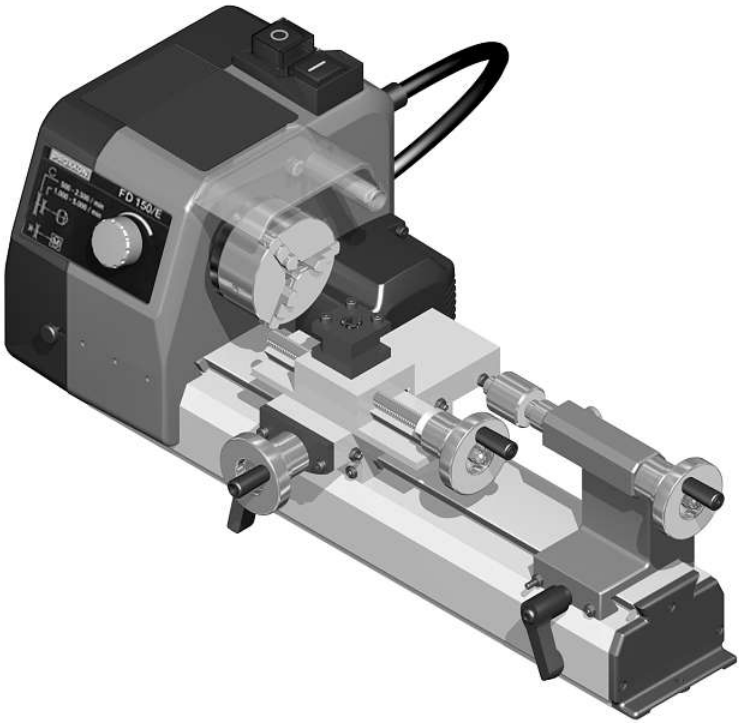
PROXXON



MANUAL

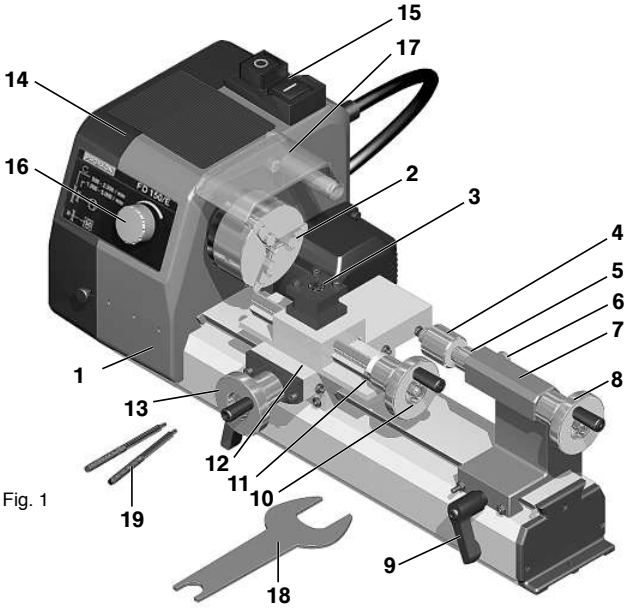


Fig. 1

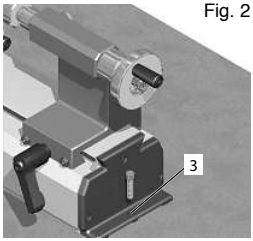


Fig. 2

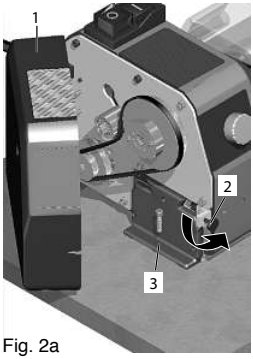


Fig. 2a

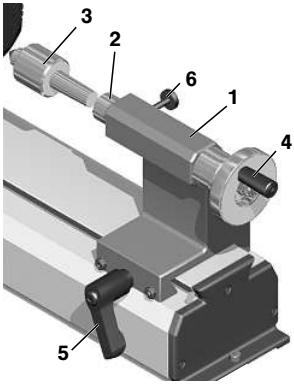


Fig. 3

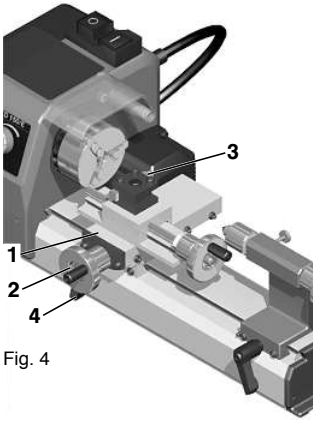


Fig. 4

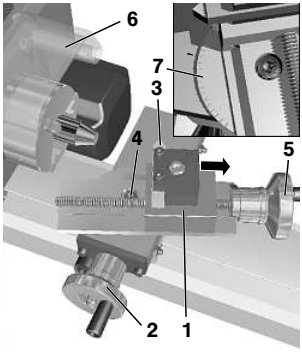


Fig. 5

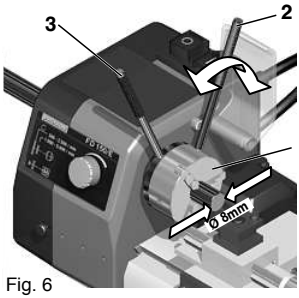


Fig. 6

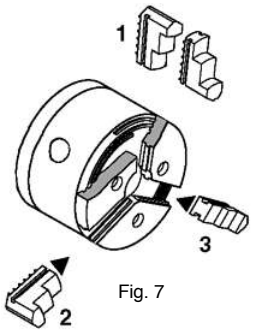


Fig. 7

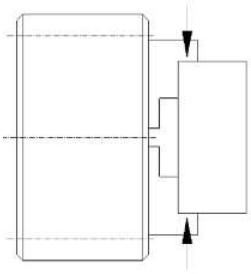


Fig. 7a

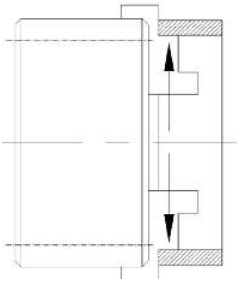


Fig. 7b

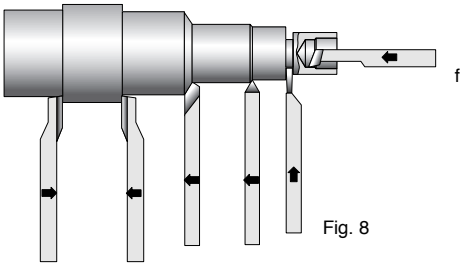


Fig. 8

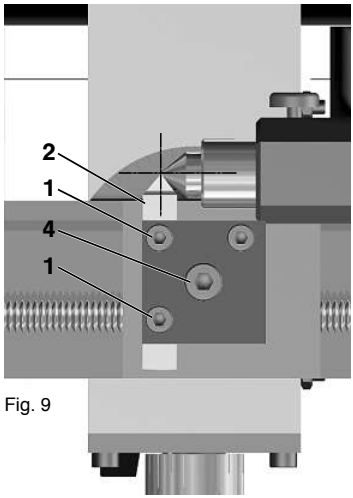


Fig. 9

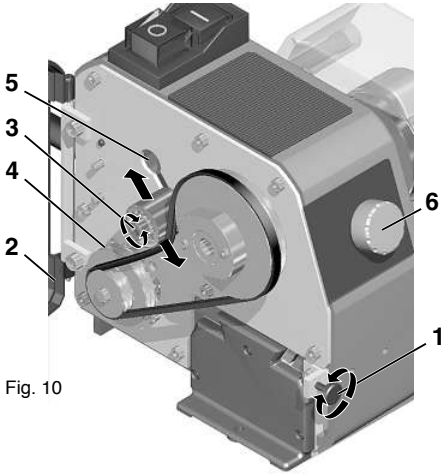


Fig. 10

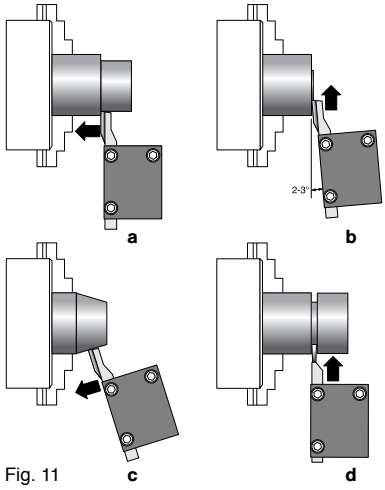


Fig. 11

GB Translation of the Original Operating Instructions FD 150/E Lathe

Contents:

Preface

The use of these instructions:

- **makes it easier** to become acquainted with the device,
- **prevents** malfunctions due to improper handling, and
- **increases** the service life of your device.

Always keep these instructions close to hand.
Only operate this device with exact knowledge of it and comply with the instructions.

PROXXON will not be liable for the safe function of the device for:

- handling that does not comply with the usual intended use
- other application uses that are not stated in the instructions
- disregard of the safety regulations
- operating errors
- lack of maintenance
- use of non-PROXXON spare parts

For your safety, please comply with the safety guidelines without fail.

Only use original PROXXON spare parts. All rights reserved for further developments in the course of technical progress. We wish you much success with the device.

Safety guidelines:

Avoid untidiness in your working area.
An untidy working area always means an increased accident risk.

WARNING!
Read all safety warnings and instructions. Failure to follow all safety warnings and instructions listed below may result in electric shock, fire and/or serious injury.

KEEP ALL SAFETY WARNINGS AND INSTRUCTIONS FOR THE FUTURE !

Fasten the device to a solid surface and make sure it is even.
Also, always make sure that the device cannot fall down or topple during operation.

Check the device for signs of damage before each use.
Please note: Defective parts, particularly damaged safety mechanisms, may only be replaced by a specialist or the PROXXON customer service. Only use original Proxxon spare parts.

Do not manipulate your machine!
Do not make any changes to the machine and do not manipulate anything! Changes or manipulations could impair the mechanical and electrical safety, but your safety in particular would also be at risk due to electric shock and further adverse effects. Injuries and material damage could be the result.

Never work without the designated safety mechanisms.

Pay attention to environmental effects!
Use the machine only in dry environments and never in the vicinity of combustible liquids or gases. Make sure you have good lighting!

Wear protective goggles!

Wear hearing protection!
The sound pressure level when working with the machine can exceed 85 dB (A), therefore always work with hearing protection!

Wear suitable working clothes!
When working, never wear loose clothing, such as neckties or scarves, as this could get caught in one of the moving parts or the automatically moving workpiece during operation and cause injuries. If you have long hair, wear a hairnet and remove your jewellery.

Do not use any damaged or deformed cutting tools.
Please make absolutely sure the cutting tools are in perfect condition. Visually check for this intact condition before each use!

Keep children and non-participants away from the working area.
Make sure that children and non-participants maintain an appropriate safety distance! Youths below the age of 16 may only use the machine under professional instruction and for purposes of schooling. When not in use, keep the machine out of the reach of children!

Do not overstress your tool.
Of course, you will only achieve optimal work results within the performance range for which the machine is designed! Therefore, avoid making the infeed too large! Do not misuse the machine, and do not use it for work for which it is not intended.

Always be prudent and attentive!
Observe the machine during work and proceed sensibly. Do not use the machine if you are distracted, tired, or if you have consumed alcohol.

Handle the connecting cable with care!
Protect the connecting cable from heat and sharp edges, and lay the cable so that it cannot be damaged. Do not pull on the cable to disconnect the plug from the socket outlet, and do not lift the device by the cable. Ensure cleanliness: Protect the cable from grease and oil!

Clean thoroughly after work!
Disconnect the mains plug!
Always unplug the mains plug when not in use, before maintenance, when changing tools, cleaning or repairing! Removing the chips is also a part of cleaning!

Carefully read the operating instructions before use and keep them in a safe place!

Overview of machine

Legend (Fig. 1)

1. Headstock
2. Lathe chuck
3. Cutting tool holder
4. Travelling lathe centre
5. Quill
6. Clamping screw for quill
7. Tailstock
8. Handwheel for quill
9. Clamping lever for tailstock
10. Handwheel for upper carriage
11. Upper carriage
12. Cross slide
13. Handwheel for cross slide
14. Gearbox cover
15. On-off switch
16. Rotational speed regulating knob
17. Chuck guard
18. Spanners
19. Dowel pins

Description of the machine

The FD 150/E is a compact precision lathe with suitably practical equipment: It offers a cross slide and an upper carriage, a sturdy headstock with a high-quality rolling bearing for the work spindle, a strong drive, and a tailstock with travelling lathe centre.
These features in conjunction with the high-strength and precise aluminium continuous casting base make the FD 150/E the specialist for all filigree workpieces.
The high rotational speed also accommodates the typical field of application:
The adjustable two-stage belt drive in combination with a sensitive control unit always ensures the suitable cutting speed even for the most minute workpiece diameters.
Apart from the classical possibilities of turning, the swivelling upper carriage also enables the manufacture of tapers or tapered elements. The drill chuck, available as accessory, makes frontal drilling of holes easy.
And for everyone with especially high requirements concerning concentricity, we have a collet set for this machine in our programme: The necessary ER11 holding fixture is provided in the main spindle. On the following pages we will introduce the machine and its possibilities in all details as well as the available accessories. The Proxxon team wishes you much happiness and success when working with your machine!

Scope of delivery

1 pc. FD 150/E Lathe
1 pc. Operating instructions
1 pc. Brochure with safety guidelines
1 pc. Open-end spanner
2 pc. Dowel pins

Technical data to FD 150/E Lathe:

Voltage:	230 Volt
Frequency:	50/60 Hz
Capacity:	100 watt
Length between centres:	150 mm
Height of centres:	55 mm
Height via support:	33 mm
Capacity of inside jaw:	1 – 20 mm
Capacity of outside jaw:	20 – 60 mm
Cross slide adjustment:	40 mm
Upper carriage adjustment:	60 mm
Spindle bore:	8.5 mm
Cone holding fixture, chuck side:	for ER 11 collets
Tool holder for tools:	6 x 6
Noise level:	< 70 dB(A)
Device dimensions:	360 x 150 x 150
Weight:	approx. 4.5 kg
Spindle speeds:	
- in gearbox stage 1:	800 – 2800 rpm
- in gearbox stage 2:	1500 – 5000 rpm

Noise/vibration information

The information on vibration and noise emission has been determined in compliance with the prescribed standardised and normative measuring methods and can be used to compare electrical devices and tools with each other.

These values also allow a preliminary evaluation of the loads caused by vibration and noise emissions.

Warning!
Depending on the operating conditions while operating the device, the actually occurring emissions could differ from the values specified above!

Please bear in mind that the vibration and noise emission can deviate from the values given in these instructions, depending on the conditions of use of the tool. Poorly maintained tools, inappropriate working methods, different work pieces, too high a feed or unsuitable work pieces or materials or unsuitable bits and cutters can significantly increase the vibration load and noise emission across the entire work period.

To more accurately estimate the actual vibration and noise load, also take the times into consideration where the device is switched off, or is running but is not actually in use. This can clearly reduce the vibration and noise load across the entire work period.

Warning:
- Ensure regular and proper maintenance of your tool
- Stop operation of the tool immediately if excessive vibration occurs!
- Unsuitable bits and cutters can cause excessive vibration and noises. Only use suitable bits and cutters!
- Take breaks if necessary when working with the device!

Only to be operated in closed rooms!

Do not dispose of the electrical device in the household waste!

Always work with hearing protection!

Wear safety glasses!

Danger!

Ensure that no clamping pins or keys remain in the holes in the chuck intended for this purpose after clamping!
Activation of the machine while clamping pins are in the chuck holes can fling these out or lead to jamming during starting.

DANGER!

Be sure to ensure that the turning jaws are tightened securely before switching on the device since they could be loosened by centrifugal force if there is no resistance.

Serious injuries or material damage may result as a consequence of this!

Set-up and commissioning

Danger!

Possibility of unexpected start-up! Injuries could be the result. Therefore, always disconnect the mains plug for all adjustment and maintenance work!

Setting up the device (Fig. 2a and Fig. 2b):

Caution!

Please check the device for any signs of damage in transit immediately upon unpacking! Damaged packaging may already indicate improper handling during transportation. Damage in transit must be claimed immediately with your dealer or the corresponding transport company!

The following elements are included with the standard equipment of the PROXXON FD 150/E lathe:

- Three-jaw chuck
- Chuck guard
- Travelling lathe centre
- Set of tools
- Tool holder

Caution!

When lifting the machine, make sure that the plastic hood 1 (Fig. 2 a) of the gear case is closed. Otherwise, close the hood and tighten the knurled screw 2, or else the cap could break as a result.

1. To set up the lathe, remove it from the packaging and set it up on a straight and level surface. The setup site must be stable and free from vibrations. Secure stability must be guaranteed!
2. Please note: The machine may only be operated if screwed securely to the surface! Drill holes (Item 3) in the angle flanges of the base end caps have been provided for this purpose. Please use screws with a 4 mm diameter.
3. In order to access the screw hole, it is important to fold up the plastic hood 1 of the gear case on the headstock side. To do so, simply release the knurled screw 2 (Fig. 2a) and swing open the plastic hood.

Lathe elements and their operation

Tailstock (Fig. 3):

The tailstock 1 on the right side of the machine base contains quill 2. The travelling lathe centre 3 is inserted into the inside cone contained within. This helps support and stabilise longer workpieces.

Caution!

When the chuck projection is greater than the 3-fold workpiece diameter, the workpiece should be generally held at the right end by the tailstock with the lathe centre.

Ideally, the centre should engage with a so-called centring hole. This can be established using the drill chuck available as accessory. The procedure is described in detail later on.

Caution!

The location tapers must always be absolutely clean.
Dirt and particularly metal chips impair accuracy and can render the quill and cone useless.

Working with the tailstock

1. To insert, e.g., the lathe centre 3, extend the quill 2 by turning the handwheel 4 approx. 10 mm.
2. Firmly insert the lathe centre with cone by hand into the quill. The cone is seated tightly and cannot be pulled out from the front.
3. To push the tailstock 1 approximately up to the workpiece, release the clamping lever 5 (Fig. 3), push the tailstock on the base guide to the required position and retighten the clamping lever 5. The lathe centre can be positioned on the workpiece face side with regulated light pressure by turning the handwheel 4. The quill should be clamped to this position by tightening the knurled screw 6 .
4. To release the cone of the travelling centre (or another utilised tool), turn the handwheel 4 to turn the quill 2 as far as possible into the tailstock after the work. The cone will release and can be removed.

Cross slide (Fig. 4)

The cross slide 1 enables the cutting tool 3 to move vertically to the rotary axis of the workpiece by turning the handwheel 2.
This permits the infeed during work, i.e. to regulate the rate of cut.
Caution: The handwheels of the machine are equipped with rotating scale rings: To traverse the carriage by a defined amount, the scale ring can be set to 0. The exact infeed can be read on the scale while operating the handwheel.

Also, this enables the machining a frontal plane face of a workpiece (face turning) or the so-called "parting" of a workpiece. This is understood as parting beyond the rotary axis so that the workpiece is detached.

Working with the cross slide

1. The cross slide (together with the upper carriage) can be pushed along the guide of the machine bed into the processing position at the workpiece. To do so, release clamping lever 4, move the carriage to the required position and retighten the clamping lever 4.
2. Regulate the position of the cutting tool 3 by turning the handwheel 2 before and during work.

Upper carriage (Fig. 5)

The upper carriage 1 enables the direct guiding and traversing of the tool holder including the cutting tool preferably in the longitudinal direction.
In addition, the upper carriage in our machine can be swivelled: This makes it possible to manufacture not just cylindrical workpieces by traversing the cutting tool parallel to the longitudinal axis of the machine (longitudinal turning): Cone-shaped workpieces or tapered sections can also be turned if the upper carriage is swivelled somewhat.
We have attached an angle scale to help set the angle of the cones to be manufactured.
The traverse path of the carriage on the precision dovetail guide is 60 mm.

Working with the upper carriage

When delivered, the upper carriage 1 is set exactly to =0°, i.e. for (cylindrical) straight turning.
1. Move the cutting tool 3 radially to the required position by turning the handwheel 2.
2. Switch on the machine. Caution: make sure that the chuck guard 6 is in the bottom position!

3. By turning the handwheel 5, move the upper carriage 1 with the cutting tool with the required infeed along the rotating workpiece.

If a cone or taper will be turned, the upper carriage 1 must be pivoted by the required amount:

1. By turning the handwheel 5, move the upper carriage 1 so far to the right until screw 4 can be accessed.
2. Loosen screw 4 and set the required conicity using the marking on the angle scale 7.
3. Retighten screw 4. Turning the handwheel 5 will traverse the upper carriage and thus the cutting tool during turning.

Please note that here, just as for the other handwheels of the machine, the scale rings are moveable and can be set to zero. The traveled path of the tool can then be read on the scale. One revolution of the handwheel corresponds to one millimetre route.

The three-jaw chuck (Fig. 6)

The chuck 1 serves as a holding fixture and for clamping the workpieces to be machined. It has a 8.5 mm opening, just like the work spindle of the machine. Thus, round materials with a rough diameter of 8 mm can also be guided through the spindle!

Caution!

When clamping a longer workpiece that is guided through the spindle and which projects out to the left, there is an increased risk of injuries. Be particularly careful in this case to prevent objects from being caught by the rotating shaft. Secure this area separately.

Clamping the workpiece:

Insert both pins 2 and 3 included in the delivery into the provided holes at the circumference of both chuck bodies and turn both chuck parts against each other to open the clamping jaws. The opposite turning direction causes the jaws to close after the workpiece has been inserted, thus clamping the workpiece.

Reversing the jaws (Fig. 7):

Fig. 7a shows the configuration of the jaws in the delivery condition. For example, tubes can be clamped from the inside or round materials can be clamped from the outside. For clamping larger outside diameters, the jaws can be revised (like shown in Fig. 7b).

1. Open the chuck far enough that the jaws can be removed from the chuck.
2. Jaws are double- and guides are single marked with numbers. Reverse jaws and insert it in a way so that the left number on the face side of the jaw corresponds to the number of the guide.
3. Start with jaw and guide 1! The sequence 1-2-3 has to be observed!
4. Press the jaw slightly and turn the in “Clamping” direction until the scroll inside the chuck body has "gripped" the toothing of the jaw.
5. Insert the second jaw and proceed as in the first.
6. With the third now the same procedure.
7. Then check that all jaws are centered.

The rotating tool holder

Select cutting tool (Fig. 8)

Caution!

For proper turning, it is imperative that:

- the correct cutting tool was selected for the corresponding purpose,
- the cutting edge of the cutting tool is sharp,
- the cutting edge of the cutting tool is positioned exactly in the "Centre"
- the correct rotational speed is used.

Here are the rotational speed types we have put together in our cutting tool set 24524 (accessories):

Left cutters (a)

- are used to wear off as much swarf in the left machining direction as possible in a short time, without special regard to the quality of the workpiece surface.

Right cutters (b)

- are used to wear off as much swarf in the right machining direction as possible in a short time, without special regard to the quality of the workpiece surface.

Roughing tools (c)

- for rough preparatory machining on workpieces. The special cut of this tool makes it suitable for large material removal without great requirements regarding surface quality.

Pointed tools (d)

- are used to achieve a clean surface with less chip removal.

Parting tools (e)

- for grooving and for separating the workpiece during parting.

Boring cutters (f)

- are used for interior diameter turning.

Clamping the cutting tool (Fig. 9)

Caution!

Insert the cutting tool as far as possible when clamping. A long projection causes vibrations, inaccuracies and a poor surface.

Cutting tools with a cross section of up to 6 x 6 mm can be clamped in the tool holder.

1. Turn out both fastening screws 1 (Fig. 9) until the selected cutting tool 2 fits into the holding fixture
2. Insert the tool in the tool holder groove and clamp tight with the screws 1. Caution: Insert the tool as far as possible when clamping!
3. Move the tip of the tool to the lathe centre of the tailstock and check the height.

It may be necessary to put, e.g., thin sheets covering the area underneath the tools in order to compensate the height for different sizes.

The tool holder provides the possibility of clamping two cutting tools at the same time. This simplifies work, because after adjusting the cutting tools between the individual machining stages for a workpiece, it is only necessary to swivel the tool holder in order to work with the respectively suitable tool.
To do so, simply loosen the Allen screw 4, swivel the tool holder and then retighten the screw 4. Of course it is possible to generally regulate the angle of the tool to the workpiece in this manner, if required.

Restart protection

Caution!

For safety reasons, the machine is equipped with a so-called restart protection: In case of brief voltage interruptions during operation, the machine will not restart for safety reasons.
But in this case, the machine can be started normally with the On button.

Demand-actuated rotational speed

The spindle speed needs to be adjusted according to workpiece material and diameter: On the one hand, the cutting speed decreases with smaller turning radii, which needs to be compensated by a higher rotational speed; on the other hand, the choice of the correct rotational speed is also dependent to a high degree on the material to be machined. The task here is to find the right compromise.
For that reason, we have equipped our lathes with an electronic speed control as well as a two-stage belt drive.
This covers the rotational speed range from 800 up to 5000 revolutions.

Setting the spindle speeds (Fig. 10)

Shifting the drive belt

Caution!

You absolutely must disconnect the mains plug before working in the gear case. Risk of injury!
1. Loosen the knurled screw 1 at the headstock and swing open the cover 2.
2. Loosen the Allen screw from the belt tightener 3.
3. Preselect the corresponding speed by shifting the drive belt 4. Please make sure the drive belt is seated correctly on the belt pulley!
4. Lightly press the tension jack 3 in the long slot 5 against the belt drive and then retighten the Allen screw. Ensure suitable belt tension. Too much tension increases wear to the belt and bearings and greatly slows down the motor.
5. Before starting work, close the gear case and retighten the knurled screw 1.

Electronic speed control

In addition to the selection of gearbox stages by means of shifting the drive belt, your machine also offers you the possibility to electronically adapt the rotational speed to the respective conditions.

1. Turn the rotational speed regulating knob Item 6 (Fig. 10) to the left or right to set the rotational speed during operation.

Working with the machine (Fig. 11):

Caution!

Always work within the intended performance range! Avoid spindle blockages caused by overloading. In the event of the spindle blocking during operation, please switch off the machine immediately and configure the feed and infeed for further machining to avoid overloading of the machine.

Caution!

Always work within the intended performance range! Avoid spindle blockages caused by overloading. In the event of the spindle blocking during operation, please switch off the machine immediately and configure the feed and infeed for further machining to avoid overloading of the machine.

Caution!

Before inserting the mains plug, please check if the information on the rating plate matches the local conditions of your mains supply. If they do not match, then damage or hazards during work could be result!

Caution!

Always wear hearing protection and protective goggles while working!

Caution!

Avoid abnormal body posture! Make sure you stand securely and can keep your balance.

Caution!

Only work with a folded down chuck guard! If the guard is defective, the machine may no longer be operated!

Example of straight turning (a)

Note:

Turning parallel to the rotary axis and machining cylindrical objects are the main applications of a lathe.

1. Clamp the workpiece as described in the chapter "Clamping the workpiece".
2. Make sure that the workpiece can be turned freely.
3. Set the necessary rotational speed by shifting the belts in the gear case (see previous section). Caution: Turn the rotational speed regulating knob to the left before switching on.
4. Clamp the appropriate tool in the tool holder (see "Clamping the cutting tool").
5. Move the support to the workpiece from right to left.
6. Set the cutting depth with the cross slide 1.
7. Move the cross slide and upper carriage up to the workpiece.
8. Switch on the machine using the master switch. Caution: Make sure that the chuck guard is folded down.
9. Traverse the cross slide and upper carriage by turning the handwheels. Caution: Do not let the carriage or cutting tool run against the lathe chuck!
10. When you have completed your work, use the master switch to shut off the machine.

Example of face turning (b)

Note:

This operating method is used to face turn the face side of a workpiece. To do so, proceed in the manner of the previously described straight turning with the following particularities:

1. Clamp the right cutter adjusted by approx. 2° to 3°. The angle adjustment must be set by swivelling the tool holder.
2. Move the cross slide with cutting tool from the outside to the inside (towards the centre) while machining the right face or shaft shoulders.

Caution!

For larger workpiece diameters, the cutting speed from the outside to the inside differs rather considerably. Therefore, infeed the cutting tool with the cross slide slowly and with sensitivity!

Example of taper turning (c)

The upper carriage is equipped with a scale and can be swivelled to two sides by 45° for taper turning. To do so, proceed as described at "Working with the upper carriage". The method of machining is the same as for straight turning.

Parting a workpiece (d)

Caution!

Insert the parting tool as far as possible when clamping. Pay attention to the exact height of the parting tool cutting edge! This should be at the level of the rotary axis or just slightly below it!

1. Clamp the parting tool at right angles into the tool holder.
2. Move the cross slide with the cutting tool with sensitivity from the outside to the inside (towards the centre). When it passes the rotary axis of the workpiece, it is separated.

Caution:

Proceed with great caution here to prevent the separated workpiece from flying around. Risk of injuries!

Machining longer workpieces with tailstock and lathe centre (Fig. 12)

1. For this purpose, a centring hole must be drilled on the right side of the workpiece.
2. Face turn the right face side as necessary.
3. Insert the drill chuck (accessory) in the quill 5 as described in the chapter "Inserting the drill chuck" and clamp a centring drill.
4. Release the clamping lever 2 and move the tailstock 6 with drill chuck and centring drill close to the front face of the workpiece. Retighten clamping lever 2.
5. Switch on the machine and drill the centring hole with the help of the quill feed. To do so, turn the handwheel 3 to the right on the tailstock and lightly push the centring drill in the workpiece with the quill. Switch off the machine.
6. Move the quill 5 back with the handwheel 3 until the cone of the drill chuck releases. Exchange the drill chuck for the travelling lathe centre 1.
7. Move the travelling centre 1, or the tailstock 6 up to the workpiece. Please note that the clamping lever 2 is clamped after having been pushed up to the workpiece.
8. Infeed the quill with the handwheel 3 until all play is eliminated.
9. Block the quill with the help of the knurled screw 4.

Repair and Maintenance

Cleaning

Caution!

Always disconnect the mains plug for all adjustment and maintenance work! Risk of serious injuries or damage due to inadvertent starting up of the device, or hazard due to electric shock!

1. After use, thoroughly clean all chips from the machine using a brush or handbrush. Do not use compressed air for cleaning.
2. Regularly lubricate or oil all moving parts, spindles and guides!

The outside of the housing can be cleaned with a soft, dry or damp cloth. It is possible to use mild soap or other suitable cleaning agent here. Solvents or cleaning agents containing alcohol (e.g. petrol, cleaning alcohol etc.) should be avoided, since these can attack the plastic housing casings as well as wash off the lubricants.

Please observe:
Changing the power supply cord may only be carried out by our Proxxon-Service-Department or a qualified specialist!

Adjusting the play of the guides (Fig. 13)

Note:

Even if the guides are regularly lubricated or oiled, it is unavoidable that the guides will exhibit play after some time due to wear.
The procedure described here using the example of the upper carriage is the same for all guides, therefore it applies analogously to the other guides on your lathe. For that reason they will not be treated separately here. Adjust the guides according to the motto: As "tightly" as necessary, as easy running as possible!
Please consider: If guides are set too closely, this causes higher operating forces as well as increased wear!

1. Release and slightly unscrew the counter nuts 1 (Fig. 13) of the adjusting screws 2 for the upper carriage 3 using an open-end spanner 5.
2. Evenly turn in the adjusting screws 2 with an Allen key 4 until the play is eliminated.
3. Retighten the counter nuts 1. In the process, hold the adjusting screws 2 in position with the fixed spanner 5 so that they do not misadjust again.
4. Then check if the support can still be moved easily and if it runs completely without play.

Adjusting the play of the handwheels (Fig. 14):

Just as for the guides, handwheel wear during operation cannot be avoided which ensures that the backlash increases slowly but consistently. To minimise this again, please proceed as follows:

1. Hold on to the handwheel 1 and release the cap nut 2.
2. Turn the handwheel slightly to the right.
3. Retighten the cap nut while still holding the handwheel.

Please consider here as well:
The complete elimination of the backlash and a too "tight" adjustment for the handwheels is unreasonable: If the handwheels are set too closely, this causes higher operating forces as well as increased wear here as well!

Accessories for the FD 150/E

Cutting tool set (Article 24524)

The contents of the cutting tool set were already introduced in the chapter "Select cutting tool"

Ring gear drill chuck (Article 24152)

Drills with sizes 0.5 to 6.5 mm can be clamped in the drill chuck to manufacture holes on the plane side.

Inserting the drill chuck (Fig. 15)

1. Remove the travelling lathe centre from the quill as explained at "Working with the tailstock".
2. Appropriately clean off the grease and dirt from the cone of the chuck 1 and quill 2.
3. Insert the collar into the quill and firmly push on the drill chuck.
4. Clamp the drill.
5. The complete tailstock 3 can now be moved up to the workpiece to be machined after the clamping lever 4 has been released. Then tighten clamping screw 4.
6. Turn the handwheel 5 to move the drill up to the workpiece.
7. Switch on the machine and turn the handwheel 5 to lower the drill to the required depth in the workpiece.

A tip: If the drill is set down very lightly, the scale ring 6 can be "zeroised". This enables the manufacture of drill holes with a defined depth by observing the scale markings and counting the handwheel revolutions during infeed: One revolution will traverse the drill by 1 mm.

Multiple range ER 11 collets (Article 24154)

The collets are particularly suitable for machining round parts with great precision. The true running accuracy is considerably higher here than when working with a jaw chuck.

Caution!

It is possible to use workpieces with diameters of up to 0.5 mm below the nominal diameter of the collet.

Caution:

Never tighten the swivel nut if no workpiece was inserted.

Inserting the collets (Fig. 16)

1. Use the wrench 1 supplied with the machine to hold the main spindle 2 at the provided flat surfaces and screw off the chuck 3 from the main spindle.
2. Thoroughly clean the fit for the collet holding fixture 4 in the main spindle.
3. Utilise the collet 5 and slightly unscrew the swivel nut 6.
4. Insert the appropriate workpiece in the collet and tighten the swivel nuts 6 with the wrench 7 provided with the collet set.

Disposal:

Do not dispose of the device in the household waste! The device contains materials that can be recycled. If you have questions concerning this topic, please contact your municipal disposal company or other appropriate municipal institutions.

EC Declaration of Conformity

Name and address:
PROXXON S.A.
6-10, Härebierg
L-6868 Wecker

Product designation:	FD 150/E
Article No.:	24150

In sole responsibility, we declare that this product conforms to the following directives and normative documents:

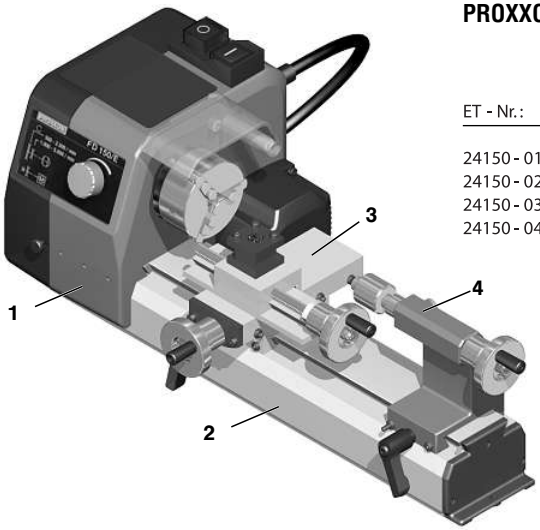
EU EMC Directive	**2014/30/EU**
	DIN EN 55014-1 / 05.2012
	DIN EN 55014-2 / 11.2014
	DIN EN 61000-3-2 / 03.2015
	DIN EN 61000-3-3 / 03.2014
EU Machinery Directive	**2006/42/EC**
	DIN EN 62841-1/07.2016

Date: 18.09.2017

Dipl.-Ing. Jörg Wagner

PROXXON S.A.
Machine Safety Department

The CE document authorized agent is identical with the signatory.

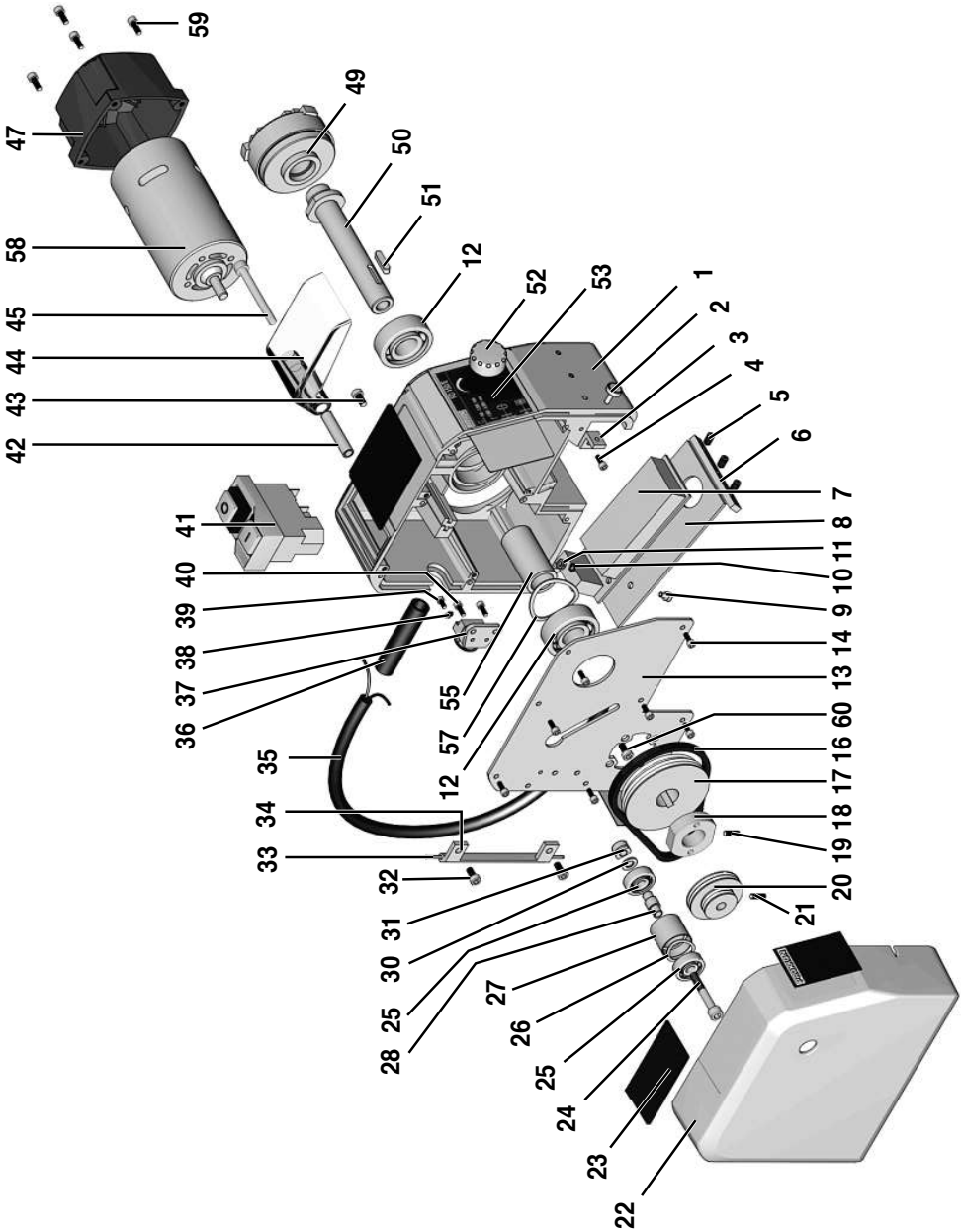


PROXXON FD 150/E

ET - Nr.:	Designation
24150 - 01	Motor and Headstock
24150 - 02	Lathe bed
24150 - 03	Slide rest
24150 - 04	Tailstock

ET - Nr.:	Designation
24150-01-01	Headstock
24150-01-02	Knurled knob
24150-01-03	Bracket
24150-01-04	Screw
24150-01-05	Set screw
24150-01-06	Adjusting plate
24150-01-07	Board (complete)
24150-01-08	Plastic plate
24150-01-09	Screw
24150-01-10	Washer
24150-01-11	Ring nut
24150-01-12	Main spindle bearing
24150-01-13	Motor mounting plate
24150-01-14	Screw
24150-01-16	Driving belt
24150-01-17	Poulley for spindle
24150-01-18	Nut
24150-01-19	Set screw
24150-01-20	Motor belt pulley
24150-01-21	Set screw
24150-01-22	Cover
24150-01-23	Mat (Cover)
24150-01-24	Screw
24150-01-25	Ball bearing
24150-01-26	Wave spring
24150-01-27	Belt pulley
24150-01-28	Axis
24150-01-30	Sleeve
24150-01-31	Nut

ET - Nr.:	Designation
24150-01-32	Screw
24150-01-33	Pin
24150-01-34	Hinge
24150-01-35	Power supply cable
24150-01-36	Tension relief
24150-01-37	Strain relief
24150-01-38	Toothed washer
24150-01-39	Brass screw
24150-01-40	Screw
24150-01-41	On-Off--Switch
24150-01-42	Bushing
24150-01-43	Screw
24150-01-44	Chuck cover
24150-01-45	Screw
24150-01-47	Cover
24150-01-49	Chuck
24150-01-50	Spindle
24150-01-51	Featherkey
24150-01-52	Rotary knob
24150-01-53	Label
24150-01-54	Type plate (not shown)
24150-01-55	Bushing
24150-01-57	Spring washer
24150-01-58	Motor
24150-01-59	Screw
24150-01-60	Screw
24150-01-99	Manual and Safety instructions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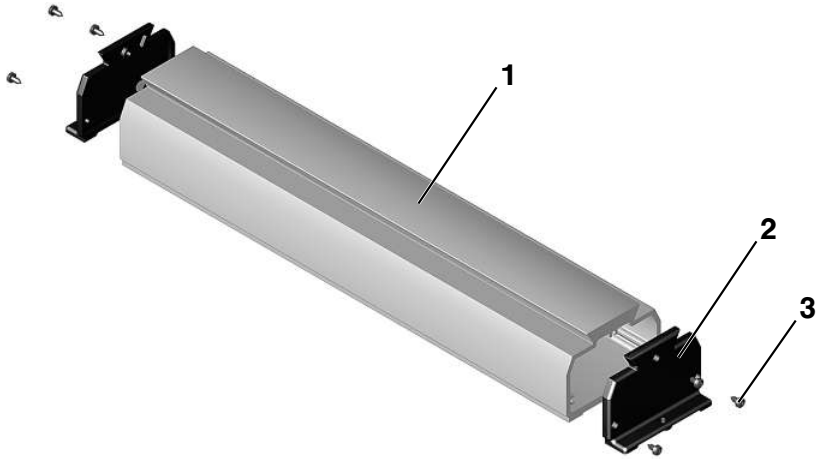
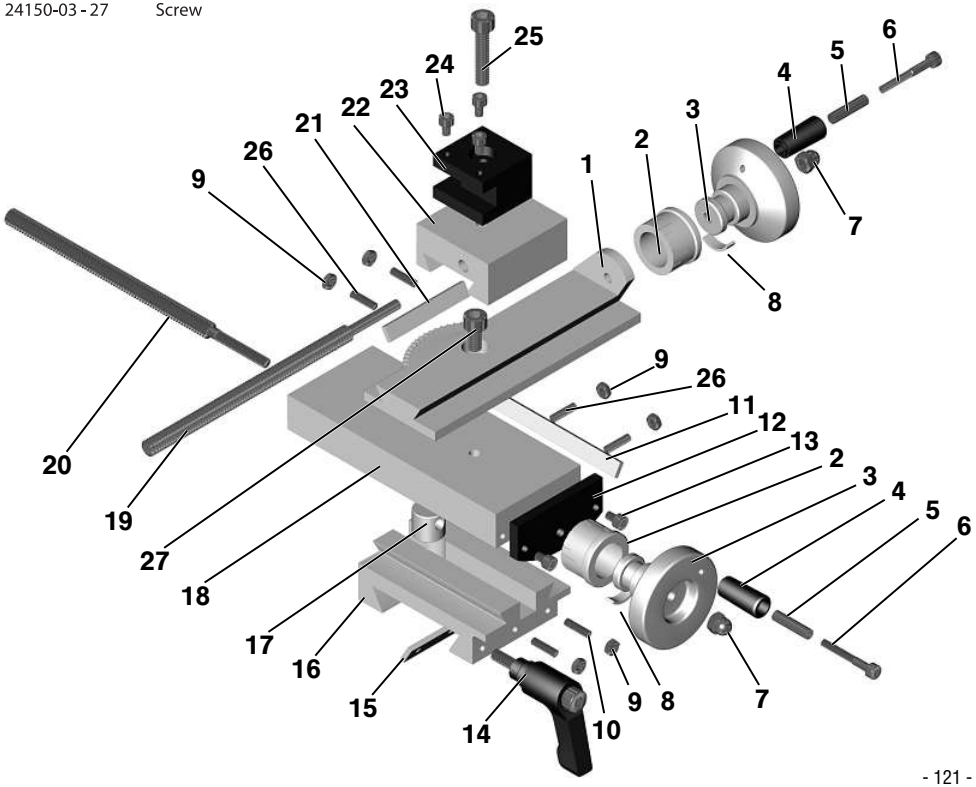
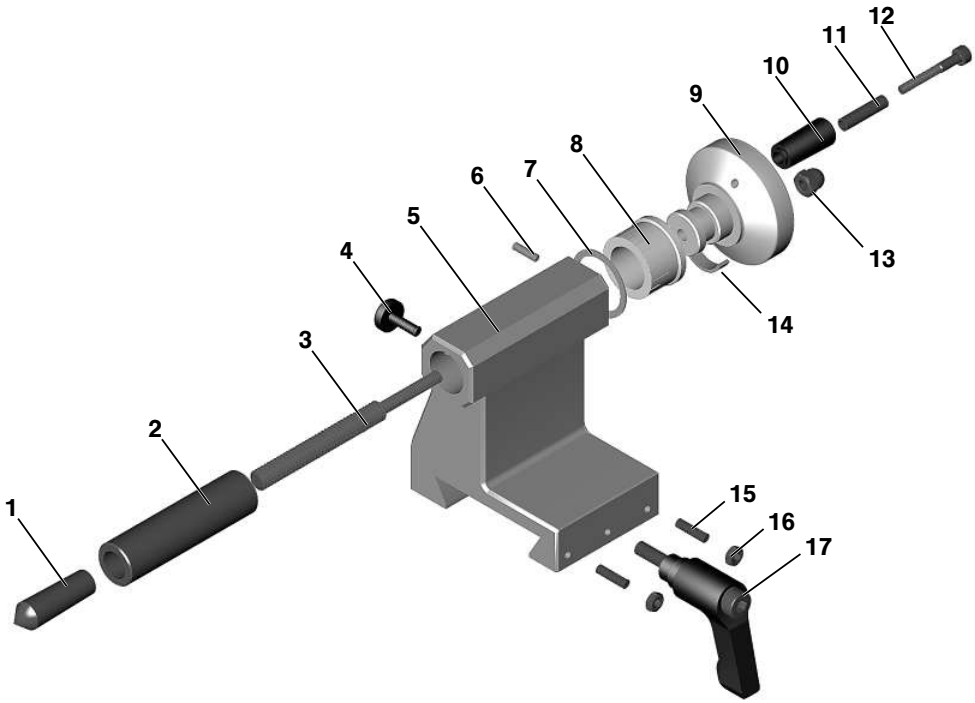
ET - Nr.:	Designation
24150 - 02 - 01	Lathebed
24150 - 02 - 02	Cap
24150 - 02 - 03	Screw



ET - Nr.:	Designation
24150-03 - 01	Guidance
24150-03 - 02	Scale ring
24150-03 - 03	Handle
24150-03 - 04	Pin
24150-03 - 05	Bushing
24150-03 - 06	Screw
24150-03 - 07	Cap nut
24150-03 - 08	Flat spring
24150-03 - 09	Nut
24150-03 - 10	Set screw
24150-03 - 11	Adjustingplate
24150-03 - 12	Plate
24150-03 - 13	Screw
24150-03 - 14	Clamp lever
24150-03 - 15	Adjustingplate
24150-03 - 16	Carriage
24150-03 - 17	Spindlenut
24150-03 - 18	Cross slide
24150-03 - 19	Spindle
24150-03 - 20	Spindle
24150-03 21	Adjustingplate
24150-03 - 22	Top slide
24150-03 - 23	Tool holder
24150-03 - 24	Screw
24150-03 - 25	Screw
24150-03 - 26	Set screw
24150-03 - 27	Screw



ET-Nr.:	Designation
24150-04-01	Rotatingcentre
24150-04-02	Sleeve
24150-04-03	Spindle
24150-04-04	Screw
24150-04-05	Tailstockbody
24150-04-06	Setscrew
24150-04-07	Washer
24150-04-08	Scalering withspring
24150-04-09	35 mm handwheel
24150-04-10	Grip
24150-04-11	Bushing
24150-04-12	Screw
24150-04-13	Capnut
24150-04-14	Spring
24150-04-15	Setscrew
24150-04-16	Nut
24150-04-17	Clamphandle



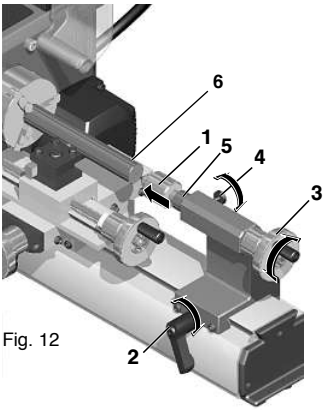


Fig. 12

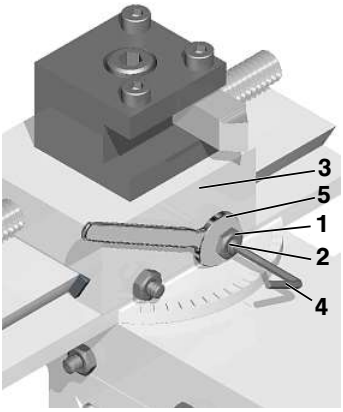


Fig. 13

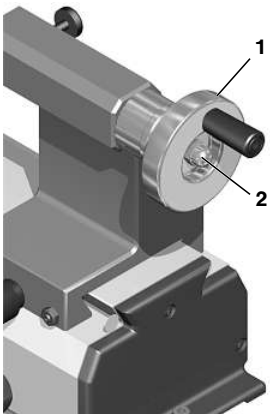


Fig. 14

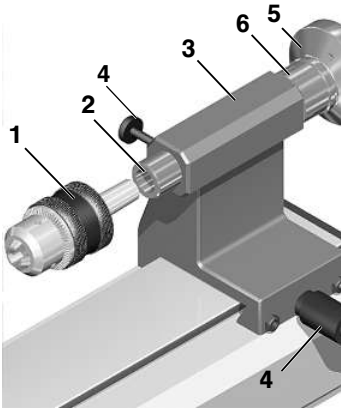


Fig. 15

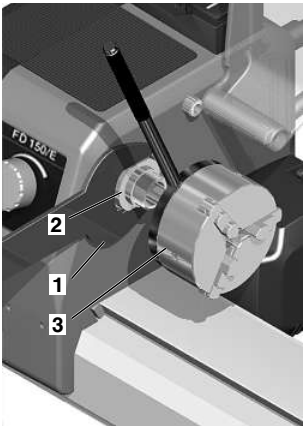


Fig. 16

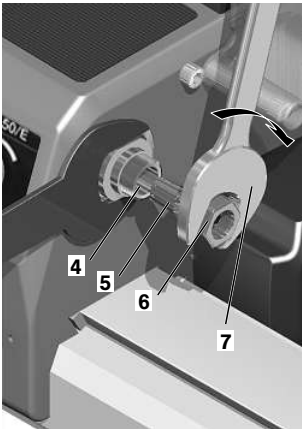


Fig. 16a

PROXXON

(GB) Service note

All PROXXON products are thoroughly inspected after production. Should a defect occur nevertheless, please contact the dealer from whom you purchased the product. Only the dealer is responsible for handling all legal warranty claims which refer exclusively to material and manufacturer error.

Improper use, such as capacity overload, damage due to outside influences and normal wear are excluded from the warranty.

You will find further notes regarding "Service and Spare Parts Management" at www.proxxon.com.

Art.-Nr. 24150-99 PR 709717702 J