

# PROMAC®

**GH-1640ZX –  
GH-1880ZX**

**METAL LATHES**

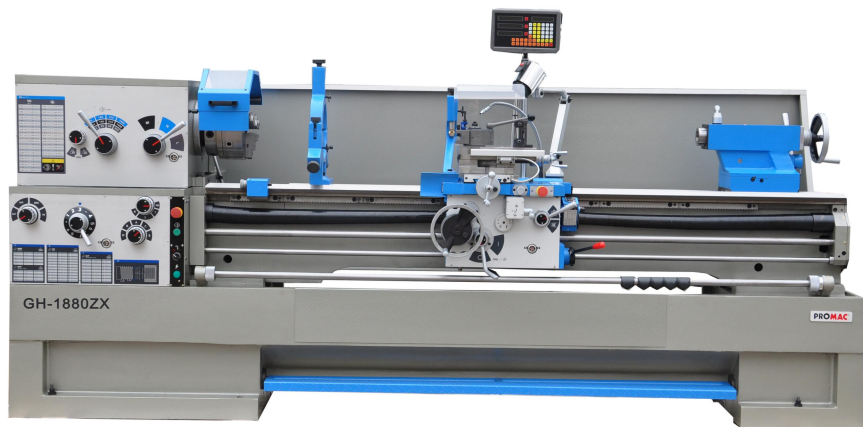
Original:

**GB**  
**Operating Instructions**

Translations:

**D**  
**Gebrauchsanleitung**

**F**  
**Mode d'emploi**



**TOOL FRANCE S.A.S**  
9 Rue des Pyrénées, 91090 LISSES, France  
[www.promac.fr](http://www.promac.fr)

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

**Product / Produkt / Produit:**

Metal Lathe  
Drehbank  
Tour à métaux  
**GH-1640ZX\_GH-1880ZX**

**Brand / Marke / Marque:**

**PROMAC**

Manufacturer or authorized representative/ Hersteller oder Bevollmächtigter/ Fabricant ou son mandataire:

**TOOL FRANCE S.A.S**  
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 60204-1:2018**

**EN IEC 61000-6-2:2019**

**EN IEC 61000-6-4:2019**

Original instruction manual / Original-Bedienungsanleitung / Notice d'instruction Originale  
Responsible for the documentation / Dokumentations-Verantwortung / Responsable de la documentation :



**JÉRÔME GERMAIN**  
General Manager  
Directeur Général

**At lisse / Hergestellt in / Fait à Lisse**

**TOOL FRANCE S.A.S – 9 rue des Pyrénées – 91090 LISSES (France)**  
**Mail : [contact@toolfrance.com](mailto:contact@toolfrance.com) - [www.toolfrance.com](http://www.toolfrance.com) Edition January 2024**

# UK Declaration of Conformity

Product:  
**Metal Lathe**

**GH-1640ZX\_GH-1880ZX**

Brand  
**PROMAC**

Manufacturer or authorized representative:

**TOOL FRANCE S.A.S**  
Unit 1a Stepnell Park  
Off Lawford Road  
Rugby  
CV21 2UX  
United Kingdom

We hereby declare that this product complies with the regulations:

**Supply of Machinery (Safety) Regulations 2010**  
**Electromagnetic Compatibility Regulations 2018**

designed in consideration of the standards:

**EN ISO 12100:2010**  
**EN ISO 23125: 2015**  
**EN 60204-1:2018**  
**EN IEC 61000-6-2:2019**  
**EN IEC 61000-6-4:2019**

Responsible for the Documentation:  
**TOOL FRANCE S.A.S**



**JÉRÔME GERMAIN**  
General Manager  
Directeur Général

**At lisse / Hergestellt in / Fait à Lisse**

**TOOL FRANCE S.A.S – 9 rue des Pyrénées – 91090 LISSES (France)**  
Mail : [contact@toolfrance.com](mailto:contact@toolfrance.com) - [www.toolfrance.com](http://www.toolfrance.com) Edition January 2024

# 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 GH-1640/1840/1860/1880 ZX 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.

### ...Table of Contents

#### 1. Declaration of conformity

#### 2. **Warranty**

#### 3. **Safety**

Authorized use

General safety notes

Remaining hazards

#### 4. **Machine specifications**

Technical data

Noise emission

Contents of delivery

Machine description

#### 5. **Transport and start up**

Transport and installation

Assembly

Mains connection

Initial lubrication

Starting operation

Break in procedure

#### 6. **Machine operation**

Controls

Chucking

Tool setup

Spindle speed selection

Turning with auto feed

Thread cutting

Drilling operation

#### 7. **Setup and adjustments**

Turning between centres

Taper turning with tailstock

Taper turning with top slide

Three jaw universal chuck

Four jaw independent chuck

Live centre

Steady and follow rest

Bed gap removal

#### 8. **Maintenance and inspection**

Annual lubrication

Weekly lubrication

Daily lubrication

Slide adjustments

Shear pin replacement

Headstock alignment

Coolant system

#### 9. **Trouble shooting**

#### 10. **Environmental protection**

#### 11. **Available accessories**

##### 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 S.A.S** 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 S.A.S** 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.

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. Machine specifications

### 4.1 Technical data

#### GH 1640 (1840/ 1860/ 1880) ZX

|                                 |                                          |
|---------------------------------|------------------------------------------|
| Swing over bed                  | 400(460)mm                               |
| Swing over bed gap              | 640(690)mm                               |
| Swing over cross slide          | 254 (280)mm                              |
| Centre distance                 | 1000/ 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                 | MT4 (MT-5)                               |
| Steady rest capacity            | 20 – 180(200)mm                          |
| Follow rest capacity            | 12 – 90mm                                |
| Cross slide travel              | 228mm                                    |
| Top slide travel                | 130mm                                    |
| 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               | 2320/ 2830/ 3320<br>x1050 x 1340(1370)mm |
| Net weight                      | 2483 (2712/ 2832/ 2988)kg                |
| Mains                           | 400V ~3L/PE 50Hz                         |
| Output power                    | 5.5 kW (7.5 HP) S1                       |
| Reference current               | 10 A                                     |
| Extension cord (H07RN-F):       | 4x2.5²                                   |
| 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.

### 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.

### 4.4 Machine description

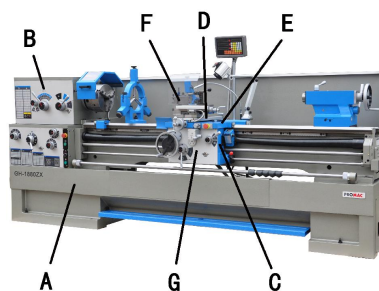


Fig 1

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

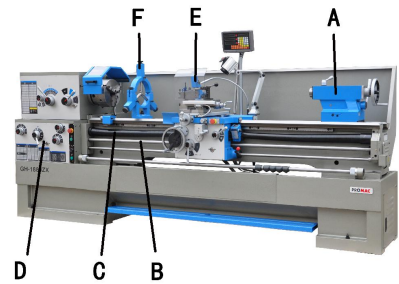


Fig 2

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

## 5. Transport and start up

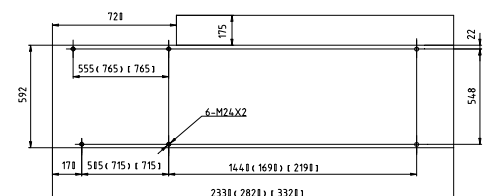
### 5.1 Transport and installation

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:



### GH1640,1840/1860/1880ZX

### 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)

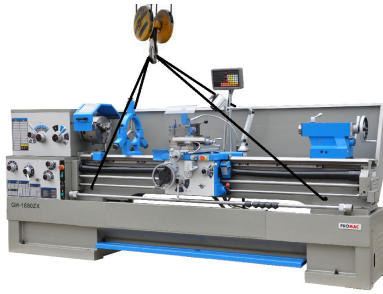


Fig 3

#### Caution:

**The machine is heavy!**

**GH 1640 ZX 2483 kg**

**GH 1840 ZX 2712 kg**

**GH 1860 ZX 2832 kg**

**GH 1880 ZX 2988 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).

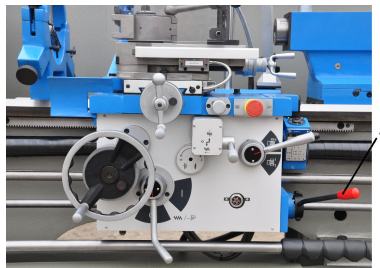


Fig 4

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 (B, 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 save 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

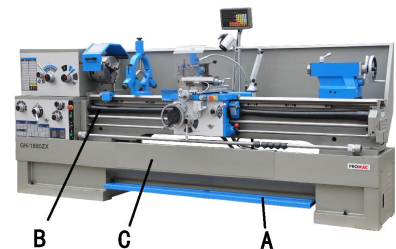
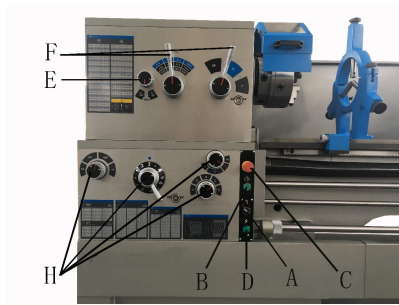


Fig 5

A....Foot break

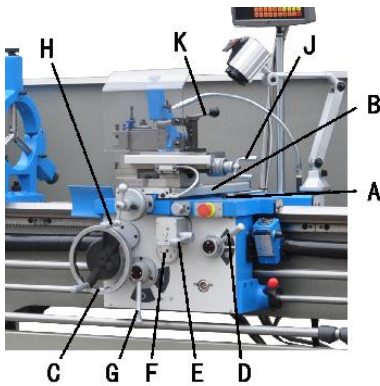
B....Micro stop for carriage

C....Bed cover (remove for cleaning)



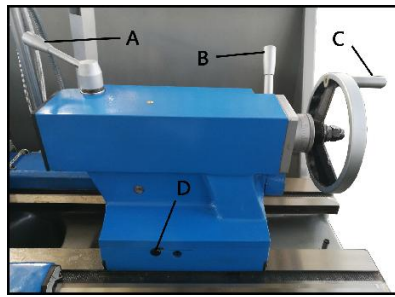
**Fig 6**

- A....Coolant On/Off switch
- B.... Spindle jog button (reverse)**
- C....Emergency stop button
- D.... Power indicator light  
(shows that electric power is on)
- E....Feed reversing lever
- F....Sindle 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

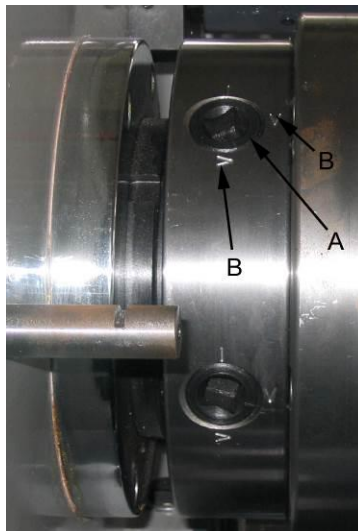
## 6.2 Chucking

### 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 form 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).

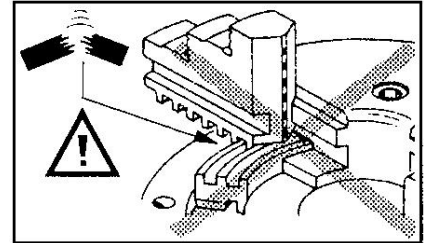
If not, adjust the cam studs by turning them in or out by one turn as needed.

Tighten cam locks.

### Attention:

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

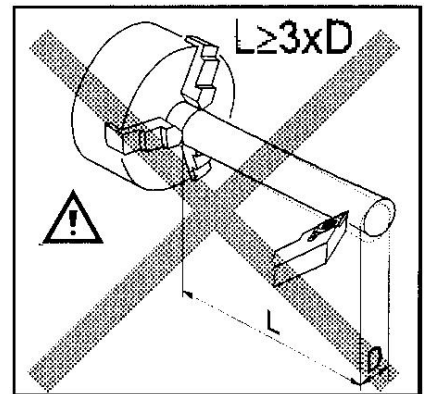
**Jaw teeth and scroll must always be fully engaged. Otherwise chuck jaws may break and fly off in rotation (Fig 10).**



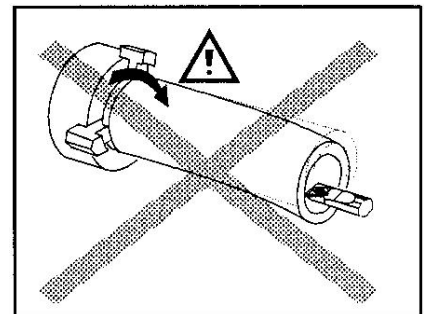
**Fig 10**

Avoid long workpiece extensions. Parts may bend (Fig 11) or fly off (Fig 12).

Use tailstock or rests to support.

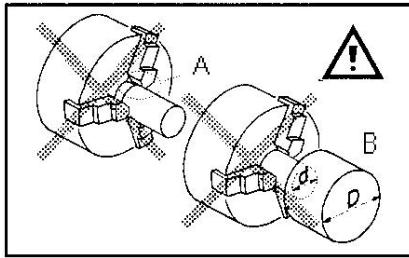


**Fig 11**



**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).

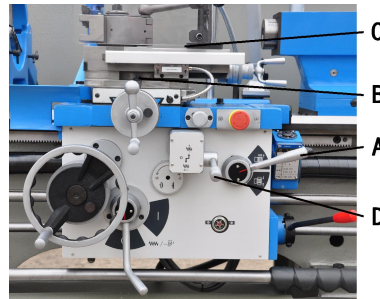
**Fig 14**

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).

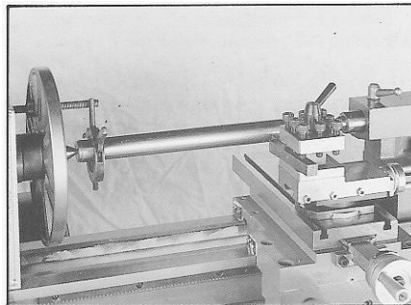


Fig 18

### 7.2 Taper turning with tailstock

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

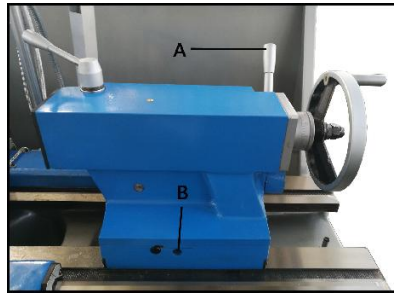


Fig 19

To offset the tailstock, loosen the locking handle (A, Fig 19), loosen the front adjusting screw (B) and take up the same amount on the rear adjusting screw.

Tighten the adjusting screws and the locking nut to hold the tailstock in position.

The workpiece must be held between centres and driven by the face plate and drive dog.

After taper turning, the tailstock must be returned to its original position.

Turn a test piece and adjust until the machine turns a perfect cylinder.

### 7.3 Taper turning with top slide

By angling the top slide, tapers may be turned.

Loosen two nuts (B, Fig 15) and rotate the top slide according to the graduated scale.

### 7.4 Three jaw universal chuck

With this universal chuck, cylindrical, triangular and hexagonal stock may be clamped (Fig 20).

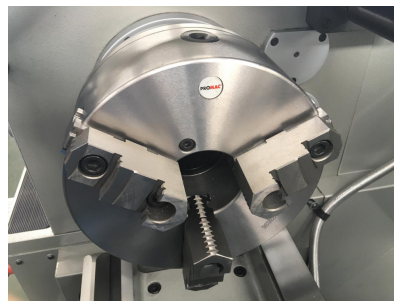


Fig 20

To hold big diameter stock, reverse the top jaws.

Use Molykote Paste G (or adequate grease) to lubricate the jaws.

### 7.5 Four jaw independent chuck

This chuck has four independently adjustable chuck jaws. These permit the holding of square and asymmetrical pieces and enable the accurate concentric set-up of cylindrical pieces.

### 7.6 Live centre

The live centre is mounted in ball bearings.

Its use is highly recommended for speeds above 500 RPM.

To eject the live centre, fully retract the tailstock quill.

### 7.7 Steady and follow rest

#### The steady rest

serves as a support for longer shafts and ensures a safe and chatter free operation.

The steady rest is mounted on the bed way with a locking plate.

Tighten the fingers so that they are snug but not tight against work piece.

Lubricate the fingers to prevent premature wear.

#### The follow rest

is mounted on the saddle and follows the movement of the tool. It prevents flexing of long and thin work pieces under pressure from the tool.

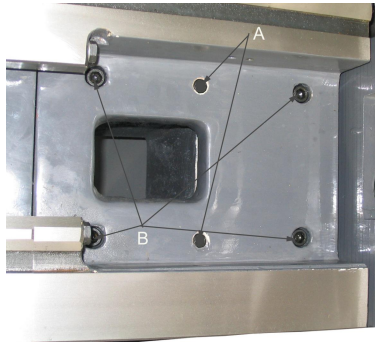
Set the fingers snug but not overly tight. Lubricate the fingers to prevent premature wear.

### 7.8 Bed gap removal

Pull the taper pins (A, Fig 21) by tightening the hex nuts.

Remove the screws (B).

Bed gap can now be removed.



**Fig 21**

Before you install the bed gap, clean the contacting surfaces thoroughly.

Remove nuts from the taper pins.

Slide taper pins into the holes and seat using a mallet.

Tighten the screws.

## **8. Maintenance and inspection**

### **General notes:**

**Maintenance, cleaning and repair 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.**

Clean the machine regularly.

Defective safety devices must be replaced immediately.

Repair and maintenance work on the electrical system may only be carried out by a qualified electrician.

### **8.1 Annual Lubrication**

#### **- Headstock:**

##### **Change the hydraulic oil**

**(GH 1640 ZX...8 Liter)**

**(GH 1840/ 1860/ 1880 ZX....12Liter)**

**DIN 51517-2 CL ISO VG 32**

(e.g. BP Energol HLP32, Castrol Hyspin AWS 32, Mobil DTE Oil Light )

Oil must be up to indicator mark in oil sight glass (A, Fig 22).

Fill oil by pulling plug located on top of the headstock underneath the rubber mat.



**Fig 22**

**Drain oil after first month of operation** by removing drain plug on the left side of the headstock at the lower rear corner.

Clean out any metal shavings.

Refill with oil.

Then change the oil in the headstock annually (respectively every 700 operating hours).

#### **- Gearbox:**

##### **Change the hydraulic oil (1,8 litre)**

**DIN 51517-2 CL ISO VG 68**

(e.g. BP Energol HLP68, Castrol Hyspin AWS 68, Mobil DTE Oil Heavy Medium)

Oil must be up to indicator mark in oil sight glass (B, Fig 22).

Fill oil by removing 2 screws on the top cover.

**Drain oil after first month of operation** by removing drain plug (C, Fig 22). Refill with oil.

Then change the oil in the gearbox annually (respectively every 700 operating hours).

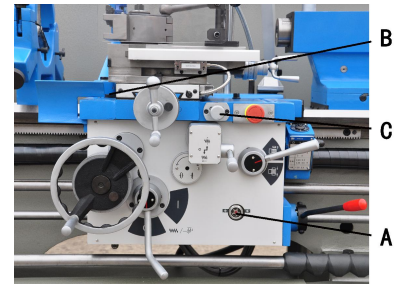
#### **- Apron:**

##### **Change the hydraulic oil (1,5 litre)**

**DIN 51517-2 CL ISO VG 68**

(e.g. BP Energol HLP68, Castrol Hyspin AWS 68, Mobil DTE Oil Heavy Medium)

Oil must be up to indicator mark in oil sight glass (A, Fig 23).



**Fig 23**

Fill oil by removing plug (B).

**Drain oil after first month of operation** by removing drain plug on the bottom. Refill with oil.

Then change the oil in the apron annually (respectively every 700 operating hours).

#### **One shot lubrication system:**

Daily pull knob (C) on the one shot lubrication system and hold for several seconds to allow oil to fill the pump. When the knob is released, oil will flow through various oil lines to lubricate the ways and cross slide surfaces.

When the oil level is below the indicator mark, oil must be added.

### **8.2 Weekly Lubrication**

Weekly inspect the oil sight glasses, fill oil on demand (see 8.1).

#### **Weekly apply grease:**

##### **DIN 51807-1 non slinging grease**

(e.g. BP L2, Mobilgrease Special).

#### **- Rack**

Apply grease on entire length.

#### **- Change gears**

Coat all gears with grease

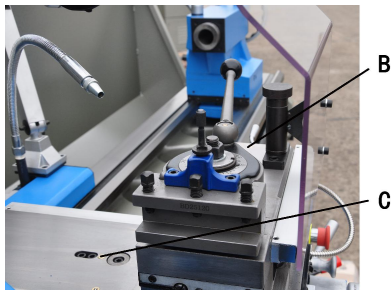
### **8.3 Daily Lubrication**

#### **Daily operate the apron one-shot lubrication system (chapter 8.1)**

#### **Daily apply oil:**

##### **DIN 51502 CG ISO VG 68**

(e.g. BPMaccurat 68, Castrol Magna BD 68, Mobil Vectra 2)



**Fig 24**

**- Top slide**

Lubricate 2 ball oilers (B, Fig 24)

**- Cross slide**

Lubricate 3 ball oilers (C, Fig 24)

**- Lead screw and feed rod**

Apply oil on entire length.

**- Lead screw/ feed rod hub**

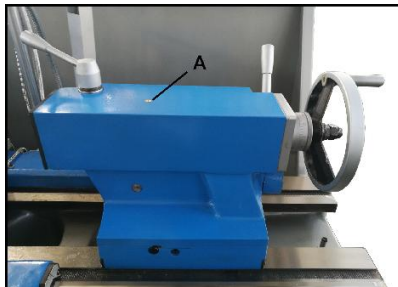
- Lubricate 2 ball oilers (A, Fig 25)



**Fig 25**

**- Tailstock**

- Lubricate 1 ball oiler (A, Fig 26)

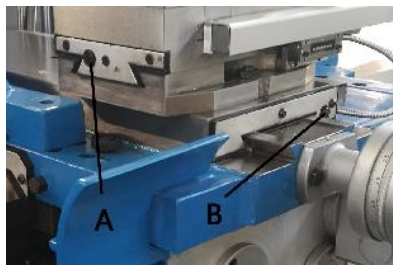


**Fig 26**

**8.4 Slide adjustments**

Each slide is fitted with tapered gib.

Loosen the front gib screw (A, Fig 27 for top slide shown) by one turn.



**Fig 27**

Tighten front gib screw (B, Fig 27 for cross slide shown) appr. a quarter turn.

Try and repeat until slide moves freely without play.

Gently tighten the rear gib screw.

**8.5 Shear pin replacement**

Lead screw and feed shaft are equipped with shearing pins to protect the drive against overload.

If a shear pin breaks it must be replaced.

Knock out the broken pin.

Line up the holes and fit a new pin.

**8.6 Headstock alignment**

The headstock has been aligned at the factory.

Check that the machine bed is level and correct before proceeding.

Turn a test piece for inspection.

The diameter should be the same on the whole turning length.

**If headstock alignment is needed:**

Loosen the 4 headstock bolts that hold the headstock to the bed.

Do not loosen completely; some drag should remain.

Adjust on the lateral adjustment bolts located on the rear of the headstock.

Tighten all headstock bolts.

**8.7 Coolant system**

Remove access cover on tailstock end of machine stand (Fig 28).



**Fig 28**

Pour 15 litres of coolant mix into dip pan.

Follow coolant manufacturer's recommendations for use, care and disposal.

**9. Trouble shooting**

**Motor doesn't start**

\*No electricity-

check mains and fuse.

\*Defective switch, motor or cord-

consult an electrician.

**Machine vibration**

\*Unbalanced work piece-

Reduce spindle speed.

\*Workpiece deflection-

improve chucking length or diameter, support on tailstock end.

\*Tool deflection-

reduce tool length.

\*Slide backlash-

adjust slide gibs.

\*Slides running dry-

lubricate with oil.

\*Dull tool tip-

resharpen or change tool.

\*Chip load too high-

reduce depth of cut or feed-

**Tool tip burns**

\*Cutting speed too high-

reduce spindle speed.

\*Dull tool tip-

resharpen tool tip.

**Machine turns a taper**

\*Tailstock alignment is offset-  
align tailstock position.

\*Machine bed is twisted-

machine bed must be level.

**No automatic power feed**

\*Shear pin has broken-

replace shear pin

**11. Available accessories**

Refer to the PROMAC -Pricelist for various accessories.

**10. Environmental protection**

Protect the environment.

Your appliance contains valuable materials which can be recovered or recycled. Please leave it at a specialized institution.



This symbol indicates separate collection for electrical and electronic equipment required under the WEEE Directive (Directive 2012/19/EC) and is effective only within the European Union.

## Metric Thread Chart ZX Series

 mm / 

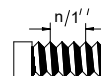


|       |    |   |   |      |    |   |   |
|-------|----|---|---|------|----|---|---|
| 0.04  | IN | A | 1 | 0.40 | MM | C | 8 |
| 0.045 | IN | A | 3 | 0.42 | MM | C | 9 |
| 0.05  | IN | A | 4 | 0.45 | MM | D | 1 |
| 0.055 | IN | A | 6 | 0.47 | MM | D | 2 |
| 0.06  | MM | A | 1 | 0.50 | MM | D | 3 |
| 0.065 | MM | A | 3 | 0.55 | MM | D | 4 |
| 0.07  | MM | A | 4 | 0.57 | MM | D | 5 |
| 0.08  | MM | A | 6 | 0.62 | MM | D | 6 |
| 0.09  | MM | A | 7 | 0.70 | MM | D | 7 |
| 0.10  | MM | A | 8 | 0.80 | MM | D | 8 |
| 0.11  | MM | A | 9 | 0.85 | MM | D | 9 |
| 0.12  | MM | B | 1 | 0.90 | MM | E | 1 |
| 0.13  | MM | B | 3 | 0.95 | MM | E | 2 |
| 0.14  | MM | B | 4 | 1.00 | MM | E | 3 |
| 0.15  | MM | B | 6 | 1.10 | MM | E | 4 |
| 0.17  | MM | B | 7 | 1.17 | MM | E | 5 |
| 0.20  | MM | B | 8 | 1.25 | MM | E | 6 |
| 0.21  | MM | B | 9 | 1.40 | MM | E | 7 |
| 0.23  | MM | C | 1 | 1.60 | MM | E | 8 |
| 0.25  | MM | C | 3 | 1.70 | MM | E | 9 |
| 0.27  | MM | C | 4 | 1.90 | MP | E | 6 |
| 0.30  | MM | C | 6 | 2.20 | MP | E | 7 |
| 0.35  | MM | C | 7 | 2.50 | MP | E | 8 |

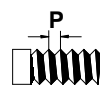


|       |    |   |   |      |    |   |   |
|-------|----|---|---|------|----|---|---|
| 0.02  | IN | A | 1 | 0.15 | MM | C | 6 |
| 0.025 | IN | A | 4 | 0.17 | MM | C | 7 |
| 0.03  | MM | A | 1 | 0.20 | MM | C | 8 |
| 0.035 | MM | A | 4 | 0.23 | MM | D | 1 |
| 0.04  | MM | A | 6 | 0.25 | MM | D | 3 |
| 0.045 | MM | A | 7 | 0.30 | MM | D | 6 |
| 0.05  | MM | A | 8 | 0.35 | MM | D | 7 |
| 0.055 | MM | A | 9 | 0.40 | MM | D | 8 |
| 0.06  | MM | B | 1 | 0.45 | MM | E | 1 |
| 0.065 | MM | B | 3 | 0.50 | MM | E | 3 |
| 0.07  | MM | B | 4 | 0.55 | MM | E | 4 |
| 0.08  | MM | B | 6 | 0.60 | MM | E | 6 |
| 0.09  | MM | B | 7 | 0.70 | MM | E | 7 |
| 0.10  | MM | B | 8 | 0.80 | MM | E | 8 |
| 0.11  | MM | B | 9 | 0.85 | MM | E | 9 |
| 0.12  | MM | C | 1 | 0.95 | MP | E | 6 |
| 0.13  | MM | C | 3 | 1.10 | MP | E | 7 |
| 0.14  | MM | C | 4 | 1.25 | MP | E | 8 |

|                                                                                                     |   |   |   |        |   |   |   |    |   |   |   |
|-----------------------------------------------------------------------------------------------------|---|---|---|--------|---|---|---|----|---|---|---|
|                    |   |   |   |        |   |   |   |    |   |   |   |
|  <b>IN</b><br>INCH |   |   |   |        |   |   |   |    |   |   |   |
| 1 5/8                                                                                               | E | 9 | S | 6      | D | 1 | S | 21 | B | 8 | T |
| 1 3/4                                                                                               | E | 8 | S | 6 1/2  | C | 9 | S | 22 | B | 3 | S |
| 2                                                                                                   | E | 7 | S | 6 3/4  | D | 6 | T | 23 | B | 2 | S |
| 2 1/4                                                                                               | E | 6 | S | 7      | C | 8 | S | 24 | B | 1 | S |
| 2 3/8                                                                                               | E | 5 | S | 7 1/2  | D | 4 | T | 26 | A | 9 | S |
| 2 1/2                                                                                               | E | 4 | S | 8      | C | 7 | S | 27 | B | 6 | T |
| 2 5/8                                                                                               | E | 8 | T | 9      | D | 1 | T | 28 | A | 8 | S |
| 2 3/4                                                                                               | E | 3 | S | 9 1/2  | C | 5 | S | 30 | B | 4 | T |
| 2 7/8                                                                                               | E | 2 | S | 10     | C | 4 | S | 32 | A | 7 | S |
| 3                                                                                                   | E | 1 | S | 10 1/2 | C | 8 | T | 36 | B | 1 | T |
| 3 1/4                                                                                               | D | 9 | S | 11     | C | 3 | S | 38 | A | 5 | S |
| 3 3/8                                                                                               | E | 6 | T | 11 1/2 | C | 2 | S | 40 | A | 4 | S |
| 3 1/2                                                                                               | D | 8 | S | 12     | C | 1 | S | 42 | A | 8 | T |
| 3 3/4                                                                                               | E | 4 | T | 13     | B | 9 | S | 44 | A | 3 | S |
| 4                                                                                                   | D | 7 | S | 13 1/2 | C | 6 | T | 46 | A | 2 | S |
| 4 1/2                                                                                               | D | 6 | S | 14     | B | 8 | S | 48 | A | 1 | S |
| 4 3/4                                                                                               | D | 5 | S | 15     | C | 4 | T | 54 | A | 6 | T |
| 5                                                                                                   | D | 4 | S | 16     | B | 7 | S | 60 | A | 4 | T |
| 5 1/4                                                                                               | D | 8 | T | 18     | C | 1 | T | 72 | A | 1 | T |
| 5 1/2                                                                                               | D | 3 | S | 19     | B | 5 | S |    |   |   |   |
| 5 3/4                                                                                               | D | 2 | S | 20     | B | 4 | S |    |   |   |   |



|                                                                                                               |   |   |   |      |   |   |   |      |   |   |   |
|---------------------------------------------------------------------------------------------------------------|---|---|---|------|---|---|---|------|---|---|---|
|                            |   |   |   |      |   |   |   |      |   |   |   |
|  <b>MM</b><br>METRIC       |   |   |   |      |   |   |   |      |   |   |   |
| 0.5                                                                                                           | A | 1 | T | 2.5  | B | 8 | R | 8.0  | D | 6 | S |
| 0.75                                                                                                          | A | 1 | S | 3.0  | C | 1 | S | 9.0  | D | 7 | S |
| 1.0                                                                                                           | A | 6 | S | 3.5  | C | 4 | R | 10.0 | D | 8 | R |
| 1.25                                                                                                          | A | 8 | R | 4.0  | C | 6 | S | 12.0 | E | 1 | S |
| 1.50                                                                                                          | B | 1 | S | 4.5  | C | 7 | S | 14.0 | E | 4 | R |
| 1.75                                                                                                          | B | 4 | R | 5.0  | C | 8 | R | 16.0 | E | 6 | S |
| 2.0                                                                                                           | B | 6 | S | 6.0  | D | 1 | S | 18.0 | E | 7 | S |
| 2.25                                                                                                          | B | 7 | S | 7.0  | D | 4 | R | 20.0 | E | 8 | R |
|  <b>MP</b><br>MODULE PITCH |   |   |   |      |   |   |   |      |   |   |   |
| 0.25                                                                                                          | A | 1 | T | 2.0  | C | 6 | S | 5.0  | D | 8 | R |
| 0.5                                                                                                           | A | 6 | S | 2.25 | C | 7 | S | 6.0  | E | 1 | S |
| 0.75                                                                                                          | B | 1 | S | 2.5  | C | 8 | R | 7.0  | E | 4 | R |
| 1.0                                                                                                           | B | 6 | S | 3.0  | D | 1 | S | 8.0  | E | 6 | S |
| 1.25                                                                                                          | B | 8 | R | 3.5  | D | 4 | R | 9.0  | E | 7 | S |
| 1.50                                                                                                          | C | 1 | S | 4.0  | D | 6 | S | 10.0 | E | 8 | R |
| 1.75                                                                                                          | C | 4 | R | 4.5  | D | 7 | S |      |   |   |   |



|                                                                                                                  |   |   |   |        |   |   |   |    |   |   |   |
|------------------------------------------------------------------------------------------------------------------|---|---|---|--------|---|---|---|----|---|---|---|
|                               |   |   |   |        |   |   |   |    |   |   |   |
|  <b>DP</b><br>DIAMETRAL PITCH |   |   |   |        |   |   |   |    |   |   |   |
| 3 1/4                                                                                                            | E | 9 | S | 11     | D | 3 | S | 36 | B | 6 | S |
| 3 1/2                                                                                                            | E | 8 | S | 11 1/2 | D | 2 | S | 38 | B | 5 | S |
| 4                                                                                                                | E | 7 | S | 12     | D | 1 | S | 40 | B | 4 | S |
| 4 1/2                                                                                                            | E | 6 | S | 13     | C | 9 | S | 44 | B | 3 | S |
| 4 3/4                                                                                                            | E | 5 | S | 14     | C | 8 | S | 46 | B | 2 | S |
| 5                                                                                                                | E | 4 | S | 16     | C | 7 | S | 48 | B | 1 | S |
| 5 1/2                                                                                                            | E | 3 | S | 18     | C | 6 | S | 52 | A | 9 | S |
| 5 3/4                                                                                                            | E | 2 | S | 19     | C | 5 | S | 56 | A | 8 | S |
| 6                                                                                                                | E | 1 | S | 20     | C | 4 | S | 64 | A | 7 | S |
| 6 1/2                                                                                                            | D | 9 | S | 22     | C | 3 | S | 72 | A | 6 | S |
| 7                                                                                                                | D | 8 | S | 23     | C | 2 | S | 76 | A | 5 | S |
| 8                                                                                                                | D | 7 | S | 24     | C | 1 | S | 80 | A | 4 | S |
| 9                                                                                                                | D | 6 | S | 26     | B | 9 | S | 88 | A | 3 | S |
| 9 1/2                                                                                                            | D | 5 | S | 28     | B | 8 | S | 92 | A | 2 | S |
| 10                                                                                                               | D | 4 | S | 32     | B | 7 | S | 96 | A | 1 | S |

