

BORING-MILLING MACHINE MECOF

MODEL CS 10

NUMBER *016961*

CUSTOMER

DATE DISPATCHED

HEAD MOTOR :

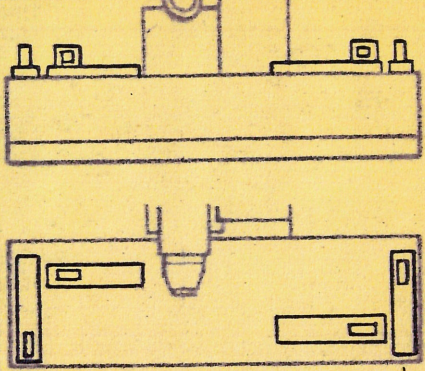
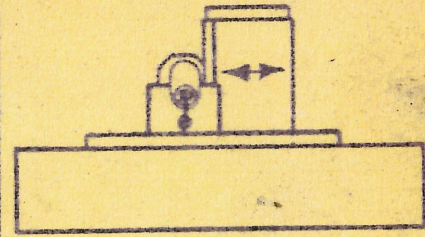
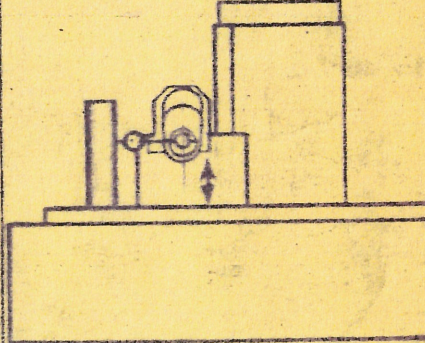
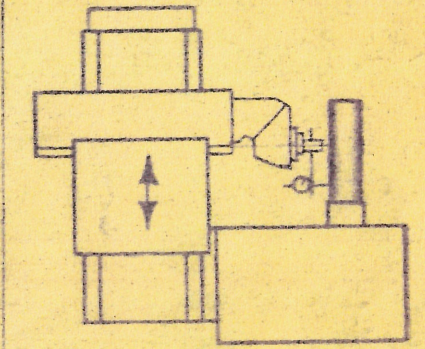
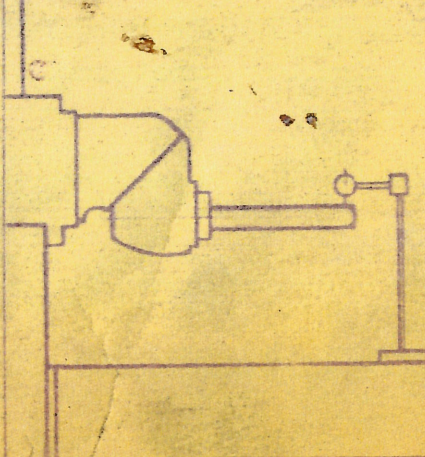
MAKE *Besozzi* TYPE *7/4* NO *3465*
VOLTS *420* CYCLES *50* HP *12*

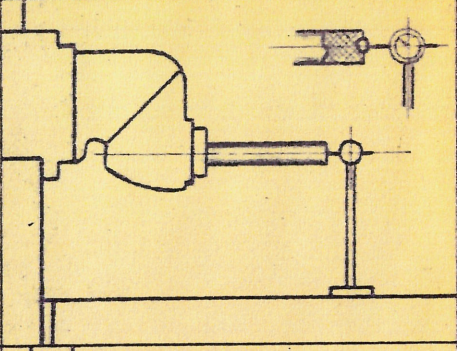
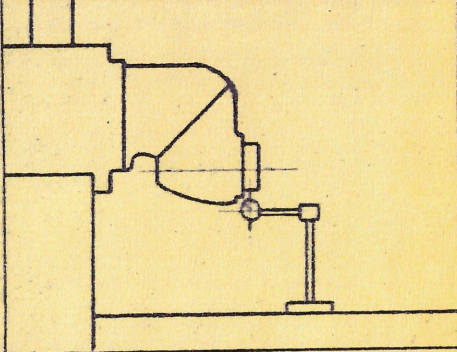
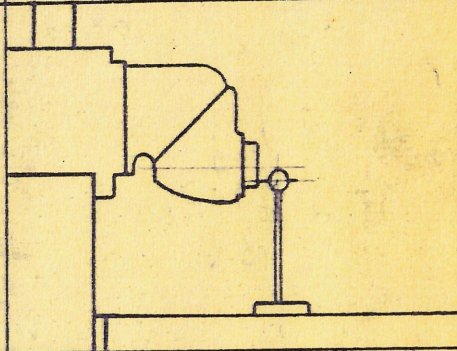
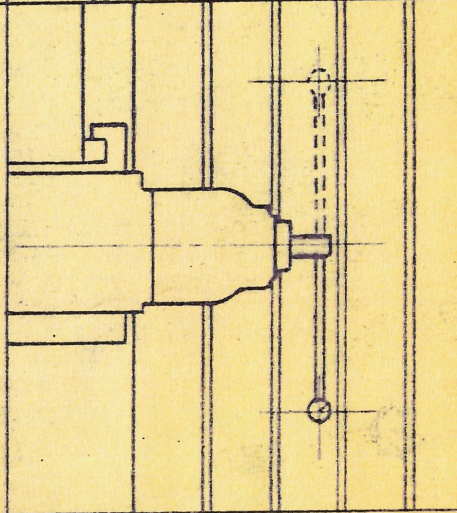
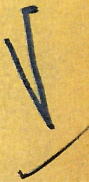
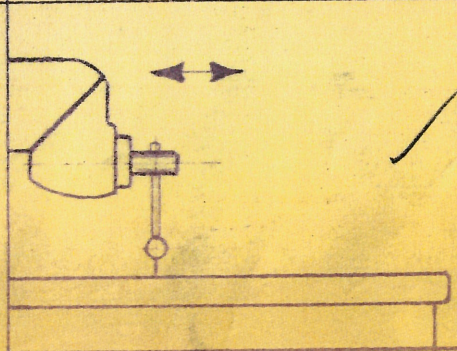
SLIDE MOTOR :

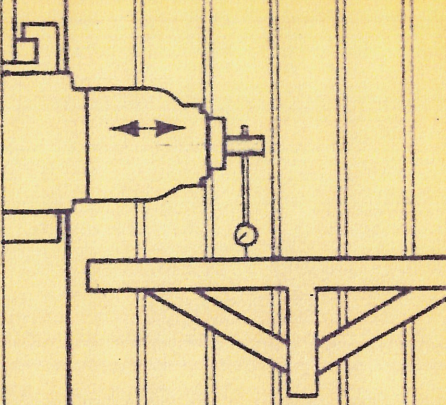
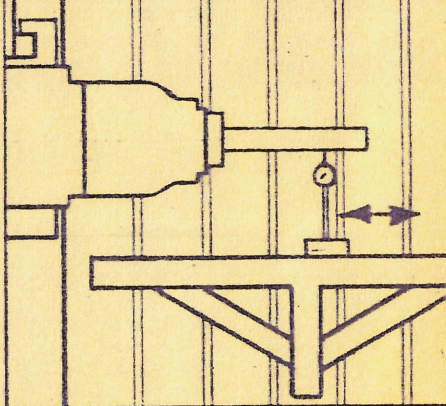
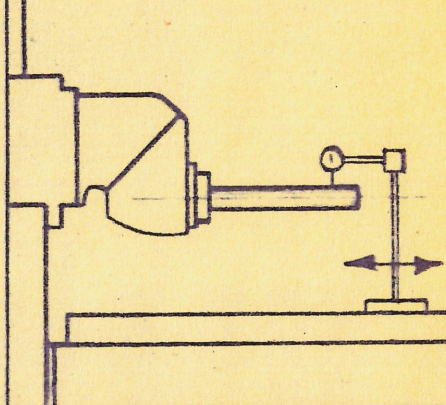
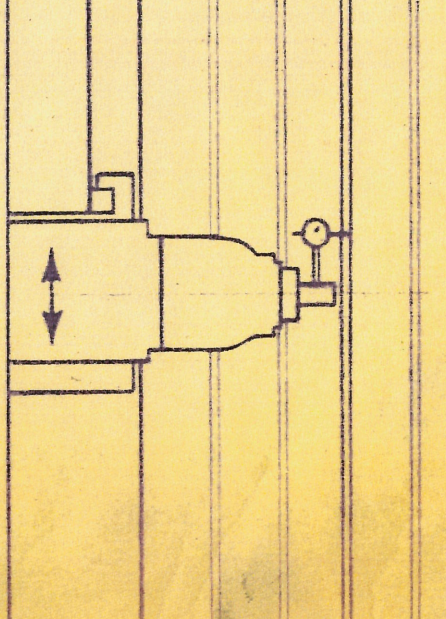
MAKE *Besozzi* TYPE *5/2* NO *3464*
VOLTS *420* CYCLES *50* HP *4*

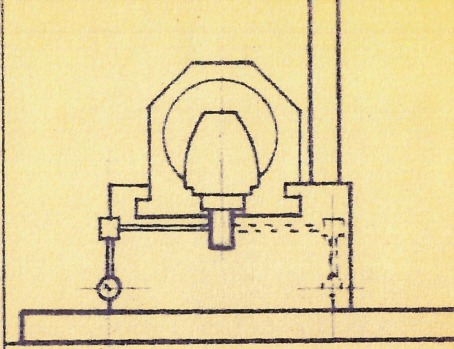
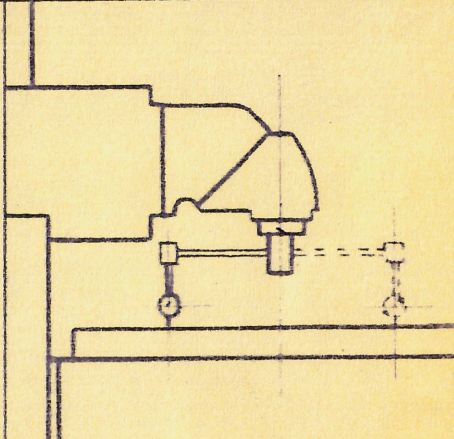
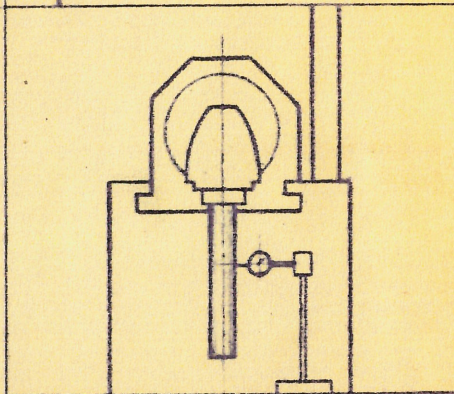
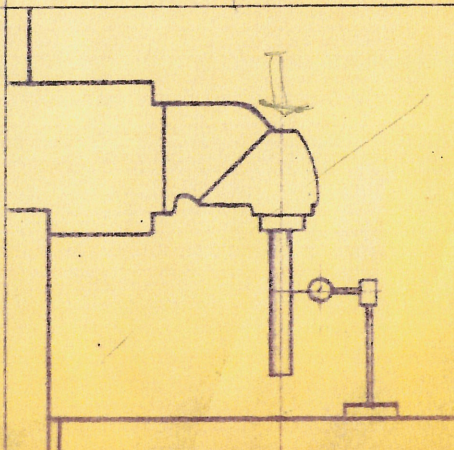
ELECTRIC PUMP :

MAKE *Rigon* TYPE *P40.140* NO *-*
VOLTS *420* CYCLES *50* HP *0.25*

OBJECT OF TESTING		TOLERAT.	NOTED
<p><u>Planarity of the table</u></p> <ul style="list-style-type: none"> - in the longitudinal direction - total error on the whole length - in the transversal direction 	<p>FIG. 1</p> 	<p>0.04 on 1000</p> <p>0.08 0.04 on 1000</p>	<p>0.03 ✓</p> <p>0.06 ✓ 0.03 ✓</p>
<p>Parallelism of the upright movement in relation to the table.</p>	<p>FIG. 2</p> 	<p>0.04 on the whole travel</p>	<p>0.03 ✓</p>
<p>Perpendicularity of the upright in relation to the table in the longitudinal direction.</p>	<p>FIG. 3</p> 	<p>0.02 on 300</p>	<p>0.02 ✓</p>
<p>As above in the transversal direction.</p>	<p>FIG. 4</p> 	<p>0.02 on 300</p>	<p>0.015 ✓</p>
<p>Transverse rotational oscillation of the spindle-cone.</p>	<p>FIG. 5</p> 	<p>0.01 (near the spindle)</p> <p>0.02 to 300 mm.</p>	<p>0.005 ✓</p> <p>0.015 ✓</p>

OBJECT OF TESTING		TOLERAT.	NOTED
<p>Axial rotational oscillation of the spindle.</p>	<p>FIG. 6</p> 	<p>0.01</p>	<p>0.005</p>
<p>Accuracy of the external part of the spindle nose.</p>	<p>FIG. 7</p> 	<p>0.01</p>	<p>0.005</p>
<p>Accuracy of the face of the spindle nose.</p>	<p>FIG. 8</p> 	<p>0.01</p>	<p>0.005</p>
<p>Perpendicularity of the spindle in relation to the table-slots.</p>	<p>FIG. 9</p> 	<p>ADJUSTED</p>	
<p>Parallelism of the transversal travel of the head in relation to the table. (To be measured on the first 500 mm. of travel).</p>	<p>FIG. 10</p> 	<p>0.02 on 500</p>	<p>0.015</p>

OBJECT OF TESTING		TOLERAT.	NOTED
Perpendicularity of the head -travel in relation to the table-slots.	FIG. 11 	0.02 on 300	0.015
Perpendicularity of the rotational axis of the spindle to the table-slots	FIG. 12 	0.02 on 300	0.015
Parallelism of the rotational axis of the spindle to the table.	FIG. 13 	0.02 on 300	0.01
Parallelism of the upright travel in relation to the table-slots.	FIG. 14 	0.02 on 500	0.01

OBJECT OF TESTING		TOLERAT.	NOTED
<p>Perpendicularity of the spindle axis in relation to the table in the longitudinal direction.</p>	<p>FIG. 15</p> 	<p>ADJUSTED</p>	<p>✓</p>
<p>As above in the transversal direction.</p>	<p>FIG. 16</p> 	<p>0.02 on 300</p>	<p>0.015 ✓</p>
<p>Parallelism of the spindle axis in relation to the vertical movement of the head on the upright guides.</p>	<p>FIG. 17</p> 	<p>0.03 on 300</p>	<p>0.02</p>
<p>As above in the perpendicular way to the Fig. 17.</p>	<p>FIG. 18</p> 	<p>0.03 on 300</p>	<p>0.02</p>

No.	DESCRIPTION
	<i>MECOF 1-2-241</i>
1	✓ Tommy bar for rotating head
1	✓ Draw bolt nut
1	✓ Draw bolt
1	✓ No. 5 Morse Taper adaptor
1	✓ Drift
1	✓ Allen-headed screw keys (one set of eight keys)
1	✓ Open ended spanner
1	✓ Spanner open-ended and ring type
1	✓ Ring spanner
1	✓ Ring spanner
1	✓ Lock nut spanner
1	✓ Lock nut spanner
1	✓ "C" spanner
1	X "C" spanner
2	✓ "C" spanners
2	✓ "C" spanners
1	✓ Limit switch for head clamping
2	✓ Indicator lamps
1	✓ Fuses (one set)
2	✓ Rubber chip guards
1	✓ Touching - up paint

FOUNDATION - INSTALLING - LEVELLING - PAGE No. 11

The accuracy of the work performed depends mainly on the exact installing of the machine.

Prepare a cement base with foundation frame as shown on the drawing.

Cover clevis with caps to prevent cement from entering the thread.

When cement is well set screw the studs (6) and place the machine base on foundation introducing the studs (6) into the holes and placing packing plates about 5/8" thick (9) between jacking screws and foundation.

Then level the machine base.

To level the base it is necessary to dismount the covers No. 1483 - Page No. ~~12~~³¹ and to displace the saddle from one end to the other of the machine ~~using the tools as shown on Page No. 12 and turning then the handle No. 1797.~~

ONLY WHEN THE BASE IS LEVELLED THE UPRIGHT CAN BE MOUNTED.

MOUNTING OF THE UPRIGHT TO THE SLIDE - Page No. 13

Mount the upright on the slide being sure that the reference pin is inserted in the right position before locking the screws.

Eight of these screws are mounted inside the upright and for mounting them it is necessary to open the cover No. 1497-a remove the 5 screws fixing the electrical equipment pane No. 1656a so that it can be turned allowing mounting screws inside the upright.

At this point the gear support (n° ~~1562a~~ ²⁷⁴⁰) can be mounted (page n° 30). It is therefore necessary to loose the screws of its supporting part, turn the support, insert the provided pins and fix the screws.

Pay attention to the OR.243 washer as it could come out of housing.

Fix the flange (n° 1800) to the gear support (n° ~~1562a~~ ²⁷⁴⁰).
Now remove the supporting part loosen before.

ELECTRICAL CONNECTION OF SLIDE AND UPRIGHT - Page No. 13

To connect the electrical equipment between upright and slide pass the flexible lead "A" through holes "C" and "D" and then connect cables following the indications marked on each cable and on straps "B".

Connect the machine to the main line through the box situated at the front part of the base.

MOUNTING OF THE HEAD-COUNTERWEIGHT - Page No. 31

The counter-weight must be mounted from the top of the upright. First lift the head at mid-way on the upright then dismount the rollers No. 1725 and their pins No. 1727/A.

Fix the chains to the counter-weight and mount through its guide-ways No. 1723 in the upright; mount again the rollers No. 1725.

The locking bar is only for keeping the weights together during transport and is not used when the machine is in operation.

LUBRICATION - Page No. 17

Before operating the machine fill the head, feed box and guideways with required quantity of oil as indicated on Page No. 16.

OPERATION OF THE MACHINE - Page No. 19

On tables No. 18 and 19 are indicated all controls for the operation of the machine.

All three traverses are provided with end-travel switches which stop the feed motor and prevent travel beyond the end limits.

When the head is locked by means of the controls No. 1 and No. 2 some switches are operated which prevent the starting of the feed motor.

ADJUSTING THE HEAD LOCKINGS - Page No. 23

To adjust the locking of the head work on parts No. 1598 and No. 1599. This operation can be done by loosening the screw at the center of the part No. 1598.

ADJUSTING OF THE HEAD-SLIDE LOCKING - Page No. 24

To adjust locking of the head-slide work on parts No. 1610 loosening the screw No. 1696 and turning the bar by some teeth. Then lock again the screw No. 1696.