

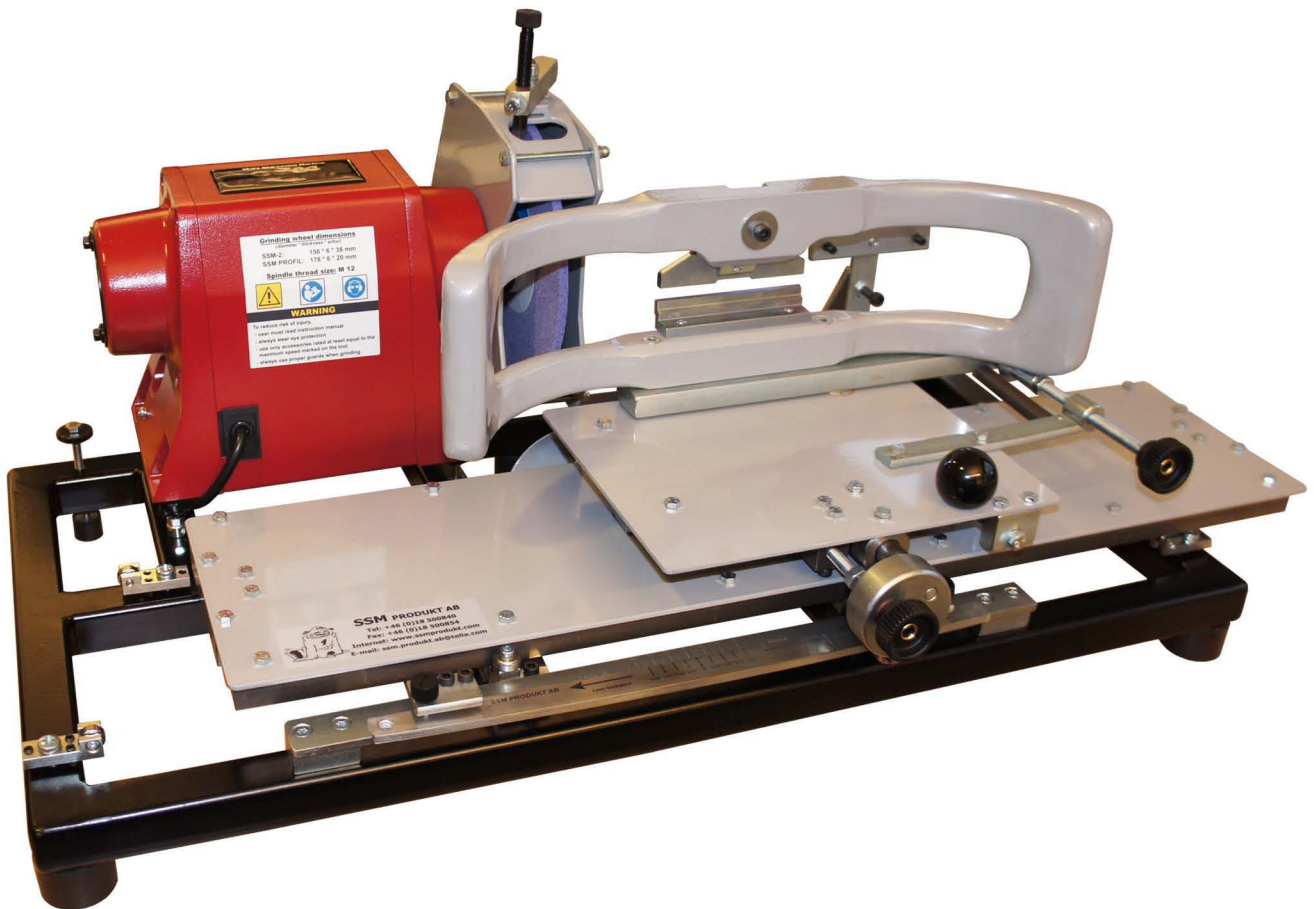
# SSM PROFIL

## INSTRUCTION MANUAL



### WARNING!

TO REDUCE THE RISK OF INJURY, USER MUST READ AND UNDERSTAND THIS INSTRUCTION MANUAL.



### ORIGINAL INSTRUCTIONS

Date of purchase: .....



# SSM PROFIL Skate Sharpening Machine

***Congratulations on your purchase of a SSM PROFIL Skate Sharpening Machine.  
We sincerely thank you for selecting a product from SSM Produkt AB.***

***To obtain an additional copy of this manual, please contact SSM at:***



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## LIMITED WARRANTY

### Scope of warranty

This warranty covers any defects in materials and workmanship under normal use.

### Period of coverage

This warranty runs for two (2) years from the date of purchase. Please save your receipt or invoice.

### Limitations

Failures due to abuse, misuse or an event or effect that cannot be reasonably anticipated or controlled (such as flood, earthquake, act of God etc.) are not covered by this warranty. Surface coating problems caused by excessive humidity, in-use scratches or abrasions, and direct exposure to the elements are also not covered.

*Repair or replacement is the only option available under this warranty. SSM Produkt AB (SSM) is not responsible for damages of any kind, including incidental and consequential damages.*

Incidental damages include but are not limited to such damages as loss of time and loss of use. Consequential damages include but are not limited to the cost of repairing or replacing property that was damaged if the product from SSM does not work properly.

### Correction of details

If your product cannot be repaired, we will replace your product free of charge.

### How to get service

Please return the defective product together with the purchase receipt. You can obtain service by contacting a dealer of SSM products or SSM directly. At our discretion, the dealer or SSM will either repair or replace your product.

### How country and state laws relates to the warranty

This warranty gives you specific legal rights. You may also have other rights that vary from country to country and from state to state.



**SSM PRODUKT AB RESERVES THE RIGHT TO MAKE IMPROVEMENTS  
AND MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE.**

**SSM PRODUKT AB  
VAKSALA-EKE, SE-75594, UPPSALA, SWEDEN**

# GENERAL SAFETY RULES



## WARNING!

**When using electric tools basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury including the following.**

**Read all these instructions before attempting to operate this product and save these instructions.**

### Safe Operation

*Keep your work area clear.*

- Cluttered areas and benches invite injuries.

*Consider work area environment.*

- Do not expose tools to rain.
- Do not use tools in damp or wet locations.
- Keep work area well lit.
- Do not use tools in the presence of flammable liquids or gases.

*Guard against electric shock.*

- Avoid body contact with earthed or grounded surfaces (i.e. pipes, radiators, ranges, refrigerators).

*Keep other persons away.*

- Do not let persons, especially children, not involved in the work touch the tool or the extension cord and keep them away from the work area.

*Store idle tools.*

- When not in use, tools should be stored in a dry locked-up place, out of reach of children.

*Do not force the tool.*

- It will do the job better and safer at the rate for which it was intended.

*Use the right tool.*

- Do not force small tools to do the job of a heavy duty tool.
- Do not use tools for purposes not intended; for example do not use circular saws to cut tree limbs or logs.

*Dress properly.*

- Do not wear loose clothing or jewelry; they can be caught in moving parts.
- Non-skid footwear is recommended when working outdoors.
- Wear protective hair covering to contain long hair.

*Use protective equipment.*

- Use safety glasses and hearing protection.
- Use face or dust mask if working operations create dust.

*Connect dust extraction equipment.*

- If the tool is provided for the connection of dust extraction and collecting equipment, ensure these are connected and properly used.

*Do not abuse the cord.*

- Never yank the cord to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges.

*Secure work.*

- Where possible use clamps or a vice to hold the work. It is safer than using your hand.

*Do not overreach.*

- Keep proper footing and balance at all times.

# GENERAL SAFETY RULES (continued)

## *Maintain tools with care.*

- Keep cutting tools sharp and clean for better and safer performance.
- Follow instruction for lubricating and changing accessories.
- Inspect tool cords periodically and if damaged have them repaired by an authorized service facility.
- Inspect extension cords periodically and replace if damaged.
- Keep handles dry, clean and free from oil and grease.

## *Disconnect tools.*

- When not in use, before servicing and when changing accessories such as blades, bits and cutters, disconnect tools from the power supply.

## *Remove adjusting keys and wrenches.*

- Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.

## *Avoid unintentional starting.*

- Ensure switch is in "off" position when plugging in.

## *Use outdoor extension leads.*

- When the tool is used outdoors, use only extension cords intended for outdoor use and so marked.

## *Stay alert.*

- Watch what you are doing, use common sense and do not operate the tool when you are tired.

## *Check damaged parts.*

- Before further use of tool, it should be carefully checked to determine that it will operate properly and perform its intended function.
- Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation.
- A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated in this instruction manual.
- Have defective switches replaced by an authorized service center.
- Do not use the tool if the switch does not turn it on and off.

## *Warning.*

- The use of any accessory or attachment or performance of any operation with this tool other than those recommended in this instruction manual may present a risk of personal injury.

## *Have your tool repaired by a qualified person.*

- This electric tool complies with the relevant safety rules. Repairs should only be carried out by qualified persons using original spare parts; otherwise this may result in considerable danger to the user.

## *Noise*

- The typical A-weighted noise levels determined according to EN 61029-1:2009 :

Sound pressure level ( $L_{PA}$ ): 81 dB

Sound power level ( $L_{WA}$ ): 94 dB

Uncertainty (K): 2,5 dB

## EC-DECLARATION OF CONFORMITY

We, SSM PRODUKT AB, Vaksala-Eke, SE-755 94, Uppsala, Sweden declare that the product SSM PROFIL to which this declaration relates is in conformity with the following standards:

EN 61029-1:2009

EN 55014-1:2006

EN 61000-3-2:2006

EN 61000-3-3:2008

EN 55014-2:1997+A1:2001+A2:2008



Uppsala, November 21, 2014  
(place, date)

Stefan Gustavsson  
(signature, name)

following the provisions of 2004/108/EC, 2006/42/EC and 2006/95/EC directives.

# SPECIFIC SAFETY RULES AND SYMBOLS



**WARNING!**



**READ OPERATOR'S  
MANUAL BEFORE USING  
THE MACHINE**



**EYE AND HEARING  
PROTECTION REQUIRED**

The machine must be used only for the purpose of grinding skate blades.

Always fasten the skate in the skate holder. NEVER hold skate being sharpened only by your hands.

*It is important to support the work properly to get the best result possible, minimize body exposure and loss of control.*

Check grinding wheel protective cover for proper fit before using the machine to minimize the risk of flying debris. Keep hands and body away from the rotating grinding wheel.

*Contact with a rotating grinding wheel or parts from an exploding grinding wheel can result in serious injury.*

Only use grinding wheels approved by SSM Produkt AB. Use grinding wheels with correct size and shape.

*Unauthorized grinding wheels may be dangerous!*

Keep grinding wheel securely fastened. When fastening grinding wheel, never use damaged or incorrect flange, flange washer or nut. *The flange and flange washer were specially designed for the machine, for optimum performance and safety of operation.*

Be careful when moving the machine. When moving the machine, do not carry it without first removing the large table. *The machine is heavy and the large table is also heavy and rolls easily on top of the bottom grid. If the machine is tilted, the large table can easily acquire enough speed that your fingers or a hand can be damaged.*

## **Safety Warnings Specific for Grinding:**

Use only wheel types that are recommended for your power tool and the specific guard designed for the selected wheel. *Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.*

The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.

*The guard helps to protect operator from broken wheel fragments and accidental contact with wheel.*

Wheels must be used only for recommended applications. For example: do not grind with the side of cut-off wheel. *Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.*

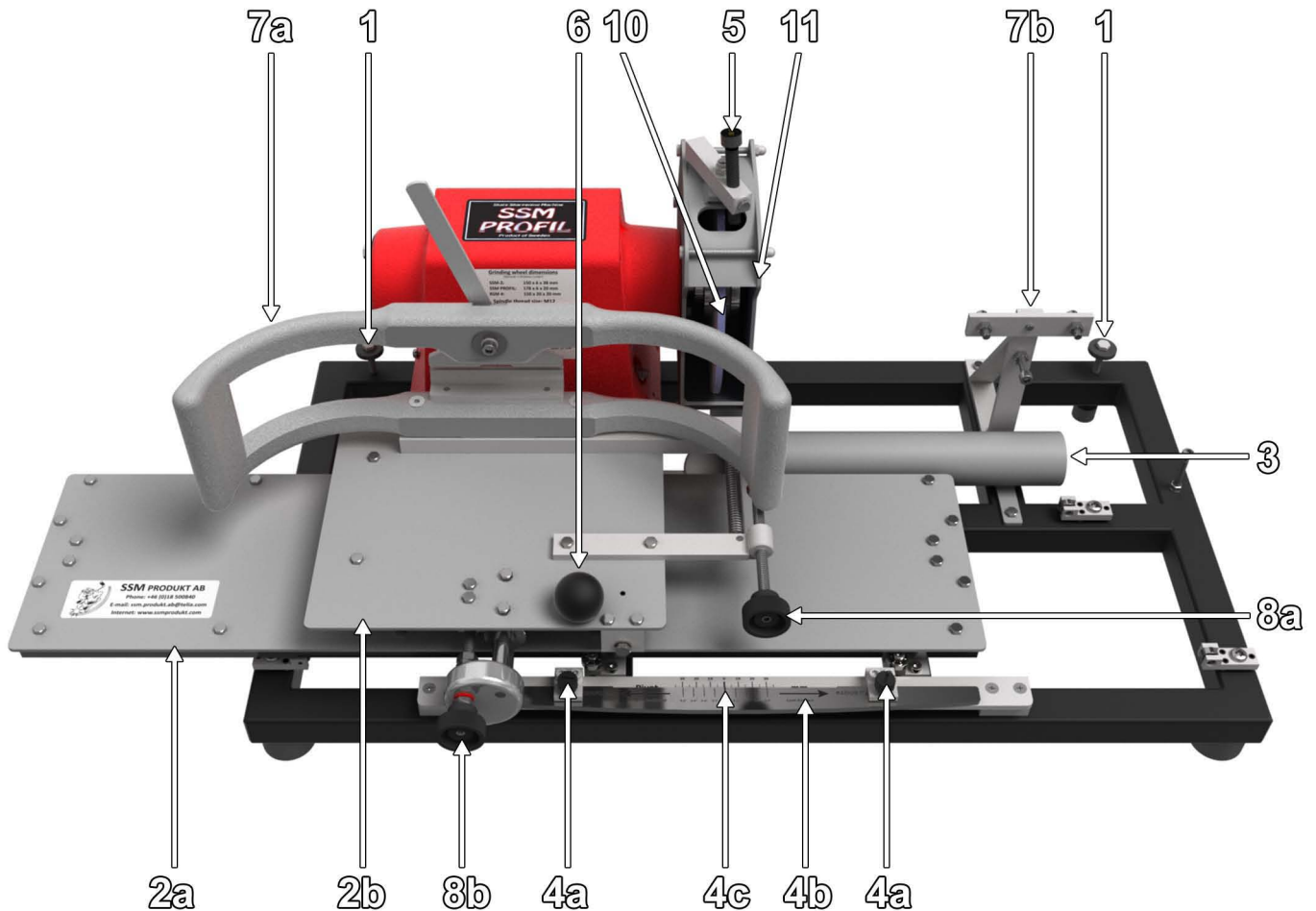
Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.

*Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.*

Do not use worn down wheels from larger power tools.

*Wheel intended for larger power tool is not suitable for the higher speed of a smaller tool and may burst.*

# FUNCTIONAL DESCRIPTION



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><b>1. Support screws</b></li> <li><b>2a. The large table</b></li> <li><b>2b. The small table</b></li> <li><b>3. Extractor tube</b></li> <li><b>4a. Template holders</b></li> <li><b>4b. Template</b></li> <li><b>4c. Center/Pivot/Pitch marking</b></li> <li><b>5. Diamond</b></li> </ul> | <ul style="list-style-type: none"> <li><b>6. Ball handle</b></li> <li><b>7a. Skate holder</b></li> <li><b>7b. Directing device</b></li> <li><b>8a. Adjustment screw</b></li> <li><b>8b. Feeding screw</b></li> <li><b>9. Power switch</b><br/>(on back side of motor)</li> <li><b>10. Grinding wheel</b></li> <li><b>11. Protective cover</b></li> </ul> |
|--|--|



**Tool to replace grinding wheel**

## FUNCTIONAL DESCRIPTION (continued)

The machine is intended to do cross-grinding on skate blades following a template. This is done by manually moving the skate blade (mounted in the holder) against a dressed, rotating grinding wheel. The open construction of the machine allows for a constant and easy supervision of the sharpening process.

A bottom grid carries an electric motor, an “extractor tube”, “template holders”, and support for the “large table”. The “large table” carries the “small table” which in its turn carries a “skate holder”. (See below.)

The bottom grid must be kept horizontal. On the motor axle the following items are mounted in this order: a flange, a grinding wheel, a flange washer, a balancing ring and a fastening nut.

The grinding wheel is partially covered by a protective cover.

The rubber feet mounted underneath the bottom make the machine steady where it stands.

1. The **Support screws** are used to support the bottom grid on the surface where it stands.
- 2a. The **large table** is used as a base to move the skate holder in the left and right direction.
- 2b. The **small table** is used as a base to move the skate holder inwards and outwards.
3. The **Extractor tube** is intended to collect sparks and other debris from the grinding wheel when grinding and dressing. Attach a suitable dust extractor.
- 4a. The **Template holders** are used to fasten the template. Screw down the knurled screws onto the template.
- 4b. The **Template** is used to steer the small table via a bearing, which should be held in contact with the template. There are several different templates to choose from and four are included when you buy this machine.
- 4c. The **Center/Pivot/Pitch marking** makes it easy to accurately position your template in the machine. It should initially be used to center the template when adjusting the direction of the skate blade. After that you can use it to change the pivot/pitch by moving the template or let the template remain centered.
5. The **Diamond** is used to dress the grinding wheel giving it a large radius.
6. The **Ball handle** is used to move the tables and to exert pressure against the grinding wheel when grinding. *(It also makes sure you always mount the skates in the same direction.)*
- 7a. The **Skate holder** is used to fasten the skate.  
Place the skate blade between the upper and lower jaw. Turn the handle and the upper jaw moves up or down.
- 7b. The **Directing device** is used to get the skate blade in a correct position. Place the skate blade against it as described on page 12 in this manual and then fasten the skate blade in the skate holder.
- 8a. The **Adjustment screw** is used to angle the skate holder (and thereby the skate blade). The right side of the skate holder will adjust itself inwards or outwards. This allows you to reposition your skate against the template if something is not 100% correctly positioned from start.
- 8b. The **Feeding screw** is used to move the small table (and thereby the skate blade) inwards or outwards. This allows you to decide how much you wish to reshape the skate.
9. The **Power switch** is used to turn the machine on and off.
10. The **Grinding wheel** rotates downwards and is used to reshape the skate after a template.  
Use grinding wheel S-4/KB60.
11. The **Protective cover** is a guard that protects if a grinding wheel would break. It also redirects sparks and debris towards the exhaust tube. The lid is fastened by five top nuts.

# FUNCTIONAL DESCRIPTION (continued)

## Skate blade information

### Ice Hockey

The ice hockey skate blade can be divided into three sections, *front, middle and rear*. These skates has one radius shape in the middle ranging from 6' to 13' (1.83 m to 3.96 m) depending on manufacturer. When you contour a skate you basically only contour the middle part.

### Goalie skates

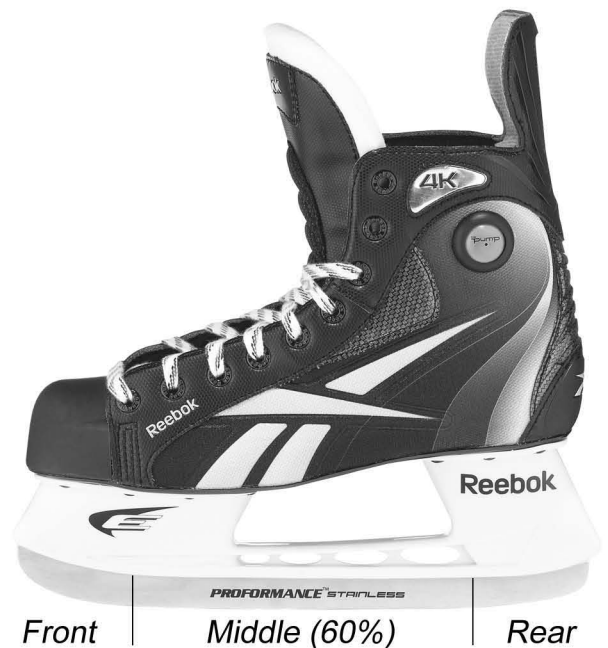
Goalie skates are designed in the same way as an ice hockey skate but their factory made radius shape instead ranges from 22' to 30' (6.7 m to 9.14 m).

### Bandy skates

The bandy skate blade is basically flat from factory. Here you must contour the whole skate blade (all three sections).

### Figure skates

A figure skate blade commonly uses a single radius between 7' to 8' (2.13 m to 2.44 m). More expensive models use 2-3 different radiuses.



## Contour shape information

### Radius

A larger radius gives more ice contact. This gives higher top speed and better balance, and is more energy efficient. However, the maneuverability will be decreased.

A smaller radius gives less ice contact which leads to increased friction (more weight on a small area). This will increase the maneuverability and acceleration at the cost of top speed, balance and energy consumption.

### Flat part

A flat part in the middle area will not be as hard on the legs as a radius surface would be. It also gives better speed if the skates are in the correct angle against the ice. However, it will not give the same amount of ice contact as compared to using a radius surface. This is because the skate is very seldom in a completely flat angle against the ice.

Using a flat part is not as common today as it was before.

## Pivot/Pitch

*Pivot* is the lowest point on a skate blade and *Pitch* is the angle in which the skate leans against the ice. These two are dependant of each other, which means if you alter one, the other will follow.

Pitch can be either *neutral* (pivot point centered underneath the skate) or be *leaning forward* (pivot point moved towards rear) or be *leaning backwards* (pivot point moved towards front).

Leaning forward is more tiresome but increases acceleration.

Skates today are designed so it is almost impossible to find the existing pivot point on a skate. Our recommendation is to contour a skate and let the player test it and then tell whether the pitch should be changed in some direction.



Pitch is leaning forward

Pitch is neutral

Pitch is leaning backwards



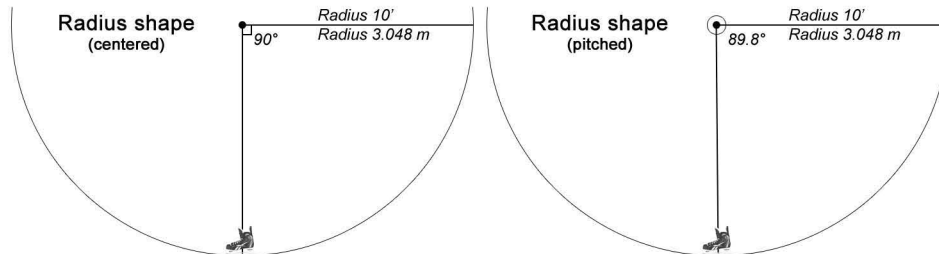
# FUNCTIONAL DESCRIPTION (continued)

## Skate contouring options

To summarize all information from previous page there are several ways to get a suitable shape on the skate blade (depending on the skating style). Here are some examples (scale 1:100):

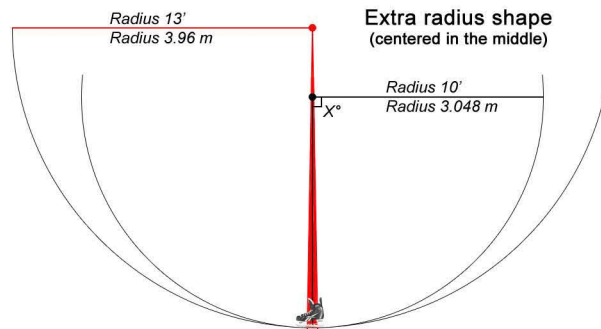
### A single base radius

This is the most common shape today. Here you use the same radius all over the middle section. This shape will give the properties described on the previous page depending on the size of the radius. Then you can pitch it to alter the abilities even further. Many seem to prefer a pitch with forward lean.



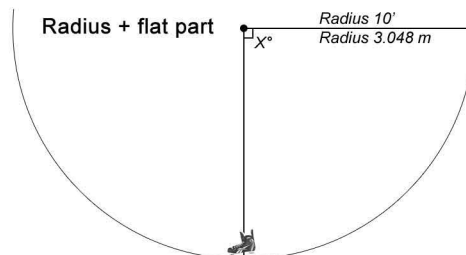
### Adding another radius shape

You can add a larger radius of custom length on the current radius shape. This will give you the option to combine the properties of two different shapes.



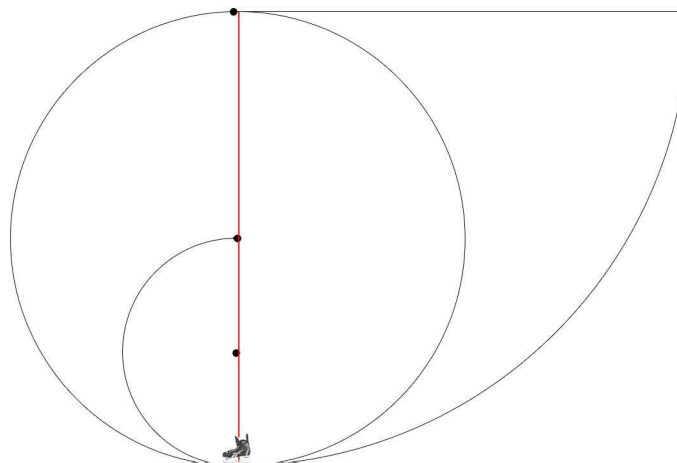
### Adding a flat part

You can add a flat glide surface of custom length (should be between 3-6 cm) on the radius shape. This area can be in the middle, adjusted towards the front or adjusted towards the rear. If you move the flat area towards the front you will get a forward lean.



### Custom templates

There are templates where you have several different radii underneath. These templates are designed so that you can utilize shapes with different properties on different parts of the skate blade. Most of these templates are pre-pitched. Here is a shape with three radii and an off-centre pivot point.



# ASSEMBLY

Your skate sharpening machine SSM PROFIL is delivered complete, but in several parts, protected inside its delivery box. Remove all contents from the box and inspect to ensure no damage was incurred during shipping. Your SSM PROFIL package should include the following:

DESCRIPTION	PART	#QTY
Instruction manual	SSM-P manual.en	1
Bottom grid with motor	BKM	1
Large table with the small table	SBLB	1
Templates	MALL	4
Tool for replacing grinding wheel	TGW	1
Double ended wrench	DEW 8, 10 mm	1
Allen screw driver	AS 2 mm	1

## Getting started:



### CAUTION!

IF POSSIBLE, ALWAYS DISCONNECT THE SKATE SHARPENING MACHINE FROM THE POWER SOURCE BEFORE MAKING ADJUSTMENTS.

Place the bottom grid on a stable, level surface. Screw down the support screws (1) until they reach the surface. Put the large table (with the small table) on its supporting ball bearings on the bottom grid.

PLEASE NOTE THE FOLLOWING: the large table is heavy and rolls easily on the ball bearings on the bottom grid. Whenever you move the machine please remove the large table. Besides the personal safety consideration, you also want to avoid damage to the ball bearings on which the large table rolls

The machine comes with a grinding wheel mounted and balanced. Refer to MAINTENANCE: HOW TO CHANGE AND BALANCE THE GRINDING WHEEL (on page 15) if you want to replace or balance the grinding wheel.

MAKE SURE THAT THE DIAMOND ISN'T TOUCHING THE GRINDING WHEEL WHEN YOU START THE MACHINE. If necessary, screw the diamond (5) upwards.

Make sure the skate holder (7a) is in the starting position, in line with the edge of the small table; if not, retract the adjustment screw (8a) outwards. **This repositioning has to be done every time you have profiled a pair of skate blades in the machine.**

MAKE SURE THAT NO PART OF THE HOLDER (7a) ON THE SMALL TABLE WILL TOUCH THE GRINDING WHEEL WHEN YOU START OR OPERATE THE MACHINE.

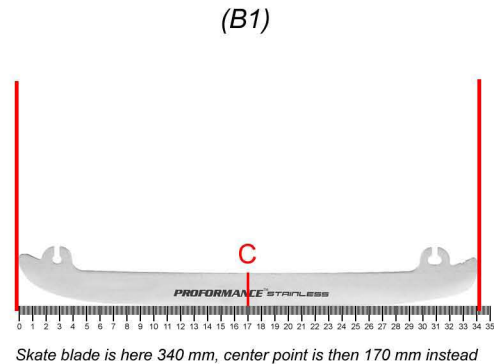
Otherwise, use the feeding screw (8b) to move away the holder.

Use a proper dust extractor attached to the extractor tube (3). This will reduce the amount of debris released. For more complete protection, wear a suitable face mask covering mouth and nose.

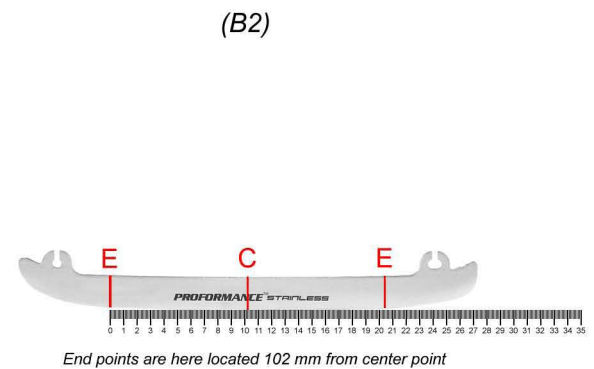
Make sure you wear safety glasses and hearing protection when you use the machine.

# OPERATION

- Before profiling a skate blade you need to make some auxiliary marks with a whiteboard pen on the blade depending on how you are going to change the profile. A good idea is to mark the plastic as well for future reference. First off, mark the center of the skate shoe (*A1, body balance point*) or the center of the skate blade (*B1*) depending on what you prefer. Let us call this point the *center point (C)*. The skate blade is often centered underneath the shoe, so most of the times these marks (*A1 and B1*) are very near each other.



- Having obtained the *center point (C)* you should delimit the area you intend to contour. If you are sharpening a *single base radius* or using a *custom template* then you need to make two marks where the middle area (60%) ends. These marks are to be located around 30% + 30% in each direction from the center point. Let us call these marks *end points (E)*.



- If you only intend to sharpen a *glide surface* within the current radius, you only need to mark that area.

If you are making a flat area you can either center it around the center point or shift it somewhat from the center. A neutral glide surface of 50 mm is generally called 25+25 (or 25-50). A forward lean glide surface of 50 mm shifted 5 mm towards the front is generally called 30+20 (or 30-50). When you shift a flat surface you need to make a new center point located in the middle of that area. Let us call it the *new center point (N)*.

If you are making a radius shaped glide surface (must be a larger radius) you should center it around the *center point (C)* with the desired distance.



## OPERATION (continued)

### (3) Balancing grinding wheel

If necessary, replace the grinding wheel.

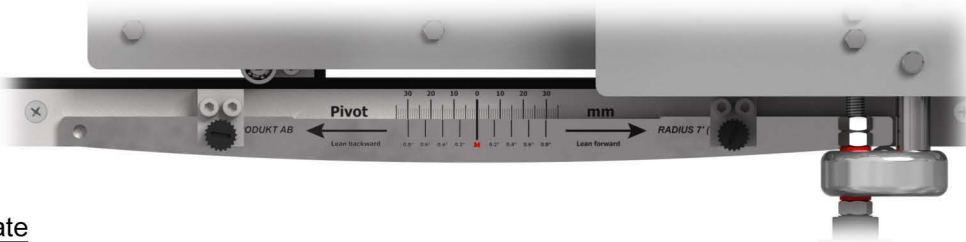
Balance it if necessary. (See MAINTENANCE: HOW TO CHANGE AND BALANCE THE GRINDING WHEEL.)

### (4) Dressing the grinding wheel

If necessary, dress the grinding wheel with the diamond. Screw the diamond inwards in small amounts, at the same time turning the diamond holder, so that the diamond moves left and right past the rotating grinding wheel. The last few movements should give dressing. Dress gently.

### 5. Mount a template

Fasten a template (4b) with desired profile using the two template holders (4a) (with the profiled surface directed towards you and the hole to the left). Make sure that the mid point of the template is aligned with the mid point of the Center/Pivot/Pitch marking (4c). Fasten the template using the knurled screws on the two template holders.



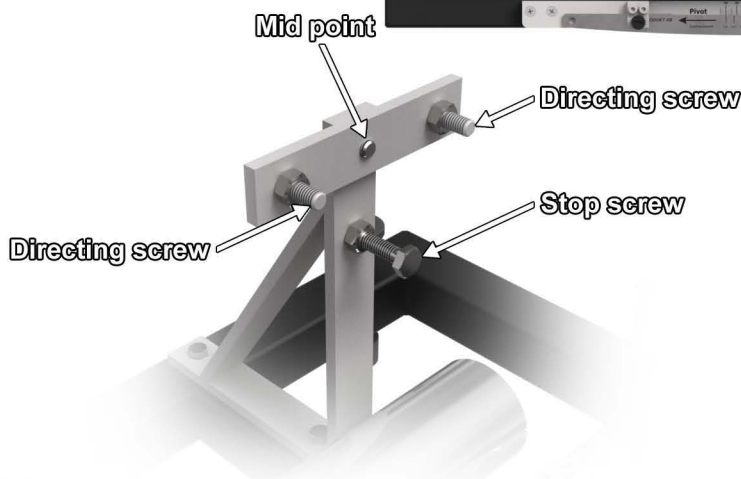
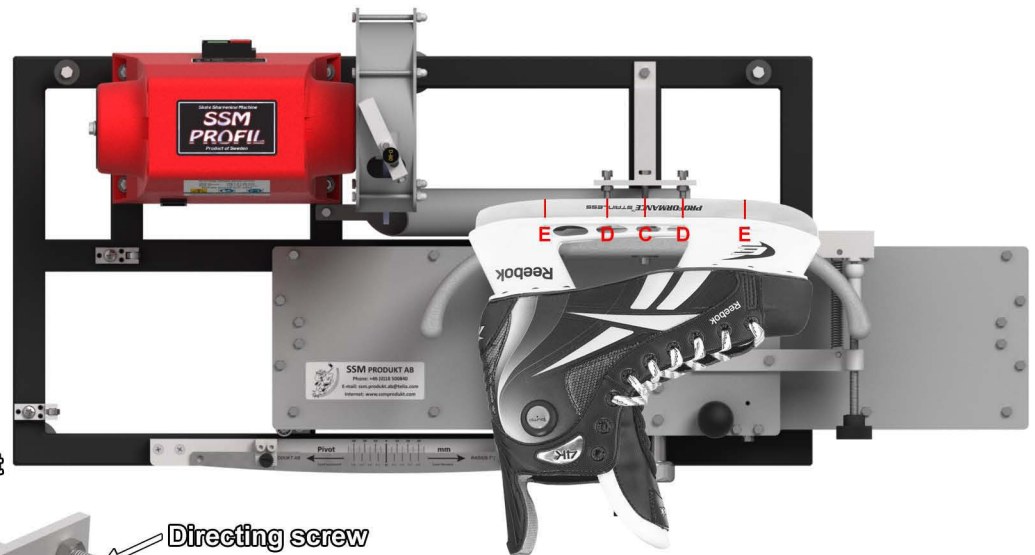
### 6. Mount the skate

\* Make sure that the skate holder is parallel to the far edge (away from you) of the small table. You can use the adjustment screw (8a) to align it in case the holder is out of angle.

Move the large table as far as possible to the right; then push the small table forwards so that the holder gets in contact with the stop screw on the directing device.

Now mount the skate in the holder, with the toe part to the right, so that the skate blade is in contact with the two directing screws while the *center point* (C) on the skate blade (or the *new center point* N) is located just at the mid point of the directing device.

Press down the handle and fasten the skate. Now you should use a marker to mark the skate blade where the directing screws are touching it. Let us call these marks *directing marks* (D). (They are located 35 mm from the mid point and are only intended for aligning the skate.)



Note: For clarity the skate is shown levitating above the holder in the figure.

# OPERATION (continued)

## 7. Aligning the skate perfectly against the template

Now move the tables towards you and back to the left. Use the feeding screw (8b) to move the small table sufficiently far back so that the skate blade can move without having contact with the grinding wheel when the large table is moved right and left (with the ball bearing in contact with the template).

### 7a. Going from a smaller to a larger radius:

*(Grinding wheel should touch red marked area (between the two D:s in the figure below) evenly on the skate.)*

**The directing device of the machine is set so that the skate will be directed in as near perfection as possible. This means that almost no adjustment needs to be done.**

To get the skate perfectly aligned against the template you should now move the large table sideways in both directions and simultaneously feed with screw (8b) until the grinding wheel "touches" inside the highest directing mark D on the skate blade (you will notice which is higher when you move the tables back and forth).

When the grinding wheel "touches" inside that directing mark D, you should continue to move the large table back and forth; now angle with the adjustment screw (8a) and feed with feeding screw (8b) until the grinding wheel "takes" equally much on the whole length between the right and left directing marks D on the skate blade. (The grinding wheel should not touch the area outside the directing marks.)

### 7b. Going from a larger to a smaller radius:

*(Grinding wheel should touch blue marked areas (around the two E:s in the figure below) evenly on the skate.)*

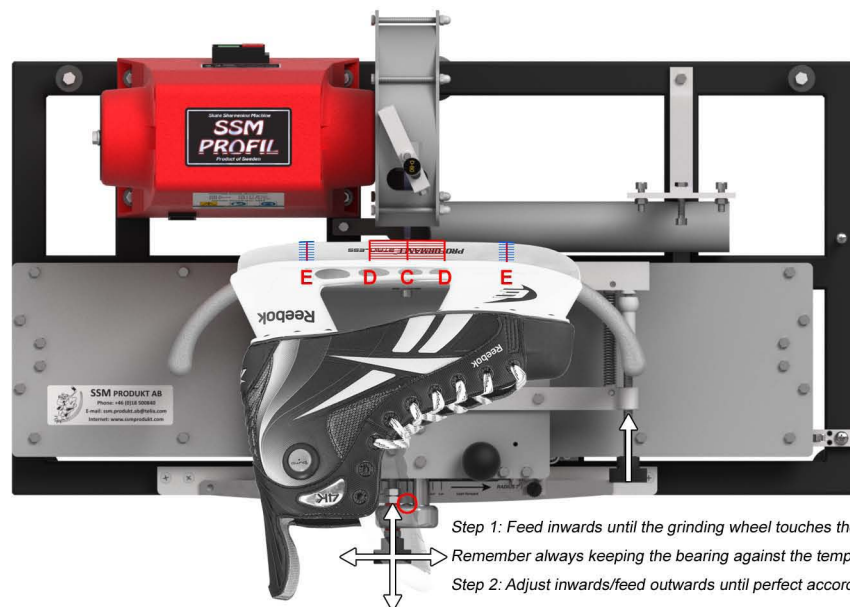
Note! If you are going from a larger radius to a smaller one you will have to align the skate in another way.

You start out the same as above but you cannot use the directing marks here. Instead you need to use the end points (E) when you align the skate.

To get the skate perfectly aligned against the template you should now move the large table sideways in both directions and simultaneously feed with screw (8b) until the grinding wheel "touches" outside the highest end point E on the skate blade (you will notice which is higher when you move the tables back and forth).

When the grinding wheel "touches" outside that end point E, you should continue to move the large table back and forth; now angle with the adjustment screw (8a) and feed with feeding screw (8b) until the grinding wheel "takes" equally much on both end points on the skate blade.

(The grinding wheel should not touch the area in between the end points.)



## 8. Pitch/Pivot

Your skate is now aligned with the template.

If you want to alter the Pitch/Pivot on the skate blade, now is the time to prepare for that. This is done by unlocking the template and moving it sideways.

The templates are designed so that you can either move the mid point of the template to a certain measure mark on the machine (pivot) or you can use the angle marks on the template and move a selected angle mark (pitch) to the mid point of the machine. When you are satisfied fasten the template again.

# OPERATION (continued)

## 9. Contouring

When grinding, use the ball handle (6) when you push the skate blade against the grinding wheel as well as when you move the large table sideways. Remember keeping the ball bearing in contact with the template during grinding.

### 9a. Going from a smaller to a larger radius:

When you start the machine, make sure the tables are moved all the way to the right so that skate blade is no longer in contact with the grinding wheel. Start moving the skate past the grinding wheel. Use the feeding screw (8b) to move inwards in small steps until the sharpening area has widened from the middle all the way out to the two end points (E).

When there are no more sparks (or the area is covered with an equal amount of sparks) the sharpening is done.

### 9b. Going from a larger to a smaller radius:

In this case the grinding wheel have to work from the end points (E) and inwards on your skate. Therefore, use the feeding screw (8b) in small steps until the whole area between the end points touches the grinding wheel.

When there are no more sparks (or the area is covered with an equal amount of sparks) the sharpening is done.

### Things to consider when profiling:

If you use a **Pivot/Pitch** you will move outside the end points (E) on one side and inside on the other. Sharpen until you are outside on one side and touch on the other side.

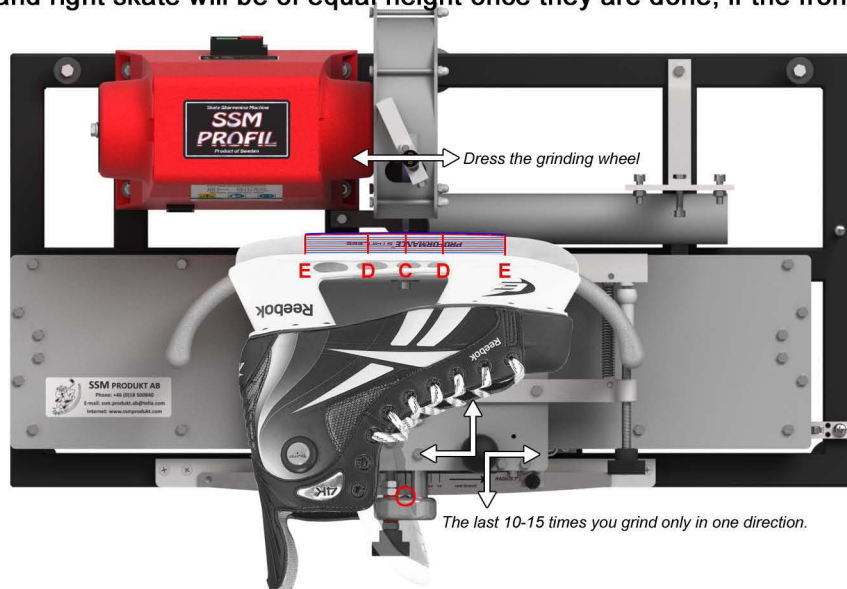
If you are making a **flat area** you need to make it some millimeters longer than intended. This is because you will get sharp edges where the flat area ends. These edges need to be rounded down on a SSM-2 or SSM TT-3.

## 10. Final contouring

Finally you should dress the grinding wheel using the diamond (5). (Adjust the skate blade inwards using the feeding screw if necessary to get it in contact with the grinding wheel again.)

Then you should grind 10-15 times, in one direction only, without further feed, but with the ball bearing pressed against the template when pulling the large table in the selected direction. When pulling in the other direction, the ball bearing should not be pressed against the template.

**Now the contouring is finished! Check underneath the skate blade where your contouring have ended. Mark these points onto the next skate blade from the same pair. You can use those markings as the end points (E). By doing so your left and right skate will be of equal height once they are done, if the front and rear parts have the same radius.**

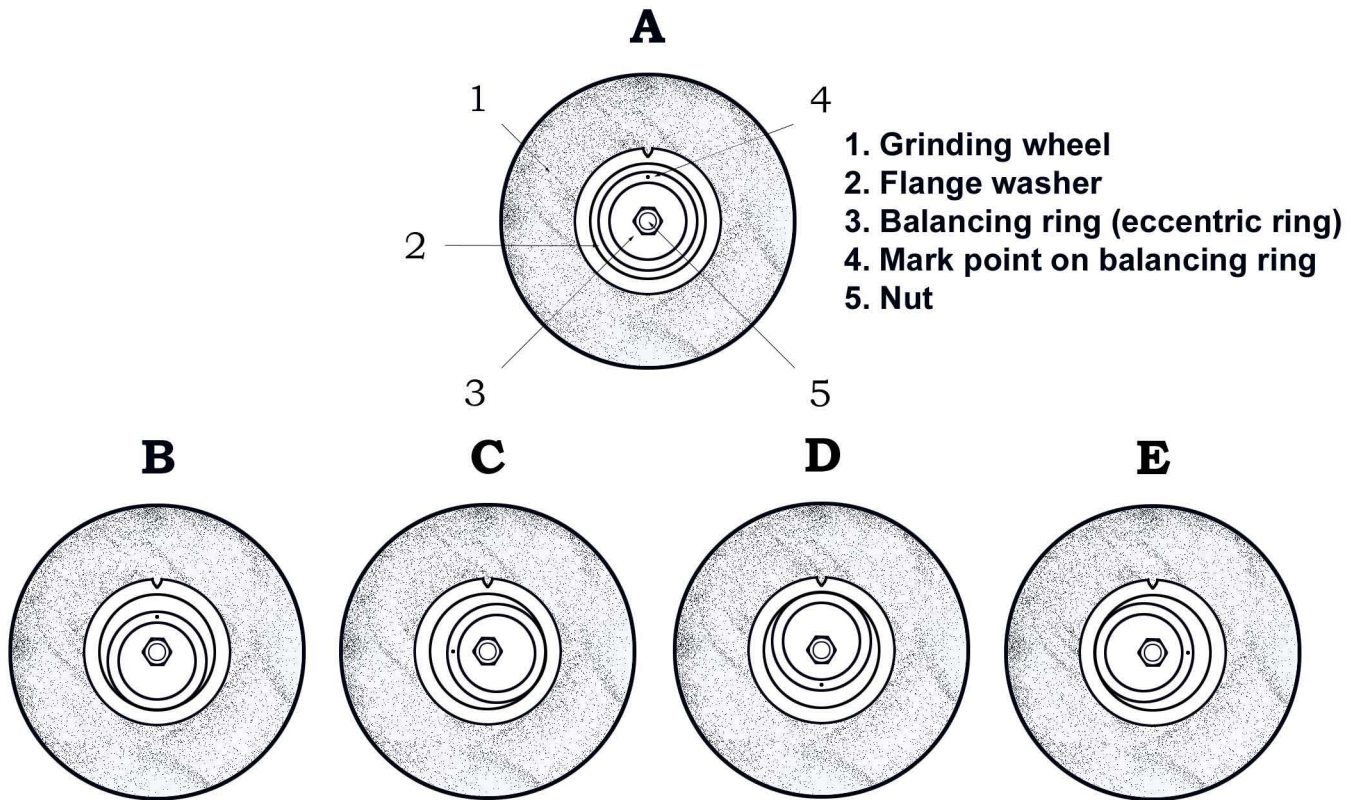


## 11. Final sharpening

Final sharpening (flat or a radius of hollow) should be done using a SSM-2 or a SSM TT-3 after the custom shape or flat profile has been achieved.

# MAINTENANCE

## HOW TO CHANGE AND BALANCE THE GRINDING WHEEL



1. First test the grinding wheel for cracks. Hold the wheel on a finger (through the center hole) and gently tap on it. By listening to the sound you can check whether the wheel contains cracks. Remove the protective cover, the nut, the balancing ring, the flange washer and the old grinding wheel. (To avoid wobbling of the grinding wheel, remember to thoroughly clean flange, flange washer and grinding wheel mounting surface before mounting.) Then put the new grinding wheel on top of the flange. Put the flange washer and then the balancing ring on top (in the neutral position, i.e. centered with the mark point in the 12 o'clock direction). Fasten the nut with the grinding wheel having some selected mark (selected by you) in the 12 o'clock direction. Start the engine and dress the grinding wheel with the diamond. Don't forget to have the protective cover on!! If the grinding wheel vibrates, adjust using the following scheme. (The grinding wheel will impart vibrations to the whole machine. They are most easily felt at the motor.)
2. Stop the engine and direct the grinding wheel in the 12 o'clock direction. Loosen the nut and move the balancing ring somewhat in the 6 o'clock direction (i.e. an eccentric position). Fasten the nut and restart the engine. Remember how much the grinding wheel vibrates (Fig. B).
3. Do as in step (2), but with the mark point in the 9 o'clock, 6 o'clock and 3 o'clock directions. The amount of eccentricity of the balancing ring should be kept the same (Figs. C, D, E).
4. If there are fewer vibrations in some direction, turn the balancing ring so that its mark point has that direction. If two directions give fewer vibrations than the others, put the mark point direction between the two. Then fasten the grinding wheel with the balancing ring adjusted. Start the engine and dress the grinding wheel. If the grinding wheel still vibrates, make a precision adjustment.
5. If a precision adjustment is needed, move the balancing ring in small amounts to be more centered or more eccentric or change the direction of its mark point slightly. Start the engine, dress the grinding wheel and test if the vibrations lessen. This is an iterative procedure. It should be possible to adjust until the vibrations practically disappear.
6. When you have found the position giving the least vibrations, then firmly fasten the balancing ring using the nut.

## MAINTENANCE (continued)

### SERVICE

If the machine is used correctly and only for sharpening skates then service is seldom needed. However, the grinding wheel and diamond should regularly be replaced. (The grinding wheel can be used as long as it is physically possible, i.e. there are no collisions between parts when you move the small table).

To retain the capacity of the machine and to continue to get a good result, always keep the machine clean. Clean the outside. Remove dust with a soft brush if needed.

**WARNING!** A complete service should always be performed by a qualified technician. When performing maintenance yourself (e.g. replacing grinding wheel or diamonds) ensure that the electric plug is disconnected. To avoid danger, work on electrical parts should always be done by a qualified technician.

For power tools with type Y attachment: 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.

## TECHNICAL SPECIFICATIONS AND DIMENSIONS

<b>HEIGHT:</b>	<b>350 mm</b>
<b>WIDTH:</b>	<b>400 mm</b>
<b>LENGTH:</b>	<b>1100 mm</b>
<b>WEIGHT:</b>	<b>34 kg</b>
<b>POWER:</b>	<b>250 W</b>
<b>VOLTAGE:</b>	<b>220-240 V</b>
<b>FREQUENCY:</b>	<b>a.c. (1-phase) 50-60 Hz</b>
<b>MAXIMUM RPM:</b>	<b>2800-3400 RPM</b>

<b>GRINDING WHEEL TYPE:</b>	<b>Type S-4 from SSM</b>
<b>GRINDING WHEEL DIMENSIONS:</b>	<b>178 x 6 x 20 mm</b>

<b>DIAMOND:</b>	<b>Type D-80 from SSM</b>
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**THE MACHINE IS INTENDED FOR INTERMITTENT USAGE (on 60s / off 60s).**

It is also available in a  approved 110-120 V version.

Your SSM Produkt AB distributor:



# ACCESSORIES

## ----- GRINDING WHEEL & DIAMOND DRESSER -----

### S-4/KB60



*Purple*  
Grit size 60: special  
Excellent on all steels

### D-80



Natural diamond

## ----- EXHAUST SYSTEMS -----

### U-840



Welding fume exhaust  
Very high quality  
Uses the U-324 filter

### NQS-500



Dust extractor  
Very powerful and quiet motor  
Uses a cyclone intake

## ----- TEMPLATES -----

Four templates are included with SSM PROFIL. There are also special templates where we can create a template according to your wishes. Thus, we can e.g. modify a radius template so that it will also give a glide surface.

### RADIUS TEMPLATE:

Radius 7' (2.13m)	Radius 4m
Radius 8' (2.44m)	Radius 5m
Radius 9' (2.74m)	Radius 6m
Radius 10' (3.05m)	Radius 7m
Radius 11' (3.35m)	Radius 8m
Radius 12' (3.66m)	Radius 10m

### SPECIAL TEMPLATES:

*Standard template with a glide surface of your choice*



### RADIUS TEMPLATE WITH GLIDE SURFACE:

Radius 11' + 40mm centered flat surface  
Radius 11' + 50mm centered flat surface  
Radius 11' + 60mm centered flat surface  
Flat template (for making a flat surface with the length of your choice)

### COMBINED TEMPLATES:

Radius 3m + Radius 6m (Detroit 1)  
Radius 4m + Radius 8m (Detroit 2)  
Radius 7' + Radius 4m (Dual 1)  
Radius 7' + Radius 5m (Dual 2)  
Radius 3m + Radius 5m (Dual 3)

### COMBINED RADIUSSES WITH GLIDE SURFACE:

Radius 4m + Radius 8m + Radius 3m (Excel one)  
**The Optimal NC (several radiusses in a specific angle)**

# QUICK CONTOUR GUIDE

## Quick guide

Make auxiliary marks on the skate blade.

Mount the desired template.

Move the large table as far as possible to the right

Move the small table against the stop screw on the directing device.

Align the center point on the skate blade with the mid point on the directing device and mount the skate.

Mark the directing points on the skate blade.

If necessary, align the skate against the template with adjustment screw 8a and feeding screw 8b.

Grinding wheel shall take equally much on your directing points or the end points.

*If you are making a **larger radius on a smaller radius** you can sharpen from one directing point (D) to the other since the skate blade will move freely outside those points. If you are making a **smaller radius on a larger radius** you must work from the end points (E) and inwards until the whole area of the skate blade between the end points (E) is covered.*

Contour the skate with feeding screw 8b until you are satisfied with the length or until it covers the whole area.