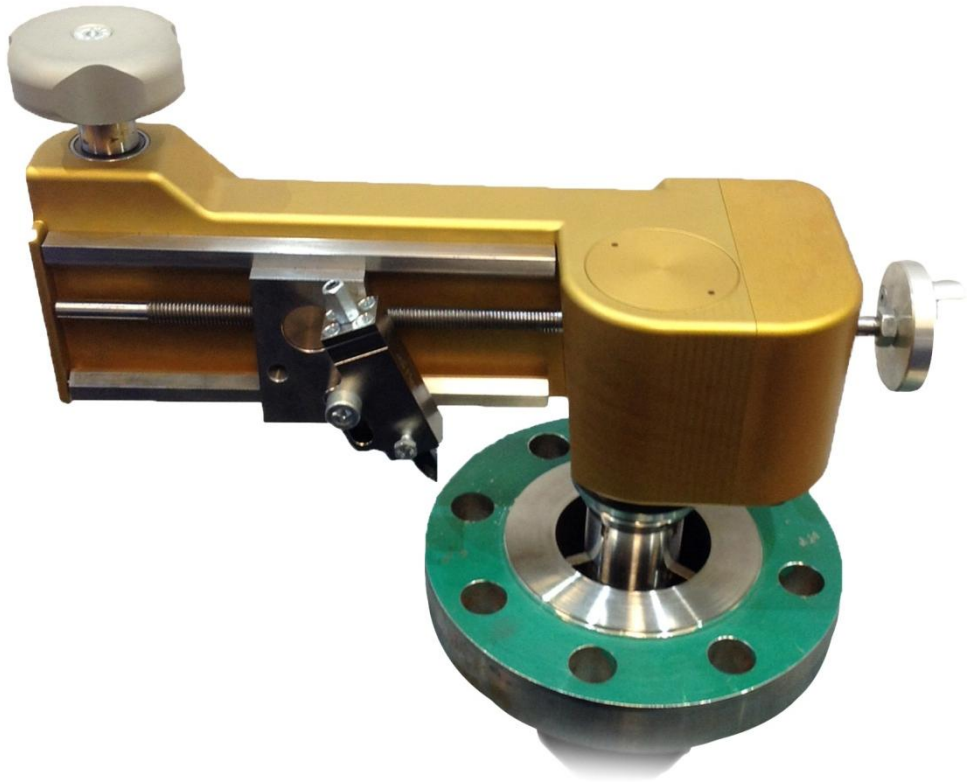
LMC Mini – Facer EVO©®

USERS MANUAL



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Len Matec prio bvba

WWW.LENMATEC.BE

Introduction

Thank you for purchasing the Mini Facer EVO ®™ ©.

This easy to use manual driven flange facing apparatus is designed to help the user to recondition flange gasket seating area's .

Below User Manual is drawn up to help you operate and maintain the Mini Facer EVO ®™ © in a safe way.

The Manual has 4 chapters, added also are recommendations and drawings thus to foresee in maximum information .

PREFACE

Contains information about the use of this user manual

CONTENCE LIST

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1 Introduction

1.1 Product description

The LMC Mini Facer EVO©® is per definition not a machine but a manual driven tool to obtain flat facing of different type and diameters of flanges .

The Mini Facer EVO is desgined to do refacing of flat face flanges of various materials.

The tool provides in a gramophone finish thus to create optimum gasket contact and gasket seating conditions.

Due to the integrated feed spindel , which is taking care of the cutting tool feed ,whilest turning the machine, the required surface finish is obtained .

The Mini Facer EVO©® can machined a flange with two different surface finishes. The surface finish can be choose by a switch knob. This switch knob has 3 positions

Position 1

In this position there is a surface finish possible ASME B 16.5 " stock finish = 6.3 to 12.5µm " according to ASME specification

position 2

This is the neutral stand of the device used for replacing the toolpost without turning the Mini Facer EVO©®

Position 3

In this position there is a surface finish possible " Smooth finish =3.2 to 6.3 µm " .

This finish is used for other types of gaskets

These surface conditions are commonly used in flange face finish .

For special surface finish requirements we can supply specific tooling

please contact your dealer for info and or availability .

The Mini Facer EVO has a yellow/gold color body finish , to improve visibility this body carries a unique serial nr engraved into the body of the tool beside the text "LMC Mini Facer EVO®™©

The Mini Facer EVO ™® © is delivered in a sturdy carry case with slotted pockets to store components from the tool.

The internal clamping diameter range of the Mini Facer EVO©® with collet is

from +/- 2” to 9” => 49 mm to 240 mm (with the std supplied clamping gibs)

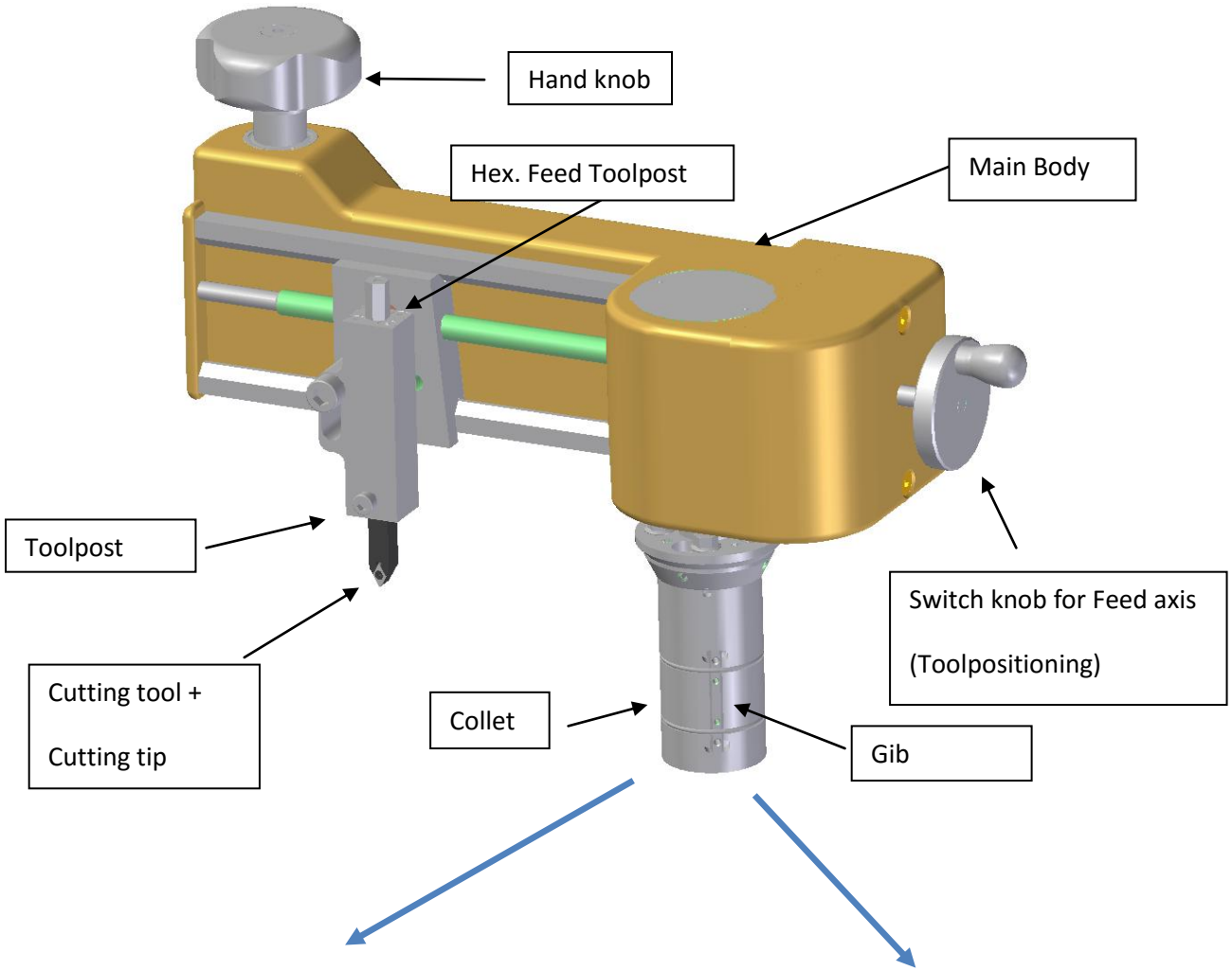
The internal clamping diameter range of the Mini Facer EVO©® with base is

from +/- 6” to 18” => 152 mm to 457 mm (with the std supplied clamping feets)

The facing diameter rage of the LMC Mini-Facer EVO ©™® is
from 2” – to 22” => 50 mm to 560 mm

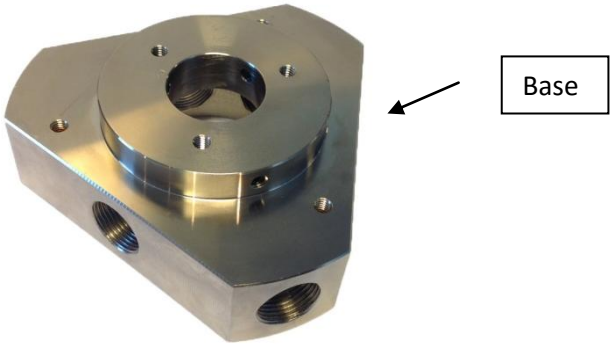
1.2 Mainparts indication of the Mini Facer EVO®™©

De Mini Facer EVO©® is built from a number of principle parts, indicated on below picture.



Clamping system 1

Clamping system 2



1.3 Conditions of use

The Mini facer EVO ©® shall only be used in the following conditions . .

- Make sure the operator / user of LMC Mini Facer EVO©® has read and understood the User Manual
- All Safety precautions are fulfilled .
- There is no damage to the Mini Facer EVO©®
- No other condition to disturb normal working of the Mini facer EVO applies .
- Maintenance and cleaning shall be taken care off and respected before all use .

1.3 Instructions for the user / operator

The Mini Facer EVO©®™ shall only be used by operators that are fully instructed and confident with the operation . Further more it is obligatory to wear in all conditions of use the necessary safety garments and clothing , such as : safety clothing , shoes , goggles . Avoid to wear loose clothing.

2 Safety precautions

2.1 Introduction

In this chapter the safety precautions are treated every operator using the Mini Facer EVO shall follow these instructions in full .

If there is any safety aspect unclear please check the Users manual or ask for more information from the safety advisor or from your dealer . .

In certain cases , specific additional safety precations might apply . Please inform and apply these instructions .

2.2 Applicable Safety precautions to follow

For a safe use of the Mini Facer EVO©® it is required to respect a number of precautions . Thee are stipulated below .

Personal protection :

- We advise to wear Safety shoes , safety goggles , gloves and applicable work clothing during the use of the Mini Facer EVO©®.




- Assure that all setting components or loose elements (e.g. the grippers the cutting toolholder) of the Mini Facer EVO are tightened or fixed the way they should be .
- Check that there are no external damages on Mini Facer EVO©® .
- Assure that the piping you work on is fully safe to work at and no dangerous and harmful products are present .
- Always work in the most ergonomical way . This to avoid injuries from the back or other inconvenient problems of health .
- Also assure people in the direct surrounding wear the necessary personal protection means
- Check before starting to operate that there is no obstacle that can cause injury or damage to the Mini Facer EVO®™©
- Also assure that the operators fysical condition is okay to do this kind of work in the conditions that apply during the work ;

Safety measures during the use of the Mini facer EVO®™©

- Wear the prescribed personal protection means during the use .
- E.g. Safety goggles , working clothing , safety boots , etc etc

- The wear of tight fit long sleeve working clothes is required since the swarf can be very warm and sharp , thus might cause injury .

- Make sure the collet is always firmly tightened so that the Mini facer EVO®™© does not come loose during the turning operation .

Do not wear loose garment , juwelry(such as rings etc) or loose hair during the work. These can cause jamming of fingers or other injuries and might lead to other dangerous situations ..

Note: Before every use of the Mini facer make sure no dirt, swarf or other components can fall into the flange bore (pipe).

3 Transport and Storage of the Mini facer EVO®™©

3.1 Transport

De Mini Facer EVO©® is supplied in a sturdy hard plastic carry case-trolley- "SKB"Model

For use and safety instructions of the case-trolley please contact the SKB supplier.

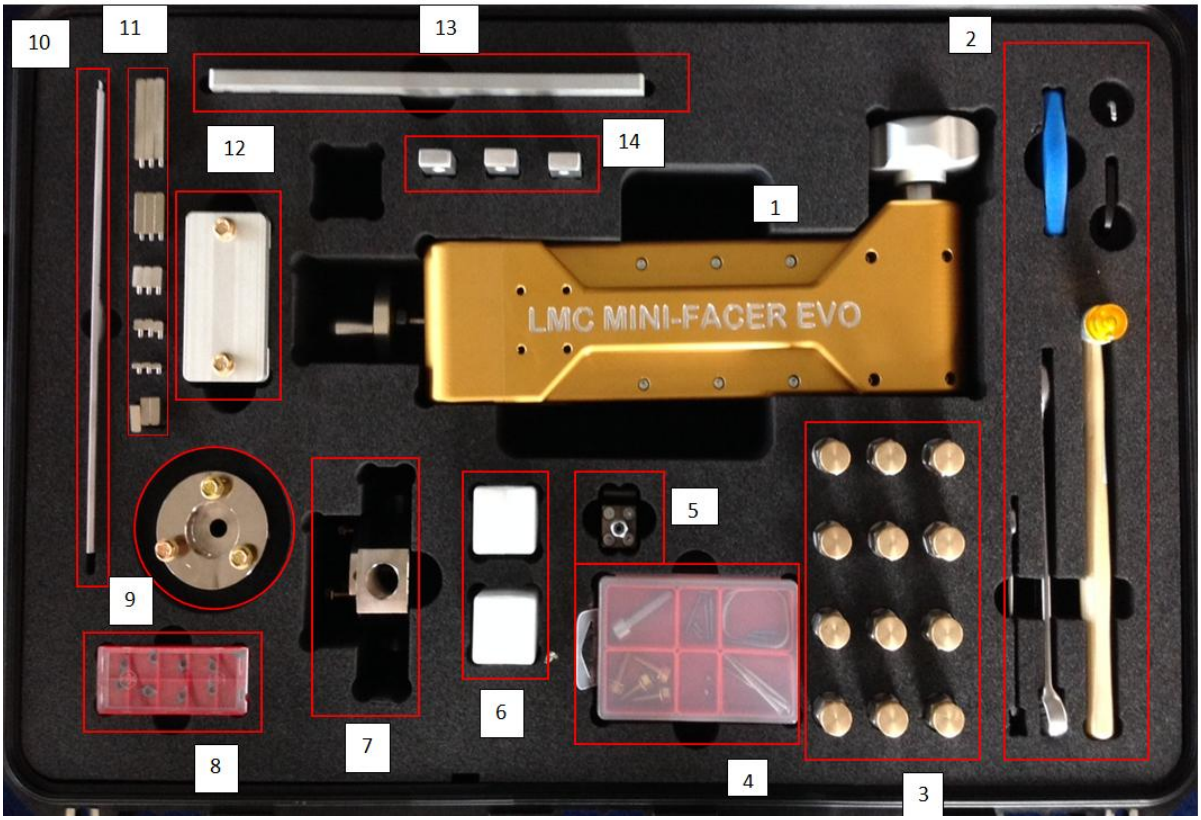
This sturdy carry case-trolley is suitable for the transport of the Mini facer EVO®™©

Attention

Weight of the case-trolley is 34 kg.

Do not lift the case- trolley manual

(1 person) to avoid injury.



1) Mini Facer EVO

2) Hand tools / set

3) Clamping feets

4) Box with boltset and ring springs

5) Tool holder

6) Cutting tool

7) Base

8) Cutting tips

9) Collet

10) Gib selector chart / Feet selector chart

11) Clamping gibs

12) Counterweight

13) Setting rail Counterweight

14) Setting bars

Do assure that the latches at the front and at the side of the carry case are firmly closed before lifting, moving, manipulating or carrying the case.

To protect the outside shell of the carry case , it is recommended to cover the case in a bubble film or full covering box when shipping .

shipping data : - dimensions : (83 x 54 x 43) cm

- weight : 34 kg.

Check after every transport that the case is intact and no damage has occurred .

In case of any damage ,replace the carry case for safety reasons and to avoid loss of tooling.

The periferical tooling to operate the Mini facer EVO®™© is also in this carry case. All tooling has a dedicated place in the box (cutout spaces foreseen) and is therewith clearly visible for the user .

During transporting the Mini facer EVO©™® case shall be fixed as load . Never put any heavy stuff on the Mini facer EVO®™© thus to avoid damage of the tool and the carry case.

3.2 Storage

- **Always store the Mini facer EVO®™© in a dry and clean place .**

- After every use dry and clean the Mini facer EVO with a clean cloth. Make sure that there is no swarf or metal particles in or at the Mini facer EVO because they can disturb the clamping aswel as the movement for normal operation . Remove the loose parts out of the Mini facer EVO, clean , inspect and lubricate slightly with a smooth film of spindle oil and put back into position.

- Then inspect to tool for eventual damage or loose parts (e.g. bolts) etc (If any loose parts repair or send to your agent for repair)

- After cleaning and inspection , lubricate the slides and spindle with a film of spindle oil, never use WD 40 or similar .

- If stored for long term, the storage shall be in warm dry conditions

4 Operating the Minifacer®™©

4.1 Intro

Operating the Mini facer EVO ®™© is very simple . Though it is of great importance to respect and apply all safety precautions .

4.2 Machining with the Mini facer EVO©™®

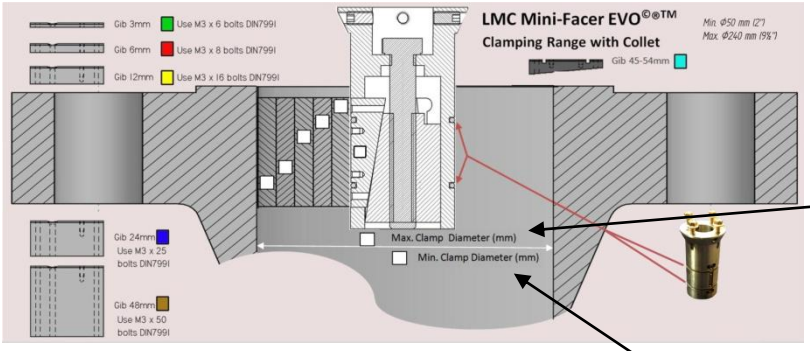
1) Check if the inside diam of the flange to machine is clean and does not show any obstruction or other elements that can disturb correct clamping of the gibs, or center shaft).

2) Measure the “id” of the flange and select the correct clamping system for the diameter of the flange to machine . Use the selector chart to choose the system
By a clamping diameter between 2" and 9" you can use the collet. (see **Clamping system 1 : collet** page 16 for the next steps for machining with the Mini facer EVO)
By a clamping diameter between 6" and 18" you can use base . (see **Clamping system 2 : base** page 18 for the next steps for machining with the Mini facer EVO)

Clamping system 1 : collet

3C) Use the gib selector chart to see which gibs are required for a correct clamping according to the inside diameter of the flange. If necessary mount gibs on each other , use the suitable bolts and allen key. (See the gib selector chart).

The suitable bolts and spring set are supplied in the red plastic box

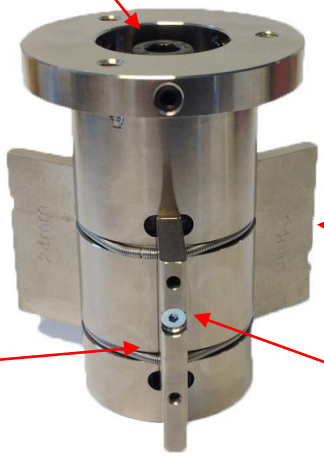


Max clamping diameter

Min clamping diameter

Gibs selector chart

Bolt for clamping collet



Gibs Mounted

Mounting springs can be left /mounted on the collet

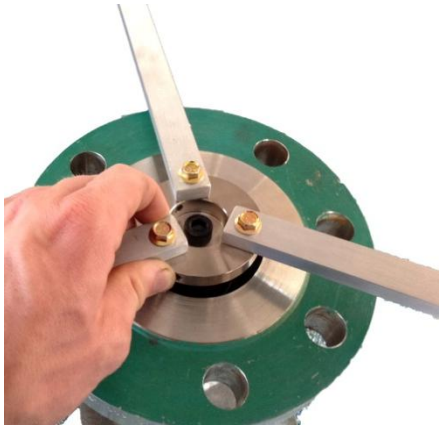
Bolt

4C) Turn the allen bolt so that the gibs are in its smallest diameter position , but avoid that you not lose parts

5C) Place the setting bars on the collet and connect them with 3 bolts SW10

6C) The collet is now ready to be fit into the bore of the flange.

7C) Place the collet with the clamping set and settings bars into the bore of the flange, keep the fingers around the clamping gibs and smoothly slide the clamps down into the bore.

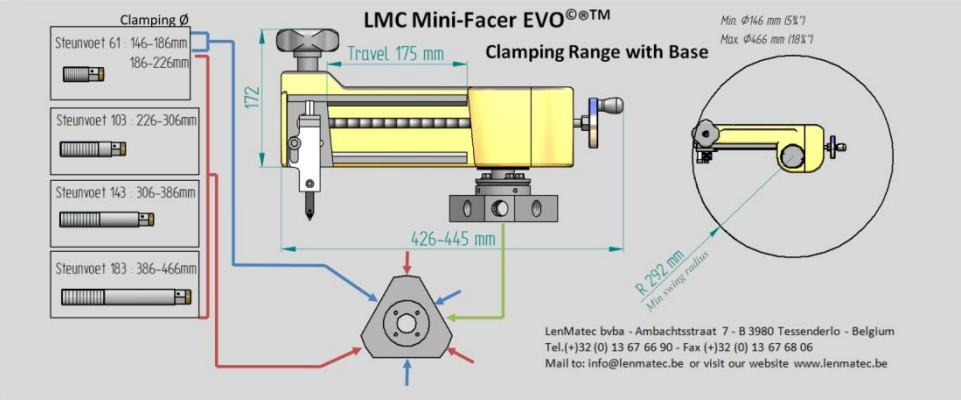


8C) Turn the bolt with the allen key know clockwise so the gibs go out and start to clamp into the bore. While turning the bolt slightly move the collet so that the centering is optimal.

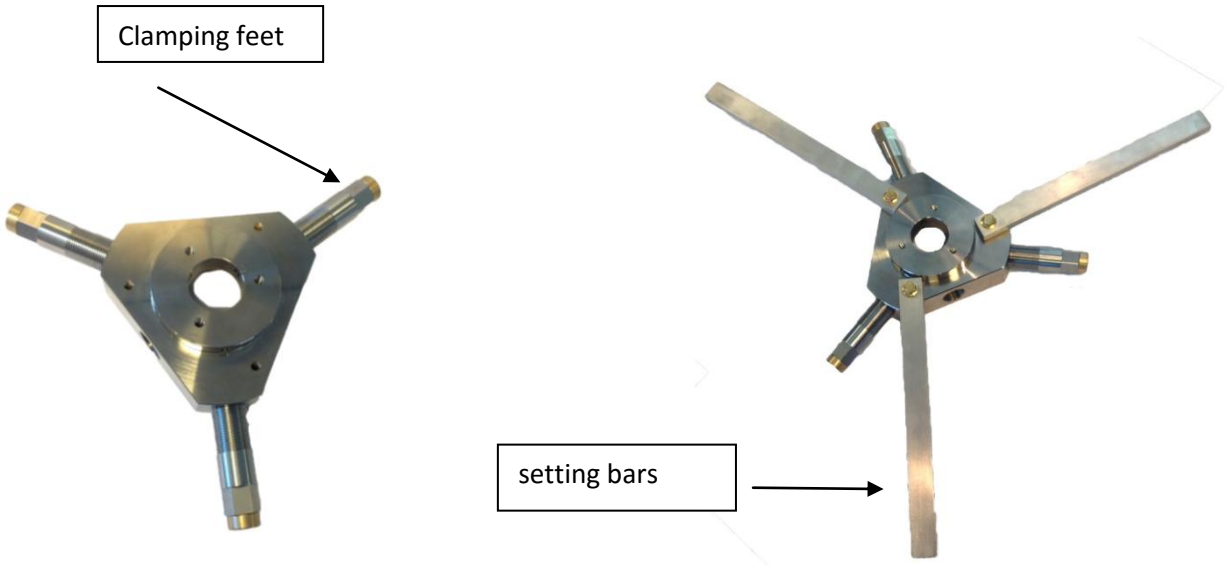
9C) Remove the align rules when the collet is fixed. Do this by unscrew the 3 bolts (SW 10) see step 10 for the next steps machining with the Mini facer EVO)

Clamping system 2: Base

3B) Use the clamping feet selector chart to see which clamping feets are required for a correct clamping.
Turn the suitable clamping feets in the base. Look hereby if the clamping feets have almost the same depth. (See the clamping feet selector chart).



Clamping feet selector chart



4B) Place the setting bars on the collet and connect them with 3 bolts SW10

5B) The collet is now ready to be fit into the bore of the flange

6B) Place the base with the clamping feets into the bore of the flange , keep the fingers around the clamping feets and smoothly slide the clamping feets down into the bore until the align rules rest on the flange face

7B) Align the clamping feets from the base, so that the centering of the base is optimal. Do this by turning the clamping feets. check that the base is correctly positioned by measuring the distance between the base and the inside of the flange

8B) Remove the align rules when the base is fixed. Do this by losing the 3 bolts (SW 10) see step 10 for the next steps machining with the Mini facer EVO.

10) Place the Mini facer EVO©™® on the clamping system and connect them together with 3 bolts (SW 10)

11) Place the cutting tool into the toolpost . Check the cutting tip and replace if necessary. Assemble the toolpost onto the toolslide so that the cutting tip faces towards you.

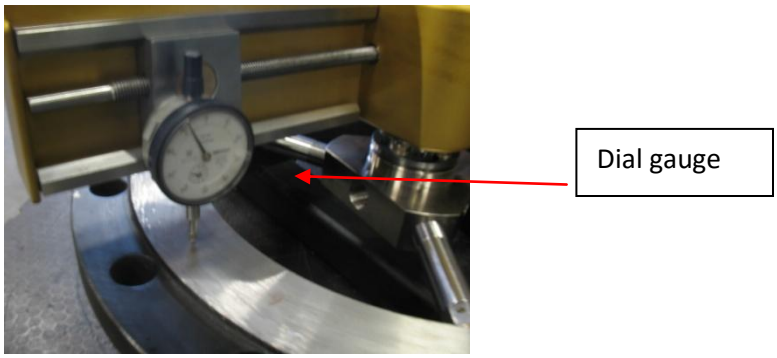
12) Switch the Mini facer EVO©™® in the neutral stand, push the Switch knob in the mid stand

Now you can turn the feed knob and replace the toolpost.

13) Turn the Mini facer EVO©™® and position the cutting tool towards the inside of the flange to face. Look if the cutting tool have the same distance to the flange face above the full surface. Is this is not the case then line the device out by losing the 3 bolts SW10 and turn the studbolts in the collet. (When turning a bolt clock wise , the Mini facer EVO©™® will go up on the side from the bolt.) After the align tighten the 3 bolts SW 10

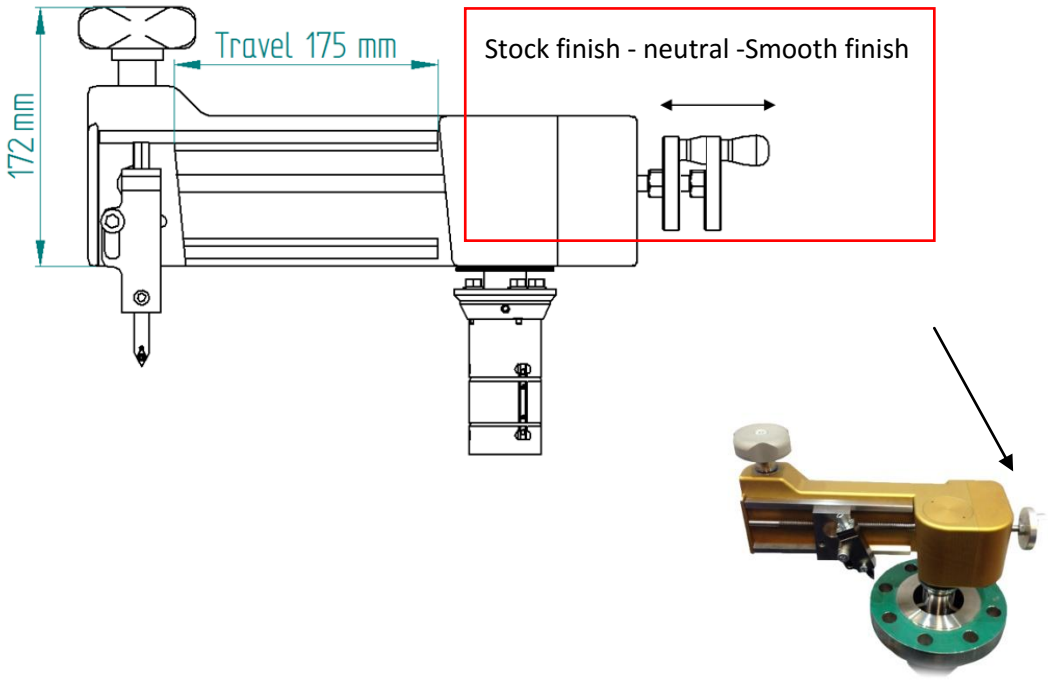
When a flanges is strongly deformed or damaged, align the Mini facer EVO on 3 place 120 degrees moved. Each measure point is hereby in the extension of the clamping feet/clamping gib

Instead of mounting the tool holder , can also connect a dial gauge to measure the deviation on the flange.

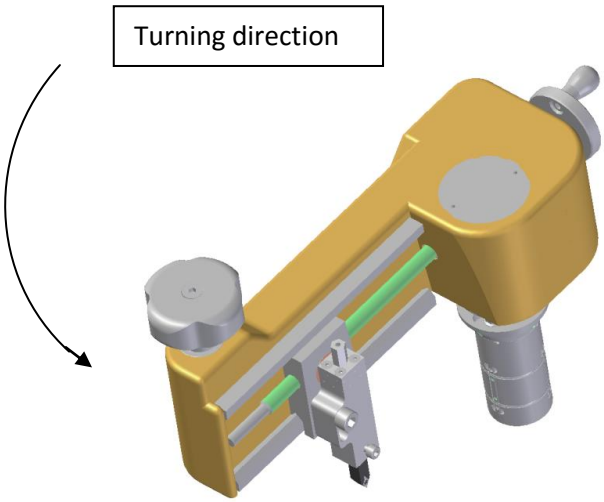


14) Bring the toolpost above the flange , release the fixing bolt on the toolpost , and feed down the cutting tool so that it just contacts the metal face. Position the cutting tool further inwards , until it has gone over the metal to machine (I.e. in a position that it is free) Feed down the cutting tool by turning the hex bolt SW 10 counter clock wise about 45 degrees. Then tighten the fixing bolt on the toolpost again.

15) Push/pull the switch knob in position 1 (stock finish) or position 2 (smooth finish) depending of the flange finish that is required.



16) Now grab the Alu knob with your hand and turn round counter clock wise . The feed system will now move the cutting tool automatically from inside to outside.



Recommendation

When a flange have to be machined in a verticale face is it recommended to place the setting rail for the couterweight and the counterweigt it self. By placing the counterweight there is less power necessary to machine the flange.

Important notice :

DO NOT STOP TURNING WHEN THE CUTTING TOOL IS MACHINING AND NEVER TURN INTO THE OPOSITE DIRECTION .

Otherwise the surface finish is not even and the cutting tip might break of.

If the whole area is not touched , then push the switch knob in the neutral stand , turn the cutting tip to the inside , release the fixing bolt on the toolpost , turn the cutting tip down for 1 1/12 revolution (equals +/- 0.1 mm down feed) . And repeat the machining operation . Repeat this until the whole gasket area is done .

After this operation go back to step 12.

Repeat step 12 to 13 until the whole surface of the flange is done

17) Turn until the cutting tip is over the metal to machine (outside the gasket face or surface area to machine)

18) When the operation is done and the gasket face is evenly machined , the job is ready.

19) To dismantle the Mini facer EVO from the clamping system, remove the toolpost (Alan bolt), then release the 3 hex bolts (SW 10 mm) and take the Mini facer EVO of the clamping system.

20) After dismantle the Mini facer EVO need only the collet or the base to removed. To do this in a safe way, it is advisable to place the three setting bars again on the basis or the collet. This avoids that the collet or base will fall undesirable.

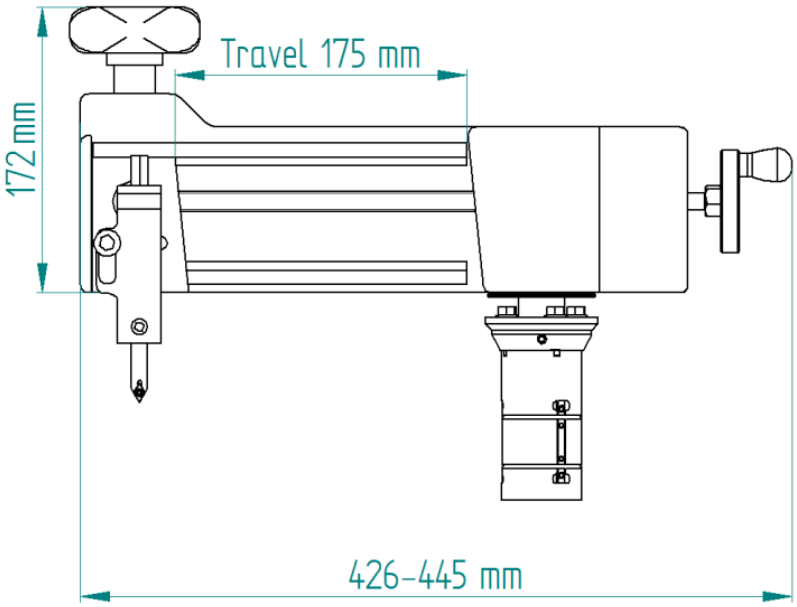
21) After mounting of the setting bars the clamping system can be removed.

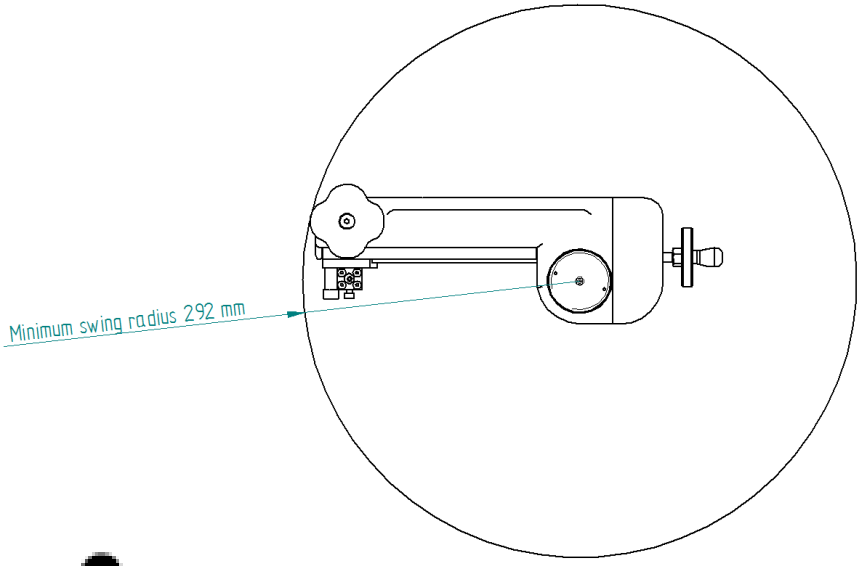
The collet can be removed by loosening the Allen screw with the wrench. While turning the allen screw hold the collet into position (by means the align rules) to prevent this component moving uncontrollably. Tap the allen screw with the plastic hammer if the collet is not coming loose.

The base can be removed from the flange by turning the clamping feets.

22) When the device and the collet / base are removed both can be cleaned and stored.

4.3 Dimensions





Please ask your distributor for more info if you find any problem operating the Mini facer EVO®™©