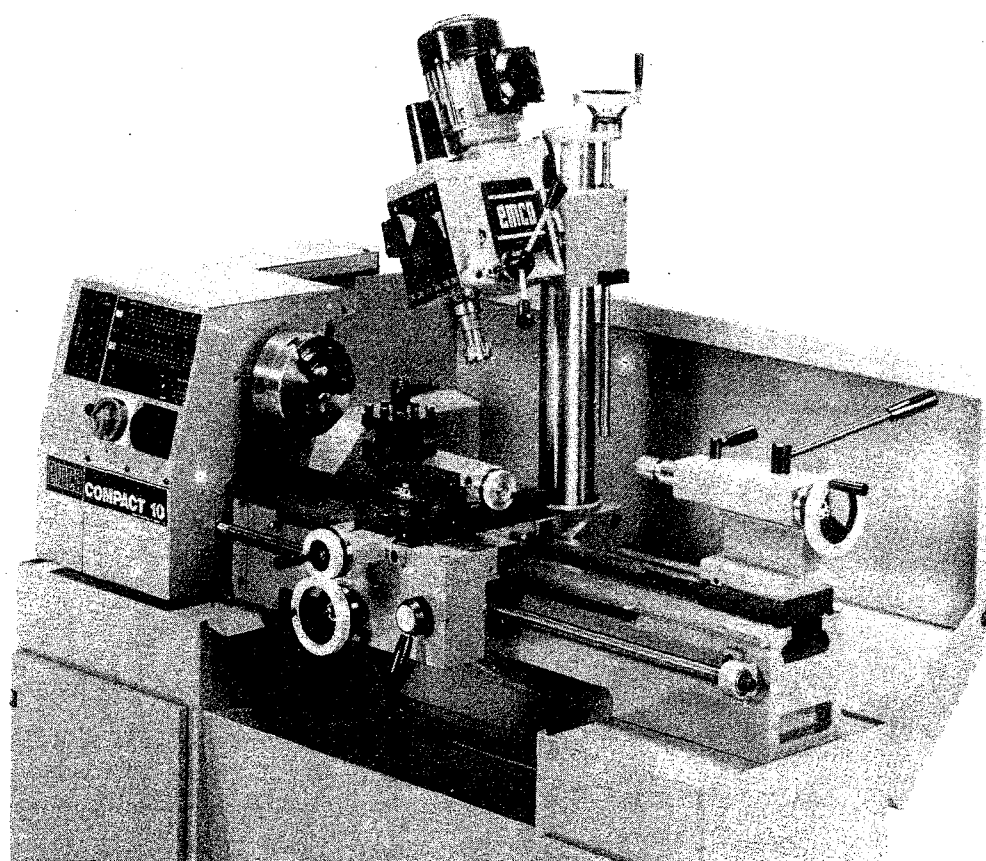


# Instruction book

## Service parts

**emco**

# COMPACT 10



**ENGLISH**

**Edition 83 03 Ref. Nr. EN 3 002**

**Maier+Co.**

A-5400 Hallein/Austria

## Preface

The instruction manual and the spare parts list contain rules for accident prevention, setting-up instructions, general description of operating elements and accessories for lathe EMCO COMPACT 10.

A separate instruction manual will be packed with the vertical milling and drilling unit. The instructions for Maximat Super 11 vertical unit are also valid for EMCO COMPACT 10.

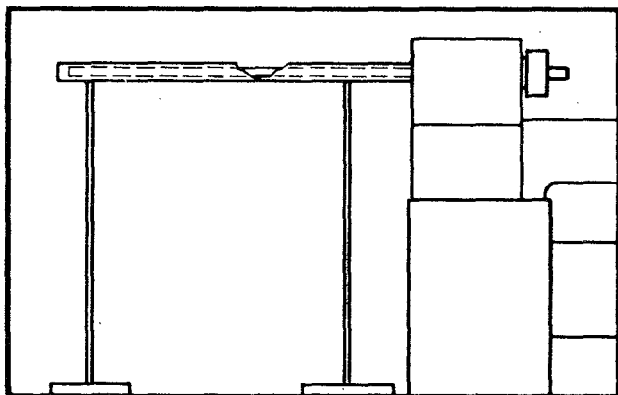
The instructions for the electrical connection of the vertical milling and drilling unit, machine lamp, coolant device, etc. you will find on pages 13-15 of this instruction manual.

## Note

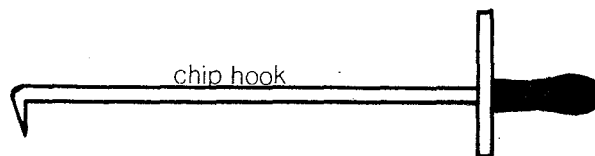
- + Read instruction manual carefully before operating machine.
- + Check bags and cartons for parts.
- + The machine is built in different versions so, if there is no influence on explanations, the photos may not always correspond with the machine delivered.
- + For transport reasons the longitudinal slide is clamped to the machine bed. Do not move slide before cleaning the machine.

# Safety Rules

- + Follow all safety rules!
- + Electrical connection: the electrical connection must be carried out professionally. A grounding receptacle must be available. Mounting of the plug (if not already mounted) as well as the connection of the accessories must also be carried out professionally.
- + Before dismounting the headstock guard (when changing motor) - remove plug.
- + Do not alter guards!  
Close belt guard before operating machine. Never open belt guard while machine is running.
- + Keep children and visitors away!  
The machine should be stored so that children and visitors not acquainted with the use of the machine cannot start it.
- + Always wear safety goggles!  
Be also aware that some materials (for example brass) spray while being worked on. Therefore, it is important that all persons near the machine are protected.
- + Wear proper apparel!  
Loose sleeves could get caught in chuck or workpiece.
- + Cover extending parts!  
When working on tubes or pipes which extend to the side of the headstock, these must be covered over the whole length.



- + Keep work area clean!  
Cluttered areas and benches invite accidents.
- + Remove adjusting keys and wrenches!  
Even when machine is not being used. The chuck keys should never be attached to the machine with chains or similar.
- + Turn off motor before attempting adjustments, maintenance or measuring work.
- + Use chip hook for removing chips!  
Chip hook has to be according WSV page N36 "Prevention against injuries through drilling and milling chips".



- + Never touch running machine parts!  
Never try to stop workpiece or chuck with the hand.
- + Do not surpass clamping capacity of the lathe chuck!  
The maximum clamping capacities are indicated in the instruction manual for lathe chucks.
- + Follow all safety and maintenance rules for lathe chucks.
- + Workpieces and tools have to be clamped professionally.
- + Be careful of extending chuck jaws  
Never reach over running (rotating) chucks.
- + Never put cleaning rags, tools, workpieces, etc. onto the machine!
- + Switch machine off before servicing!  
Remove plug from socket.

# Technical Data

Center height	140 mm/ 5,5"
Distance between centers	650 mm/25,6"
Swing over bed	280 mm/11"
Swing over cross slide	170 mm/6,7"
Width of lathe bed	155 mm/6,1"
Travel of top slide	100 mm/3,9"
Travel of cross slide	135 mm/5,3"
Leadscrew dia.	20 mm/0,79"
Leadscrew pitch:	
Metric machine	3 mm
Inch-type machine	8 tpi.
Dia. of chuck	140 mm/5,5"
Dia. of independent chuck	152 mm/6"
Dia. of faceplate	254 mm/10"
Net weight (without machine stand) approx.	150 kg/330 p.
Weight (with machine stand) approx.	220 kg/484 p.

## Headstock

### Main spindle DIN-execution

Hole through spindle	26 mm/1,02"
Spindle taper	MT 4
Center taper	MT 4
Spindle nose acc. DIN 55021	Size 3

### Main spindle Camlock-execution

Hole through spindle	36 mm/1,4"
Spindle taper	MT 5
Center taper	MT 5
Spindle nose acc. to ASA 5.9/D1 resp. ISO 702/II	Size 4
Number of spindle speeds	6
Range of speeds (rpm)	50 Hz 70-1700 60 Hz 85-2000

## Tailstock

Center sleeve dia.	30 mm/1,18"
Stroke of center sleeve	80 mm/3,15"
Inside taper	MT 2
Set-over	+10 mm/-8 mm/ +0,4"/-0,31"

## Drive motor

3-phase: P2	0,75 kW (S6-60%)
P1	1,2 kW
1-phase: P2	0,75 kW (S3-60%)
P1	1,2 kW

## Feed drive

From main spindle to reversing gear mechanism, from reversing gear mechanism to quadrant (Change gears 30/40/60/90/120)

## Feeds

Metric machine:  
2 longitudinal 0,08 and 0,17 mm/rev.  
Inch-type machine:  
2 longitudinal 0,0035 and 0,007 inch/rev.

## Thread pitches metric machine

### With basic equipment:

3 metric threads 0,25/1,5/3mm

### With change gear set additionally:

18 metric threads 0,3-5 mm  
21 inch threads 48-5 tpi.  
8 module threads 0,5-1,5

## Thread pitches inch-type machine

### With basic equipment:

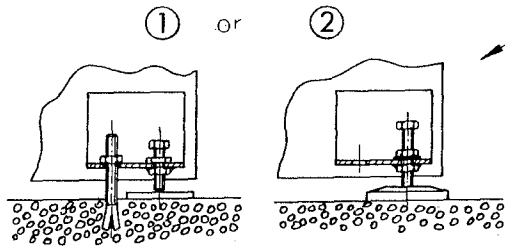
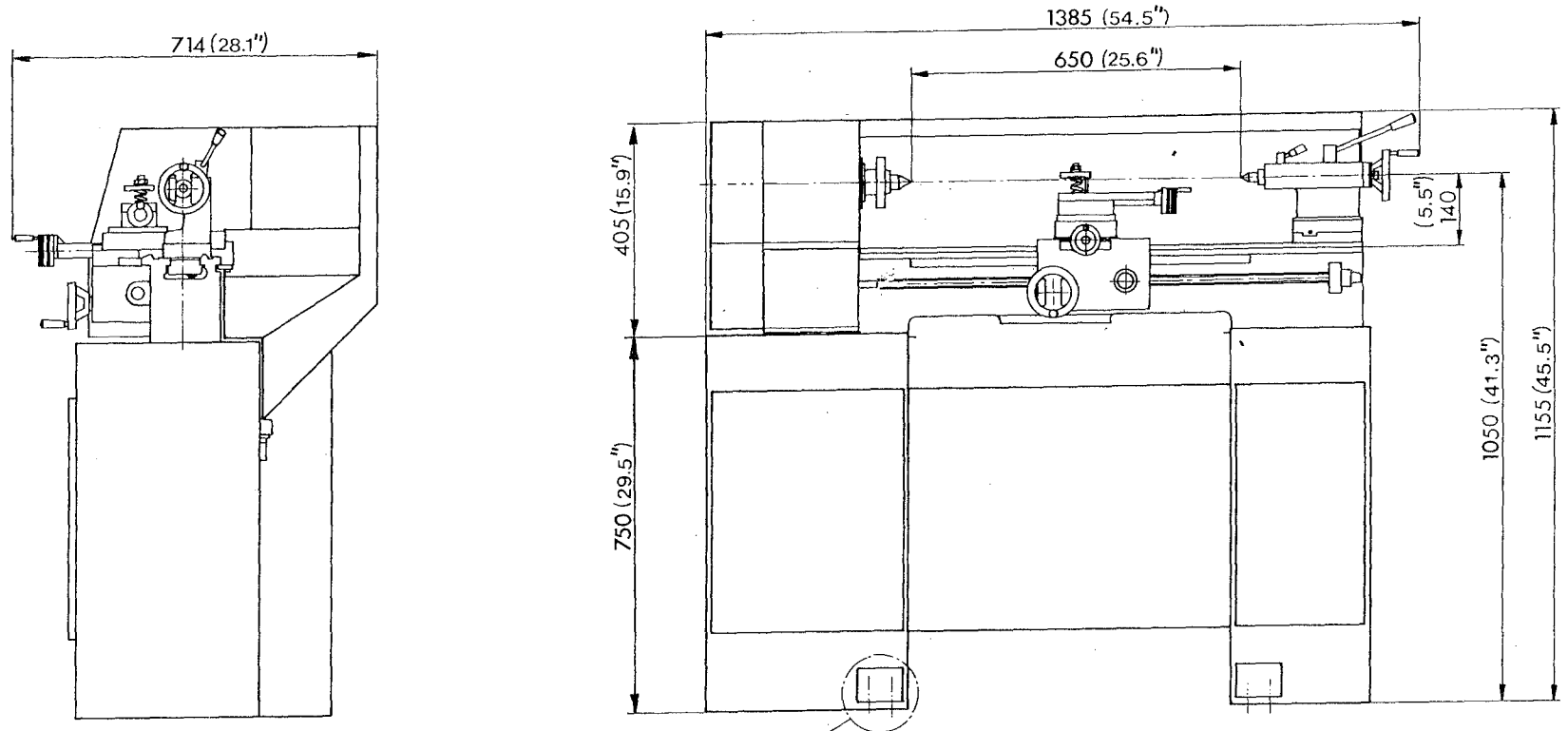
3 inch threads 32/16/8 tpi.

### With change gear set additionally:

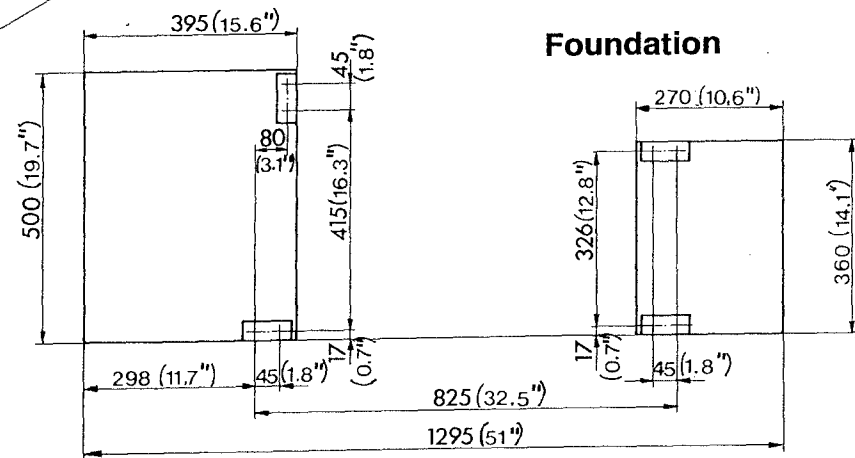
13 metric threads 0,45-5 mm  
21 inch threads 48-5 tpi.  
8 Diametral Pitch threads 110-15 DP

Colour	RAL 6011/green
Required floor space	1700 x 900 mm/ 67" x 35"

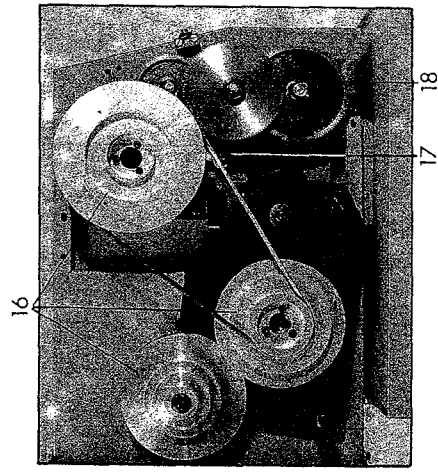
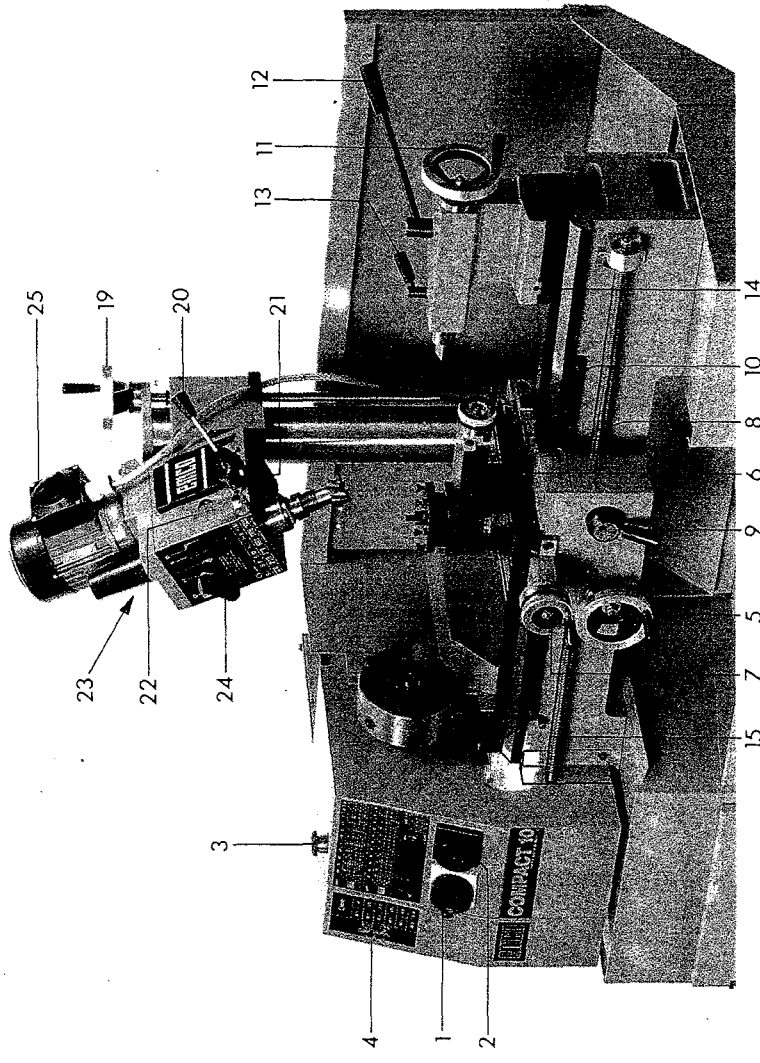
### Dimensions



### Foundation



# Controls



## Controls – Lathe

- 1 Lockable main switch with low-volt resp. no-volt release (only with VDE and Special Safety Electric Version)
- 2 Switch for selecting direction of main spindle revolution
- 3 Mushroom emergency off switch (only with Special Safety Electric Version)
- 4 Cover for spindle drive and change gears
- 5 Longitudinal slide handwheel
- 6 Clamping screw for longitudinal slide
- 7 Cross slide handwheel
- 8 Clamping screw for cross slide
- 9 Half nut lever
- 10 Top slide handwheel
- 11 Handwheel for tailstock
- 12 Convertible clamping lever for tailstock
- 13 Convertible clamping lever for tailstock ram

- 14 Bolts for setting over tailstock
- 15 Leadscrew
- 16 Belt drive
- 17 Reversing gear drive
- 18 Change gears with quadrant

## Controls – Vertical Drilling and Milling Unit

- 19 Handwheel for vertical slide
- 20 Lever for lowering pinion
- 21 Adjustable depth stop for pinion
- 22 Clamping lever for pinion
- 23 Clamping lever for vertical slide
- 24 Levers for switching spindle speeds
- 25 Main switch for vertical motor

## Different Versions of the Basic Machine

### 1. Standard-Electric Version

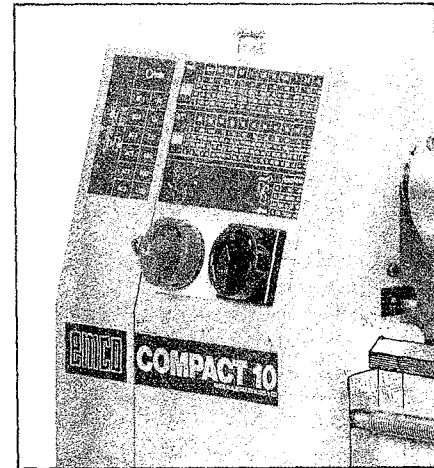
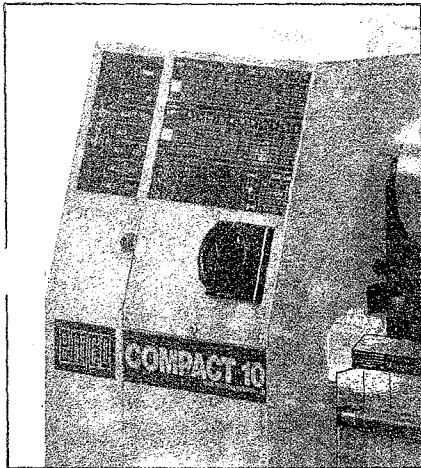
- Motor switch for 2 directions
- Clamping strip to connect vertical drilling and milling attachment, coolant attachment, machine lamp

### 2. VDE-Electric Version

- Motor switch for 2 directions
- Clamping strip to connect vertical drilling and milling attachment, coolant attachment, machine lamp
- Lockable main switch with emergency stop function and low-volt release.

### 3. Special Safety Electric Version

- Motor switch for 2 directions.
- Clamping strip to connect vertical drilling and milling attachment, coolant attachment, machine lamp
- Lockable main switch with emergency stop function and low-volt release.
- Mushroom emergency switch
- 24 V control circuit.
- Micro end switch for belt cover
- Micro end switch for chuck guard.



## Mechanical Versions

### Metric Machine

Leadscrew, cross- and top slide spindle, tailstock ram with metric pitches.  
Metric graduations on handwheels.

Spindle nose DIN 55021, size 3

### Inch-type Machine

Leadscrew, cross- and top slide spindle, tailstock ram with inch pitches.  
Inch graduations on handwheels.

(Only for USA and Canada)

Camlock spindle nose size 4, ISO 702/II  
resp. ASA 5.9/D1

### Spindle Noses

#### **Note:**

**Certain combinations of electric versions and/or inch machines and/or spindle noses are limited for delivery to specific countries.**



## Basic Equipment

Bed with Vee-guideways  
Headstock  
Tailstock  
Longitudinal, cross and top slide  
Single toolpost  
Belt drive (6 steps)  
Leadscrew  
Electrical equipment alternatively  
threephase or singlephase

1 Center MT 4 (DIN Spindle nose; MT5  
with Camlock spindle nose)

1 Center MT 2

Lathe dog

Dog pin

Grease gun

Instruction manual

Service parts list

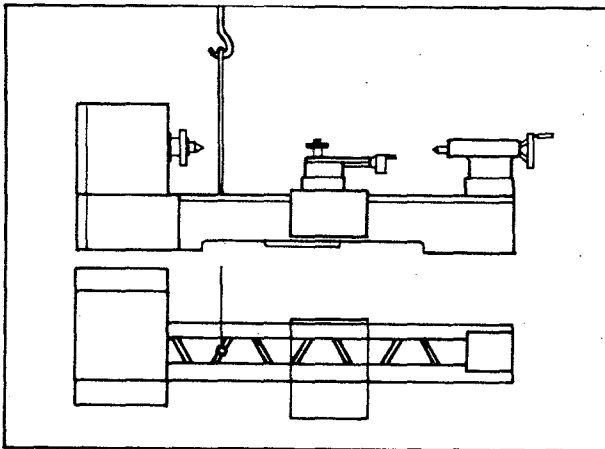
Set of wrenches

### Unpacking the Machine

The machine is delivered packed in a wooden crate. After receipt check all parts for completeness.

The machine can best be lifted out of the crate with a belt or rope, which is fixed around the diagonal rib of the lathe as illustrated.

Note: weight of machine (without stand:  
150 kg, approx. 330 pounds)

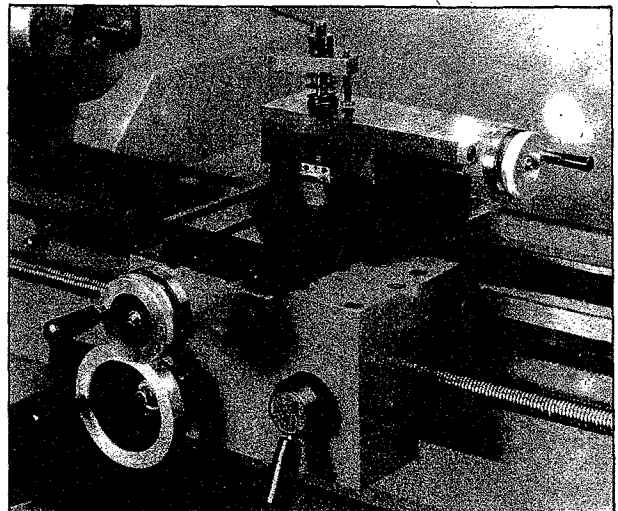


### Cleaning the Machine

All blank surfaces of the machine are coated with a rust-protective. This must be carefully removed with petrol or similar material; do not use nitrobenzine. After this, all parts must be coated with a rust-preventive oil.

#### Note:

For transport reasons, the longitudinal slide is clamped to the lathe bed and must not be moved before the rust-protective is removed.



# Setting-up the Machine

## General

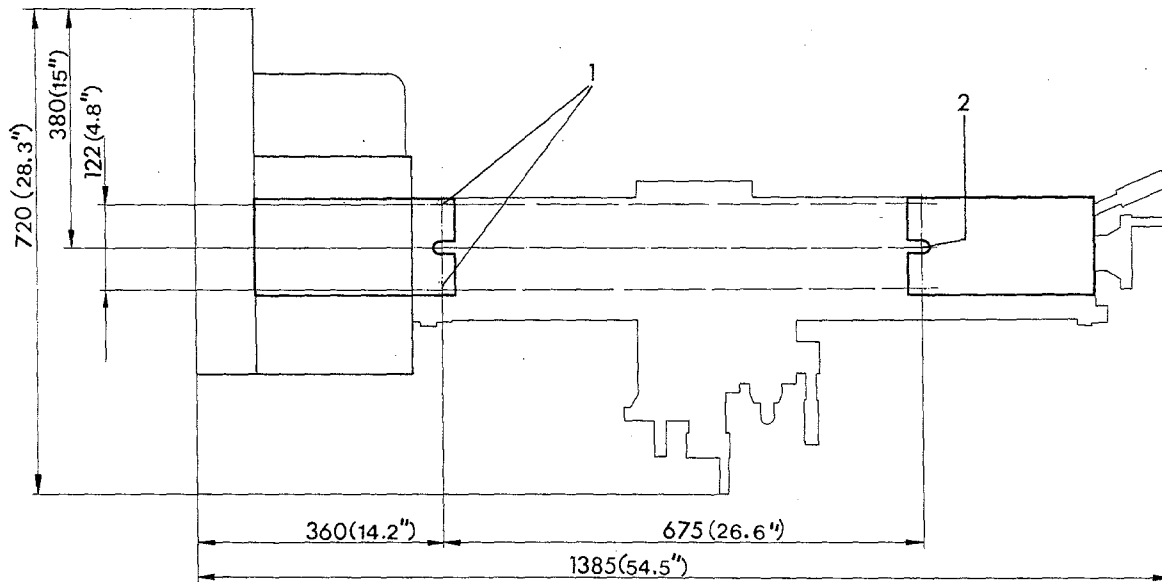
Only an accurately aligned machine guarantees maximum precision. The lathe bed must be levelled exactly in longitudinal and cross directions. Levelling devices with the accuracy no-

ted below have to be used. Allowable deviations: 0,03mm per meter (0.001" per yard)

### Note:

Workbench or support area must be comparable to the weight of the machine.

## Mounting the Machine to an Already Existing Workbench



Four casting extensions are provided on the bottom of the lathe bed. These are used for supporting and levelling the machine by means of set screws in longitudinal and cross directions. Recommended size of set screws: M10

### Recommended method of fastening the machine:

- ① Casting extensions for set screws
- ② "U" on the lathe bed for tightening the machine.