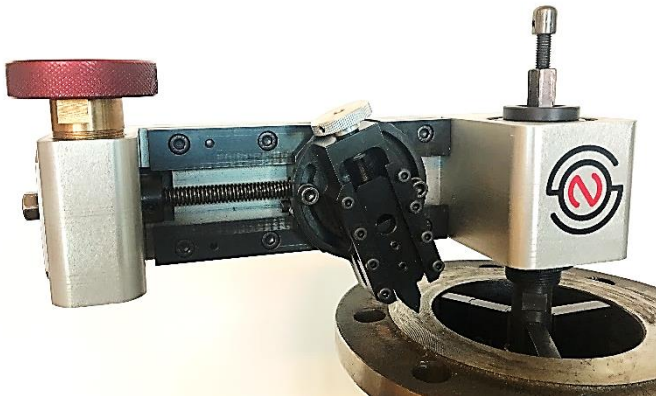




normaco

Portable Machining Tools

Manual Facer



Operating Manual

Contents

Contents	2
1. About the Manual.....	3
1.2 General.....	3
1.2 Intended Use	3
1.3 Manufacturer:	3
2. Safety	4
2.1 General information.....	4
2.2 Safe Work Area.....	4
2.3 Safe Operation and Service	4
3. About the Equipment	5
4. Set up.....	7
4.1 Preparation.....	7
4.2 Levelling.....	9
4.3 Setting up	10
4.4 Tool Setup	13
4.4.1 Spiral Serrated Finish	14
4.4.2 Smooth finish	14
5. Operation.....	15
6. Maintenance.....	16
6.1 General maintenance	16
6.2 Changing the feed screw.....	16
7. Troubleshooting	18

1. About the Manual

1.2 General

This manual is inseparable part of the Normaco Manual Facer. Operators and service personnel must familiarize with this manual before commencing the work.

During the use the manual must be kept readily available for the operators and service personnel.

1.2 Intended Use

The Manual Facer is designed to be used for manually re-machining the flange sealing surfaces.

It is strictly forbidden to use this tool for any other purpose beyond the intended use and limits of the tool.

1.3 Manufacturer:

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Lehmja küla, 75306
ESTONIA
Phone +372 6003704

normaco@normaco-tools.com
www.normaco-tools.com

2. Safety

2.1 General information

This equipment may only be used for its intended purpose, within the operational limits.

All changes and modification to the construction are prohibited, without permission from the manufacturer.

Additionally, the operators must consider local laws and regulations regarding work safety and environmental protection that might affect the use of this device.

2.2 Safe Work Area

- Keep work site clean. Remove non-essential tools, cables and materials from the work area
- Keep the work area well lit.
- Keep non-essential personnel away from the work area.

2.3 Safe Operation and Service

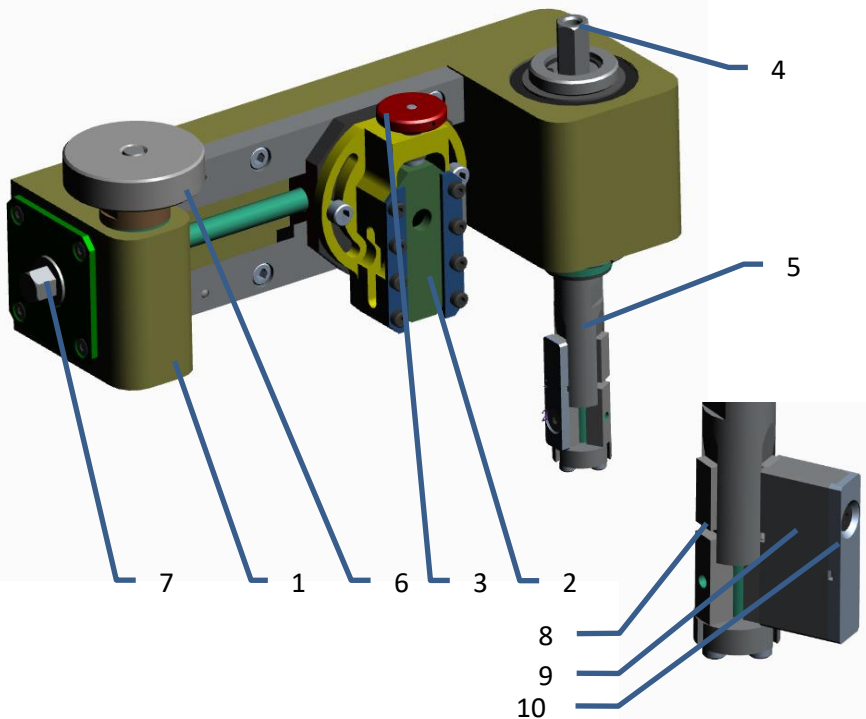
- Before commencing the use of the device remove all adjusting tools and wrenches.
- Use brush to keep the device clean from metal shavings.
- While cleaning the device, wear safety gloves.
- While operating the device always wear eye protection.
- Use only original spare parts.
- Maintenance and service must be done only by qualified and properly trained personnel.
- Never wear loose clothing or jewellery, which can get caught in the device.
- Tooling can get extremely hot during machining operation; do not touch the tool before it has cooled down.
- Do not use the device if it is faulty!

3. About the Equipment

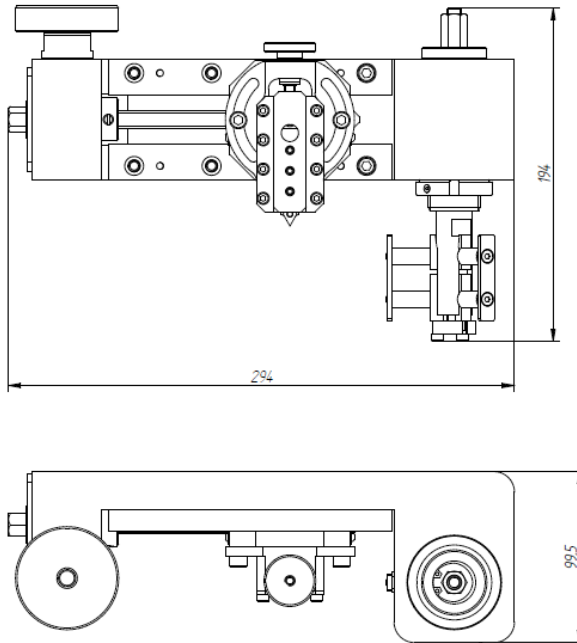
The Manual Facer is designed to be used for manually re-machining the flange sealing surfaces.

It consists of the following parts:

- | | |
|-----------------------|------------------|
| 1. Housing | 6. Feed Handle |
| 2. Tool holder | 7. Fast Feed Nut |
| 3. Vertical feed knob | 8. Base Jaw |
| 4. Jaw clamping nut | 9. Extension |
| 5. Mandrel | 10. Top Jaw |



Overall dimensions:



Machinable area;

Min D25,5 mm

Max D420mm

Continuous travel of toolholder: approx. 80mm

Clamping range: Min \varnothing 24.5mm, max \varnothing 162mm

4. Set up

4.1 Preparation

Prepare the work area by cleaning the area to be cut.

Measure the internal diameter of the flange where the Manual Facer will be attached to. Use the table on page 8 to determine the clamping jaws required and mount the Jaws on to the mandrel following the steps below.



Mount the base jaws to the mandrel using the spring.



Mount the extension legs (if required) to the base jaws



Mount the top jaws on top of the base jaw / extension leg, using the screws provided.

Manual Facer Clamping Jaw Selection Chart

Clamping Diameter (mm)		Top Jaw	Extension Block	Base Jaw
Min	Max			
24.5	29.7	no	no	yes
29.4	34.6	A		
34.3	39.5	B		
39.3	44.5	C		
44.2	49.4	D		
49.2	54.4	E		
54.2	59.4	F		
59.1	64.3	G		
64.1	69.3	H		
69.1	74.3	I		
73.1	78.3	A	22	
78.1	83.3	B		
83.1	88.3	C		
88.0	93.3	D		
93.0	98.2	E		
98.0	103.2	F		
103.0	108.2	G		
108.0	113.2	H		
113.0	118.2	I		
117.0	122.2	A	44	
122.0	127.2	B		
127.0	132.2	C		
132.0	137.2	D		
137.0	142.2	E		
142.0	147.2	F		
147.0	152.2	G		
152.0	157.2	H		
157.0	162.2	I		

4.2 Levelling

For best results the Manual Facer should be levelled with the flange.

1. Place the mandrel of the device inside the flange to be machined.
2. Pretension the jaws by turning the clamping nut with the wrench.
3. Mount the indicator to the tool holder using the mounting bracket provided.
4. Check with the indicator the straightness of the device by rotating the device around while observing the indicator.
5. Note which two jaw positions are highest.
6. Use the punch and hammer to hit the jaws that are the highest to bring all the jaws to the same level. Observe the indicator to determine amount of strikes required.



7. Check the indicator readings on all jaw positions and repeat the adjustment until the indicator reading is same for each jaw position.
8. Make sure the jaws are securely tightened.

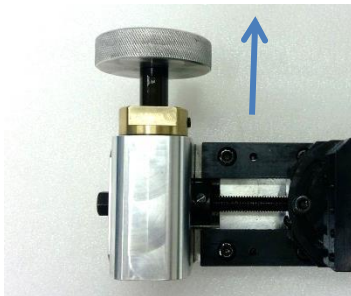
4.3 Setting up

Adjust the tool holder to the edge of the area to be machined. Use the speed return function, by attaching a ratchet to the fast feed nut and by disengaging the manual feed by pulling the feed handle upwards and rotating the manual feed wheel counter-clock-wise.

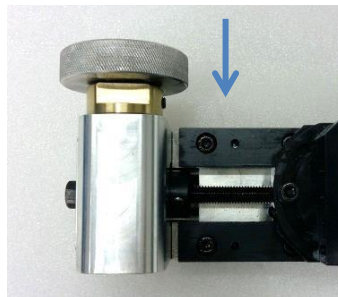


CAUTION:

If the Feed handle is not disengaged properly before turning the fast feed nut, internal gears can be damaged!



Feed Handle engaged



Feed Handle disengaged

After finishing the adjustment, return the feed handle to operating position by carefully pressing downwards while rotating the handle clockwise.

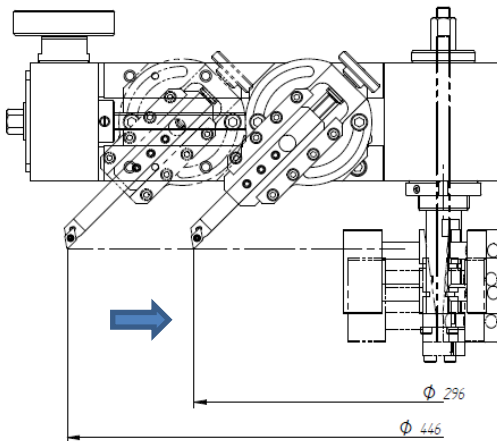
Machinable areas with different tools.

Direction of allowed tool block movement shown with arrow.

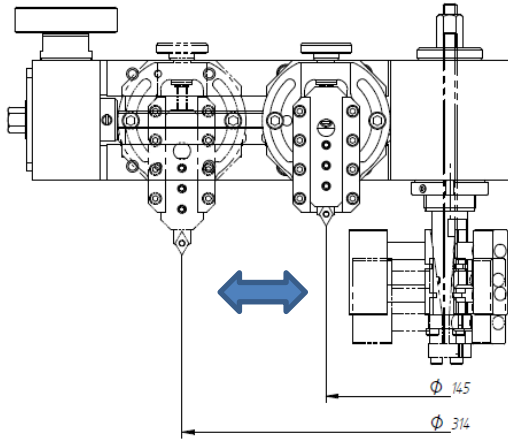
CAUTION:

! **Make sure to rotate the device so that the insert side (cutting edge) of the tool is in front.**

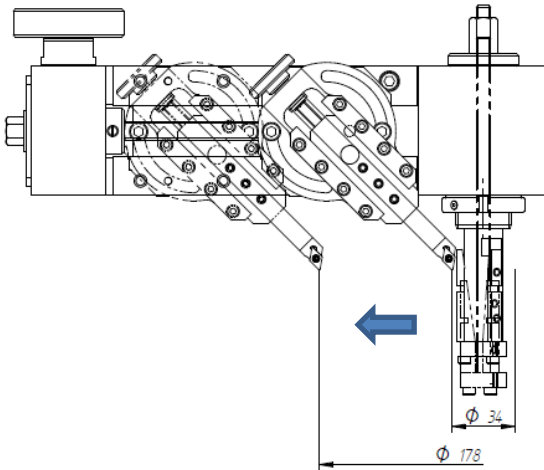
Rotating to the opposite direction will break the insert



Using Right hand tool, rotation counter clockwise.



Using Neutral tool, rotation clockwise or counter clockwise.



Using Right hand tool, rotation clockwise.

4.4 Tool Setup

Before commencing the work, the correct tool must be chosen, based on the desired results of the machining.

With the Manual Facer it is possible to create different surface finishes.

There are two different tools to cover the machining area:

- Neutral tool
- Right hand tool

Depending on the diameter range, you must choose a tool that has correct angle.



Insert the tool to the tool holder and secure with locking screws from the side of the tool block.

Adjust the vertical position of the tool by turning the vertical feed knob so that the tool is touching the flange. Use the vertical feed knob to achieve suitable cutting depth.

One turn of the feed knob equals to 1mm of vertical tool movement.

4.4.1 Spiral Serrated Finish

For spiral serrated finish, feed screw TR10x2 must be installed. (for installing feed screws, see chapter 6.2)

With the sharp tool using the insert with R0.4, the insert must be set at 90deg angle to the work piece.

4.4.2 Smooth finish

For smooth finish, feed screw M10x0.75 must be installed and tool with R0.8mm used. (for installing feed screws, see chapter 6.2)

5. Operation

To machine a flange, simply rotate the Manual Facer while holding the feed handle tightly. See previous chapter for direction of rotation.

Do not apply excessive vertical force on the feed handle as it may reduce the machining quality.

If the device does not rotate easily, reduce the machining dept.

Depending on the flange, repeat the machining to get optimum quality.

To remove the Manual Facer from the flange, release the clamping jaws by turning the clamping nut counter clockwise with the wrench.

Be careful when releasing the mandrel, the Manual Facer can move by its own weight unexpectedly.

6. Maintenance

6.1 General maintenance

Manual Facer should be cleaned after each operation. Clean it from chips, coolant and dirt and wipe it with oily cloth.

Visually inspect the equipment for any damage or loose or missing screws, bolts or nuts.

Apply general purpose grease to the moving components.

6.2 Changing the feed screw.

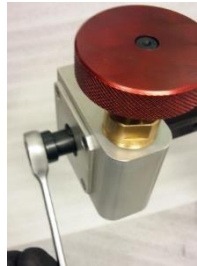
1. Open and remove the set screw as shown.



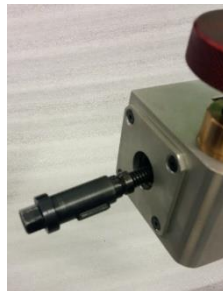
2. Using the wrench, turn the fast feed nut so that the tool holder moves inwards.



3. Keep turning until the feed screw becomes loose from the feed nut.



4. Remove the feed screw by pulling it out.



5. Remove the feed nut from the back of the device housing



6. To insert a new feed screw, repeat the steps above in reversed order.

7. Troubleshooting

Problem	Possible Cause	Solution
Tools Chatter and/or surface finish is poor	Tool is over extended	Re-adjust the tool closer
	Tool is dull or damaged	Replace tool
	Tool is not properly fixed	Check tool clamping
	Facer is adjusted badly on the flange	Re-adjust the Facer
	Cutting coolant is required	Apply coolant
	Tool is not in optimal angle	Readjust the angle of attack
Tool holder does not feed	Feed handle is disengaged	Engage feed handle
	Feed nut or Screw damaged	Replace nut or screw
	Feed handle is not rotating.	Hold the handle tighter
	Tool holder is obstructed	Remove obstruction
	Gears are damaged	Contact the manufacturer
Facer is moving during the operation	Jaws are poorly tightened	Tighten the jaws

