

# SSM PROFIL

## INSTRUCTION MANUAL



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



### ORIGINAL INSTRUCTIONS



Date of purchase: .....



# Skate sharpening machine SSM PROFIL

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 or the invoice. 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.**

## 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 <sub>PA</sub> ):	81 dB
Sound power level	(L <sub>WA</sub> ):	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+A1+A2  
EN 61000-3-2:2014  
EN 61000-3-3:2013  
EN 55014-2:1997+A1+A2

Uppsala, August 31, 2016  
(place, date)



Stefan Gustavsson  
(signature, name)

following the provisions of 2006/42/EC and 2014/30/EU 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 are specially designed for the machine, for optimum performance and safety of operation.

## **Safety warnings specific for grinding**

*Use only wheel types that are recommended for your power tool and the specific guard designed for it.*

- 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.

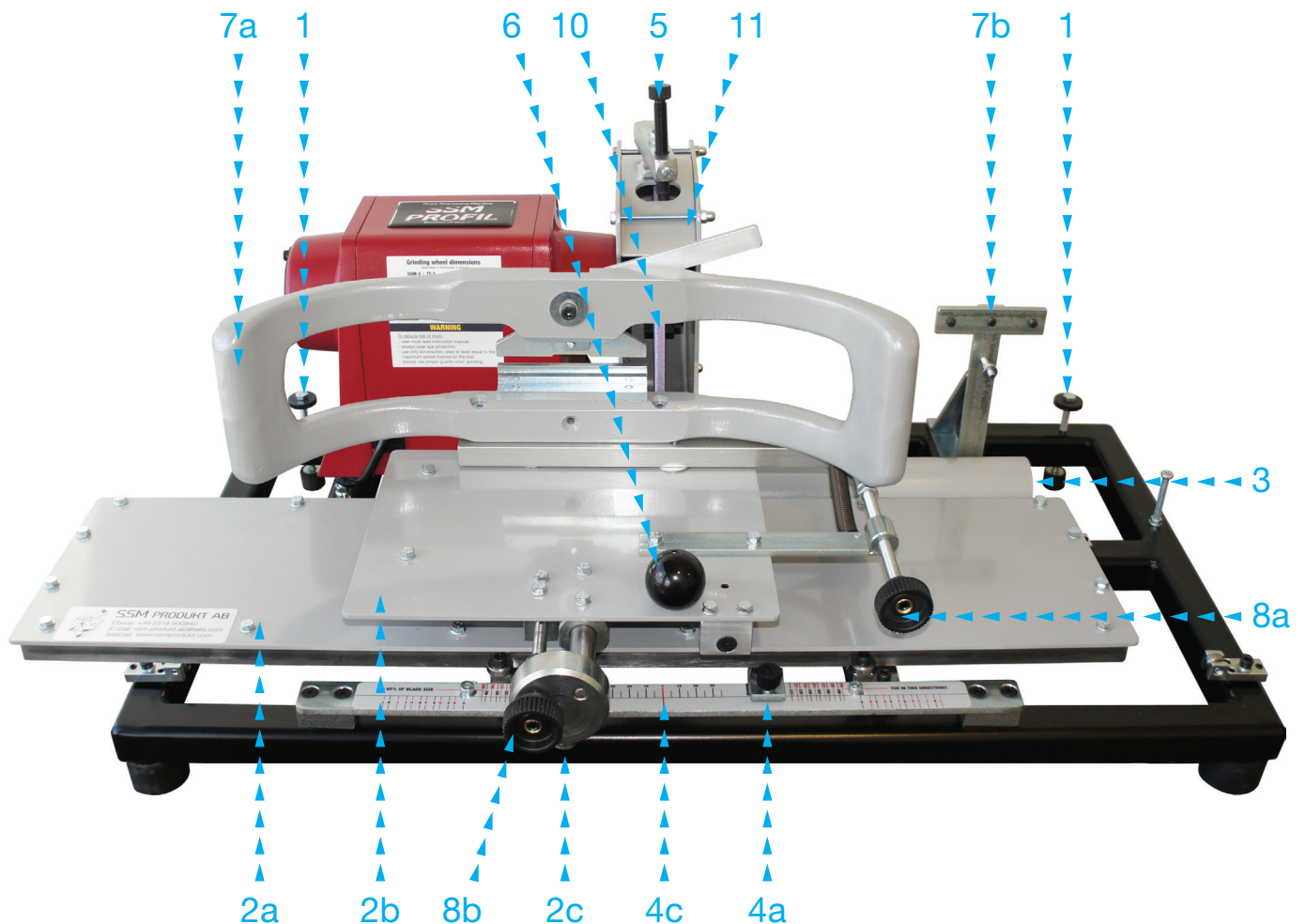
*Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.*

- 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.*

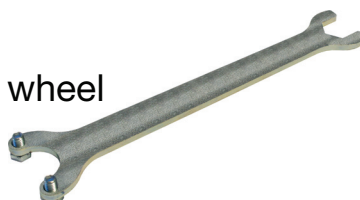
- Wheel intended for larger power tool is not suitable for the higher speed of a smaller tool and may burst.

## FUNCTIONAL DESCRIPTION



- |     |                         |     |                             |
|-----|-------------------------|-----|-----------------------------|
| 1.  | Support screws          | 5.  | Diamond                     |
| 2a. | The large table         | 6.  | Ball handle                 |
| 2b. | The small table         | 7a. | Skate holder                |
| 2c. | Guide roller            | 7b. | Directing device            |
| 3.  | Extractor tube          | 8a. | Adjusting screw             |
| 4a. | Template holders        | 8b. | Feeding screw               |
| 4b. | Template (not pictured) | 9.  | Power switch (not pictured) |
| 4c. | Blade marking system    | 10. | Grinding wheel              |
|     |                         | 11. | Protective cover            |

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.
- 2c. The guide roller for the small table will direct the movement (inwards and outwards) of the small table by following the shape of the template.
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 the guide roller, 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 Blade marking system on the base of the machine has a center position aligned with the grinding wheel. This makes it easy to accurately position your template in the machine. The markings should be used to center the template before adjusting the direction of the skate blade. This is the “neutral” position. The template can afterwards be moved forwards or backwards from center to change the relative pitch imparted on the blade when shaping the blade to the template.

*The skate is always put in the holder with the toe to the right and heel to the left. The left side of the template is associated with the right side of the skate blade, i.e. the toe. The right side of the template is associated with the heel of the skate blade. When the template is moved to the right (toward the heel) this causes the pivot point of the blade to be more toward the rear of the skate blade and thus causing a more forward leaning pitch.*

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 forces you to always mount the skates in the same and “correct” direction. The toe of the skates will always be to the right.)
- 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.

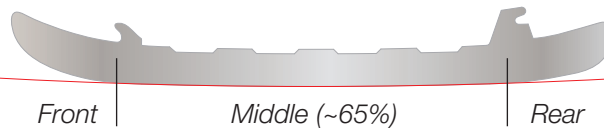
*NOTE: The SSM Profil machine allows the operator an easy way to square the template with the holder and the blade which is essential for consistent contouring operations.*

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/ME60.
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

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 9' to 13' (2.74 m to 3.96 m) depending on manufacturer. When you contour a skate you basically only contour the middle part after a template.



**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).

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

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 stability, and it is more energy efficient. However, the acceleration and maneuverability will be decreased.

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

Which template a player chooses is a personal preference. There is a trade off and most skaters will choose a radius shape that is a happy medium.

#### 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 common today.

### 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 dependent on each other. If you move the pivot point to the rear of the blade, the pitch of the skate and skater will lean more forward. If you move the pivot point forward, the pitch will be less forward or be neutral or to the rear. Leaning forward is more tiresome but increases acceleration.

It is difficult to determine the precise existing pivot point of a skate because different skate manufacturers may use different natural leaning pitch built in to the boots or the plastic holding the blades. Our recommendation is therefore 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 the previous page, there are several ways to get a suitable shape on the skate blade (depending on the skating style). Here are some examples:

#### 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.

*Radius 10' (3.048 m)*



#### Adding another radius shape

By using two different radius shapes at the middle section you can combine the abilities from these curves. A smaller radius in the front of the skate blade provides good mobility and grip when accelerating. With a larger radius in the rear, you get extra support and pressure. The combination of a smaller radius in the front and a larger one in the rear results in the skate leaning (pitching) somewhat forward.

*Radii 10'/20' (3/6 m)*



#### Several radii

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. Make sure to check out our Natural Curve series.

*The Natural Curve*



#### 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. Children learning to skate should use a flat area of 6 cm.

*Flat area of 6 cm*



## ASSEMBLY

Your skate sharpening machine SSM PROFIL is delivered complete and 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 also include the following:

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

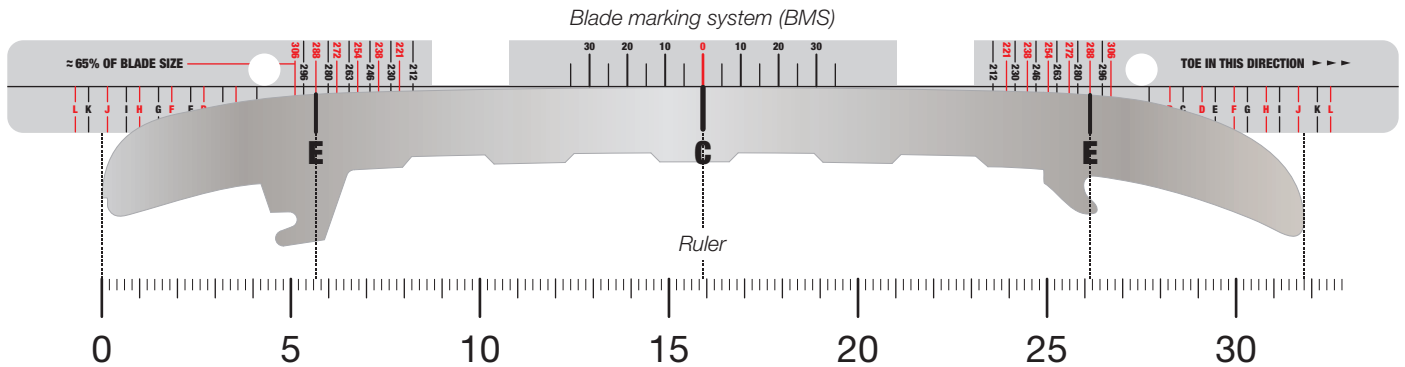
Use a proper dust extractor attached to the extractor tube (3). This will reduce the amount of debris released. For more complete protection, wear a suitable face mask covering mouth and nose.

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

## OPERATION

**1: 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 blade. This can be done using our Blade marking system (see below) or with a regular ruler. Let us call this point the center point (C).



**2a: 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 (around 65%) ends. These marks are to be located in each direction from the center point. Let us call these marks end points (E).

Blade marking system BMS:

Center the skate blade between the same type of letters closest to its outer measurements. Here they are just outside of letter J. The center point is then located at 0. The end points are located at the number of the skate blade size (here 288).

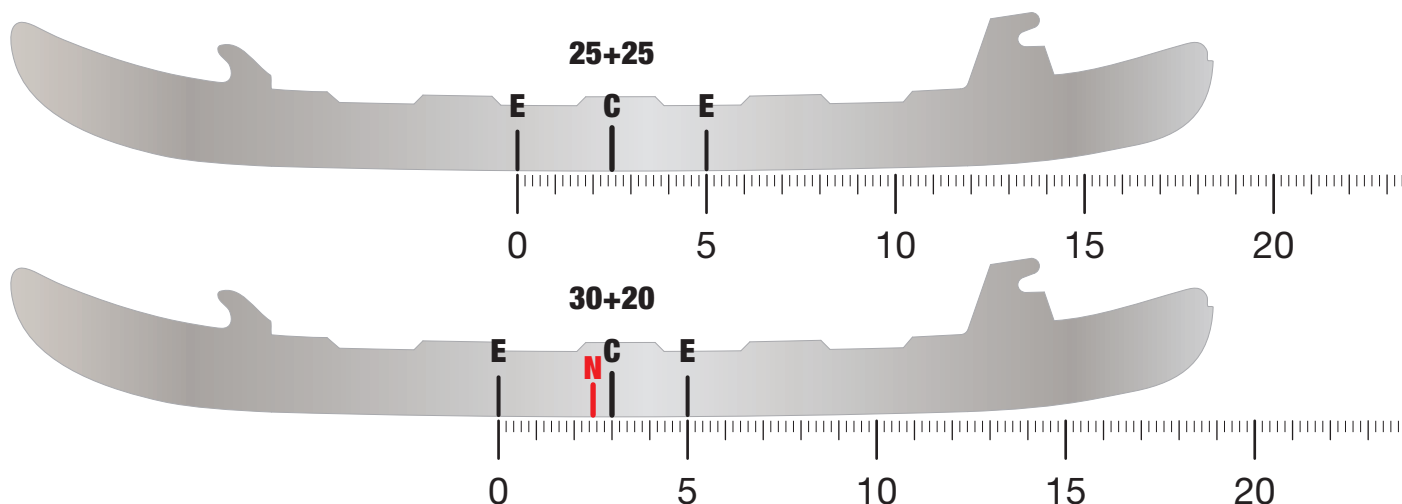
Using a ruler:

Place the skate blade against the ruler and measure it (318 mm). Center point is then located at  $318/2$ , which is 159. End points are calculated by  $318 \times 0.65$ , which is 206.7. Divide this number by 2 and add/subtract it to the center point value to get the end points location. Place the ruler with 103.35 at point C and mark points E at 0 and 206.7.

### 2b: Glide surface

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



## OPERATION (continued)

### 3: Balancing grinding wheel

If necessary, replace the grinding wheel.

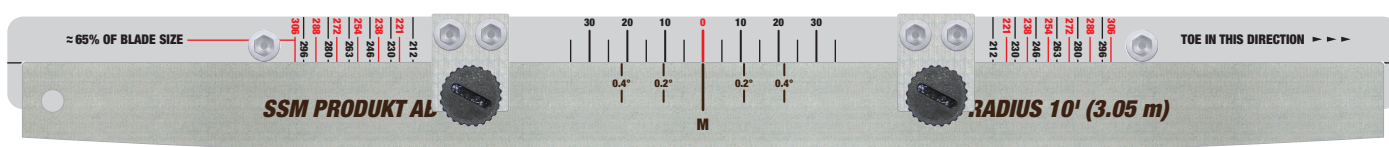
Balance it if necessary. (See MAINTENANCE: HOW TO CHANGE AND BALANCE THE GRINDING WHEEL.)

### 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 Blade marking system (4c). Fasten the template using the knurled screws on the two template holders.

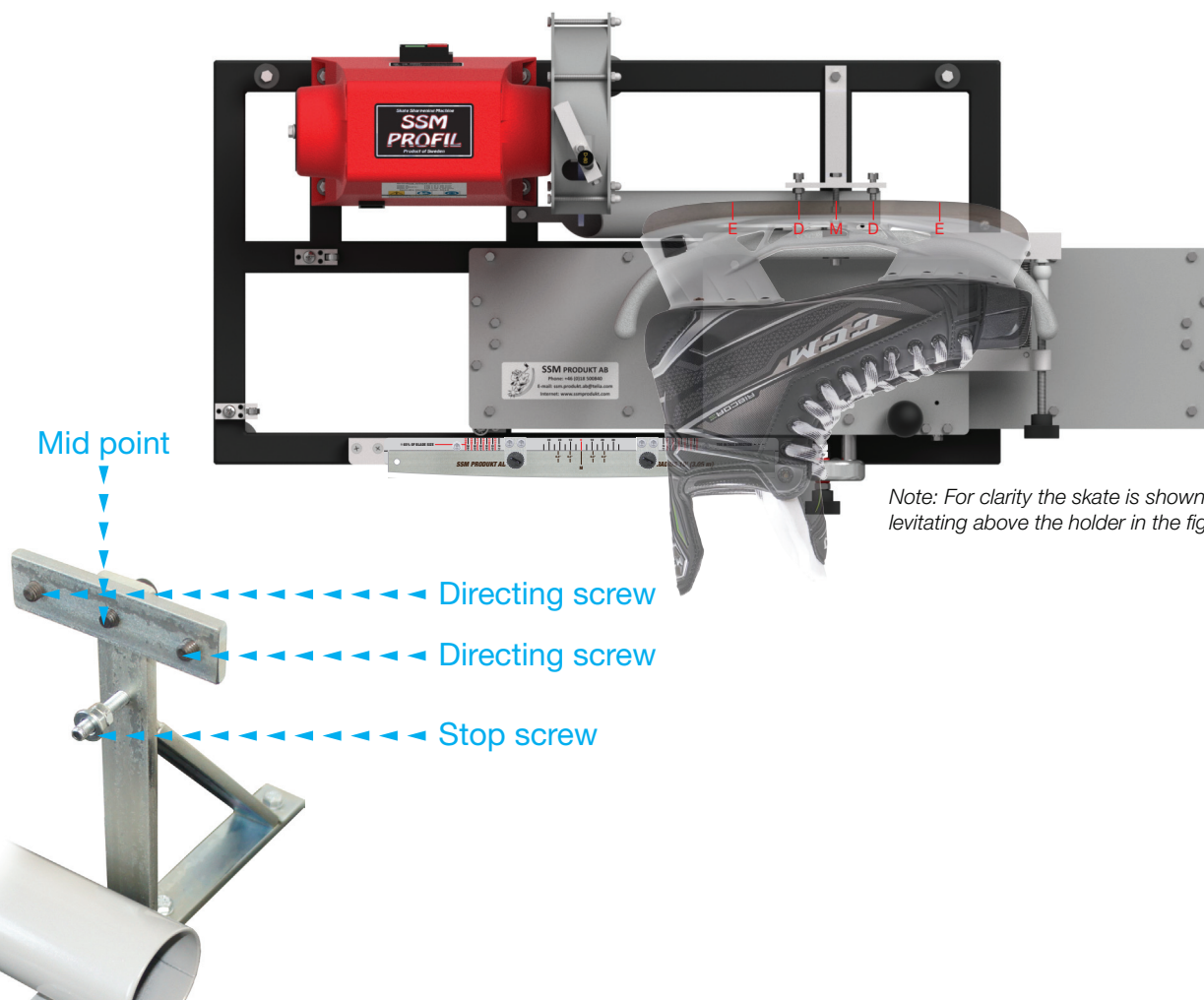


### 6: Mount the skate

Check that the skate holder is somewhat 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 stop screw on the directing device enters the hole in the holder. 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.

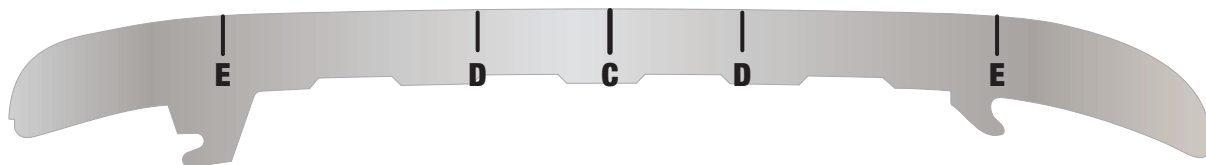
*Optional: Mark the skate blade where the directing screws are touching it. Let us call these marks directing marks (D). (They are located 35 mm from the mid point and are only needed if you want to align the skate.)*



## OPERATION (continued)

### 7: Preparation

The template and directing screws are aligned against each other, which means the skate blade will be in correct angle when it is mounted against the directing screws with its center point against the mid point.



#### 7a: When going from a smaller to a larger radius

The grinding wheel will start to touch the skate blade at its highest point (center point C). Red line is the template shape (here around 20') and grey is the current skate blade (here 10').



#### 7b: When going from a larger to a smaller radius

The grinding wheel will start to touch the skate blade at the end points (around E) of its current radius shape. Red line is the template shape (here around 10') and grey is the current skate blade (here 20').

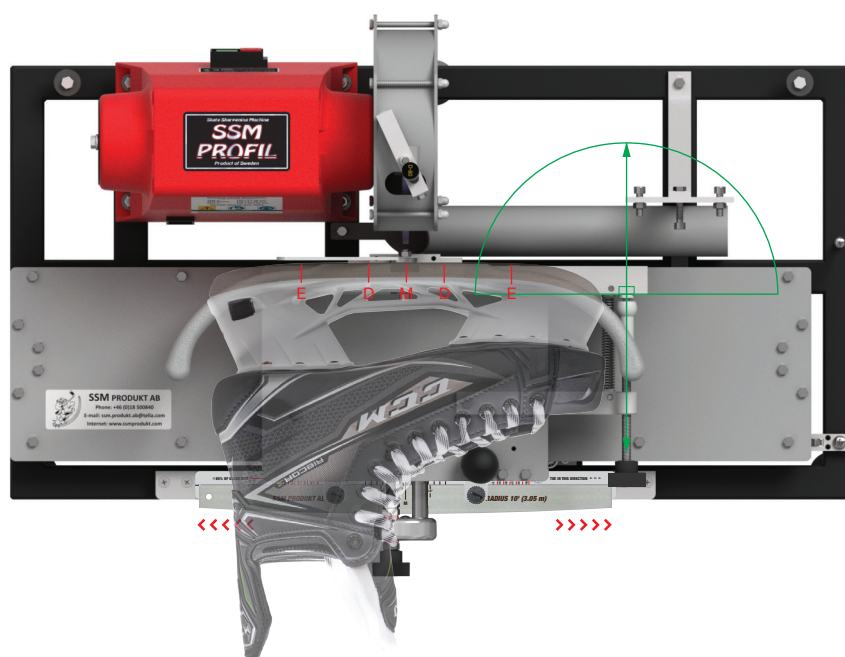


#### 8a: Adjustment screw

If you move the skate blade pass the grinding wheel and notice that the blade is pitched already (sharpened more in the front or rear), you can use the adjustment screw to compensate (reset) in the other direction.

#### 8b: Pitch/Pivot

If you want to alter the Pitch/Pivot on the skate blade you unlock the template and move it sideways. The templates are designed so that you can either move the mid point of the template to a certain measure mark (mm) on the machine (pivot) or you can use the marks on the template (degrees) and move a selected angle mark (pitch) to the mid point of the machine (see image on page 12). When you are satisfied fasten the template again.



## OPERATION (continued)

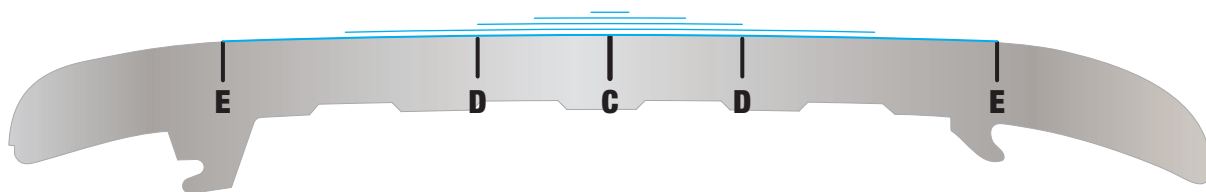
### 9: Contouring

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).

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.

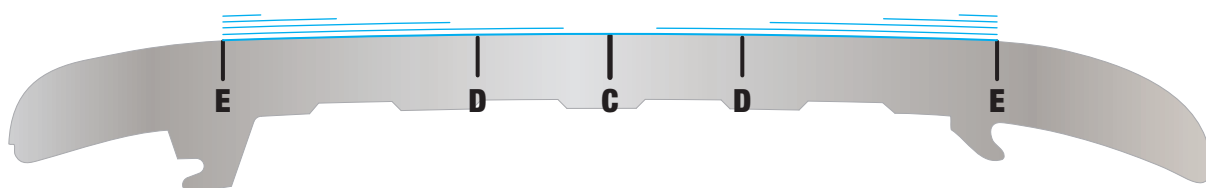
#### 9a: Going from a smaller to a larger radius

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 (a little outside E) and inwards on the skate. Therefore, use the feeding screw (8b) in small steps until the whole area between the end points touches the grinding wheel.



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

When using a template with several radii, the grinding wheel will touch the skate blade at few different points.

#### 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.

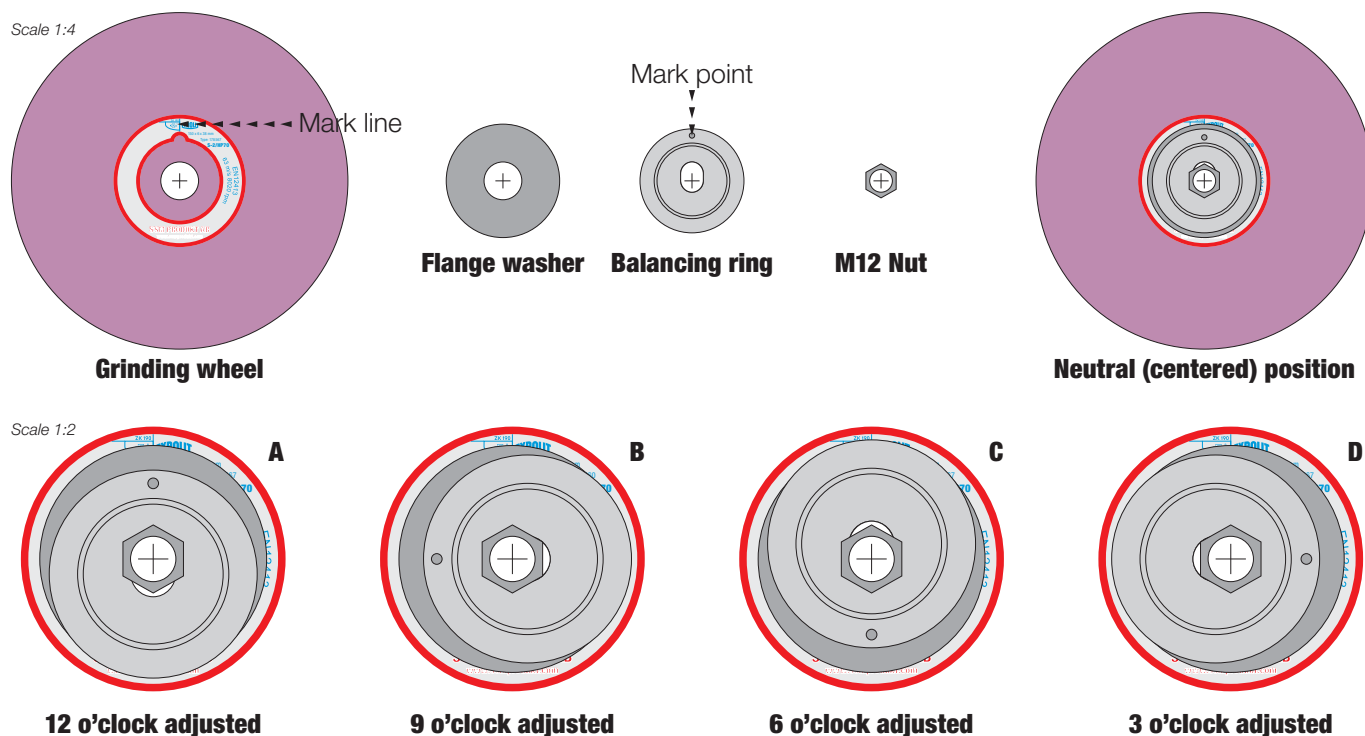
Now the contouring is finished! Check underneath the skate blade where your contouring have ended. Mark these points onto the next skate blade from the same pair. You can use those markings as the end points (E). By doing so your left and right skate will be of equal height once they are done, if the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



## 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.)

Put the new grinding wheel on top of the flange with the mark line in the 12 o'clock position. Then put the flange washer and then the balancing ring on top in a neutral position (i.e. centered with the mark point in the 12 o'clock direction). Fasten the nut.

**Start the engine and dress the grinding wheel with one of the diamonds.**

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 end of the guide arm at the skate holder.)
2. Stop the engine and direct the grinding wheel mark line to 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. A).
3. Do as in step 2, but with the balancing ring 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. B, C, D).
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 best position, 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

Height:	350 mm
Width:	400 mm
Length:	1100 mm
Weight:	34 kg
Power:	250 W
Voltage:	220-240 V
Frequency:	AC (1-phase) 50-60 Hz
Revolutions per minute:	2800-3400 RPM
Grinding wheel type:	Type S-4 from SSM
Grinding wheel dimensions:	178 x 6 x 20 mm (diameter x thickness x arbor)
Diamond:	D-80 or SD-80

!! THE MACHINE IS INTENDED FOR INTERMITTENT USAGE !! (on 60 s / off 60 s).

**Your SSM PRODUKT AB distributor:**

# CONTOUR TEMPLATES

Four templates of your choice (from our line up) are included with SSM PROFIL.

## CONTOUR TEMPLATES "single radius"

Radius 7'	(2.13 m)	Figure skating
Radius 8'	(2.44 m)	
Radius 9'	(2.74 m)	
Radius 10'	(3.05 m)	Ice hockey
Radius 11'	(3.35 m)	
Radius 12'	(3.66 m)	
Radius 13'	(3.96 m)	
Radius 14'	(4.27 m)	Bandy
Radius 15'	(4.57 m)	
Radius 16.4'	(5 m)	
Radius 19.7'	(6 m)	Goalies
Radius 23'	(7 m)	
Radius 26'	(8 m)	
Radius 28'	(8.53 m)	
Radius 30'	(9.14 m)	
Radius 33'	(10 m)	

## CONTOUR TEMPLATES "split"

NA Split 1	- radii 8.5'/9.5'	(2.6m/2.9m)	Ice hockey
NA Split 2	- radii 9'/10'	(2.7m/3.0m)	
NA Split 3	- radii 9.5'/10.5'	(2.9m/3.2m)	
NA Split 4	- radii 10'/11'	(3.0m/3.3m)	
SE Split 1	- radii 10'/13'	(3.0m/4.0m)	Bandy
SE Split 2	- radii 10'/16.4'	(3.0m/5.0m)	
SE Split 3	- radii 13'/20'	(4.0m/6.0m)	
Detroit 1	- radii 10'/20'	(3.0m/6.0m)	Goalies
Detroit 2	- radii 13'/26'	(4.0m/8.0m)	
Goalie Split	- radii 24'/28'	(7.3m/8.5m)	

## CONTOUR TEMPLATES "several radii"

### Natural Curve Quick

Radii A, 10', C, D (for sizes 246-254)  
 Radii A, 10', C, D (for sizes 263-272)  
 Radii A, 10', C, D (for sizes 280-288)  
 Radii A, 10', C, D (for sizes 296-306)

### Natural Curve 11Q

Radii A, 11', C, D (for sizes 263-272)  
 Radii A, 11', C, D (for sizes 280-288)  
 Radii A, 11', C, D (for sizes 296-306)

### Natural Curve 12I

Radii A, 12', C, D (for sizes 263-272)  
 Radii A, 12', C, D (for sizes 280-288)  
 Radii A, 12', C, D (for sizes 296-306)

### Natural Curve Intermediate

Radii A, 13', C, D (for sizes 263-272)  
 Radii A, 13', C, D (for sizes 280-288)  
 Radii A, 13', C, D (for sizes 296-306)

### Quad XSN

Radii 6, 8, 11 & 12'

### Quad ONC

Radii 6, 9, 11 & 13'

### Quad 1N

Radii 6, 9, 12 & 15'

### Quad 2N

Radii 7, 10, 13 & 16'

## CONTOUR TEMPLATES "bandy"

Bandy Youth R5/12	(radii 3m, 5m, 3m)
Bandy Youth R5/14	(radii 2m, 5m, 2m)
Bandy Youth R4/16	(radii 2m, 4m, 2m)
Bandy Youth R5/16	(radii 2m, 5m, 2m)
Bandy Youth R4/18	(radii 2m, 4m, 2m)
Bandy Youth R5/18	(radii 2m, 5m, 2m)
Bandy Youth R6/12	(radii 4m, 6m, 4m)
Bandy Elite R4/20	(radii 2m, 4m, 2m)
Bandy Elite R5/20	(radii 2m, 5m, 2m)
Bandy Elite R5/20	(radii 2m, 5m, 4m)
Bandy Elite R4/22	(radii 2m, 4m, 2m)
Bandy Elite R5/22	(radii 2m, 5m, 2m)
Bandy Elite R6/20	(radii 4m, 6m, 4m)
Bandy Elite R6/22	(radii 4m, 6m, 4m)
Bandy Elite Viklund	(radii 1m, 5m, 1m)
Bandy EX1	(radii 0.75, 3, 4, 5, 6, 0.75m)
Bandy EX2	(radii 0.75, 4, 5, 6, 7, 0.75m)

## ACCESSORIES

### S-4/ME60



Grinding wheel  
Grit size: 60 ceramic  
Excellent on all steels

### D-80



Diamond dresser  
(natural diamond)

### FE-840



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

### NQS500



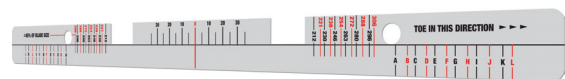
Dust extractor  
Very powerful and quiet  
Uses a cyclone intake

### BR



Blade replicator  
- copy a skate blade shape  
- remove the template holder and mount this instead

### BMS



Blade marking system  
- measure / mark the skate blade  
- place the contour template  
- can be used without SSM PROFIL