BT-6

BT-12

Machine type: **AMT**_____

Machine Serial no.: _____

Ahire machine tools pvt. ltd.
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Content

WARRANTY

The machine is warranted against poor material / workman ship for a period of fifteen months from the date of dispatch OR twelve months from the date of installation, whichever is earlier.

(On single shift usage of machine) (For std. M/CS separate commissioning is not done)

If any material / manufacturing defects is/are detected and brought to our notice during this period, we guarantee to repair and / or replace these defective part/s FREE – OF – COST.

(Subject to receipt of such item/s, sent prepaid to our factory for our inspection / evaluation)

⚠ CAUTION

All consumable Electric / Electronic / Pneumatic / Hydraulic / Mechanical items such as …

A.C / D.C. coils, HRC / Glass fuses, piston and valve seals, rubber parts, semi – conductor devices, wear pads, guide bushes etc… are EXCLUDED from this warranty clause.

This warranty is also NOT applicable for any parts, equipment or items, which has / have inherently shorter life than above mentioned warranty period.

Please note, our warranty will be valid ONLY if, machine / equipment is used / operated as per guidelines of instruction manual and necessary preventative maintenance schedule is maintained.

Evaluation of defects / parts done by our technical team will be final.

IMPORTANT INFO

The operating manual and various pictures / diagrams / circuits shown there in are exclusive property of M/S AHIRE MACHINE TOOLS PVT. LTD., all rights are reserved.

Unauthorized duplication and / or use, in any forms is not permitted, unless confirmed with us.

DO NOT OVER LOAD AND / OR TAMPER THE MACHINE / EQUIPMENT!

ENSURE OPERATOR SAFETY. DO NOT OPERATE MACHINE WITH GUARDS REMOVED.

FIRM+MULTIPLE EARTHING CONNECTION OF MACHINE / EQUIPMENT IS MANDA

Technical Details

BT-6

- Drill diameter : 0.6 – 6 mm
- Spindle : B12
- Drilling Stroke max. : 55 mm
- Spindle to Column Face : 180 mm
- Spindle to Table : 135 – 380 mm
- Table Surface : 220 x 285 mm
- T-Slots (Size x Qty) : 12 x 2
- Column diameter : 75 mm
- Total height : 800mm
- Weight : 73 kg
- Dual Speed Motor : 0.37 / 0.55 Kw
- 8 Spindle Speeds :

  12000 rpm
  8500 rpm
  6000 rpm
  4250 rpm
  3000 rpm
  2160 rpm
  1500 rpm
  1080 rpm

- Operating Voltage : 415 V
- Frequency : 50 Hz
- Power Fuse : 5 A
- Noise level while idling at highest : <70 db (A

BT-12

- Drill diameter : 4 – 12 mm
- Spindle : MT1
- Drilling Stroke max. : 50 mm
- Spindle to Column Face : 180 mm
- Spindle to Table : 135 – 390 mm
- Table Surface : 220 x 285 mm
- T-Slots (Size x Qty) : 12 x 2
- Column diameter : 75 mm
- Total height : 800mm
- Weight : 73 kg
- Dual Speed Motor : 0.37 / 0.55 Kw
- 6 Spindle Speeds :

  4800 rpm
  2980 rpm
  2400 rpm
  1670 rpm
  1492 rpm
  860 rpm

- Operating Voltage : 415 V
- Frequency : 50 Hz
- Power Fuse : 5 A
- Noise level while idling at highest : <70 db (A

Safety instructions

-

- Wear protective goggles.

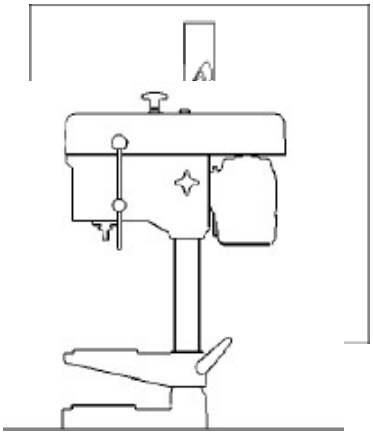
- Tie long hair up.

- If hair is very long wear a hairnet.

- Wear safety boots.

- Remove jewelry before commencing work.

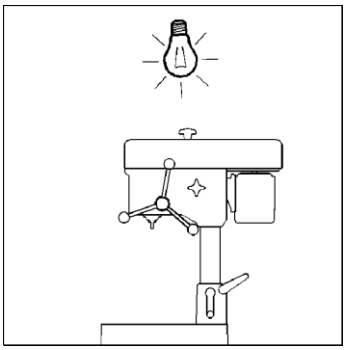
- Operating elements have to be easily accessible.



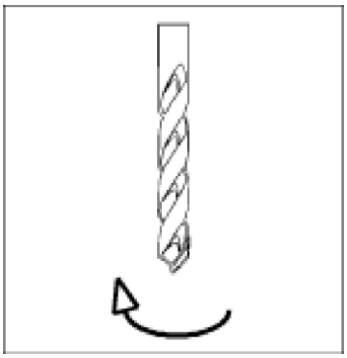
- Rotation clockwise.
- The machine is equipped with an electric MAXION protection cover saving.

- Only open protection cover when drilling spindle is completely in standstill.

- Do not touch spindle while its in motion.



- Ensure sufficient lightning.



- The machine is equipped with an electric MAXION protection cover saving.

- Only open protection cover when drilling spindle is completely in standstill.

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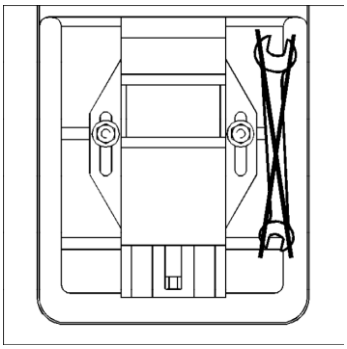
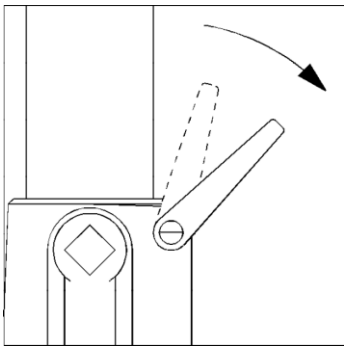
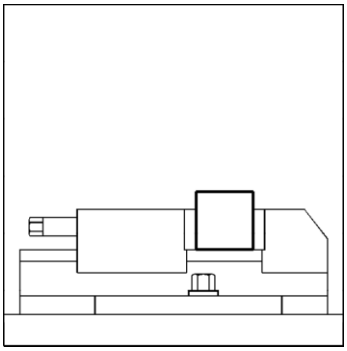


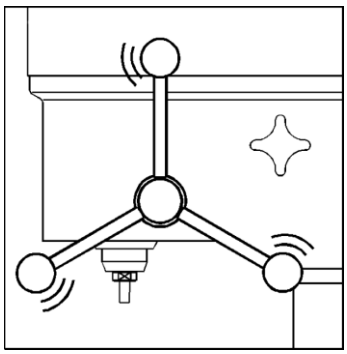
- Deposit tools and measuring devices out of workplace.



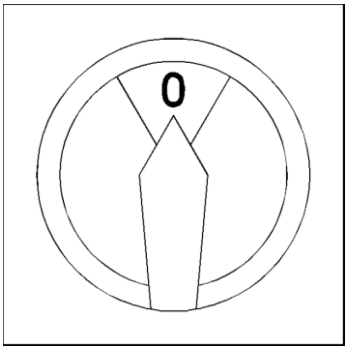
- Clamp column or intermediate table before commencing work.



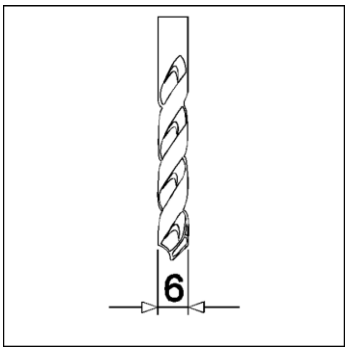
- Clamp work piece securely.



- Feed lever runs back automatically.

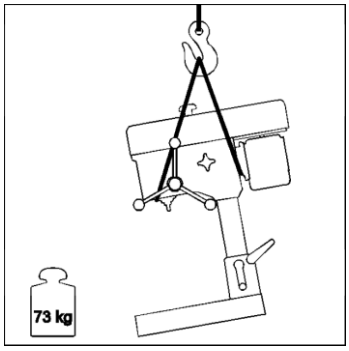


- For maintenance purposes set main switch on „0“.
- Secure main switch against unintended starting.



- Use only drills with diameter of max. 6 mm.

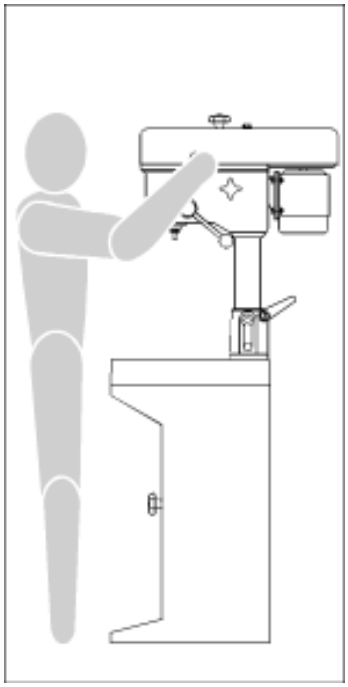
Unpacking and Transporting



- Compare items listed on delivery note with actual delivery.

Notice safety regulations for moving of goods.

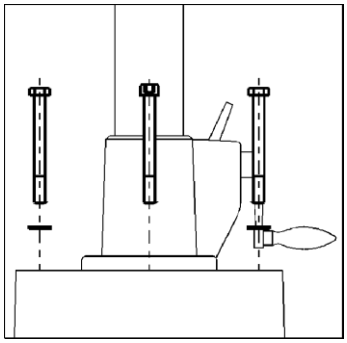
- Use crane for transporting.
- Affix ropes like pictured.



Installation site

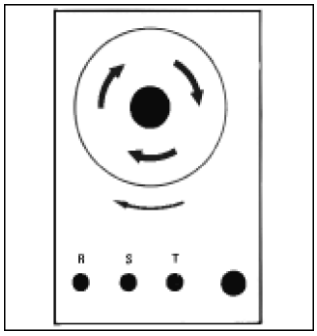
- Operation elements have to be freely accessible.
- Only install machine on stable foundation.
- Pay attention to an even assembly space.
- Arrange an adequate working height.

Set up and installation

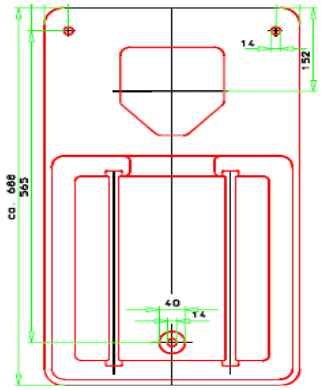


- Drill trough – holes like pictured.
- Fix machine securely.

☞ Do not distort the table.



- Let electrical access be established by an electrician.



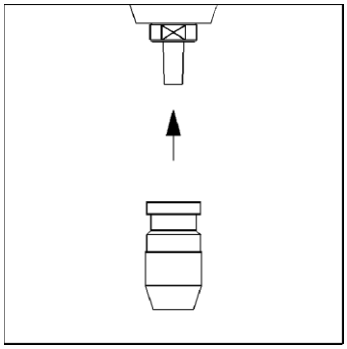
- Additional bring in a bore hole 85 – 100 mm diameter into the Work table for putting down the column.
  - For more Detail Please refer Pg. no - 26.

First start – up

Switch ON from panel.

Press Green push button to start machine .

- Degrease all bare machine parts, especially drill chuck cone, spindle peg or mores taper. Do not use any other solvents.



- Insert drill chuck with light jerk.

Check fixed fit.

- Lubricate

ELECTRICAL INSTALLATION

- Make sure Incoming Supply is three Phase supply 415VAC Proper.
- R, Y, B connection is connected as per sequence.
- Neutral and earth is compulsory.
- Insure the panel box is away from the water Leakage.

Note:

- Do not touch live wire with hand.
- For installation use Tester and Hand Gloves

POWER – UP:

INSTALLATION

After installation and checking all above check points, machine can be powered up for checking basic machine operations. Switch on the incoming electrical power isolator.

- Check if machine lamp is working ok. (Via. Lamp ON/OFF switch on front plate)
- Start machine motor via. Start signal of motor ON switch.
-

CHECK DIRECTION OF SPINDLE ROTATION!

- Spindle to run clockwise when viewed from operator position.
- {Inter – change any two in – coming phase lines, if direction needs to be changed.}

[IF – IN – DOUBT]
Please contact M/S Ahire Machine Tools PVT. Ltd. personnel and / or its authorized representative in your
Area. Commissioning at site by M/S Ahire Machine Tools PVT. Ltd. personnel can be provided at extra cost.
(If required.)

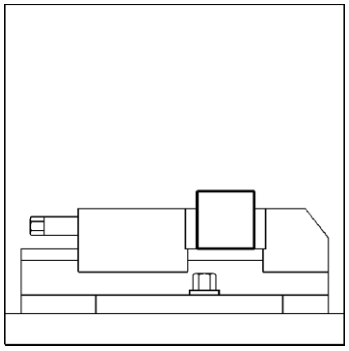
CHECK LIST FOR START-UP

After successful erection of BT6 machine and necessary provision of electrical power connections, following points MUST be ensured for initial START – UP of machine.

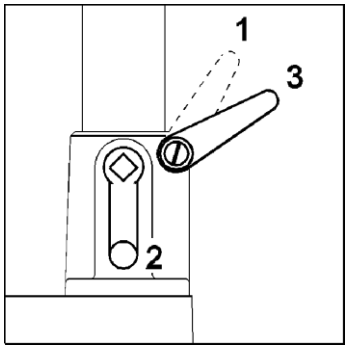
No	Description	Area	Check mark
1	Leveling of machine completed and leveling screw locked	General	
2	All necessary machine parts cleaned and oiled	General	
3	Work table / head stock moved to normal position (If required)	General	
4	Safety rings / head stock / work table clamped on column	General	
5	Electrical input connected to machine through isolator and checked ok	General	
6	Earthing connection provided to machine / panel checked ok	General	
7	All machine wiring checked for any damage and rectified (if any)	General	
8	R/Y/B/N connections to junction box checked and sequenced ok	General	
9	Tool holder and tool REMOVED from spindle. (if applicable)	General	
10	Top cover / front safety guarding position(if applicable)	General	
11	Belt tension checked ok manual movement of spindle ok	General	

Please note, above check list points are given as starting reference. This list is NOT a full / final list and many routine checks as per individual customer policy and statutory requirements may be necessary to follow, during initial start – up for machine.

Preparation

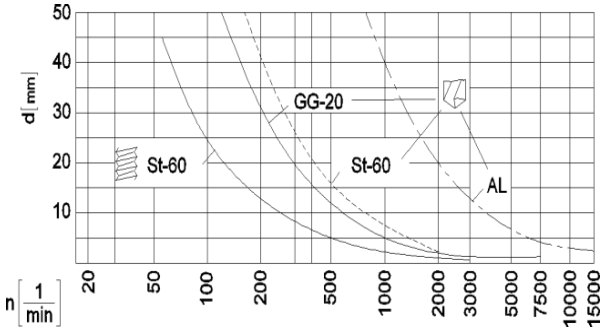


- Clamp work piece securely on machine table.
- Clamp drill firmly.



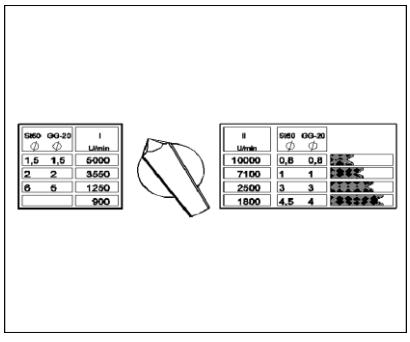
Adjust distance between drilling bit and work piece

- **1** Loose clamp lever
- **2** Move upper part by using crank
- **3** set clamp lever tight.



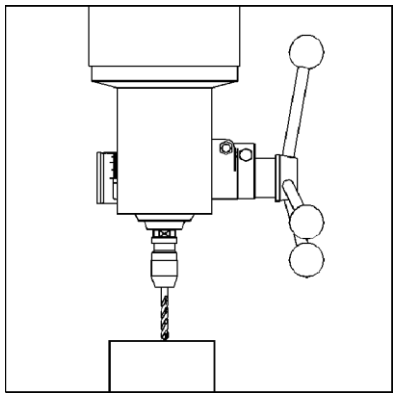
Adjust rotation speeds.

- Read off rotation speeds.



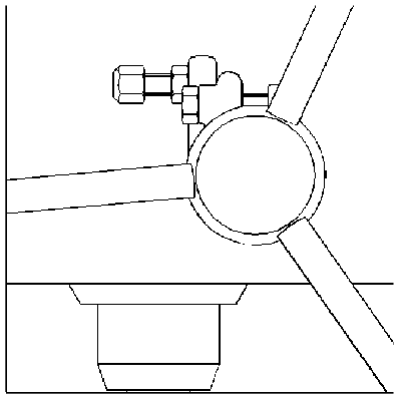
- Choose belt pitch, which is closest to your desired rotation speed.

Setting Drilling depth/Stroke



- **Drilling with graduated collar:**
- Put drilling bit in standstill on work piece,
- hold feed lever in position,
- turn graduated collar to „0“,
- Drill.

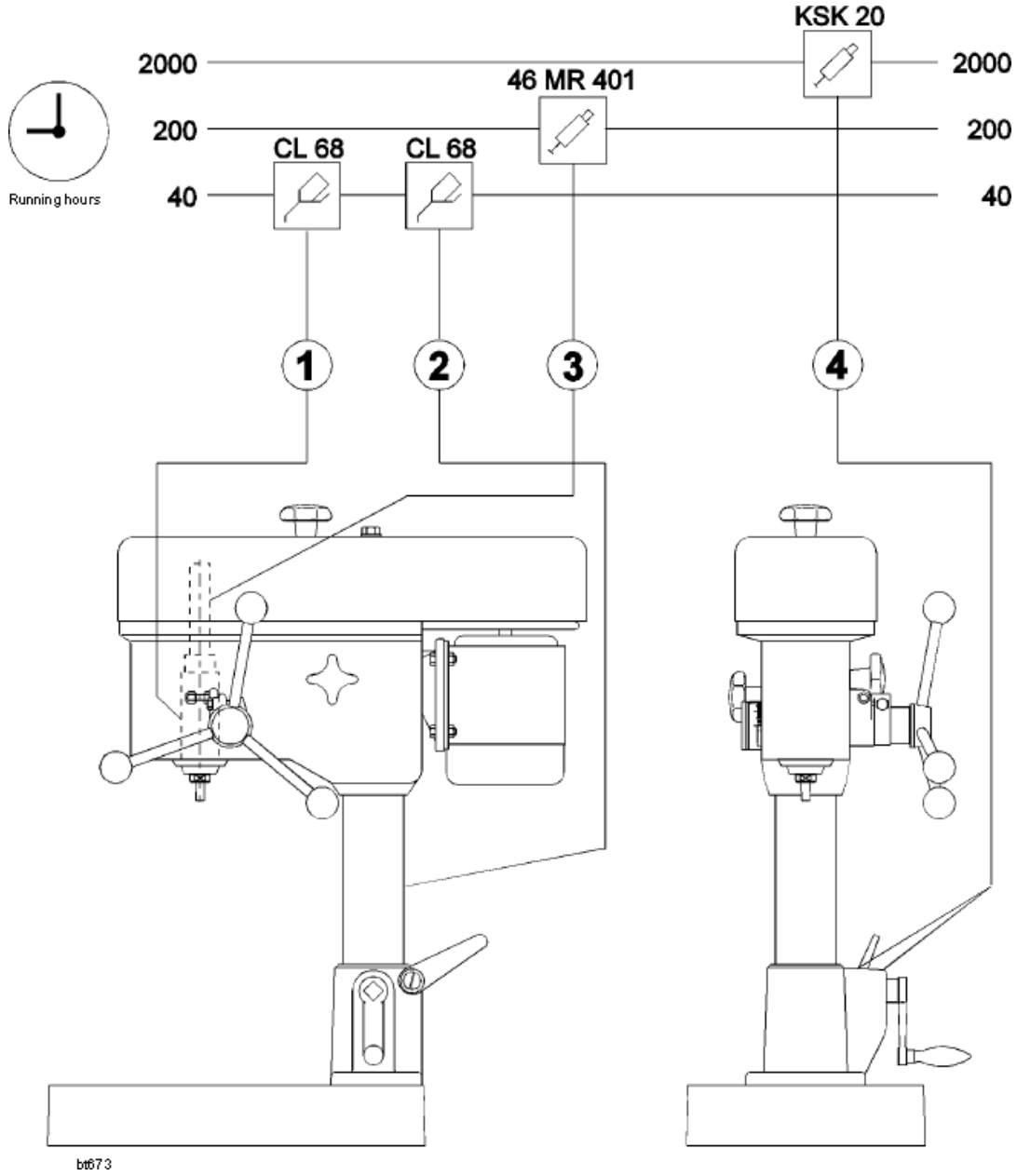
Feed lever runs back automatically.



- **Drilling with drilling depth adjustment:**
- Put drilling bit in standstill onto drilling base,
- turn locating ring to stop position,
- set clamp screw tight.

Feed lever runs back automatically.

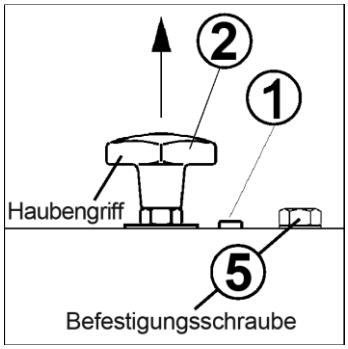
Lubrication instruction



1	Quill	CL 68	-	Lubricant
2	Column	CL 68	-	Lubricant
3	Spindle spline shaft	46 MR 401	-	Paste „Kluwer“
4	Lifting device	KSK - 20	-	Grease

Belt change

Set main switch on „0“and secure against unintended starting.

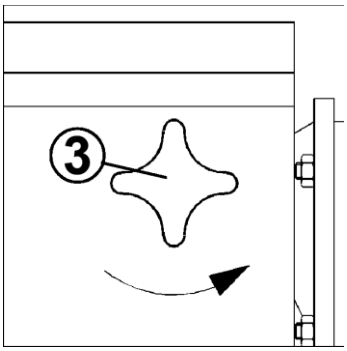


- The machine is equipped with an electric MAXION protection cover saving.

Notice backlash of drilling spindle!

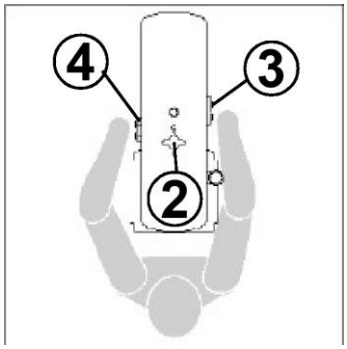
- Only open protection cover when drilling spindle is completely in standstill.

  Visual check!
- Loose fastening screw **1** and pull protection cover up to the stop.

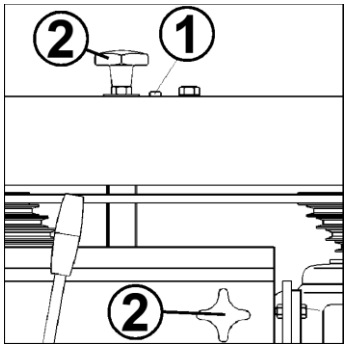


Attention!
Do not remove or unscrew handhold of the protection cover **2** and fastening screw **5** !

- Loose right start grip screw **3**



- Turn left star grip screw **4** until belt is not fixed.

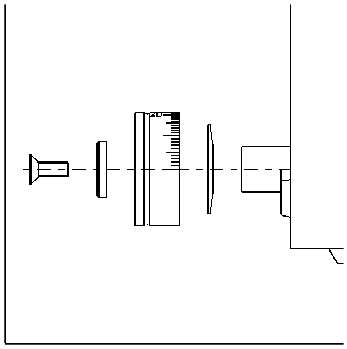


- Put belt in desired belt pitch,
- tension belt (left star grip screw **4**),
- maintain tension,
- set star grip screw on right-hand side tight
- fold protection cover down
- set fastening screw **1** tight.

If belt turns out of its position while working, then belt is not tensioned sufficiently.

Machine is ready for next drill sequence

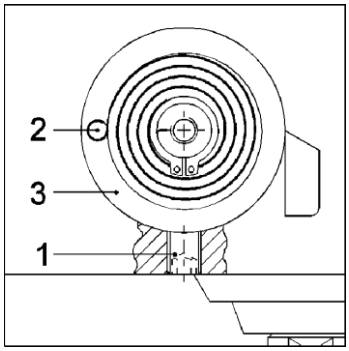
Adjust release spring



Set main switch on „0“and secure against unintended starting.

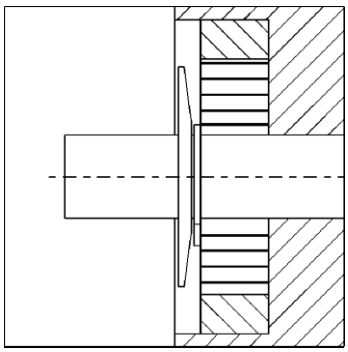
Feed lever has to roll back slowly but continuously.

- Quill has to be driven up as high as possible,
- screw countersink out,
- Remove disc, graduated collar and disc spring.



- Loose set screw **1**
- put pin with diameter of ca. 5 mm in drilling **2**
- turn bushing **3** and hold it firm

Tension release spring just so, that quill does not slip out by itself.



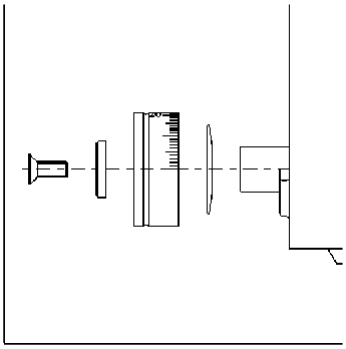
- Tighten set screw **1**
- insert disc spring like pictured,
- Mount graduated collar, disc and set screw.

Check runback of feed lever.

Malfunction table

Problem	Cause	Solution
• Spindle doesn't start	• Main switch is turned off • Belt is torn • Belt is loose • Interruption of power supply	• Turn main switch on • Change belt • Tension belt • Let power supply be checked
• Machine is vibrating	• Machine stands on uneven floor • Tool doesn't run concentrically • Belt is distorted	• Anchor machine on uneven floor • Clamp tool concentrically • Raise belt tension
• The feed lever cannot be moved. • The feed lever moves only with difficulty.	• Drilling depth stop is jammed. • Tooting of quill is damaged.	• Release drilling depth stop. • Let the quill be changed
• Feed lever does not move back all the way.	• Release spring is not tensioned enough. • Release spring is damaged.	• Tension release spring. • Let release spring be changed.
• Grinding noises in spindle.	• Bearing damage in upper spindle bearing. • Bearing damage in driving bushing.	• Change the bearing. • Change the bearing.
• Drilling bit turns but does not drill.	• Drilling bit is blunt. • Drilling bit turns counterclockwise.	• Reground drilling bit. • Change rotating field.

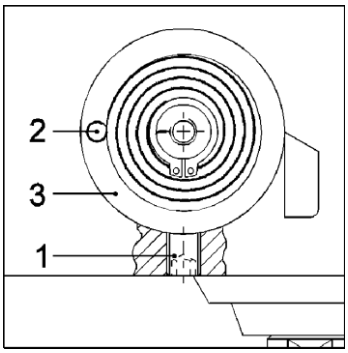
Change release spring



Set main switch on „0“ and secure against unintended starting.

Feed lever has to roll back slowly but continuously.

- Quill has to be driven up as high as possible,
- remove set screw, disc, graduated collar, disc spring and locking ring
- hold feed lever



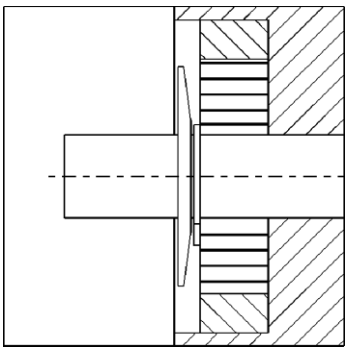
- Loose set screw **1,**
- change release spring

Mounting position like pictured.

- Put pin with diameter of ca. 5 mm in drilling **2**
- turn bushing **3** and hold it firm

Tension the release spring just so, that the quill does not slip out by itself.

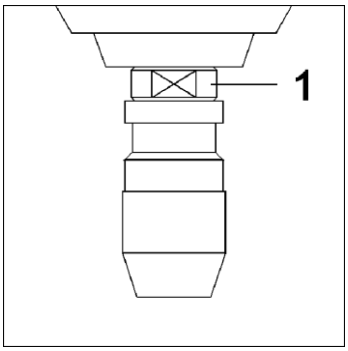
- Tighten set screw **1**



- Put disc spring in like pictured
- mount graduated collar, disc and set screw.

Check runback of feed lever.

Change drill chuck



Set main switch on „0“and secure against unintended starting.

- Loose drill chuck with withdrawal nut **1** (turn counterclockwise)

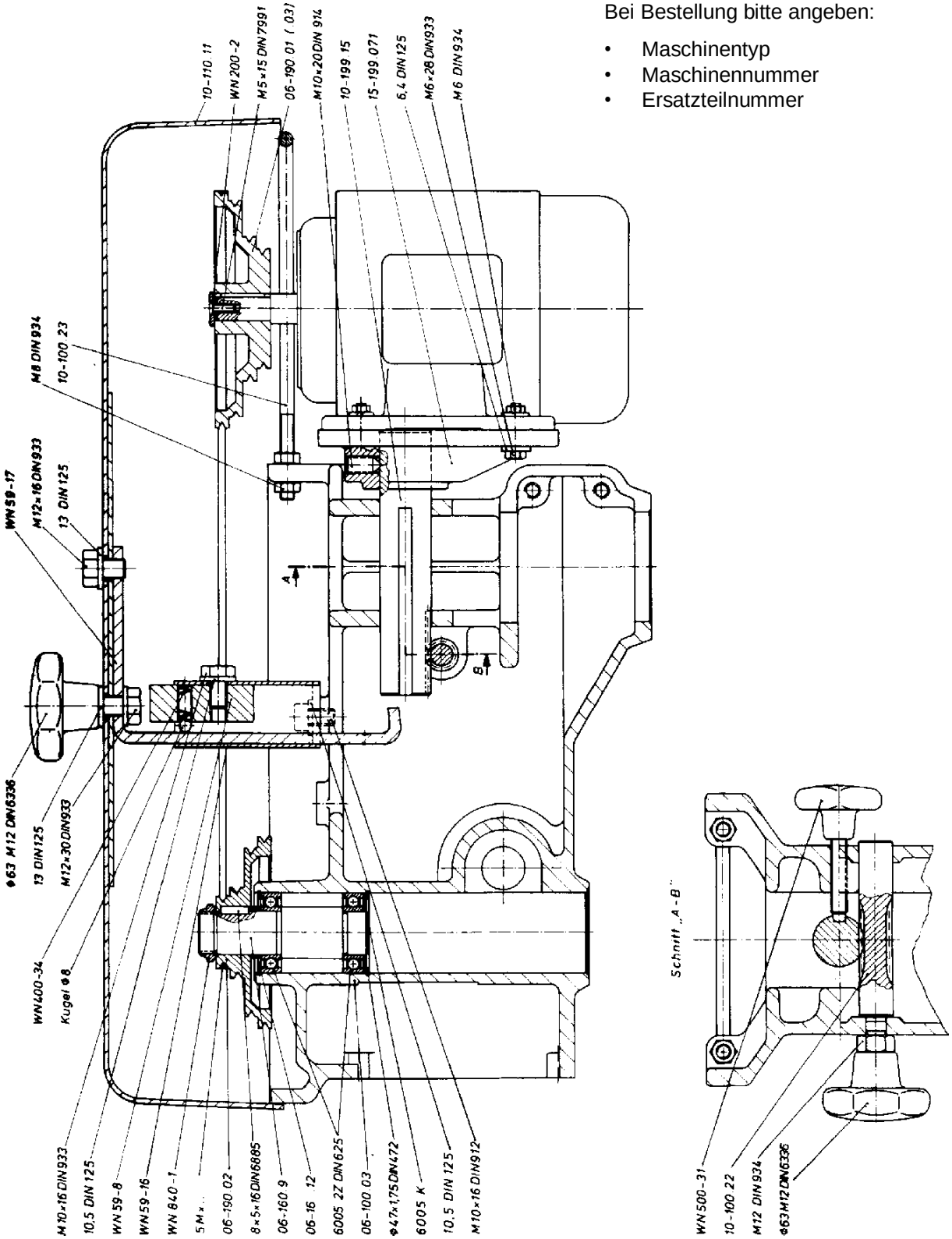
- screw in withdrawal nut
- clean cone and drill chuck cone with kerosine
- Insert drill chuck with light jerk

Check fixed fit!

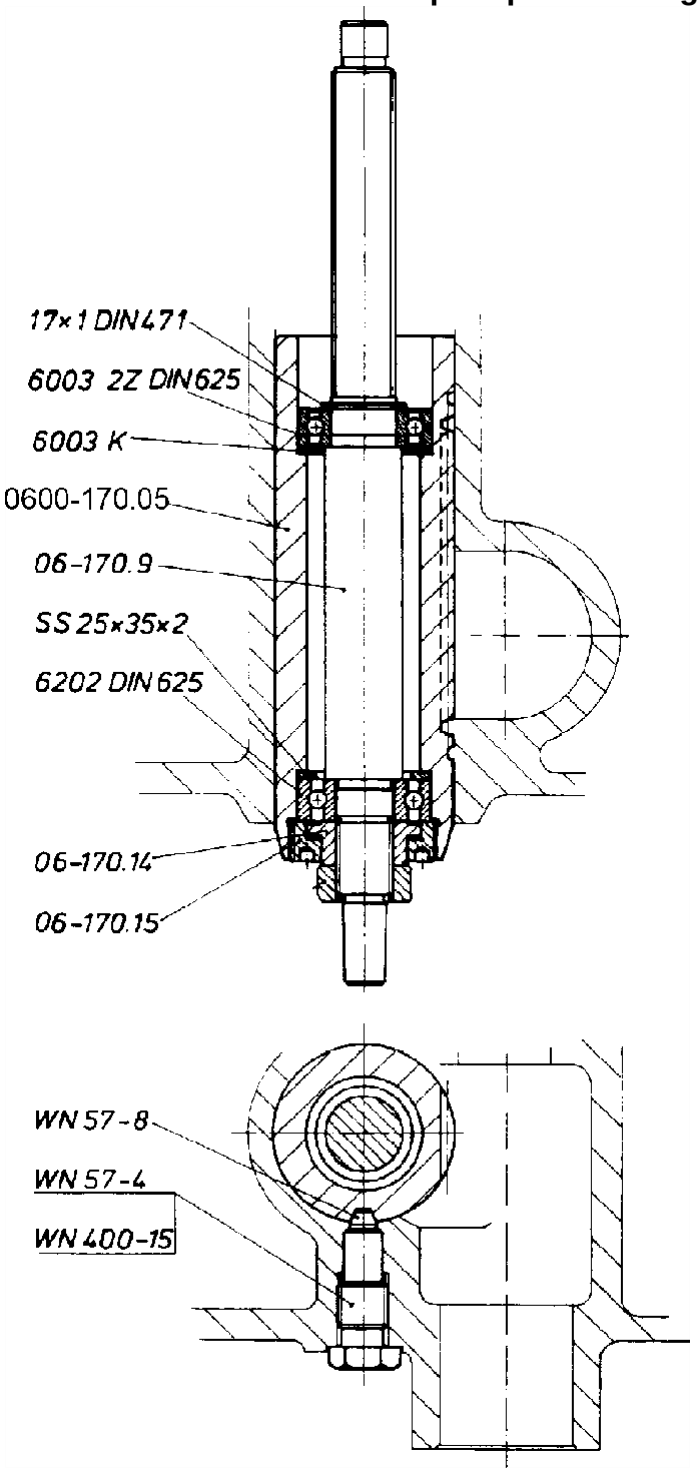
Nur MAXION-Ersatzteile verwenden.

Bei Bestellung bitte angeben:

- Maschinentyp
- Maschinennummer
- Ersatzteilnummer



Spare part drawing – Quill

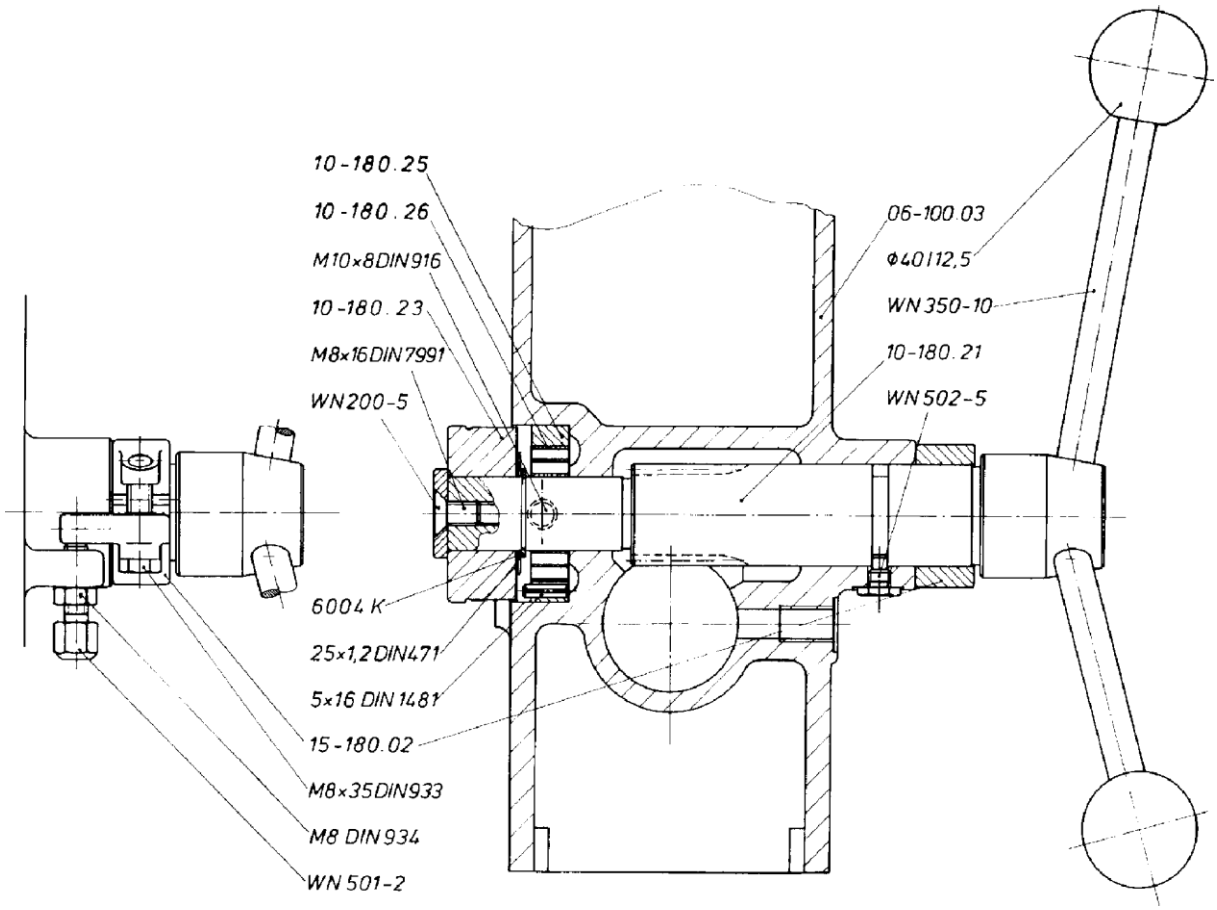


Nur MAXION-Ersatzteile verwenden.

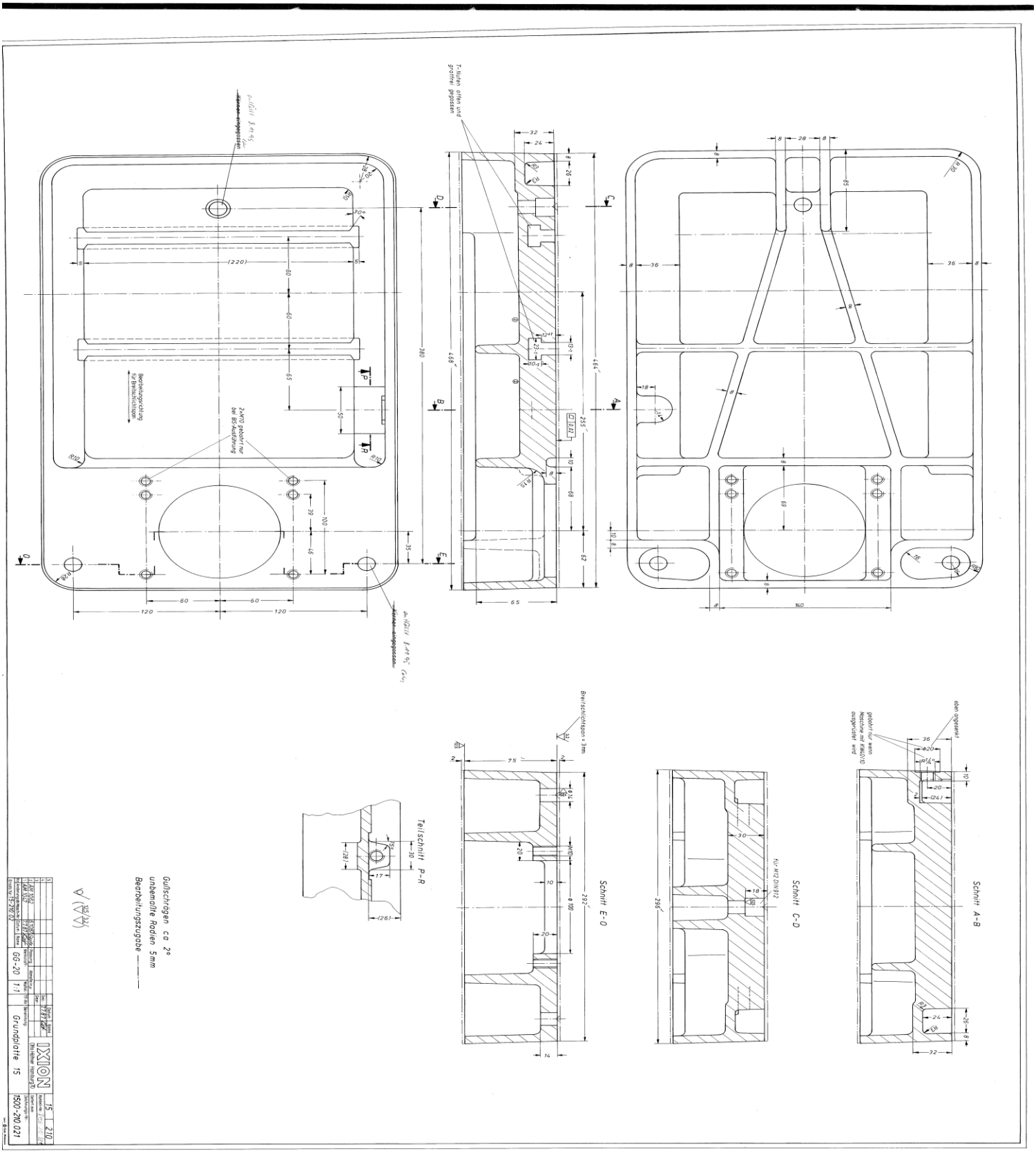
Bei Bestellung bitte angeben:

- Maschinentyp
- Maschinennummer
- Ersatzteilnummer

Spare part drawing – Feed

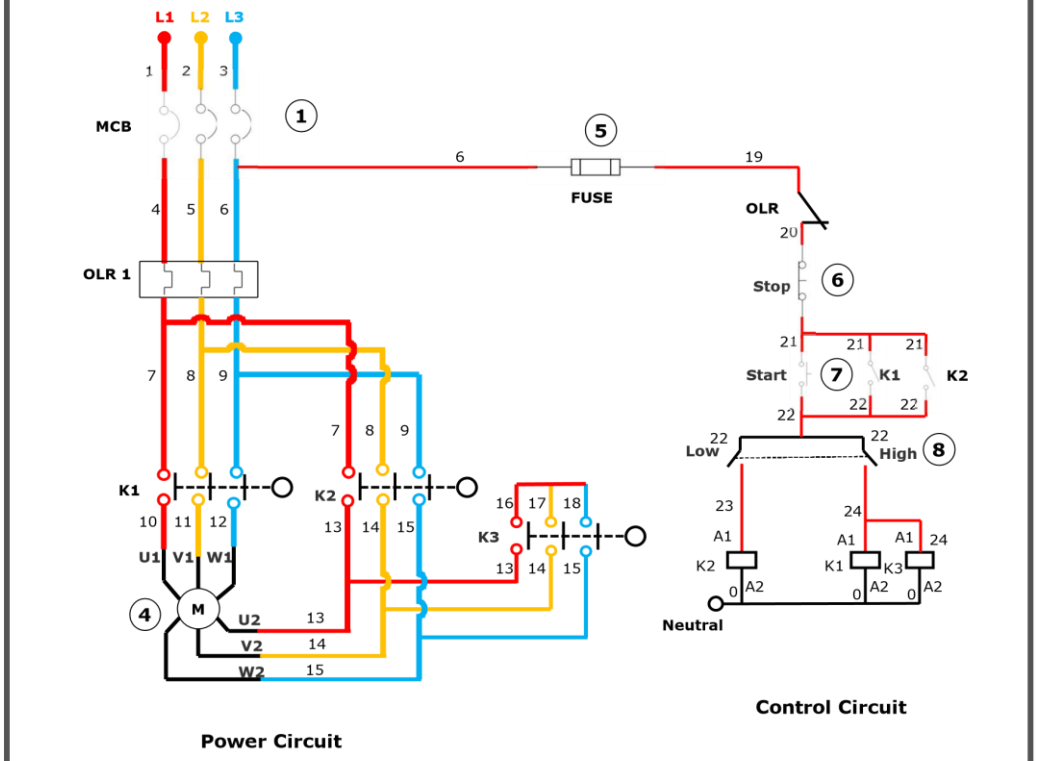


Work-Table


Gußschrägen ca 2°
unbemaßte Radien 5mm
Bearbeitungszugabe ..... mm
Teilschnitt P-R
Schnitt E-D
Schnitt C-D
Schnitt A-B
Grundplatte 15
GG-20
1500-210.021
IXION

ELECTRICAL CIRCUIT DIAGRAM

BT-6

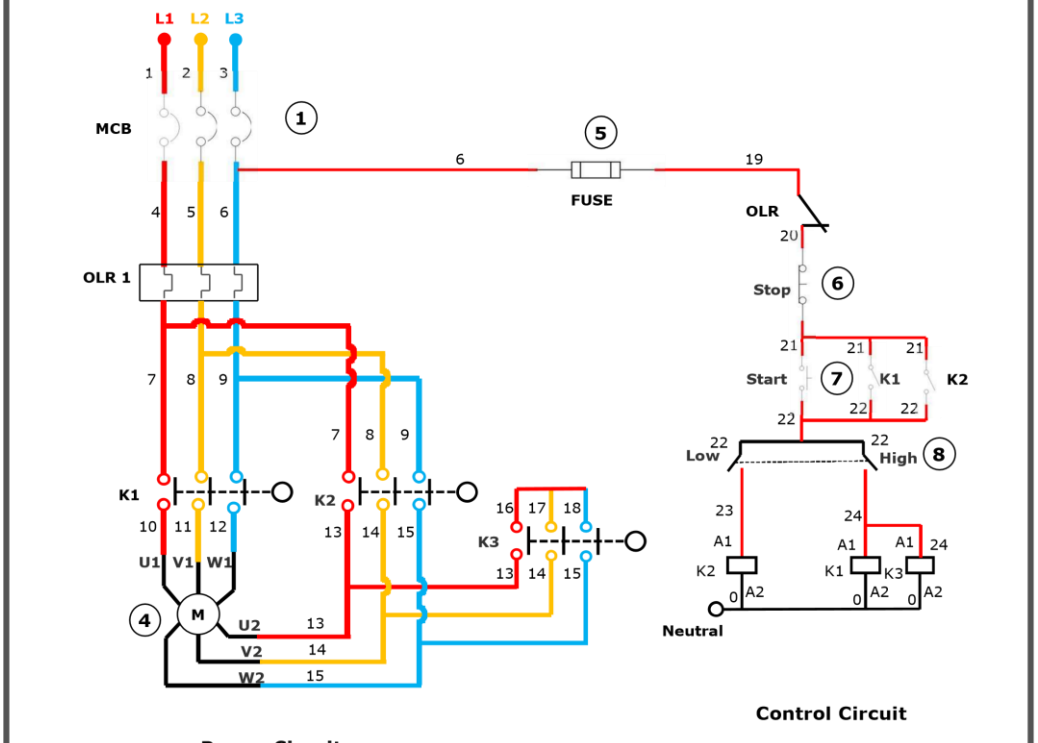


Note: Set the OLR at 1.6Amp

Sr No.	Component	Specification	Make	Qty
9	Wire	1.5Sqmm / 1Sqmm	Polycab	6Mtr / 4Mtr
8	Selector Switch	SPDT Switch Black Color	TEKNIC	1 Nos
7	Start Button	NO, Push Button Red Color	TEKNIC	1 Nos
6	Stop Button	NC, Push button Green Color	TEKNIC	1 Nos
5	(FTB) Fuse	5Amp	SIEMENS	1 Nos
4	Motor	0.5hp, 1440 & 2800 RPM Dual Speed Foot Mounted	ROTOMOTIVE	1 Nos
3	Contactor	Coil 230VAC, 3Pole	SIEMENS	3 Nos
2	OLR	Range: 1.6 to 2.5Amp	SIEMENS	1 Nos
1	MCB	415VAC, 3 Pole	SIEMENS	1 Nos

NAME	Electrical Wiring Diagram Drilling machine: BT6			DRG OWNER
Drawn BY	Drawn Date	Apprd BY	Apprd Date	
AjIt.P	12/11/2019	Kesava.c	13/12/2019	
AHIRE MACHINE TOOLS PVT.LTD			Sheet No.	1
			DRG NO.	009-90-001 R1

BT-12



Note: Set the OLR at 2Amp

Sr No.	Component	Specification	Make	Qty
9	Wire	1.5Sqmm / 1Sqmm	Polycab	6Mtr / 4Mtr
8	Selector Switch	SPDT Switch Black Color	TEKNIC	1 Nos
7	Start Button	NO, Push Button Red Color	TEKNIC	1 Nos
6	Stop Button	NC, Push button Green Color	TEKNIC	1 Nos
5	(FTB) Fuse	5Amp	SIEMENS	1 Nos
4	Motor	1hp, 1440 & 2800 RPM Dual Speed Foot Mounted	ROTOMOTIVE	1 Nos
3	Contactor	Coil 230VAC, 3Pole	SIEMENS	3 Nos
2	OLR	Range: 1.6 to 2.5Amp	SIEMENS	1 Nos
1	MCB	415VAC, 3 Pole	SIEMENS	1 Nos

NAME	Electrical Wiring Diagram Drilling machine: BT12			DRG OWNER
Drawn BY	Drawn Date	Apprd BY	Apprd Date	
Ajit.P	05/09/2021	Kesava.c	13/10/2021	
AHIRE MACHINE TOOLS PVT.LTD			Sheet No.	1
			DRG NO.	013-90-001 R1