 200- sets and drums

Article	Part Name	Count/Weight	Article	Part Name	Count/Weight
701416	Drum complete empty		700962	Pentagonal cutter	(x76)
701417	Drum core		706495	Hexagonal cutter	(x76)
701419	Flail shaft (12mm)	(x4)	700963	Beam cutter	(ca. 4.5kg)
701378	Retaining ring	(x2)	707400	VHM-milling cutter 12mm	(x36)
104267	Hexagon bolt	(x8)	700967	Milling cutter 11mm	(x40)
108693	Locknut	(x8)	700965	Milling cutter 22mm	(x24)
702116	Spacers				

Set 701505	Drum 701422	Set 701930	Drum 706563
Assemble type A			
			
Set 701506	Drum 701423	Set 701508	Drum 701425
Assemble type B		Assemble type C	
			
Set 701507	Drum 701424	Set 701997	Drum 702208
Assemble type D		Assemble type E	
			
Drum 700981		Drum 700982	
			

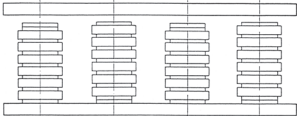
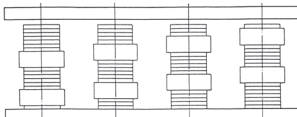
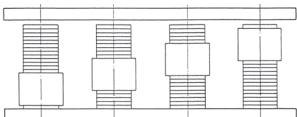
Drum assembly type A 	Drum assembly type B 
Drum assembly type C 	Drum assembly type D 
Drum assembly type E 	

i Standard drum delivered with the machine is 701422!

▲
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Cutters SF 60- sets and drums

Article	Part Name	Count/Weight	Article	Part Name	Count/Weight
701082	Drum complete empty		700962	Pentagonal cutter	(x24)
701083	Drum core		706495	Hexagonal cutter	(x24)
701084	Flail shaft (10mm)	(x4)	700963	Beam cutter	(ca. 1.5kg)
701000	Retaining ring	(x2)	707400	VHM-milling cutter 12mm	(x8)
108674	Hexagon bolt	(x8)	700967	Milling cutter 11mm	(x8)
701385	Spacers		700965	Milling cutter 22mm	(x4)

Set 701105	Drum 701094 Standard	Set 701955	Drum 706562
Assemble type F		Assemble type F	
			
Set 701106	Drum 701095	Set 707531	Drum 707530
Assemble type G		Assemble type H	
			
Set 701108	Drum 701097	Set 701107	Drum 701096
Assemble type H		Assemble type I	
			
Drum assemble type F		Drum assemble type G	
			
Drum assemble type H		Drum assemble type I	
			

WARRANTY

Von Arx EOOD guarantees perfect operation of the unit for a period of 24 months from the date of purchase. If the product is used in shift operation this warranty period is halved.

Von Arx EOOD checks all units to ensure they are complete and operating correctly before they leave the works.

The customer must check the machine for any defects or damage in transit immediately on receipt and must inform the sales center and the forwarding agent of any damage or defect without delay.

Von Arx EOOD undertakes to correct all faults demonstrably due to defective materials or workmanship within the stated warranty period as quickly as possible or will arrange repair through an official Von Arx Service and sales center.

No liability whatsoever can be accepted for damage due to incorrect handling, disregarding this Operating Manual, overloading, unsuitable use, incorrect maintenance or natural wear and tear. Repairs or modifications made by the purchaser or third parties without our permission in writing are the responsibility of the customer and immediately void our warranty.

In addition, no claim can be considered under the warranty if any parts other than those manufactured or recommended by Von Arx EOOD are used.

Blades are parts subject to wear and, owing to this, are not covered by warranty.

Von Arx EOOD cannot be held liable for any damage or loss incurred by the purchaser directly or indirectly (consequential loss, loss of profit, extra costs, etc.).

Bought parts such as engines, motors, switches etc. are guaranteed within the warranty determination of the corresponding suppliers.

To prove qualification for a warranty you will need the warranty card and a corresponding commercial invoice of your sales center.

EC DECLARATION OF CONFORMITY

In accordance with the EC Machinery Directive 2006/42/EC:

We declare that the tool listed below conforms with the relevant, basic health and safety requirements of the EC Directive on the grounds of its design and construction and with the model put on the market by our company. Any modification of the tool without our consent causes this Declaration to be void.

The unit also complies with European Standard EN 13862:2001.

(Operator-steered Floor Cutting Machine
for grooving and milling of flooring.)

Applied Standards:

EN ISO 12100:2011, EN ISO 13849-1:2015 EN 13862:2001+A1:2009, EN 60204-1:2019

Designation of the unit

Surface preparation machine

Type

FR 200 (115V, 230V, 400V, gasoline)

Von Arx EOOD, 4000 Plovdiv/Bulgaria



Torbjörn Bengtsson

MBD

Plovdiv, 01.09.2019

Responsible for technical documentation: Maria Spasova



