

# PROMAC®

**GH-2260ZX**  
**GH-2280ZX**

## METAL LATHES

Original:

**GB**  
**Operating Instructions**

Translations:

**D**  
**Betriebsanleitung**

**F**  
**Manuel Utilisateur**



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M – GH-2260ZX-T GH-2280ZX-T

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**CE-Conformity Declaration**  
**CE-Konformitätserklärung**  
**Déclaration de Conformité CE**

**Product / Produkt / Produit:**

Metal Lathe  
Drehbank  
Tour à métaux  
**GH-2260ZX**  
**GH-2280ZX**

**Brand / Marke / Marque:**

**PROMAC**

**Manufacturer / Hersteller / Fabricant:**

TOOL FRANCE SARL  
9 Rue des Pyrénées, 91090 LISSES, France

We hereby declare that this product complies with the regulations  
Wir erklären hiermit, dass dieses Produkt der folgenden Richtlinie entspricht  
Par la présente, nous déclarons que ce produit correspond aux directives suivantes

**2006/42/EC**

Machinery Directive  
Maschinenrichtlinie  
Directive Machines

**2014/30/EU**

electromagnetic compatibility  
elektromagnetische Verträglichkeit  
compatibilité électromagnétique

designed in consideration of the standards  
und entsprechend folgender zusätzlicher Normen entwickelt wurde  
et été développé dans le respect des normes complémentaires suivantes

**EN ISO 12100:2010**

**EN ISO 23125:2015**

**EN 60204-1:2006+A1:2009**

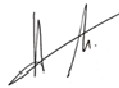
**EN 61000-6-2:2005**

**EN 61000-6-4:2007+A1:2011**

Responsible for the Documentation / Dokumentations-Verantwortung / Responsabilité de Documentation:

Head Product-Mgmt. / Leiter Produkt-Mgmt. / Resp. Gestion des Produits

TOOL FRANCE SARL



2018-11-20 Christophe SAINT SULPICE, General Manager

TOOL FRANCE SARL

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# GB - ENGLISH

## Operating Instructions

Dear Customer,

Many thanks for the confidence you have shown in us with the purchase of your new PROMAC -machine. This manual has been prepared for the owner and operators of a JET GH 2280ZX metal lathe to promote safety during installation, operation and maintenance procedures. Please read and understand the information contained in these operating instructions and the accompanying documents. To obtain maximum life and efficiency from your machine, and to use the machine safely, read this manual thoroughly and follow instructions carefully.

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##### **1. Declaration of conformity**

On our own responsibility we hereby declare that this product complies with the regulations\* listed on page 2. Designed in consideration with the standards\*\*.

##### **2. Warranty**

TOOL FRANCE SARL guarantees that the supplied product(s) is/are free from material defects and manufacturing faults.

This warranty does not cover any defects which are caused, either directly or indirectly, by incorrect use, carelessness, damage due to accidents, repairs or inadequate maintenance or cleaning as well as normal wear and tear.

Further details on warranty (e.g. warranty period) can be found in the General Terms and Conditions (GTC) that are an integral part of the contract.

These GTC may be viewed on the website of your dealer or sent to you upon request.

TOOL FRANCE SARL reserves the right to make changes to the product and accessories at any time.

##### **3. Safety**

###### **3.1 Authorized use**

This metal lathe is designed for turning and drilling machinable metal and plastic materials only. Machining of other materials is not permitted and may be carried out in specific cases only after consulting with the manufacturer.

**Never cut magnesium-  
high danger to fire!**

The workpiece must allow to safely be loaded and clamped.

The proper use also includes compliance with the operating and maintenance instructions given in this manual.

The machine must be operated only by persons familiar with its operation and maintenance and who are familiar with its hazards.

The required minimum age must be observed.

The machine must only be used in a technically perfect condition.

When working on the machine, all safety mechanisms and covers must be mounted.

In addition to the safety requirements contained in these operating instructions and your country's applicable regulations, you should observe the generally recognized technical rules concerning the operation of metalworking machines.

Any other use exceeds authorization. In the event of unauthorized use of the machine, the manufacturer renounces all liability and the responsibility is transferred exclusively to the operator.

### 3.2 General safety notes

Metalworking machines can be dangerous if not used properly. Therefore the appropriate general technical rules as well as the following notes must be observed.

Read and understand the entire instruction manual before attempting assembly or operation.

Keep this operating instruction close by the machine, protected from dirt and humidity, and pass it over to the new owner if you part with the tool.

No changes to the machine may be made.

Daily inspect the function and existence of the safety appliances before you start the machine. Do not attempt operation in this case, protect the machine by unplugging the power cord.

Remove all loose clothing and confine long hair.

Before operating the machine, remove tie, rings, watches, other jewellery, and roll up sleeves above the elbows.

Wear safety shoes; never wear leisure shoes or sandals.

Always wear the approved working outfit.

Do **not** wear gloves.

Wear goggles when working

Install the machine so that there is sufficient space for safe operation and work piece handling.

Keep work area well lighted.

The machine is designed to operate in closed rooms and must be placed stable on firm and levelled ground.

Make sure that the power cord does not impede work and cause people to trip.

Keep the floor around the machine clean and free of scrap material, oil and grease.

Stay alert!

Give your work undivided attention. Use common sense. Do not operate the machine when you are tired.

Do not operate the machine under the influence of drugs, alcohol or any medication. Be aware that medication can change your behaviour.

Never reach into the machine while it is operating or running down.

Never leave a running machine unattended. Before you leave the workplace switch off the machine.

Keep children and visitors a safe distance from the work area.

Do not operate the electric tool near inflammable liquids or gases. Observe the fire fighting and fire alert options, for example the fire extinguisher operation and place.

Do not use the machine in a damp environment and do not expose it to rain.

Work only with well sharpened tools.

Always close the chuck guard and pulley cover before you start the machine.

Remove the chuck key and wrenches before machine operation.

Specifications regarding the maximum or minimum size of the work piece must be observed.

Do not remove chips and work piece parts until the machine is at a standstill.

Do not stand on the machine.

Connection and repair work on the electrical installation may be carried out by a qualified electrician only.

Have a damaged or worn power cord replaced immediately.

Never place your fingers in a position where they could contact any rotating parts or chips.

Check the safe clamping of the work piece before starting the machine.

Don't exceed the clamping range of the chuck.

Work pieces longer than 3 times the chucking diameter need to be supported by the tailstock or a steady rest.

Avoid small chucking diameters at big turning diameters.

Avoid short chucking lengths.

Avoid small chucking contact.

Never exceed the max speed limitation of the work holding device.

Choose a small spindle speed when working unbalanced work pieces and for threading and tapping operations.

Any work piece stock extending the rear end of the headstock must be covered on its entire length. High danger of injury!

Long work pieces may need a steady rest support. A long and thin work piece can suddenly bend at high speed rotation.

Never move the tailstock or tailstock quill while the machine is running.

Remove cutting chips with the aid of an appropriate chip hook when the machine is at a standstill only.

Never stop the rotating chuck or work piece with your hands.

Measurements and adjustments may be carried out when the machine is at a standstill only.

Setup, maintenance and repair work may only be carried out after the machine is protected against accidental starting by pulling the mains plug.

### 3.3 Remaining hazards

When using the machine according to regulations some remaining hazards may still exist.

The rotating work piece and chuck can cause injury.

Thrown and hot work pieces and cutting chips can lead to injury.

Chips and noise can be health hazards. Be sure to wear personal protection gear such as safety goggles and ear protection.

The use of incorrect mains supply or a damaged power cord can lead to injuries caused by electricity.

## 4. Machine specifications

### 4.1 Technical data

#### GH 2260/ 2280 ZX

Swing over bed	560mm
Swing over bed gap	760mm
Swing over cross slide	330mm
Centre distance	1500/ 2000mm
Width of bed	335mm
Spindle taper	MT-7
Spindle nose DIN 55029(Camlock)	S8
Hole through spindle	Ø80 mm
Spindle speeds...12	25-1800 rpm
Tailstock ram travel	150mm
Tailstock taper	MT-5
Steady rest capacity	20 -200mm
Follow rest capacity	12 – 90mm

Cross slide travel 300mm  
 Top slide travel 130mm  
 Tool size max 25 x 25 mm  
 Longitudinal feeds 0.04–2.5mm/r  
 Metric threads...24 0.5–20mm  
 Inch threads...61 1-5/8 – 72 TPI  
 Lead screw pitch 6mm  
 Coolant tank capacity 15 L  
 Overall L x W x H 2830/ 3320 x 1100 x 1470mm

Net weight 2900/ 3145 kg  
 Mains 400V ~3L/PE 50Hz  
 Output power 7.5 kW (10.2 PS) S1  
 Reference current 10 A  
 Extension cord (H07RN-F): 4x2.5<sup>2</sup>  
 Installation fuse protection 25A

**4.2 Noise emission**

Acoustic pressure level (EN 11202):  
 Idling at maximum speed 81,2 dB (A)

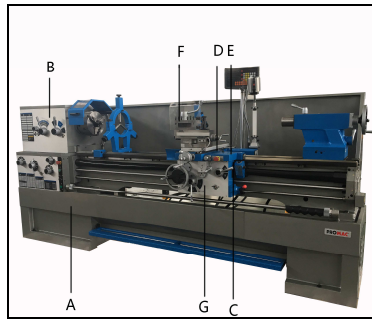
The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

**4.3 Content of delivery**

- Cast iron stand
- 6 Leveling pads
- Pull out chip tray
- Splash guard
- 250mm 3-jaw universal chuck
- 300mm 4-jaw independent chuck
- 300mm faceplate
- Four way tool post
- Steady rest
- Follow rest
- Foot brake
- Coolant system
- Halogen work light
- MT-4 (MT-5) life centre
- MT-5 fixed centre
- MT5/MT7 centre sleeve
- Threading dial
- Operating tools in tool box
- Oil can
- Operating manual
- Spare parts list.

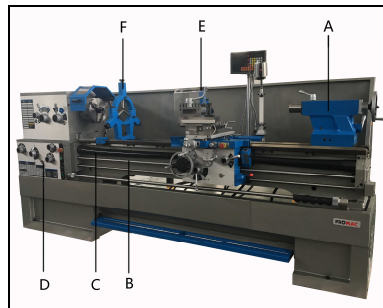
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**4.4 Machine description**



**Fig 1**

- A....Lathe bed
- B....Headstock
- C....Carriage
- D....Top slide
- E....Cross slide
- F....Four way tool post
- G....Apron



**Fig 2**

- A.....Tailstock
- B.....Lead screw
- C.....Feed rod
- D....Gear box
- E.....Follow rest
- F.....Steady rest

**5. Transport and start up**

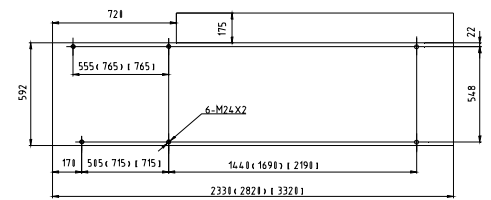
**5.1 Transport and installation**

The machine will be delivered in a closed crate.

For transport use a forklift or hand trolley. Make sure the machine does not tip or fall off during transport.

The machine is designed to operate in closed rooms and must have sufficient floor space to operate it and to have access from all sides.

**Floor plan:**



**GH2260/2280ZX**

**5.2 Assembly**

If you notice transport damage while unpacking, notify your supplier immediately. Do not operate the machine!

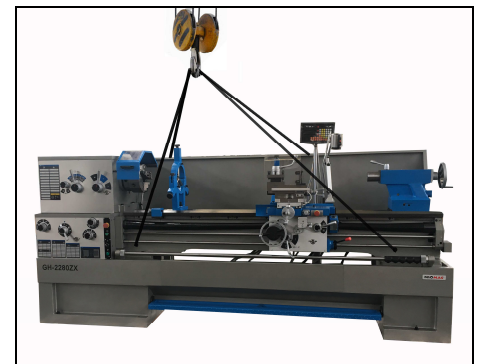
Dispose of the packing in an environmentally friendly manner.

Clean all rust protected surfaces with petroleum, diesel oil or a mild solvent.

Unbolt the lathe from the shipping crate bottom.

Move the tailstock to the tailstock end of the bed.

Place 2 steel rods of sufficient strength into 2 holes of lathe bed. Sling the lathe with properly rated straps ( Fig 3)



**Fig 3**

**Caution:**

**The machine is heavy!**  
 GH 2260 ZX 2900 kg  
 GH 2280 ZX 3145 kg

**Use great care.**  
**Assure the sufficient load capacity and proper condition of your lifting devices.**  
**Never step underneath suspended loads.**

Use a machinist's precision level on the bed ways and check to make sure that the lathe bed is level.

The lathe bed must be level to be accurate.

### 5.3 Mains connection

Mains connection and any extension cords used must comply with applicable regulations. The mains voltage must comply with the information on the machine licence plate.

The mains connection must have a 16 A surge-proof fuse.

Only use power cords marked H07RN-F

Connections and repairs to the electrical equipment may only be carried out by qualified electricians.

Connection takes place on the terminal box on the back of the machine.

### 5.4 Initial lubrication

The lathe must be serviced at all lubrication points and all reservoirs filled to operating level before the lathe is placed into service! Failure to comply may cause serious damage to the lathe! (see chapter 8 for lubrication).

**After one month of operation the oil must be changed on headstock, gearbox and apron.**

The coolant tank has to be filled with coolant (see chapter 8.7)

### 5.5 Starting operation

**Before starting the machine check the proper chucking (see chapter 6.2).**

Turn ON the main power switch (located on the electric box at the rear of the machine).

You can now start the machine with the forward/ reverse lever (A, Fig 4).

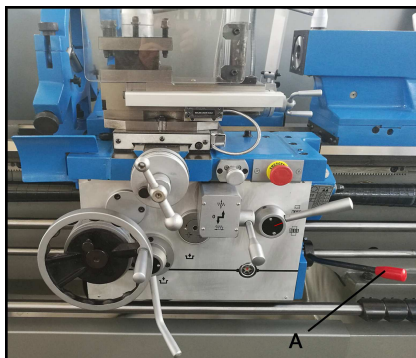


Fig 4

Push the lever  
- right and down for forward rotation  
- right and up for backward rotation.

Return the lever to its 0-position to stop the machine.

The spindle jog button (D, Fig 6) advances the spindle momentarily.

The foot break will stop all lathe functions and break down the spindle rotation.

**Attention:**  
Lathe still has electric power.

The emergency stop button (C, Fig 6) stops all machine functions.

**Attention:**  
Lathe still has electric power.  
Turn emergency stop button clockwise to reset.

### 5.6 Break in procedure:

To allow time for the gears and bearings to break-in and run smoothly, do not run the lathe above 560 rpm for the first 6 hours.

## 6. Machine operation

**Warning:**  
Setup work may only be carried out after the machine is protected against accidental starting.  
**With pressed emergency stop button.**

Measurements and adjustments may be carried out when the machine is at a standstill only.

Check the safe clamping of the work piece before starting the machine.

Never stop the rotating chuck or work piece with your hands.

Never place your fingers in a position where they could contact any rotating parts or chips.

Remove cutting chips with the aid of an appropriate chip hook when the machine is at a standstill only.

Always close the chuck guard and pulley cover before you start the machine.

Choose a small spindle speed when working unbalanced work pieces and for threading and tapping operations.

Never cut magnesium-high danger to fire!

**In case of danger step on the foot break and press the emergency stop button.**

## 6.1 Controls

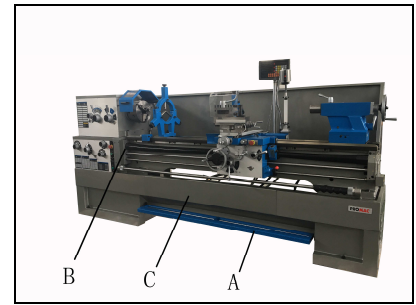


Fig 5

- A....Foot break
- B....Micro stop for carriage
- C....Bed cover (remove for cleaning)

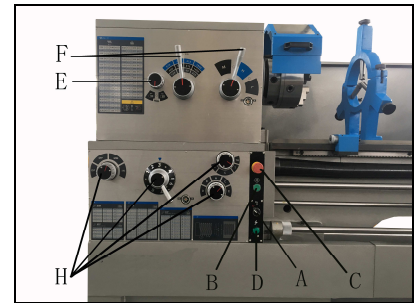


Fig 6

- A....Coolant On/Off switch
- B.... Spindle jog button
- C....Emergency stop button
- D.... Power indicator light (shows that electric power is on)
- E....Feed reversing lever
- F....Spindle speed levers
- H....Feed / Lead selector levers  
F, D...for feed rod  
E, C...for lead screw

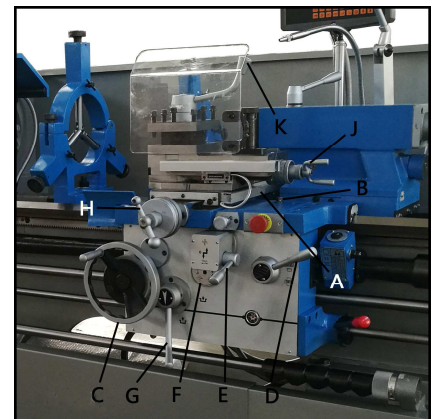
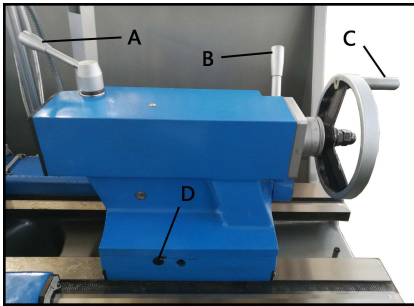


Fig 7

- A.....Cross slide lock
- C....Longitudinal Travel Hand Wheel

- D.....Half-Nut Lever (thread cutting)
- E.....Automatic Feed Lever  
longitudinal feed...push and down  
cross feed.....pull and up
- F.....Adjustable feed clutch
- G.....Feed engage lever
- H.....Cross slide hand wheel
- J.....Top Slide Hand Wheel
- K.....Tool post clamping lever



**Fig 8**

- A....Tailstock Spindle Locking Lever
- B.....Tailstock Locking lever
- C....Tailstock Spindle Hand Wheel
- D....Tailstock off-set adjustment

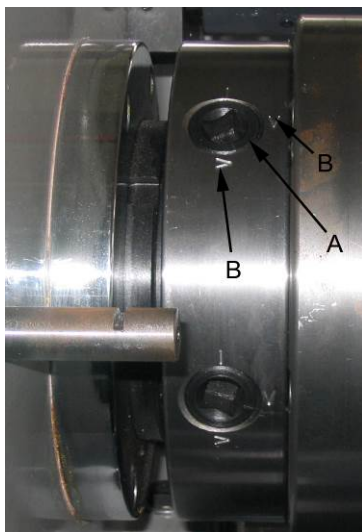
**6.2 Chucking**

**Chuck removal:**

Before removing the chuck from the spindle, place board across the bed ways under the chuck.

Support the chuck while turning three cam locks ¼ turn counter-clockwise.

Line up the two marks (A, Fig 9) for removal.



**Fig 9**

Carefully remove the chuck from the spindle.

Clean all contact surfaces.

Lift the chuck up to the spindle nose and press onto the spindle.

Tighten in place by turning the cam locks ¼ turn clockwise.

The index mark (A) on the camlock should be between the two indicator arrows (B).

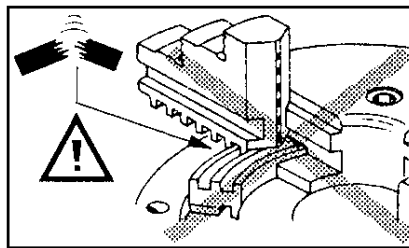
If not, adjust the cam studs by turning them in or out by one turn as needed.

Tighten cam locks.

**Attention:**

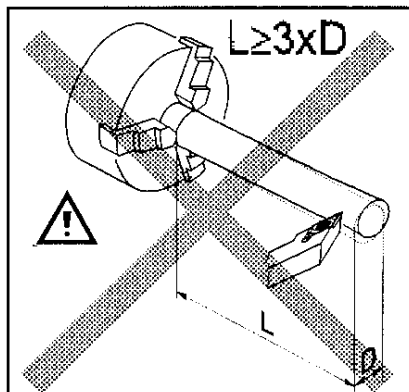
Never exceed the max speed limitation of the work holding device.

**Jaw teeth and scroll must always be fully engaged. Otherwise chuck jaws may break and fly off in rotation (Fig 10).**

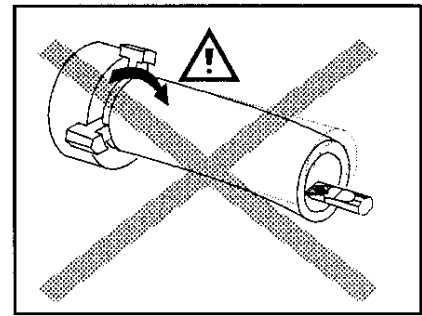


**Fig 10**

Avoid long workpiece extensions. Parts may bend (Fig 11) or fly off (Fig 12). Use tailstock or rests to support.

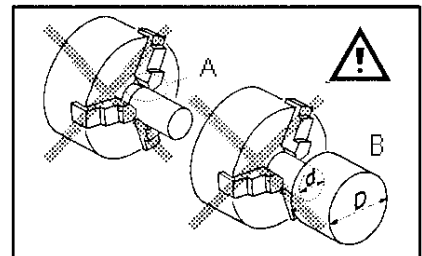


**Fig 11**



**Fig 12**

Avoid short clamping contact (A, Fig 13) or clamping on a minor part diameter (B).



**Fig 13**

Face locate the workpiece for added support.

**6.3 Tool setup**

The cutting angle is correct when the cutting edge is in line with the centre axis of the work piece. Use the point of the tailstock centre as a gauge and shims under the tool to obtain the correct centre height.

Use a minimum of two clamping screws when installing the cutting tool to the four way tool post.

Avoid big tool extensions.

**6.4 Spindle speeds selection**

The correct spindle speed depends on the type of machining, the cutting diameter, the material to be machined and the cutting tool.

These are recommended max. speeds for a 50mm cutting diameter with carbide (HM) tools:

Aluminium, brass	1500 RPM
Cast iron	1000 RPM
Mild steel	800 RPM
High carbon steel	600 RPM
Stainless steel	300 RPM

If high speed steel (HSS) tools are used about 5 times lower speeds must be chosen.

Generally speaking, the larger in relation the cutting diameter, the smaller the possible RPM.

**For example:**

Turning mild steel at a diameter of 25mm allows a speed of

1600 RPM max. with carbide tool  
320 RPM max. with HSS tool

**To change the spindle speed:**

The speed may never be changed when the spindle or motor are still running.

Move the speed select levers (F, Fig 6) according to the speed you desire.

It may be necessary to turn the chuck by hand to help the gears to engage.

**6.5 Turning with auto feed**

Several automatic longitudinal and cross feeds are readily available by selection on the gearbox handles (E, F, H, G, Fig 14).



**Fig 14**

The feed direction can be chosen with the feed reversing lever (A, Fig 14).

Move the lever (D, Fig 15):

- in and down longitudinal feed.
- out and up for cross feed.

**Fig 15**

**The correct feed depends on the material to be cut, the cutting operation, the type of tool, the rigidity of the work piece chucking, the depth of cut and the desired surface quality.**

**For example:**

Longitudinal OD-turning, mild steel of 25mm diameter with a carbide tool at 1400 RPM and with rigid chucking.

**Stock removal and roughing cut:**

Depth of cut 2mm  
Feed per revolution 0,2mm  
(change gear box position 4, G and I )

**Finishing cut:**

Depth of cut 0,5mm  
Feed per revolution 0.1mm  
(change gear box position 4, G and II )

**Micro finishing and calibration cut:**

Depth of cut 0,2mm  
Feed per revolution 0.05mm  
(change gear box position 4, G and III )

When roughing big diameters reduce the depth of cut!

**6.6 Thread cutting**

Threading is performed in multiple passes with a threading tool. Each depth of cut should be about 0,2mm and become less for the finishing passes.

The threading direction can be chosen with the feed reversing lever (A, Fig 14).

Set the feed rate selectors (E, F, G, H, Fig 14) in proper position.

**A) To cut inch and metric threads**

Set the machine up for the desired threading pitch and first depth of cut.

Engage the halve nut (A, Fig 15). The halve nut must be engaged during the entire threading process.

- Start the machine at the lowest spindle speed.
- When the tool reaches the end of cut, stop the motor and at the same time back the tool out of the part so that it clears the thread (Attention inertia: Stop the motor in time)
- Reverse the motor direction to allow the cutting tool to travel back to the starting point.

Repeat these steps until you have obtained the desired results.

**B) To cut metric threads with threading dial:**

On most metric threads the threading dial can be used. The halve nut can be opened at the end of cut, rather than the motor being stopped and reversed. The halve nut may only be engaged at the corresponding graduation match on the threading dial.

**6.7 Drilling operation**

Use a drill chuck with MT-4(MT-5) arbour (option) to hold centring drills and twisted drills in the tailstock.

For recommended speeds refer to section 6.4

To eject the drill chuck, fully retract the tailstock quill.

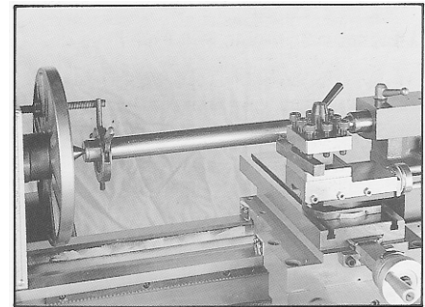
**7. Setup and adjustments**

**Warning:**

**Setup and adjustment work may only be carried out after the machine is protected against accidental starting. Turn off the main switch and press the emergency stop button!**

**7.1 Turning between centres**

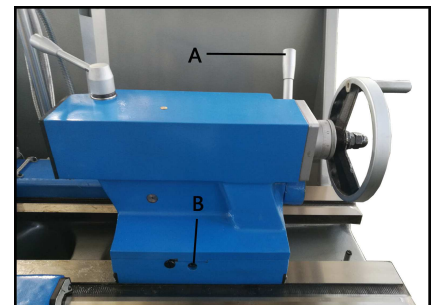
Mount the workpiece fitted with the drive dog between centres. The driver is driven by the face plate (Fig 18).



**Fig 18**

**7.2 Taper turning with tailstock**

Turning up to a side angle of 5° can be achieved by off-setting the tailstock.



**Fig 19**