

DRECHSELMEISTER TWISTER FU-180 TWISTER FU-180 TV Woodturning Lathe

Original Operating Instructions





DRECHSELMEISTER

Dear customer,

Thank you for choosing the **DRECHSELMEISTER TWISTER FU-180** lathe.

The **TWISTER FU-180** is a lathe that combines innovation with tried-and-true methodologies. This woodturning lathe is the great result of a cooperation of experienced woodturners and engineers and is suitable for beginners, advanced turners, professionals and artists alike at an exceptional price-performance ratio.

Continuous support is important to us. If you have any questions concerning our products or service, please call us or send us an e-mail. We are happy to hear from you. Your experience enables us to further improve the quality of our lathes.

Sincerely yours

Note:

For the purpose of continuous improvement, the manufacturer reserves the right to make technical changes and changes to the information provided at any time without prior notice and without incurring any obligations on the manufacturer. No part of this document may be reproduced or transmitted in any form without express written permission, regardless of the means of doing so.



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Applied directives/standards

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU

Applied harmonised standards:

EN ISO 12100:2010;
EN 60204-1:2018;
EN ISO 13849-1:2015;
EN 61000-6-2:2019;
EN 61000-6-4:2019

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Explanation of symbols

	Wear eye protection		Danger to lathe, material, or environment		Important notes
	Wear ear protection		Environmentally hazardous substance		Do not dispose together with domestic waste
	Wear protective footwear		Imminent danger to health and risk of serious injuries		
	Wear respiratory protection		Notes on using the operating instructions		

Introduction

This manual contains instructions on safety, assembly, operation and maintenance, and spare parts lists.

If you take into account the recommendations given in these instructions, the **TWISTER FU-180** will give you years of failure-free service.

1 | Warranty

This product is subject to the statutory warranty according to Austrian law from the time the product is handed over.

There is no basic claim to replacement or rescission.

In case of a complaint, please contact your local dealer. He will coordinate the further procedure with you.

2 | Basic health and safety instructions for power tools



Please note:

Failure to read and observe these operating instructions may result in serious injury. As with all machinery, operating a woodturning lathe can lead to dangerous situations. Careful use and handling can significantly reduce the risk of injury. Neglecting basic precautions can lead to user injuries. The machine is designed exclusively for the recommended use. Therefore, do not carry out any work on the machine that is not intended by the manufacturer and do not make any changes whatsoever. If you have any questions regarding the use of the machine you cannot find an answer to in these operating instructions, please contact your dealer.

Workplace safety

- a. **Keep your workplace clean and well lit.** Messy or unlit workplaces can lead to accidents.
- b. **Do not use power tools in potentially explosive environments where flammable liquids, gases or dusts are present.** Power tools may produce sparks which can ignite the dust or vapours.
- c. **Keep children and other people away while using the power tool.** Distraction can cause you to lose control of the power tool.

Electrical safety

- a. **The plug of the power tool must fit into the socket. The plug must not be changed in any way. Do not use adapter plugs together with earthed power tools.** Unmodified plugs and matching sockets reduce the risk of an electric shock.
- b. **Avoid physical contact with earthed surfaces such as pipes, heaters, stoves and refrigerators.** There is an increased risk of an electric shock if your body is earthed.
- c. **Keep your power tool away from rain or moisture.** Water entering a power tool increases the risk of an electric shock.
- d. **Do not misuse the power cord to carry the power tool, hang it up or pull the plug out of the socket. Keep the power cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled power cords increase the risk of an electric shock.
- e. **If operating the power tool in a damp environment cannot be avoided, use a residual-current circuit breaker.** Using a residual-current circuit breaker reduces the risk of an electric shock.

Personal safety

- a. **Be attentive, pay attention to what you are doing and take the utmost care when operating a power tool. Do not use a power tool when you are tired or under the influence of drugs, alcohol or medication.** One moment of carelessness when using a power tool can cause serious injury.
- b. **Wear personal protective equipment and safety glasses.** Wearing personal protective equipment such as dust mask, non-skid safety shoes, hard hat or ear protection, depending on the type and use of the power tool, reduces the risk of personal injury.
- c. **Avoid unintentional starting. Ensure the power tool is switched off before connecting it to the power supply and/or battery pack, picking it up or carrying it.** Carrying power tools with your finger on the switch or connecting activated power tools to the power supply can cause accidents.
- d. **Remove any adjusting tool or spanner before turning the power tool on.** A tool or spanner that gets caught in a rotating part of the power tool can cause injuries.
- e. **Avoid an abnormal posture. Ensure secure footing and maintain balance at all times.** This enables better control of the power tool in unexpected situations.

- f. **Wear suitable clothing. Do not wear loose clothing or jewellery. Keep your hair and clothing away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- g. **If dust extractors and collectors can be installed, ensure these are connected and used properly.** Using a dust extractor can reduce dust-related hazards.
- h. **Do not let familiarity gained from frequent use of the power tool allow you to become careless and ignore tool safety principles.** Within a fraction of a second, careless behaviour can lead to serious injuries.

Use and care of the power tool

- a. **Do not overload the power tool. Use the appropriate power tool for your work.** Using the right power tool will enable you to work better and safer within the indicated power range.
- b. **Do not use a power tool if its switch is defective.** A power tool that cannot be turned on or off is dangerous and must be repaired.
- c. **Disconnect the plug from the socket and/or remove the battery pack before making any adjustments to the device, changing inserts or putting the power tool away.** This precaution prevents the unintentional start of the power tool.
- d. **Store idle power tools out of the reach of children. Do not allow persons unfamiliar with the power tool or its instructions to operate the power tool.** Power tools are dangerous when used by inexperienced people.
- e. **Maintain power tools and accessories with care. Check whether moving parts are working properly and are not jammed, and whether parts are broken or damaged to the extent that the function of the power tool is impaired. Have damaged parts repaired before using the power tool.** Many accidents are caused by poorly maintained power tools.
- f. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to jam and easier to control.
- g. **Use the power tool, accessories, etc., according to the present instructions. Take into account the working conditions and the work to be performed.** The use of power tools for other than its intended applications can lead to dangerous situations.
- h. **Keep handles and gripping surfaces dry, clean and free from oil and grease.** Slippery handles and gripping surfaces do not allow for safe handling and control of the power tool in unexpected situations.
- i. **Only connect the type F plug of the machine to an earthed socket. Do not** turn on the machine if it is not earthed.

Service

- a. **Only have your power tool repaired by qualified personnel and only with original spare parts.** This ensures that the safety of the power tool is maintained.

3 | General health and safety instructions for woodturning lathes

- a. Wear **personal protective equipment (PPE)**.



Ear protection: Wear ear protection for longer work. Certain materials can produce an increased noise level during wood turning.



Safety glasses / face shield: Always wear at least safety glasses when working on the machine. If necessary, use a full eye protection or face shield, since normal eyeglasses are usually only shock-resistant and safety glasses only protect the eyes. A face shield protects eyes and face.



Respiratory protection: When processing different types of wood, exotic wood-based and other materials, and when performing certain tasks like sanding, sawing or drilling, dusts are produced that are harmful to health. Therefore, operate the machines only in well-ventilated areas and wear respiratory protection. Use also a suitable dust extractor and/or a filtering system of the circulating air.

If you are using the woodturning lathe commercially, an automatic chip and dust extractor approved by the professional association must be installed.

- b. **Inform yourself about the lathe before using it for the first time.** If you are unfamiliar with the function of a lathe, get professional support. An instruction by an experienced and trained woodturner is strongly recommended.

- c. **Minimum age.** The minimum age to use a lathe is 16 years.

- d. **Wear suitable clothing.**



Rotating parts can be dangerous. Clothing, jewellery and long hair can get caught in the rotating parts. Therefore, do not wear loose clothing or jewellery and use a headgear or hairnet. Avoid wearing gloves that can get caught during turning. Wear protective footwear and make sure the floor is non-slip.

- e. **Do not work in damp, dark and dangerous environment.** The lathe is designed exclusively for indoor use. Protect the lathe from hazy or damp locations and do not expose it to wet conditions. Ensure adequate lighting and ventilation of the workplace. Avoid areas with explosive atmospheres. Failure to comply with these rules may result in warranty loss.

- f. **Keep your workplace neat and clean.** Untidy workplaces and tables cause accidents. Do not switch on the lathe until all objects (tools, pieces of wood, etc.) have been removed from it. Keep the immediate work area and floor free from dirt and leftover pieces. Accumulated sawdust is a fire and accident risk.

- g. In case of a **power failure**, the workpiece is no longer slowed down. The run-down time may be longer.

- h. **Avoid unintentional starting.** Make sure that the main switch (if present) is in the "OFF" position when connecting the lathe to a type F socket.

- i. **Do not leave the lathe running unattended.** Do not leave the lathe until the power is turned off and the machine has come to a complete stop.

- j. **Use the right tool.** Use only suitable tools or accessories for wood turning. Avoid unnecessary force of the tools. Keep the woodturning tools in good condition. Sharp and clean tools guarantee best results and minimise the risk of injury. Ensure that the tool is in the correct position to the workpiece.

- k. **Working on the lathe.** Make sure the electrical voltage is switched off and then check the spindle by turning it with your hand to see whether the workpiece can move freely.

Check the workpiece to prevent parts of it from chipping during turning.

When using adhesives (even cyanoacrylate superglues), bear in mind that they can still be liquid in voids or wide cracks even after hours of drying. During turning, they can leak due to the centrifugal forces and fly in the direction of the chip flight, i.e. in the direction of the woodturner, posing a health or injury risk.

Always check that the correct speed is set before switching on the spindle.

Use the lowest speed for new or out-of-balance workpieces.

Always turn at the recommended speed. For more information see page 19/20. Do not try to slow down workpieces by hand.

Place the tool rest as close as possible (about 5-10 mm) to the workpiece. Before each start, rotate the workpiece by hand to make sure that it runs freely. Turn off the lathe from time to time and readjust the tool rest.

- l. **Pay attention to secure footing** (foot position, balance).

- m. **Make sure there is enough work space around the machine.** Untidy work surfaces and floors can lead to injuries.

- n. **Use only original accessories** and follow the steps described in the operating instructions. Using accessories from other manufacturers may result in injuries.

4 | Safety devices

Safety devices serve to protect persons and material. Without intact safety devices serious injuries can occur.



Danger!

The lathe may only be operated with functioning safety devices. Switch off the lathe immediately if you discover that a safety device is faulty or disassembled. All additional systems installed by the operator must be equipped with the prescribed safety devices.

Warning labels on the lathe

All warning labels on the lathe are for your safety. Always keep them readable and pay attention to their meaning.



Overview of safety devices

The lathe has various safety devices:



1. Protective conductor connected to the local power via a type F plug.
2. Cover above the pulley drive. Access only possible with a tool.
3. Covers on the electric motor.
4. Emergency stop button on the mobile control box.
5. Stops on both ends of the bed.

EMERGENCY STOP / ON and OFF function

The lathe has a red combination switch (0) which is used to trigger an **EMERGENCY STOP** or to turn off the machine normally. By pressing the **red** button (0), all machine functions are stopped.

To restart, press the **green** ON button (I). This button will light up after activation. The illumination will go out as soon as the red button is pressed and the machine comes to a standstill.

The toggle switch is used to switch between forward and reverse rotation. If the reverse rotation is activated, the orange indicator lamp lights up.

Use the rotary knob to control the motor speed.

The back side of the mobile control box is magnetic. So, the control box can be positioned anywhere on the bed or on any other flat metal surface.



Caution!

When using a chuck, faceplate, etc., use the reverse rotation only after having installed an unwind-protection system (if necessary, ask your specialist dealer). Stop the forward rotation first, wait until the workpiece comes to a complete stop and only then switch to the reverse rotation. This also reduces the risk that the workpiece unwinds from the spindle.

5 | Technical data

Dimensions

Length x height x depth 1,360 mm x 1,250 mm x 560 mm
 Length x height x depth (without grey cast iron stand) 1,360 mm x 515 mm x 465 mm

Weight

Upper part (without grey cast iron stand) 79 kg
 Stand 60 kg
 Total weight 144 kg

Distance between centres

..... approx. 560 mm
 Distance between centres with bed extension 460 mm approx. 1020 mm
 Centre height approx. 180 mm

Headstock

Spindle thread M33 x 3.5 mm
 Bore Morse taper MT 2 with 10 mm through hole through headstock
 Indexing device with window 24 positions (15 degree increments)
 Spindle lock 4 positions
 Pivoting 0 to 180 degrees with detent positions at 0, 30, 60, 90, 120 and 180 degrees

Drive ~240 volt, three-phase motor, IP54, 1,420 rpm, 50 Hz, 1,500 W

Power supply 240 volt ~ L1-N-PE, 50 Hz

Speed ranges (rpm on spindle) Range I: 150 – 3,700 rpm, Range II: 50 – 1,230 rpm
 Range is changed by relocating the Poly V belt

Tailstock

Bore Morse taper MT 2 with 10 mm through hole
 Quill travel 70 mm with scale

Tool rest 350 mm with 1" shaft (25.4 mm)

Emission sound pressure level <79 dB (A)

Combined bed extension / outboard turning attachment (option)

Workpiece diameter max. 500 mm*
 Workpiece thickness max. 200 mm*
 *) These indications are subject to the condition (imbalance) of the workpiece.

Paint RAL 7047 Telegrey 4 / RAL 5003 Sapphire blue

Basic equipment

350 mm tool rest, 95 mm faceplate, live centre MT2, 25 mm 4-prong drive centre, double taper, open-ended spanner for loosening the faceplate, holder for tools and mobile control box, knockout bar and operating instructions

Nameplate

Modell / Type / Serie(s)	TWISTER FU-180 N7-INV KC-INV	
Motor / Power	1 / N / PE 230V/50 Hz 1,1 kW	
Techn. Daten / Specification	0 – 3.700 U/min (RPM) M33x3,5 MK 2	
Baujahr / Year		
Gewicht / Weight	144 kg (79 kg Tisch- / Table-Version)	
Serien-Nr. / Serial No.	A N7 -	
		Neureiter Maschinen GmbH Kellau 167, AT-5431 Kuchl

Optional accessories

- Additional bed 400 mm (combined outboard turning attachment and bed extension) with tool rest extension shaft
- Take Away quick-change system for banjo
- Quick-change system "Easy" for Twister FU-180
- Steady rest, height adjustable

6 | Information on noise emission

The measurement is carried out in accordance with the standards EN ISO 3744:2010 & EN ISO 3746:2010 & EN ISO 11203:1996 & EN 61029-2-4.

The emission level measured according to these DIN standards cannot reliably be used to determine whether precautionary measures are needed, since factors such as the duration and type of work, the workshop size and the existence of other sources of noise (e.g. machines running at the same time) have a decisive influence on the noise level. The acceptable exposure rates may vary from country to country. For all these reasons, we recommend the user to wear an appropriate ear protection while working on the machine.

7 | Spindle with groove for unwind-protection system (ASR EUROLOCK)

In order to meet increased safety standards, the spindle of your **DRECHSELMEISTER** lathe has a groove that allows the easy fixture of an ASR EUROLOCK unwind-protection system.

When used with optionally available ASR EUROLOCK accessories (see pictures below), a fixed clamping of spindle and accessories is enabled. Especially when working on larger workpieces, this effectively prevents the accessories from unwinding from the spindle thread.

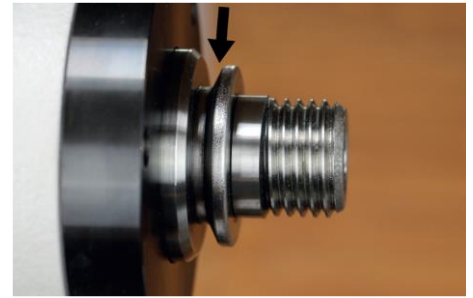


Fig. ASR locking ring
DDKS22-FPS



Fig. Unwind-protection
chuck

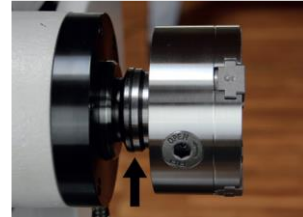


Fig. Clamping without
locking ring

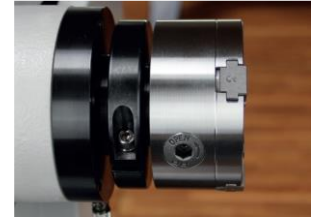


Fig. Unwind-protection
system in use

8 | Frequency inverter



The frequency inverter is very quiet and programmed ready for use. Do not make any changes to the frequency inverter. The programming screw on the frequency inverter may only be operated by qualified personnel. To change the speed of the lathe, use only the rotary knob on the mobile control box.

The frequency inverter is programmed with a soft start and soft stop. You cannot shorten the run-down time with the handwheel. Just let the workpiece come to a stop by itself. In the event of a power failure, the run-down time is extended.

9 | Functional description

A lathe is a machine used to work on mostly cylindrical or prismatic pieces of wood. For this, the workpieces are mounted with special fixing devices between headstock and tailstock or with special clamping devices (chucks, faceplates, etc.) and then they are driven via an electric motor.

The electric motor drives the spindle via belt pulleys. The **TWISTER FU-180** allows you to choose between two speed ranges (transmissions). The fine tuning of the motor speed is done via a frequency inverter. To make the fine adjustment, use the rotary knob on the mobile control box. It allows you to continuously adjust the motor speed in the respective speed range. This enables you to choose the rotational speed suitable for the diameter of your workpiece. This improves the safety during turning and the quality of the workpiece surface.

To switch on the drive unit, turn the main switch clockwise until it clicks into place. Turn on the motor on the mobile control box and adjust the motor speed with the rotary knob.

Automatic shutdown

The **TWISTER FU-180** is equipped with a zero-voltage switch which shuts down the lathe in the event of a power failure and prevents a restart when power is restored. Furthermore, the drive may be switched off by the frequency inverter in the event of an overload. In order to be able to restart the lathe in all cases, eliminate the cause: In the event of a power failure, restore the power supply; in case of an overload, reduce the load or select the belt pulley for the lower speed range.

The tool rest serves to minimise the risk of injury. The turning tools are guided by hand to the workpiece. The cutting forces that occur must be absorbed by the operator. In order to deflect these forces, the turning tools must constantly rest firmly on the tool rest.

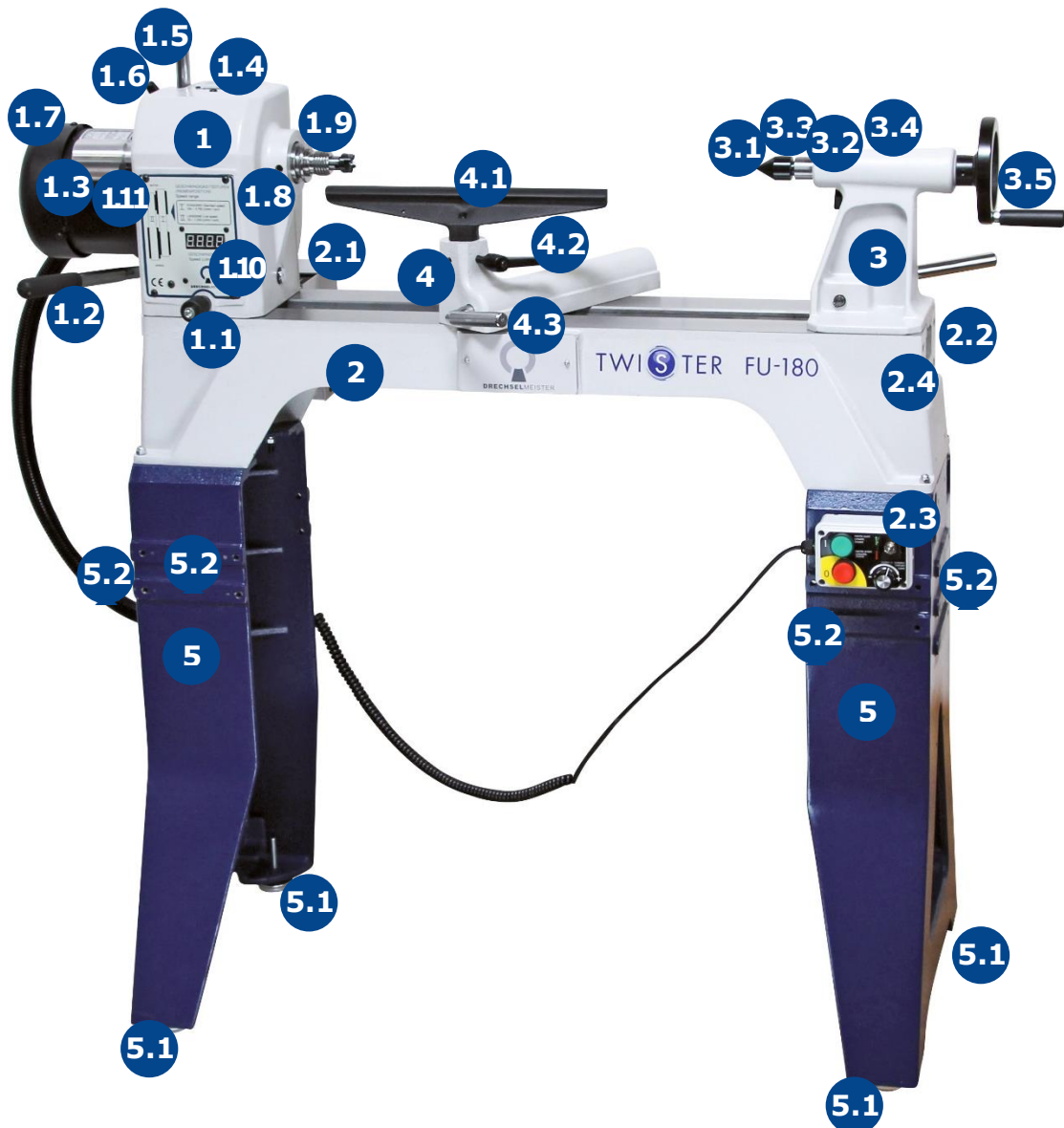
Before using the lathe for the first time, read the operating instructions carefully in order to become familiar with the dangers that may arise from operating the machine (in particular from rotating parts and forces involved).

If you do not have any experience in turning, familiarise yourself with the lathe before starting to work. Seek advice from experienced woodturners and let them instruct you.

Various dealers offer basic and advanced woodturning classes. Video material and books can also be useful.

10 | Installation site requirements

Requirement	Recommendation
Lathe installation site	Place the lathe near a power source (type F socket). Make sure the ground is level, firm and has a sufficient load capacity. Leave enough space around the machine. Make sure there is sufficient space for turning the headstock, for the bed extension, optional accessories and/or the outboard turning attachment. Other machines installed in the workshop must not affect the operation of the lathe.
Lighting and ventilation	Pay attention to good lighting (illuminances according to DIN 5035) and ventilation. In addition, use adjustable lighting for your work area on the lathe so that no shadows are cast on the workpiece. We recommend the installation of a light source with a value of at least 300 lux, better 500 lux, at the cutting edge of the tool. If possible, place the lathe near a window.
Electrical equipment	In order to operate the lathe, a suitable household 240 V type F socket is required, which is protected by at least a B 16 (ampere) circuit breaker. Electrical cables and sockets must comply with local electrical codes. In case of doubt, ask your electrician. Avoid using an extension cord. This lathe is designed for a voltage of 240 V ($\pm 10\%$) according to IEC 60038. If it is operated outside of this voltage, it may run irregularly or may be damaged.
Ambient temperature	Operate the lathe at an ambient temperature of $+10^{\circ}\text{C}$ to $+32^{\circ}\text{C}$ (climate class SN). If the lathe is not used for a period of more than 3 months, the ambient temperature should not exceed 30°C. If the lathe is not used for more than 1 year, the electrolytic capacitors may deteriorate. Especially in the cold season, give the machine enough time to adapt to the temperatures at the installation site before assembly.
Ventilation	Ventilate your workplace adequately. The degree of ventilation depends on the size of the workshop and the number of manufactured workpieces. The use of dust extractors and filters reduces your health risk.
Working height	Adjust the height of the lathe so that the centre of the spindle is at the level of your elbow.
Working space	When fixing the lathe to the table or ground, leave a space of at least 80 cm around the lathe for repair and maintenance work.
Stand	When using the lathe without a stand, choose a suitable installation surface. In this case an outboard turning attachment cannot be used.



1 Headstock

- 1.1 Release knob for turning the headstock
- 1.2 Headstock clamping lever
- 1.3 Handwheel
- 1.4 Belt pulley cover
- 1.5 Motor tensioning lever
- 1.6 Motor fixing lock handle
- 1.7 Electric motor
- 1.8 Spindle lock
- 1.9 Spindle with M33 thread
- 1.10 Digital speed indicator
- 1.11 24-position indexing device

2 Bed

- 2.1 Main switch (rear side on the frequency inverter)
- 2.2 Holes for fixing the bed extension
- 2.3 Mobile control box
- 2.4 Stop screw

3 Tailstock

- 3.1 Live centre
- 3.2 Quill
- 3.3 Quill fine adjustment (rear side)
- 3.4 Quill fixing lock handle (rear side)
- 3.5 Handwheel

4 Banjo

- 4.1 Tool rest
- 4.2 Lock handle
- 4.3 Banjo clamping lever

5 Stand

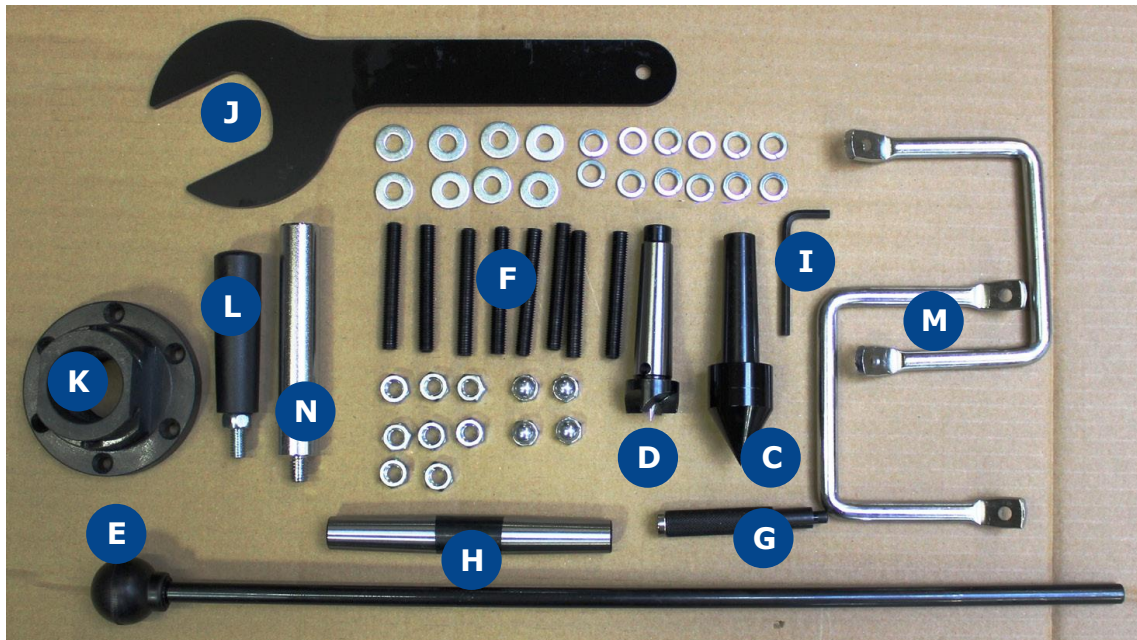
- 5.1 Adjustable feet
- 5.2 Fixing points for bed extension of outboard turning attachment

12 | Transport package content

Bed, headstock, tailstock and banjo with tool rest form a unit. Stand and accessories are packed in a separate box.



- A** Bed with headstock, tailstock, banjo with tool rest 350 mm (1" shaft)
- B** Stand and adjustable feet
- C** Live centre, MT2
- D** 4-prong drive centre 25 mm, MT2
- E** Knockout bar
- F** Screws 8 x M8 for fixing the bed on the stands with 8 washers and safety washers, 8 nuts and 4 cap nuts respectively
- G** Spindle locking pin
- H** Double taper, MT2
- I** Hex key 4 mm
- J** Open-ended spanner for releasing the faceplate from the spindle
- K** Faceplate 95 mm with M33 x 3.5 mm thread with two 5 mm stop grub screws
- L** Tailstock handwheel handle
- M** Carrying handles of bed
- N** Motor tensioning lever



13 | Lathe assembly



Caution!



- Pay attention to the weight of the components and handle them carefully to avoid injuries.
- Make sure that all screw connections are tightened firmly, but not over-tightened. Check all screw connections for tightness after eight operating hours.

• During assembly, place the headstock in such a way that the cable connections are not damaged and the cables are not pinched.

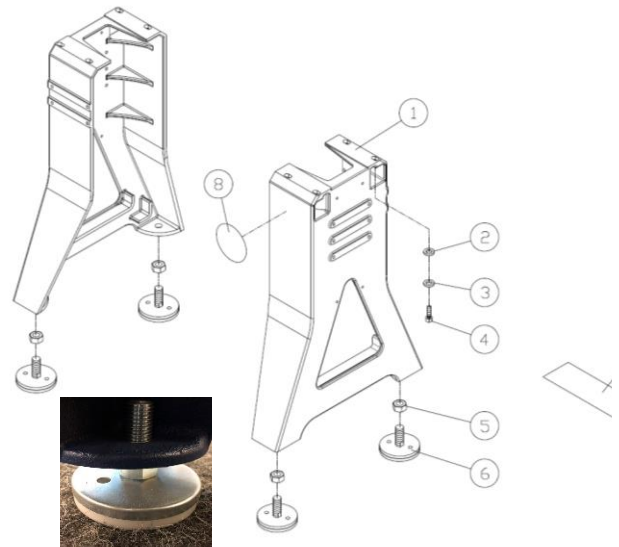
• The cast iron stands have been designed especially for **DRECHSELMEISTER** machines. Using them with other machines may pose a risk of injury.

Preparing the stands for assembly

The two stands can be used both on the left and on the right side.

Lay the cast iron feet (6) flat on the floor, screw them into the threaded holes on the lower side of the stand and secure them with the appropriate hexagon nuts (5). To ensure the secure and level placement of the lathe, the set screws can be adjusted at any time. Use a standard spirit level to align the lathe.

If the floor is level and the working height is sufficient, the feet do not necessarily have to be mounted. They are used to compensate for unevenness and to adjust the working height by up to 50 mm (general rule for adjusting the lathe height: centre height at elbow height).



Secure placement of the lathe

Depending on the floor at the installation site, it may be necessary to use rubber pads underneath the feet. For this, cut the supplied rubber strip into appropriately sized pieces and place them under the feet. This prevents the lathe from moving when working on out-of-balance workpieces.



The extra-large feet also offer the option of screwing the lathe directly to the floor.

In this case, make sure to have sufficient space around the machine for repair and maintenance work. By screwing the lathe to the floor, you achieve greater stability when working on out-of-balance workpieces, but the lathe will also be subjected to higher stress.

Lathe assembly

Prepare a wooden board according to the drilling template on page 33 and fasten it to the fixing points on the left-hand stand that are actually intended for the outboard turning attachment. For this, use the supplied 3/8" screws. Align the stand so that it is flush with the board edge and secure the board on the right-hand stand with a bar clamp.

The distance between the inner holes at the top of the stands should be approx. 78 cm.



Before fixing the bed to the stands, reduce the weight of the bed. Remove the plastic film, the headstock, the tailstock and the banjo. For this, remove the stops at both ends of the bed.

With the help of a second person, lift the headstock out of the guide of the bed and place it next to the bed on two wooden slats.

Tip: Lock the spindle and put a 12 - 15 mm long rod into the hollow spindle for easier carrying.



Screw the first 4 3/8" screws into the bed. Use the inner holes for this.



With the help of a second person, lift the empty bed onto the stands and align it.



Now, fix the bed to the stands: Fasten the bed on the left-hand side with four screws, on the right-hand side with two screws. For now, only tighten the screws by hand. Remove the wooden board, align the bed and the stands and tighten the screws firmly. Also screw in the two screws that held the wooden board.



Frequency inverter

The frequency inverter is mounted on the rear side of the bed. It is well protected in a metal box. The screws required for fixing the frequency inverter are attached to the bed and have to be unscrewed before assembly.

The **main switch**, which regulates the power supply, is installed on the side of the frequency inverter box. So, it is well protected and short cable runs are guaranteed.

Next to the main switch you will find an adjusting device for the run-down brake.



Now, lift the headstock with the help of a second person and place it carefully in the bed guide.

Then mount the stop bar on the left-hand end of the bed. Slide the headstock to the end of the bed and lock it.



Place the lathe at the designated location and use a spirit level to check whether the bed is level. If necessary, adjust the feet to level the lathe.



First, place the banjo on the bed, then the tailstock.
Reinsert the stop (screw) on the right end of the bed.



Screw the motor tensioning lever (N) into the intended hole.



14 | Operating the lathe

Headstock

The headstock consists of: drive unit (electric motor) with lock handle and lever for tensioning and loosening the belt, belt pulleys with transmission, spindle with M33 x 3.5 mm thread and Morse taper 2 (MT2), rotary knob for 24-position indexing device (engages every 15°), cover for belt pulleys with window for 24-position indexing device, safety screw for cover, handwheel, clamping lever for displacing the headstock, digital speed indicator in rpm on the spindle, release knob for turning the headstock.



Aligning the headstock at any position on the bed

The headstock can be clamped at any position on the bed. For spindle turning, it is necessary to align the headstock with the tailstock. To turn the headstock, loosen the release knob by turning it and pulling it towards you. Loosen the clamping lever on the left side of the headstock, move the headstock to the desired position and turn it until it is flush with the bed and the tailstock.

Mount the double taper (H) in the tailstock and insert it into the spindle by moving the tailstock so that it slides in without any resistance.

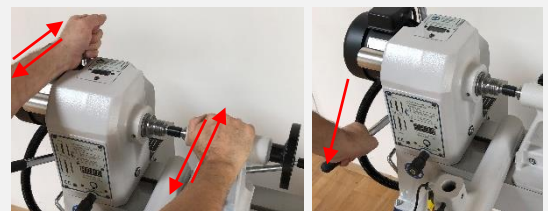
If necessary, align the headstock accordingly by gripping the motor tensioning lever with your left hand and the tailstock with your right hand and agitating them in opposite directions.

As soon as the quill and the spindle are in alignment, lock the headstock with the clamping lever.

Make sure that the headstock does not twist while being clamped.

Of course, headstock and tailstock can also be aligned without double taper by aligning live and drive centres.

This is a quick alignment method, but the double taper method is more accurate.



Caution!

Make absolutely sure that the machine is always switched off before turning or displacing the headstock or before aligning it by means of the double taper (pull the power plug). Otherwise, injuries or material damages may occur.

Realign the headstock as described above every time you have turned the headstock, e.g. for outboard turning.

Morse taper

The Morse taper is a standardised tool taper. With its help, different attachments are friction-locked in the spindle and the quill. Common sizes for woodturning lathes are MT1 (smaller lathes), MT2 (small, medium and larger lathes) and MT3 (larger lathes).



A clean fit of the taper in the hollow shaft is decisive for the best possible power transmission. Even the slightest contamination can lead to damages in the shaft (of the headstock and quill). Therefore, make sure to clean both the taper of the tool and the hollow shaft of the spindle and quill at **each** tool change. Use a dry, clean rag or a bottle brush and avoid oils and greases as these reduce friction.

It is sufficient to hand-drive tools into the shaft. It is not necessary to hit them into place.

Changing the 4-prong drive centre

Insert the supplied knockout bar from the outside into the through hole of the headstock. Now, try to eject the 4-prong drive centre by pushing it slowly. While doing this, carefully hold the 4-prong drive centre on the outside with your hand.



Caution!

To avoid injuries, do not hold the 4-prong drive centre at its tip.



Changing the live centre and accessories

The live centre and further accessories (e.g. drill chuck, mill-drill) can be ejected by turning the tailstock handwheel counterclockwise. Alternatively, the live centre can also be ejected from behind with the knockout bar. To prevent the tools from falling, hold them on the outside with your free hand.

Tailstock

Never loosen the quill of the tailstock or the tailstock itself while the workpiece is rotating. The tailstock disposes of an MT2 quill. The quill guide is equipped with a lock handle which must always be locked after having clamped a spindle blank with the handwheel. Next to the lock handle, there is a nut for readjusting the quill. The clamping lever for locking the tailstock on the bed is mounted on the rear side of the tailstock. By loosening the circlip, it can be removed and placed on the front of the tailstock if desired.

Regularly make sure that the tailstock is firmly locked on the bed. The tailstock guarantees a perfect alignment between live centre and drive centre. This assures low-vibration turning and is the best prerequisite for exact drilling with the tailstock. To move the tailstock along the bed, loosen the clamping lever, move the tailstock to the desired position and lock the lever again.

To turn the quill in or out, loosen the lock handle of the quill and turn the handwheel. The quill can be used with live centres and tools with a Morse taper no. 2 (MT2). To mount the tool, quickly and firmly insert it into the quill shaft by hand. Do not hit the accessories (e.g. live centre, drill chuck) into the shaft.

Make sure that the tools you are using are well seated in the Morse taper. Some tools have an extended Morse taper – in this case, it may be possible that the tools are not yet firmly locked when the scale indicates "0". Turn the quill towards the headstock until the taper is firmly locked.



Caution!

The tip can cause injuries. Remove the live centre when not in use.

Tool rest

Loosen the clamping lever, move the banjo to the desired position on the bed and lock the lever again.

Place the tool rest close to the workpiece. Choose the setting that suits you best. Before switching on the lathe, turn the workpiece by hand to ensure that it is not in contact with the tool rest. When turning, stop the lathe at intervals and readjust the tool rest.



Danger!

- As long as woodturning tools are in contact with the workpiece, they must rest firmly on the tool rest.
- To avoid pinching your fingers during sanding or polishing, remove the tool rest from the workpiece.

Locking the spindle

The spindle has four holes in total (every 90°) for locking the spindle. Lock the spindle to remove chucks and the like from the spindle.

For this, put the supplied locking pin into the hole on the headstock.



Make absolutely sure that you do not turn on the motor while locking the spindle.



24-position indexing device

By turning the locking pin (1), the 24-position indexing device engages. This allows a uniform division of 15° steps during one rotation of the spindle.

With this graduation, the spindle can be divided 24, 12, 8, 6, 4, 3 and 2 times per rotation.



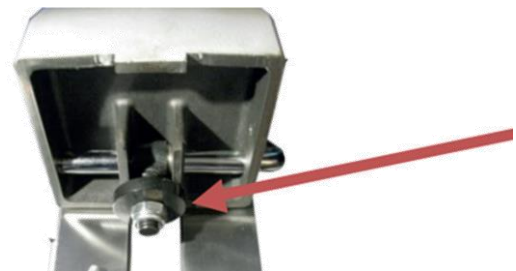
Make absolutely sure that the power plug is disconnected. Do not turn on the motor while indexing.



Use the 24-position indexing device only to make divisions, not to remove chucks from the spindle.

Clamping mechanism (eccentric clamp)

If the headstock, tailstock or banjo cannot be firmly fixed on the bed, it may be necessary to readjust the eccentric clamp. Pull the headstock, tailstock or banjo to the end of the bed and slightly tighten the lock nut on the underside.



Cable connections

The cable connections between frequency inverter and headstock or motor are protected in a stable sheath. Check the integrity of the cables regularly during cleaning and maintenance work. Replace them if necessary.



Run-down brake

Your **TWISTER FU-180** lathe disposes of a run-down brake that can be regulated using the toggle switch.

In normal operation (when working on small and medium-sized workpieces), set the switch to "STANDARD ↓". In this case, the machine brings the spindle to a standstill within less than 10 seconds whenever it is switched off.

In case of larger workpieces (weighing more than approx. 10 kg), the braking function can be impaired by the weight of the workpiece. In this case, set the switch to "SLOW ↑". Due to the slower acceleration and longer braking time, this setting protects motor and electronics.



15 | Optional accessories

The accessories listed below are optionally available and not included in the scope of delivery of the **TWISTER FU-180**.

Quick-change system "EASY" for TWISTER FU-180 [DDTWI-AS]

This device facilitates a quick changing of the bed extension. It is installed at the respective mounting positions of the lathe and bed extension.



TAKE AWAY quick-change system for banjo [DDBKS18-FD]

This system facilitates a quick unlocking of the banjo in order to lift it out of the bed without having to remove the tailstock.



Additional bed 400 mm [DDTWI-BV400S]

This additional bed enables comfortable working on larger workpieces and can also be used as an outboard turning attachment.

For the use as an outboard turning attachment, please note the following section.



Outboard turning attachment

The **TWISTER FU-180** offers you the possibility of turning workpieces that have a diameter of more than 35 cm with or without an outboard turning attachment.

An outboard turning attachment can be mounted at six different positions: on the stands on the left and right front, and on the sides at two different positions. The support supplied with the outboard turning attachment provides extra stability. The "Easy" quick-change system, which is optionally available, allows for a quick and easy change of the bed extension or outboard turning attachment.

To utilise the outboard turning attachment, mount the bed extension (B) (optionally available) at the fixing points (A) of the stand that suit you best using the supplied mounting kit. Loosen the clamping lever (K) to be able to pull or push the headstock.

Turning the headstock is only possible if the locking device (D) is unlocked first. For this, turn the release knob (D) counterclockwise and pull it towards you.

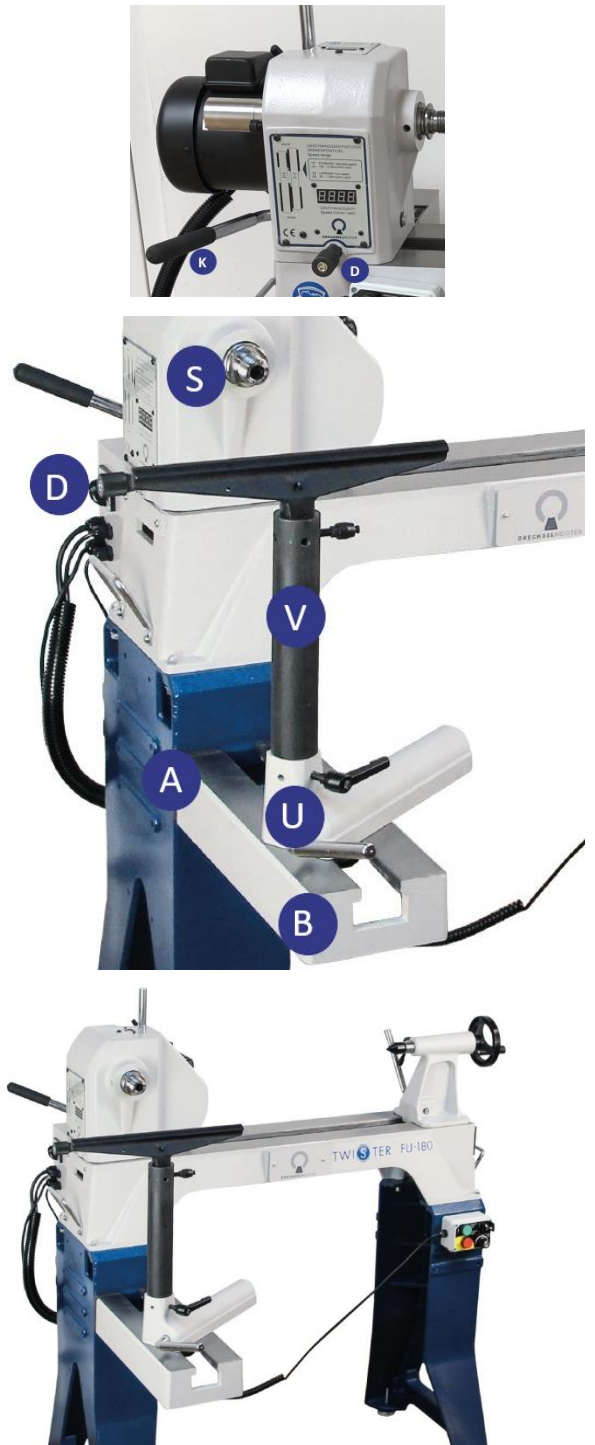
Now, the headstock can be turned by 90° or 180° in the desired direction. Then, clamp the headstock with the clamping lever (K) and lock the release knob (D). Now, insert the banjo (U) into the bed extension.

In order to compensate for the different centre height of the outboard turning attachment, insert the shaft extension (V) into the banjo and the tool rest into the shaft extension and lock them both.



Notes on turning

If you want to turn workpieces with larger diameters, move the headstock a bit towards the bed centre in order to be able to push the tool rest to the outside of the workpiece.



16 | Guidelines for rotational speeds

Especially in case of workpieces with a larger diameter (30 cm or more), make sure to reduce the imbalance as far as possible (e.g. using a bandsaw) before turning.

The given speed recommendations refer to turning an already round workpiece.

For roughing a workpiece blank, select a lower speed. Start with the lowest possible speed and increase it slowly. Always stay below the speed at which the machine starts to vibrate.

Due to the different properties of wooden workpieces, we cannot guarantee that the recommended values are always correct. It may be necessary to select a lower speed as indicated.

Please note that these recommendations are not based on calculations or simulations. Instead, we aim to comply with accident prevention regulations in a conservative form.

If you have any questions on this subject, please contact a competent person or your dealer.

Turning above the bed

Workpiece diameter	Turning rpm
up to 15 cm	1000
15 – 20 cm	800
20 – 25 cm	650
25 – 30 cm	500
30 – 35 cm	450

Outboard turning

Workpiece diameter	Turning rpm
up to 50 cm	310
50 – 60 cm	250
60 – 70 cm	180
70 – 80 cm	170

Recommendations on working with the 95 mm faceplate



CAUTION! Observe the rule of thirds!

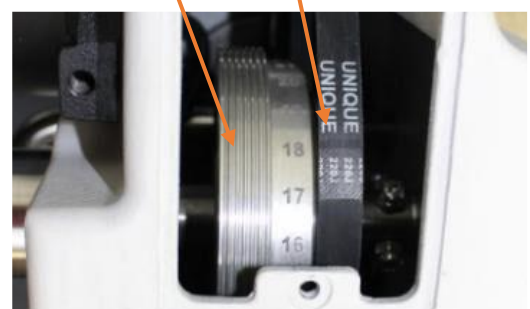
The faceplate should not be smaller than 1/3 of the workpiece diameter.
For workpieces with a diameter of more than 29 cm, use bigger faceplates.

- Select the speed corresponding to the workpiece conditions.
- Create a flat supporting surface.
- Avoid impact stress.
- Shorter thick screws are better than long thin ones. (Shear force)
- Do not use faceplates with recognizable damages.
- Always use the supplied tool to remove the faceplate from the spindle.
- Never stand in a critical area while working (critical: directly in front of the workpiece).
- Only mount blanks that are as homogeneous and round as possible.
- Do not use unbalanced, cracked or crack-prone wood.
- Avoid using risky and untrained techniques or turning tools that can get caught / stuck.

Changing the speed range by changing the belt pulley

The motor drives the pulleys of the spindle via two belt pulleys and a Poly V belt. When working on workpieces with a larger diameter, a slower belt speed is needed to maintain the optimum torque. This means, if you have been turning e.g. spinning tops using a fast belt speed and then you want to turn a bowl with a diameter of 30 cm or more, the motor power can be reduced under heavy use. In this case, another speed range must be selected.

Range I Range II



For this purpose, there are two belt pulleys underneath the cover on the headstock which allow you to choose between two different speed ranges. To change the speed range, proceed as follows:

1. Disconnect the power plug first and then open the cover on the headstock. For this, loosen the socket head screw on the cover.



2. Release the lock handle on the motor flange. Use the motor tensioning lever to pull the motor towards the headstock. This will release the tension of the Poly V belt.



3. Now, place the belt on the corresponding belt pulleys on motor and spindle.
Range I: 150 - 3,700 rpm.
Range II: 50 - 1,230 rpm.

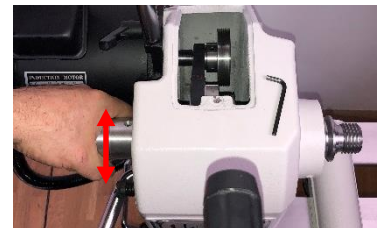


Changing the belt

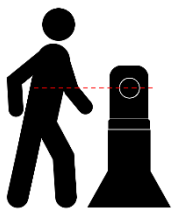
To change the belt, the spindle has to be removed.

Instructions on how to proceed will be delivered with the replacement belt.

4. Then, use the motor tensioning lever to push the motor in the opposite direction and tension the belt. Turn the handwheel to check whether the belt has been placed correctly.
5. Secure this position with the lock handle and close the cover. Retighten the socket head screw by hand.
6. Now plug in the power plug again. The new speed range is set.



17 | Work ergonomics



Installing the lathe correctly facilitates fatigue-free and safe working. It helps to handle the tools safely and to more easily achieve the desired shape of the workpiece.

Place the lathe in such a way that the tips (of 4-prong drive centre and live centre) are level with your elbows when you stand upright.

If possible, place the lathe near a source of natural light. Artificial light should come from above, but not fall directly into the eyes.

18 | Working on workpieces



Danger!

- Always wear eye protection.
- Make sure that the workpiece is clamped firmly. Always start with a low motor speed and then increase it until you reach the optimum speed.
- If the motor speed is too high, out-of-balance workpieces can be thrown out of the lathe and seriously injure you.
- After the EMERGENCY STOP button has been pressed, the lathe slowly reduces the speed to zero. Do not try to stop the workpiece by hand during the run-down phase. There is a high risk of injury from splinters and overheating.
- Make sure that your fingers do not get pinched between workpiece and tool rest.



Caution! • In case of a power failure, the workpiece is no longer slowed down. The run-down time may be longer.

- The 4-prong drive centre must hold the workpiece securely. Pre-punch the workpiece using the 4-prong drive centre and a wooden mallet.
- Use a support (steady rest) when turning long and thin, or long workpieces, especially when the workpiece starts vibrating.
- Use the woodturning tools carefully. Make sure to place the tool on the tool rest before moving it towards the workpiece.
- When working with dangerous types of wood always use a dust extractor and/or a respiratory mask and wear safety glasses.
- Do not use heavy, out-of-balance workpieces. If the workpiece starts vibrating, immediately reduce the speed or switch off the machine and restart it at a lower speed.



- Do not use any workpieces with cracks or insufficient strength (e.g. due to rot).
- Mount the workpiece securely.
- Select an appropriate chuck.
- Select the motor speed according to the diameter of the workpiece. Please note the recommendations on page 19/20.

Pay special attention to the mounting of the workpiece. It has to be done as safely as possible. There are different possibilities for this. Consult books, obtain video material or attend a woodturning class.

Pay particular attention to safety and out-of-balance workpieces. Use a balanced speed, mount the workpiece securely and try to remove the imbalance of the workpiece as far as possible before mounting it.

Mounting blanks for spindle turning

Make sure that the workpiece is optimally centred as the imbalance must be minimised, especially when working with larger workpieces. A deep impression of the 4-prong drive centre increases the secure hold of the workpiece during turning.

Take a square piece of wood (turning square) and find the centre at both ends. Use a pencil to draw diagonals between the corners. You can also use a centre finder.

Then, place the square on a solid surface and punch the 4-prong drive centre with a wooden, rubber or Teflon mallet exactly into the centre of the head end of the wood. This gives you four deep impressions at one end of the square where the 4-prong drive centre can easily penetrate and hold the workpiece securely.

Insert the 4-prong drive centre into the spindle and make sure it is tight. Now, press the marked end of the square into the 4-prong drive centre. Slide the tailstock towards the other end of the square leaving a little space and lock the tailstock with the clamping lever on the rear side on the bed. Turn the handwheel to drive the live centre into the marked centre of the other end of the square. Finally, lock the quill with the lock handle.

Do not press the workpiece into the mounted 4-prong drive centre with the tailstock. This would create an unnecessary pressure on the tailstock and headstock and would make it more difficult for the 4-prong drive centre to penetrate into the square, especially in the case of hardwood.

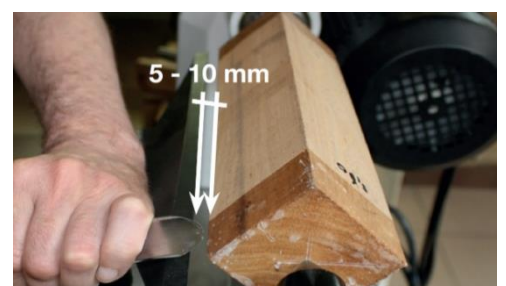
The blank is now properly mounted.



Adjusting the tool rest

Place the banjo in front of the workpiece and lock the clamping lever. During adjustment of the tool rest, make sure that the blank can still rotate freely. There should be a gap of approx. 5-10 mm between the workpiece and the tool rest. Lock the tool rest with the lock handle.

As a general rule, the wood should be cut with the tool. If the selected speed is too slow, the wood will "hammer" against the tool and tear out. In this case, considerable forces will be exerted on the tool and workpiece. This can lead to dangerous situations. Therefore, it is better to choose a suitable speed (see page 19/20). This will give you a better cut and less force will be exerted on the workpiece. Compare it to working with a plane. If you move the plane very slowly, it is much more difficult to cut the fibres.



Mounting blanks for faceplate turning

Use a bandsaw to cut the blank to a round shape before mounting it on the lathe. This makes it easier to start turning and reduces vibrations. To mount the pre-shaped blank on a faceplate or chuck, you need a flat surface. If necessary, plane hollow or curved surfaces. Screw faceplates onto the blank with at least six wood screws. Especially for larger workpieces, the faceplate is the safe method for initial mounting.

As an alternative to mounting workpieces on a faceplate, modern chucks allow mounting workpieces by means of woodworm screws or corresponding drill holes. When using chucks, read the operating instructions of the respective manufacturers.



Woodturning tools

The description below is only intended to provide a brief overview of the different tools that can be used for wood turning. In no case does it replace attending a woodturning class or dealing with the topic of "wood turning". For video material on our lathes, please visit our website www.drechselmaschinen.at. For books and DVDs on wood turning, please ask your specialist dealer. He will also give you information about woodturning classes.



Roughing gouge

Use a roughing gouge to bring a square or slightly rectangular spindle blank into a cylindrical shape. There are two different types of roughing gouges: the English U-shaped and the German flat forged roughing gouge. The English type is only used for spindle turning whereas the German type may also be used for faceplate turning.

When roughing, adjust the tool rest slightly below the centreline of the spindle allowing the cutting edge to attack the workpiece slightly above the centreline. Use the roughing gouge until the workpiece is round.



Spindle gouge

Use a spindle gouge for more precise and finer shaping. It allows you to create large and small shapes such as coves, beads and ogees.

When spindle turning, position the spindle gouge always slightly above the centreline of the workpiece. Use the spindle gouge almost always slightly vertically and cut with the lower side of the cutting edge (near the front curve). Make sure that bevel contact is maintained when cutting with a spindle gouge.



Bowl gouge

Bowl gouges are used for faceplate turning. Bowl gouges with standard and fingernail grind are in common use.

The standard grind is easier to use and universally applicable both for the inner and outer shaping of the workpiece.

Using bowl gouges with fingernail grind requires a little more experience. When used correctly, these gouges will allow you to shape the interior quickly and effectively and to achieve a very fine chip removal (angel hair cut) on the exterior at a correct angle (approx. 45°).



Skew chisel

Skew chisels are used to create mirror-like surfaces that require little sanding. It takes a great deal of practice to use them. Use skew chisels only for spindle turning. Rectangular skew chisels are suitable for creating fine surfaces; oval skew chisels are suitable for forming long coves.

Hold the skew chisels at a lateral angle of about 45° to the workpiece. The middle third of the cutting edge does the work; the bevel maintains contact with the workpiece. The skew chisel attacks the workpiece well above the centreline.



Parting tool and bedan

Use a parting tool to part the wood. The tool attacks the workpiece in the upper third and is guided in an arc to the centre.

For cutting flats during spindle turning, the same procedure is followed, but the motion is stopped when the desired diameter is reached. For this, you can also use a bedan.



19 | Care and maintenance

Maintenance / Machine care

To protect the lathe, especially in high humidity, apply a suitable wax, silicone spray or any other rust protection after each use on all corrosion-prone areas such as bed, spindle thread with MT2 and quill with MT2, as well as some screw threads.

After each use, clean the bed, the head- and tailstock taper and the M33 spindle thread with a rag soaked in alcohol or a usual solvent. Store and dispose of the used rags properly.

Caution!



- Cleaning rags or polishing wool soaked in oils, greases, solvents and cleaning agents are flammable. Collect them in suitable closed metal containers.
- Oil-soaked cleaning rags or polishing wool tend to self-ignite and must be stored and disposed of separately.

Clean and impregnate all bare areas **immediately**, especially when working with green wood.

After each use, check the belt pulleys for dust and dirt deposits and clean them if necessary.

Grease the threaded spindle of the tailstock at least once a year or, if necessary, more often if it is subjected to high use due to drilling work. Proceed as follows:

Loosen the lock handle, the M8 nut and the stud bolt. Then, unscrew the quill completely from the tailstock by turning the handwheel. Now, you have access to the quill thread for cleaning and greasing.

The re-assembly is done in the reverse order:

First, place the quill on the thread and turn the handwheel until the quill is retracted again. Then, loosely screw in the stud bolt - it should not jam the quill, just secure it against twisting. Secure the stud bolt with the M8 nut. It is best to hold the stud bolt with a spanner. Finally, turn the lock handle into place (closer to the handwheel!).



All bearings are sealed on both sides and do not require maintenance.

Working on electrical system components



Danger!

- Do not carry out work on electrical system components unless the main switch is switched off and the power plug is disconnected. Do not leave the power plug unattended and secure it against being plugged in.
- Have work on the electrical system carried out only by qualified electricians.

20 | Terms of guarantee

Neureiter GmbH grants a five-year manufacturer's guarantee on this product from the date of purchase.

If defects in material or workmanship occur during the intended use of the **TWISTER FU-180**, please contact your dealer. After submission of a copy of the invoice, the defect in question will be verified in coordination with our service department and, as required, it will be repaired or the product will be replaced. The organisation of a possible transport (after consultation with our service department) lies within the responsibility of the customer. The packaging must be safe for transport.

If it is determined that the complaint lies outside the granted terms of guarantee (e.g. in the case of defects arising from normal wear, improper use, power overload, overvoltage, unauthorized modifications of the machine, use of force, failure to observe the safety precautions or own attempts of repair), the customer has to pay the full costs for transport and repair.

Only the terms of guarantee cited here are valid, any side agreements are not recognised unless they are presented in written form and signed (documented) by the manufacturer/importer. No claim whatsoever arises from verbal agreements that have not been documented. The present terms of guarantee are valid in German-speaking countries; elsewhere different terms of guarantee may apply. In this case, please contact your local dealer.

Please note that your statutory rights are not restricted by the above guarantee.

21 | Troubleshooting

Symptom	Possible cause	Possible remedy
Machine does not switch on	No current	Check, if power plug is connected, check fuses
	Motor, switch or cable defective	Contact a qualified electrician
	Spindle or 24-position indexing device locked	Release locks
	No mains voltage	Check fuses
Machine switches off	Frequency inverter switched off	Wait approx. 10 minutes and turn on again
	Workpiece out-of-balance	Balance out workpiece, reduce speed
Machine vibrates	Workpiece not clamped securely	Improve clamping length or diameter, support tailstock end, use steady rest
	Blunt cutting edge of tool	Sharpen or replace tool
	Cutting pressure too high	Reduce cutting depth or feed
	Workpiece clamped off-centre	Clamp workpiece centrically
	Speed too high	Reduce speed
	Belt pulleys are loose	Tighten belt pulleys
	Machine positioned on uneven ground	Level machine
	Dirt between belt pulleys and belt	Clean grooves
	Bearing defective	Check and replace if necessary
	Motor bearing defective	Have checked and replaced if necessary
	Tool rest, tailstock or headstock not firmly locked	Check and lock, tighten lock nut on the underside if necessary
	Main bearing has play	Have bearing replaced
Machine chatters	Cutting pressure too high or feed too fast/workpiece surface too rough	Reduce pressure / feed
	Blunt woodturning tool	Sharpen woodturning tool
	Tips are not aligned	Readjust headstock
	Woodturning tool springs	Move tool rest closer to workpiece
	Workpiece too large	Reduce belt speed
Poor motor power	Poly V belt is loose	Retighten belt

22 | Decommissioning

Please observe the following notes when preparing for final decommissioning:



- When decommissioning the machine, adhere to the applicable laws and regulations for disposal.



- Do not dispose of the machine or parts of it together with domestic waste.



- Dispose of all parts of the machine in such a way that health and environmental damages are excluded. Check which materials can be recycled and recycle them properly.
- Oils, greases, solvents and cleaning agents are hazardous to the environment and must not be allowed to reach sewage or normal domestic waste. Dispose of them via local recycling centres. The same applies to cleaning rags or polishing wool soaked in oils, greases, solvents and cleaning agents.

Of course, you can also bring your defective machine to your local dealer. He will ensure proper recycling.



EC – Declaration of Conformity

For machines (according to EC-Directive 2006/42/EC)

No. of Declaration of Conformity:	Neu-DM-221-103-EN
Distributor:	Neureiter Maschinen GmbH Gewerbegebiet Brennhoflehen Kellau 167 A – 5431 Kuchl
Responsible person for technical documentation:	Ludwig Neureiter Kellau 167 A – 5431 Kuchl
Object of the declaration:	Woodturning Lathe
Product designation:	TWISTER FU-180 TWISTER FU-180 TV
Technical model name:	<i>N7-INV; N7 INV</i>
Technical series name:	<i>KC-INV</i>

The serial number, crucial technical information and marks of conformity can be found on the rating plate of each machine.

The distributor bears the sole responsibility for issuing this EC Declaration of Conformity.

The object of the declaration described above is in conformity with the relevant **Union harmonisation legislation:**

Machinery Directive 2006/42/EC

Electromagnetic compatibility (EMC) Directive 2014/30/EU

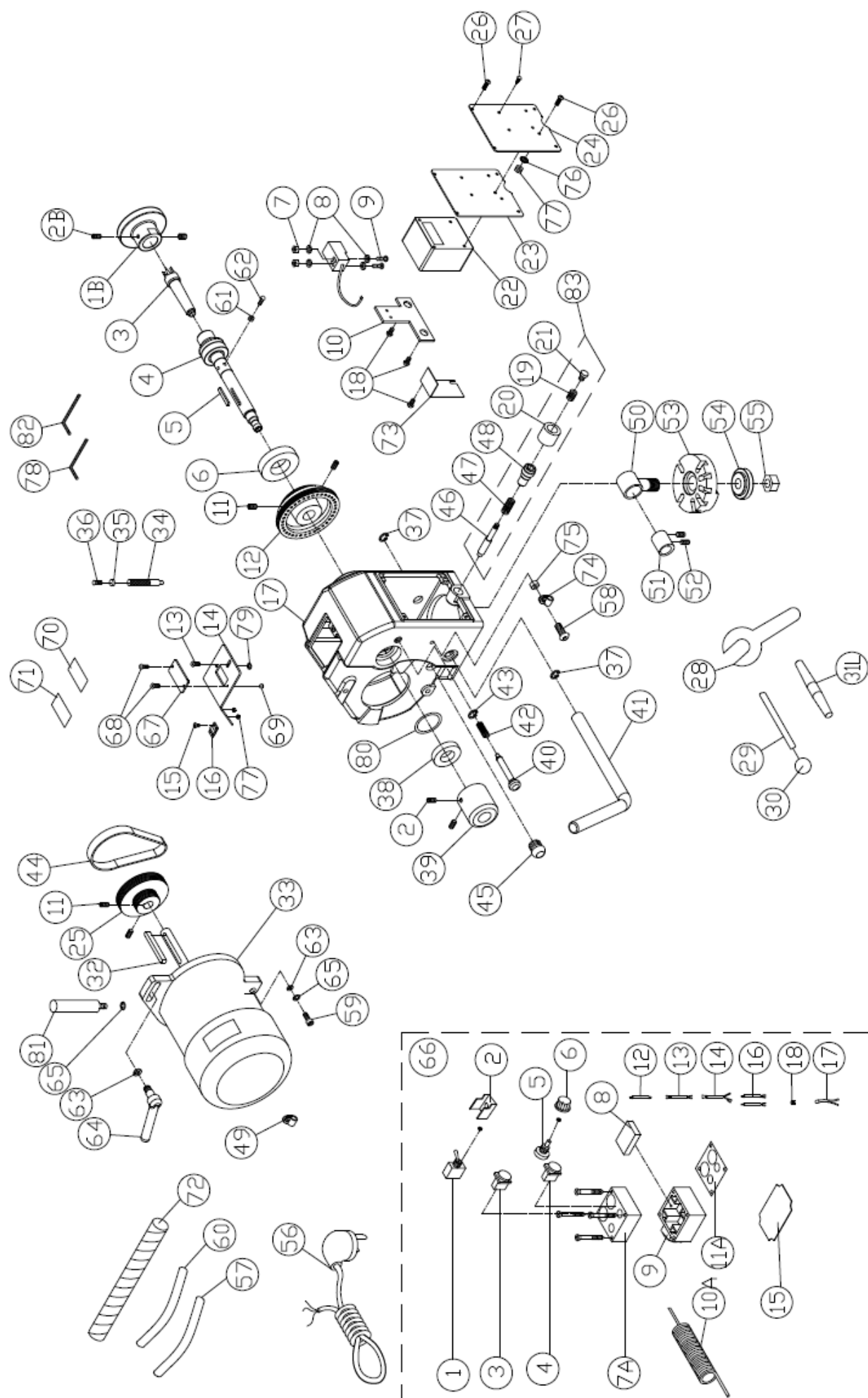
The following harmonised standards and technical specifications have been applied:

EN ISO 12100:2010	Safety of machinery General principles for design Risk assessment and risk reduction
EN 60204-1:2018	Safety of machinery Electrical equipment of machines – Part 1: General requirements
EN ISO 13849-1:2015	Safety of machinery Safety-related parts of control systems – Part 1: General principles for design
EN 61000-6-2:2019	Electromagnetic compatibility (EMC) Immunity standard
EN 61000-6-4:2019	Electromagnetic compatibility (EMC) Emission standard

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A – 5431 Kuchl

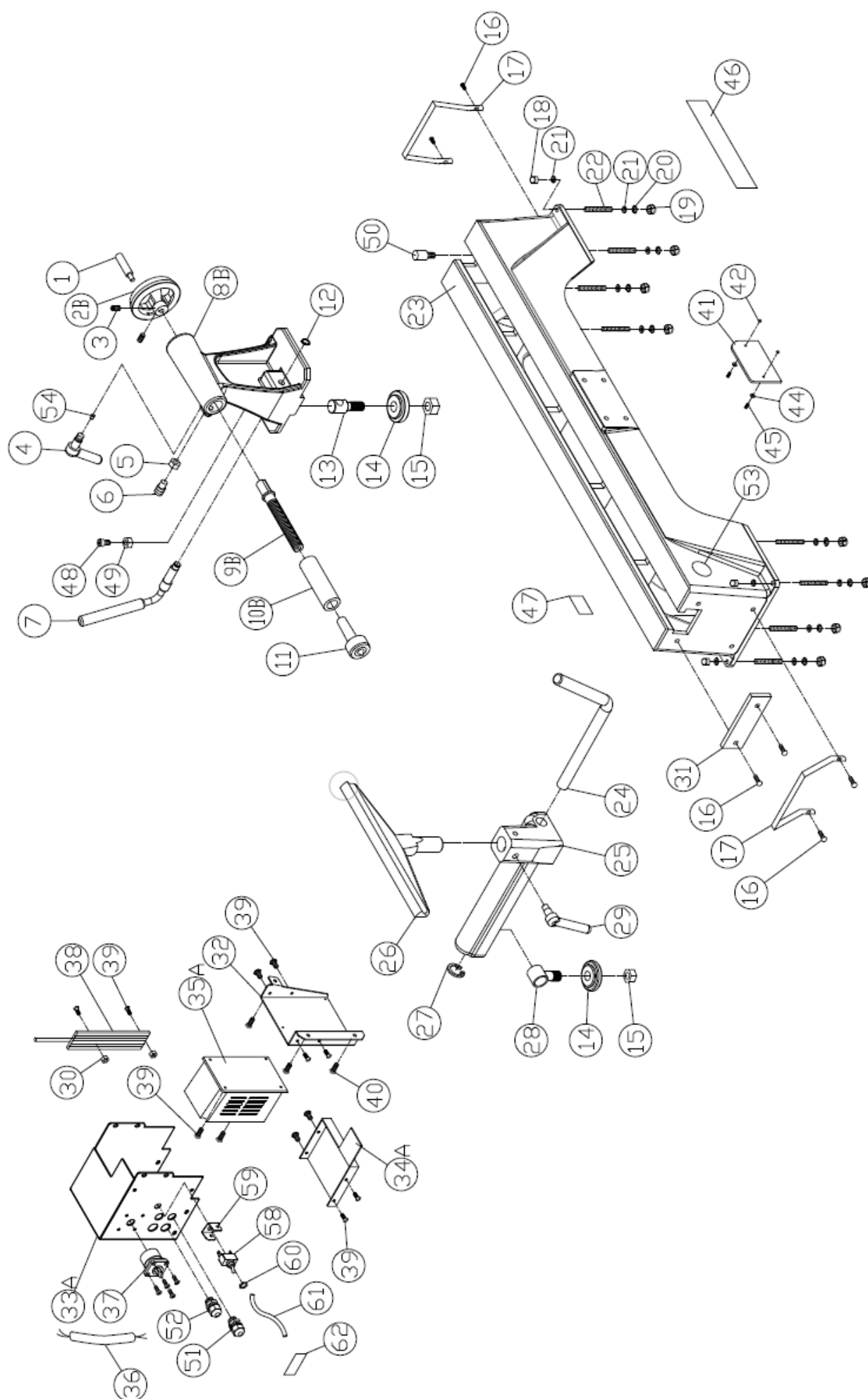
Kuchl, 24 March 2022
Ludwig Neureiter (owner)

DDTWI-FU180-TV_Neu-DM-221-103-EN



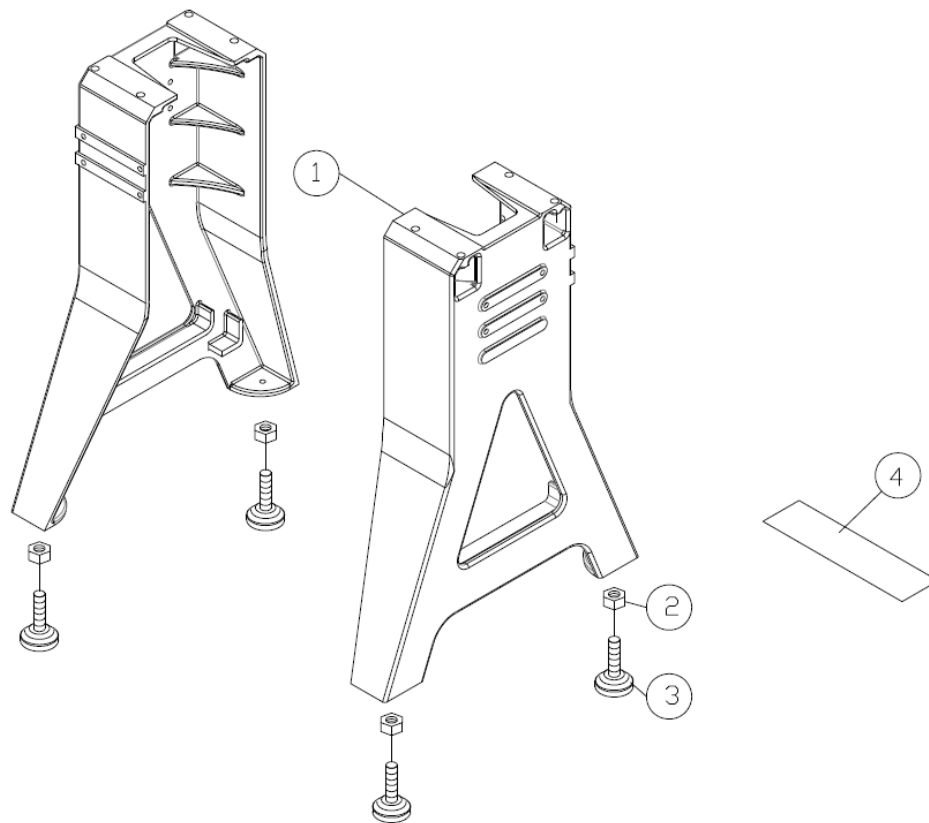
Item	Part No.	Specification	Description
51	N7AC-A51	1x bushing	1/4" x 1/4"
52	N7AC-A52	2x set screw	
53	N7AC-A53	1x base	
54	N7AC-A54	1x clamp	
55	N7AC-A55	1x nylon nut	3/4"-10UNCxT13.5
56	N7AC-A56	1x power cable	
57	N7AC-A57	1x motor cable	
58	N7AC-A58	1x round-head screw	#10-24UNC x 7/8"
59	N7AC-A59	1x cap screw	3/8" x 1-1/4"
60	N7AC-A60	1x signal wire	
61	N7AC-A61	4x nut	M6
62	N7AC-A62	4x screw	M6 x 10 mm
63	N7AC-A63	2x washer	3/8"
64	N7AC-A64	1x lock handle	3/8"-16UNCx25 mm
65	N7AC-A65	2x spring washer	3/8"
66	N7AC-A66	1x mobile control box	
66-1	N7AC-A66-01	1x forward / reverse switch	
66-2	N7AC-A66-02	1x protector	
66-3	N7AC-A66-03	1x ON button (green)	
66-4	N7AC-A66-04	1x OFF button (red)	
66-5	N7AC-A66-05	1x speed control	
66-6	N7AC-A66-06	1x speed control knob	
66-7A	N7AC-A66-07A	1x control box housing	
66-8	N7AC-A66-08	1x magnet	
66-9	N7AC-A66-09	1x cable protector	PG-9
66-10A	N7AC-A66-10A	1x feed line	
66-11A	N7AC-A66-11A	1x label	
66-12	N7AC-A66-12	1x cable 1	
66-13	N7AC-A66-13	1x cable 2	
66-14	N7AC-A66-14	3x cable 3	
66-15	N7AC-A66-15	1x foam	
66-16	N7AC-A66-16	2x cable 4	
66-17	N7AC-A66-17	1x LED lamp	
66-18	N7AC-A66-18	1x LED lamp holder	
67	N7AC-A67	1x acrylic plate	
68	N7AC-A68	2x button head screw	M4 x 10 mm
69	N7AC-A69	2x nut	M4
70	N7AC-A70	1x warning label	
71	N7AC-A71	1x warning label	
72	N7AC-A72	1x hose	
73	N7AC-A73	1x cover plate	
74	N7AC-A74	1x wire fixing piece	ACC-2.5
75	N7AC-A75	1x nut	#10 - 24
76	N7AC-A76	1x external-tooth washer	M5
77	N7AC-A77	3x nut	M5
78	N7AC-A78	1x hex key	4 mm
79	N7AC-A79	1x nut	CSTW-5
80	N7AC-A80	1x wave washer	BWW6205
81	N7AC-A81	1x motor tensioning lever	
82	N7AC-A82	1x hex key	3 mm
83	N7AC-A83	1x release knob assembly	

Item	Part No.	Specification	Description
1B	N7AC-A01B	1x faceplate	95 mm M33
2	N7AC-A02	3x set screw	1/4" x 3/8"
2B	N7AC-A02B	2x set screw	M6 x 10 mm
3	N7AC-A03	1x drive centre	MT 2
4	N7AC-A04	1x spindle	M33 x 3.5
5	N7AC-A05	1x key	4 x 4 x 50 mm
6	N7AC-A06	1x bearing	6205
7	N7AC-A07	2x nut	M3
8	N7AC-A08	4x washer	M3
9	N7AC-A09	2x round-head screw	M3 x 25 mm
10	N7AC-A10	1x bracket	
11	N7AC-A11	4x set screw	M6 x 10mm
12	N7AC-A12	1x spindle belt pulley	2 ranges
13	N7AC-A13	1x cap screw	M6 x 12 mm
14	N7AC-A14	1x headstock cover	
15	N7AC-A15	4x flat head screw	M5 x 10 mm
16	N7AC-A16	1x hinge	
17	N7AC-A17	1x headstock	
18	N7AC-A18	3x tap screw	1/4" x 3/8"
19	N7AC-A19	1x spring	
20	N7AC-A20	1x bushing	
21	N7AC-A21	1x special screw	1/4"
22	N7AC-A22	1x digital readout	
23	N7AC-A23	1x plate	
24	N7AC-A24	1x label	
25	N7AC-A25	1x motor belt pulley	2 ranges
26	N7AC-A26	5x button head screw	M5 x 12 mm
27	N7AC-A27	4x tap screw	M3 x 10 mm
28	N7AC-A28	1x open-ended spanner for faceplate	
29	N7AC-A29	1x knockout bar shaft	
30	N7AC-A30	1x knockout bar knob	
31L	N7AC-A31L	1x double taper	MT2 / MT2
32	N7AC-A32	1x key	4 x 4 x 45 mm
33	N7AC-A33	1x motor	1.5 HP
34	N7AC-A34	1x spindle locking pin	
35	N7AC-A35	1x magnet	
36	N7AC-A36	1x flat head screw	M3 x 8 mm
37	N7AC-A37	2x circlip	S-19
38	N7AC-A38	1x bearing	6304
39	N7AC-A39	1x handwheel	
40	N7AC-A40	1x locking pin for index plate	
41	N7AC-A41	1x headstock clamping lever	
42	N7AC-A42	1x spring	
43	N7AC-A43	1x circlip	S-9
44	N7AC-A44	1x belt	2201-6V
45	N7AC-A45	1x strain relief	PG11
46	N7AC-A46	1x release knob	
47	N7AC-A47	1x spring	
48	N7AC-A48	1x seat	
49	N7AC-A49	1x wire fixing piece	ACC-5
50	N7AC-A50	1x bolt	



Item	Part No.	Specification	Description
30	N7AC-B30	2x nut	M5
31	N7AC-B31	1x stop bar	
32	N7AC-B32	1x frequency inverter bracket	
33A	N7AC-B33A	1x top cover frequency inverter	
34A	N7AC-B34A	1x bottom cover frequency inverter	
35A	N7AC-B35A	1x frequency inverter	E-type
36	N7AC-B36	1x signal wire, short	
37	N7AC-B37	1x main switch	
38	N7AC-B38	1x brake	
39	N7AC-B39	12x button head screw	M5 x 8 mm
40	N7AC-B40	3x button head screw	M6 x 10 mm
41	N7AC-B41	1x cover plate	
42	N7AC-B42	2x cap nut	M3
44	N7AC-B44	2x magnet	
45	N7AC-B45	2x flat head screw	M3 x 8 mm
46	N7AC-B46	1x label "TWISTER FU-180"	
47	N7AC-B47	1x nameplate	
48	N7AC-B48	1x cap screw	M6 x 12 mm
49	N7AC-B49	1x nut	M6
50	N7AC-B50	1x stop screw	
51	N7AC-B51	2x strain relief	PG9
52	N7AC-B52	2x strain relief	PG11
53	N7AC-B53	1x warning label	
54	N7AC-B54	1x brass insert	
58	N7AC-B58	1x toggle switch	
59	N7AC-B59	1x switch guard	
60	N7AC-B60	1x washer	
61	N7AC-B61	1x cable	
62	N7AC-B62	1x label	

Item	Part No.	Specification	Description
1	N7AC-B01	1x handwheel handle	
2B	N7AC-B02B	1x handwheel	6" x 19
3	N7AC-B03	2x set screw	1/4" x 1/4"
4	N7AC-B04	1x lock handle	5/16"
5	N7AC-B05	1x nut	M10
6	N7AC-B06	1x set screw	M10 x 30 mm
7	N7AC-B07	1x clamping lever	
8B	N7AC-B08B	1x tailstock	
9B	N7AC-B09B	1x tailstock spindle	T18x4
10B	N7AC-B10B	1x tailstock quill	
11	N7AC-B11	1x live centre	MT2
12	N7AC-B12	1x circlip	S-12
13	N7AC-B13	1x bolt	
14	N7AC-B14	2x fixing piece	
15	N7AC-B15	2x nylon nut	3/4" x 10UNC
16	N7AC-B16	6x round-head screw	M6 x 16 mm
17	N7AC-B17	2x carrying handle	
18	N7AC-B18	4x cap nut	M8
19	N7AC-B19	8x nut	M8
20	N7AC-B20	8x spring washer	M8
21	N7AC-B21	12x washer	M8
22	N7AC-B22	8x set screw	M8 x 60 mm
23	N7AC-B23	1x bed	
24	N7AC-B24	1x clamping lever	
25	N7AC-B25	1x banjo	
26	N7AC-B26	1x tool rest	350 mm
27	N7AC-B27	1x circlip	S-18
28	N7AC-B28	1x bolt	
29	N7AC-B29	1x lock handle	3/8"



Item	Part No.	Specification	Description
01	N7AC-C01	2x stand (suitable for left + right)	
02	N7AC-C02	4x nut	M20 x 2.5P
03	N7AC-C03	4x adjustable foot	M20 x 2.5P
04	N7AC-C04	1x rubber pad (to be cut to size)	

29 | Drilling template for auxiliary support

Use this template to prepare the wooden board which serves as auxiliary support during assembly of the lathe. For more information see page 13.

