

Operating manual

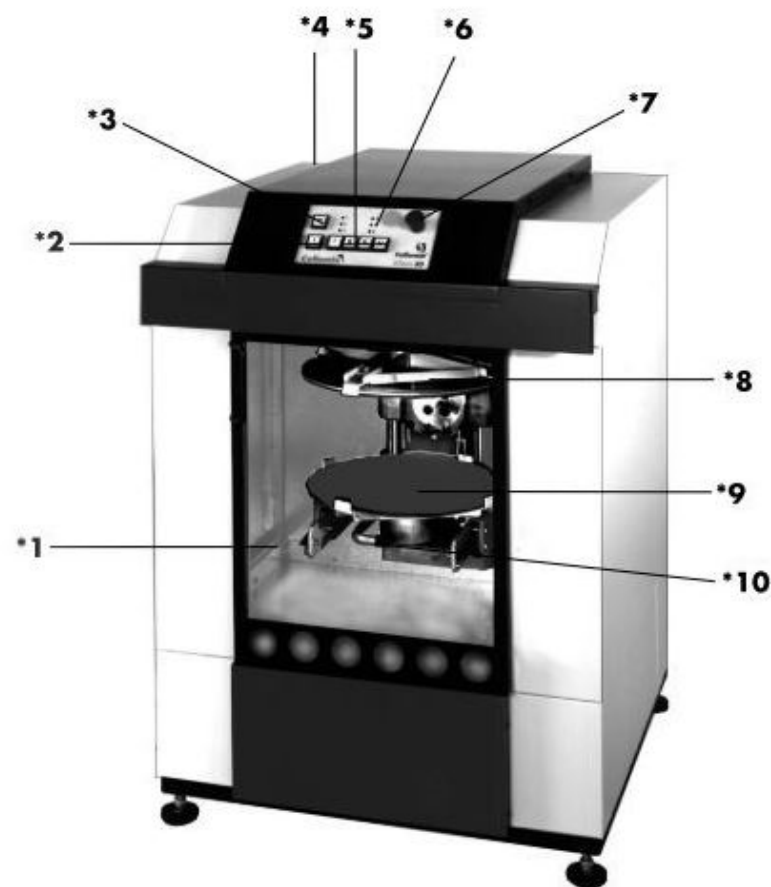
Biaxial Mixer Collomat Biax 20

Machine number:

Year of manufacture:

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Controls

- | | |
|---|--------------------------------------|
| *1. Sliding door | *6. LEDs for fault displays (1-6) |
| *2. Pushbutton „Open clamping table“ | *7. Emergency Stop pushbutton |
| *3. Pushbutton „Open door“ | *8. Top clamping table |
| *4. Main switch (at the rear) | *9. Slide with bottom clamping table |
| *5. 4 x start- / time selection pushbuttons | *10. Locking lever |

for *6.: Time selection on the pushbuttons:

I = 60 sec. **II** = 120 sec. **III** = 180 sec. **IV** = 240 sec.

2. General information

Before you use the machine for the first time, please read this operating manual and the safety instructions carefully and follow the information exactly.

Keep this manual safe and within immediate reach.

The machine is to be used only by persons who have read the operating manual and who are acquainted with the occupational safety and accident prevention regulations in force in your country.

Those parts of the manual that are important for the correct and safe operation of the machine are printed in **bold type**. The numbers in the text are related to the controls at page 3 (with*) and to the exploded drawings.

The "Attention" symbol is used to mark a physical risk to persons and has to be strictly observed.

The "Stop" symbol is used to mark situations in which there is a risk of damage to the machine.

The "Voltage Hazard" symbol is used to mark live and therefore hazardous components.

This machine is protected by international copyrights and patents.



2.1 Proper use

Applications are to be found in the wholesale and retail paint trade, in the paint, lacquer, printing ink and chemical industries, and many other related sectors. This mixer is particularly ideal as a component in paint dosing systems.

The Collomat Biax is a fully automatic, stationary mixer for closed, round, angular and oval containers made of metal and plastic. It is suitable, therefore, for the preparation of paints, master batches, house paints, industrial paints, synthetic plasters, mineral plasters and diverse other materials of low to high viscosity, in single-component or two-component form.

The Collomat Biax 20 can be used with containers of between 95 and 340 mm in height and a maximum 330 mm in diameter. Maximum weight: 30 kg

It is prohibited to use the machine in areas where there is a potentially explosive atmosphere, either occasionally or permanently.

2.2 Working principle

The clamped mixing container rotates around its longitudinal and transverse axis simultaneously at 2 different speeds which are adapted to the specific material. This mixing principle guarantees that the material is prepared quickly, smoothly and with minimum stress on the container. After you have loaded the container in to the mixer it is clamped automatically between the tables and the mixing cycle started. The required mixing time can be selected at the key-board.

3. Safety instructions

For your own protection, read the safety instructions carefully and follow them exactly.

Observe the electrical regulations in force at your company and those listed in this manual when you install the machine.

Wear safety shoes when installing or relocating the machine.

Make sure the machine stands securely.

Keep your work place tidy. There is a higher risk of accidents at an untidy work place.

Consider ambient conditions. Do not install the machine in damp rooms. Provide good lighting and good access.

Keep third parties away from your work place.

Close the machine when it is not being used. Projecting parts may injure you and others.

Take care of the power cable. Make sure it is laid neatly and where it cannot be damaged. Protect the cable in particular from heat, sharp edges, oil and acid. Check the cable and plug regularly for signs of damage.

Do not overload the machine. Check that the weight and dimensions of the mixing container are suitable.

Never lift large and heavy containers into the machine by yourself.

Use only undamaged and sturdy mixing containers. If you don't, the container may burst.

The mixing container has to be closed completely.

Make sure that the mixing container sits in central position on the clamping table. Secure the container handles with tape strip or rubber band.

Take good care of the machine. Make sure that the moving parts move smoothly and without restriction. Remove any dirt immediately. Do not use high-pressure equipment to clean the machine.

Make sure that the safety devices work properly and are clean. Follow the maintenance instructions.

Do not use the machine if the door or the acrylic glass window is damaged. If the acrylic glass window is broken, do not reach into the interior! There is a high risk of injury from rotating components.

Do not start the machine with the housing open. Pull out the power plug! There is a high risk of accidents!

Before switching on the machine after maintenance work, check that no wrenches or setting tools are left inside the machine compartment.

Use only suitably approved extension cables and plugs.

Examine the machine for signs of damage. Check regularly that all parts are in good working order. Have repairs carried out only by the manufacturer or an approved specialist.

Use only original replacement parts.

Do not start the machine if any safety devices or switches are defective. Always pull out the power plug before carrying out any maintenance work.



The biaxial mixer is not to be operated in any way different to that described in the operating manual.

In particular it is prohibited:

- to operate the machine if any parts of the housing are missing.
- to operate the machine with any defective parts.
- to bridge or deactivate any safety devices.
- to use and install non-original replacement parts.
- to run the machine for longer than 20 minutes (risk of the mixing container bursting)



3.1 Safety-related components

Closed housing:

The housing forms a stationary safety partition that can be opened only with the help of tools.

Machine door with lock:

The door forms an opening safety partition with interlock arrangement. On the one hand it is impossible for the machine to start when the door is open. On the other hand it is impossible to unlock the door until the mixing cycle is completed and the mixing unit adopts its vertical position.

Latching magnet for the mixing unit:

The mixing unit is latched in vertical position by a latching pin which is pushed forward by spring force. It is released again when a pulling magnet is excited to draw the latching pin back again. If the pulling magnet fails, the mixing unit remains in latched position and cannot be started.

Clamping table switch:

A microswitch in the top clamping table monitors whether or not a container is clamped in the mixing unit. It is impossible to start the mixing cycle if there is no container clamped in position. The switch has to be pushed up by the spring-mounted clamping table in order to actuate a triggering pulse.

Emergency Stop function:

The Emergency Stop function is designed to safely disconnect the control voltage supply and stop the machine in emergencies, to halt the running machine when required.

4. Before using the biaxial mixer for the first time

4.1 Installing / Transport notes

Your "Collomat" biaxial mixer is delivered in cardboard packaging on a disposal pallet.

Use a suitable hoist to lift the machine off the pallet. Be particularly careful with the bottom of the machine so that no bearing parts are damaged or bent. Approximate weight: 162 kg.

Place the machine on firm, level ground. Slight unevenness can be compensated with the height-adjustable machine feet using a size 17+19 fork wrench.

4.2 Connecting to the power supply and opening the door

To be able to open the door you must first connect the machine to a 230V power supply system with a protective earth conductor.

Turn on the **main switch at the rear** of the machine.

Pushbutton (*3) „Open door“ lights up as soon as the machine is switched on. If this does not happen, check whether the Emergency Stop pushbutton (*6) is pressed and release it if necessary.

For a proper operation of the machine press the pushbuttons, at least always for 1 sec.

While you are pressing pushbutton (*3), slide the door to the right.

Screw the door handle in place.



Main switch at the rear



Pushbutton *3: Open door

4.3 Activating the PERMA lubrication system (optional)

The machine comes with a PERMA long-time lubricator which is to be installed before you use the machine for the first time. Proceed as follows:

For an easier installation, first open the mixing unit completely, use pushbutton *2. The lubrication nipple on the hub is on the left side.

Activate the PERMA cartridge by turning the grey activation screw into the cartridge until the holding clip is torn off completely. Remove also the black cap at the top of the cartridge.

Screw the cartridge into the adapter which was fitted to the hub at the factory. Lubrication is now guaranteed for approx. 1 year.



Mounting of the PERMA cartridge

4.4 Average mixing times

The mixing times quoted below are meant as a guide only. It is up to you to determine the best mixing time for the material in question. The mixing time depends on the material viscosity. Small containers need a longer mixing time

This machine has a choice of 4 different mixing times:

60, 120, 180, 240 seconds.

Material	Mixing time
House-, industrial- and dispersion paints	ca. 60 - 120 sec.
Printing inks, 1- and 2-component materials	ca. 120 sec.
Finished plaster, highly viscous materials	ca. 180 - 240 sec.

5. Start up

5.1 Trial run

Carry out a trial run with an empty mixing container. **The machine will not start if it is not loaded with a container.**

Release the bottom clamping table (*8), push the locking lever (*10) to the left and pull the slide forward.

If the mixing container is higher than the current position of the clamping tables you will have to move the tables further apart. This is done by pressing pushbutton *2.

Place the mixing container in central position on the clamping table. **Use elastic bands or adhesive tape to secure the container handles. Maximum container height: 340 mm!**

Push the slide back into the machine until it latches in place. To do so, lift the clamping table slightly.

Close the door.

Press on one of the time selection switches (*4) which also serve as starting buttons. See page 3 of the manual for details of the mixing time settings. The start pushbutton lights up while the program is running.

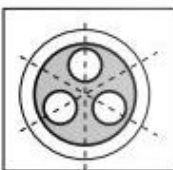
The Collomat Biax begins automatically to clamp the mixing container.

Check whether the machine is installed in a vibration-free position. Use the height-adjustable machine feet to compensate any unevenness.

The machine switches off automatically when the timed cycle is over. The clamping tables move apart and the door is released for opening.



Pushbutton *2: open clamping tables



The container must be in central position on the clamping table

5.2 Start

Open the door by pressing pushbutton (*3) and sliding the door simultaneously to the right.

Release the bottom clamping table (*9), push the locking lever (*10) to the left and pull the slide forward.

If the mixing container is higher than the current position of the clamping tables you will have to move the tables further apart. This is done by pressing pushbutton no. *2.

Place the mixing container on the clamping table in central position. This is particularly important for heavy containers. Use elastic bands or adhesive tape to **secure the container handles**. Maximum container height: 340 mm!

Push the slide back into the machine until it latches in place. To do so, lift the clamping table slightly.

Close the door.

Select the mixing time you want with the corresponding pushbutton (*5). This also starts the mixing cycle.



Secure the container handles with elastic bands

5.3 Ending

At the end of the timed cycle the mixing unit turns automatically into its vertical position and opens the clamping tables.The door is then released for opening and the door pushbutton (*3) lights up.

To **open the door**, press the door pushbutton (*3) again and keep it pressed while you slide the door to the right.

Important! Never use the main switch to end the mixing operation itself!



When you are finished working with the machine, turn it off at the main switch.

5.4 Triggering the Emergency-Stop function

If a container develops a leak or one of its handles becomes loose or any other hazardous situation arises while the mixing cycle is in progress, press the Emergency Stop pushbutton (*7) to switch off the machine.

The mixing unit slows down to a standstill and remains in that position. **It does not return automatically to base position.**

The pushbutton (*7) **has to be reset by hand**. You cannot open the door until the door button lights up again (approx. 8 sec.) The door can then be opened as described above.

Holding the clamping table or, the container in the case of heavy containers, turn the **mixing unit by hand back into vertical position** until it latches in place.

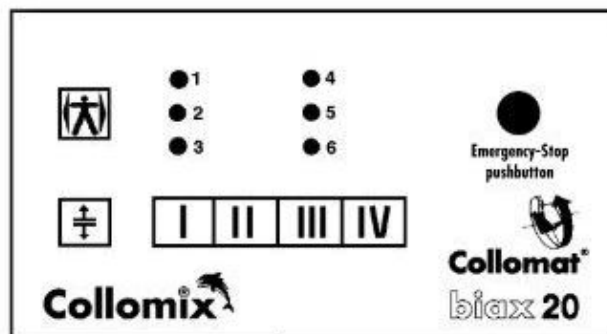
The **clamping tables have to be moved apart before you can restart.**

Open the door and press the pushbutton (*2) to move the clamping tables apart.

The machine can now be restarted.

6. Fault signals and troubleshooting

Faults often arise as the result of poor maintenance or lubrication and soiling. Please note the lubricating and maintenance instructions in Chapter 7!



Fault signals via LEDs 1 - 6 on the keyboard:

- | | |
|-----------------|-------------------------------------|
| 1 Door open | 4 Positioning (setting to vertical) |
| 2 Clamp/unclamp | 5 Mixing motor (speed too high/low) |
| 3 Processor | 6 Emergency Stop |

If a fault occurs during a **regular program run**, the corresponding LED on the keyboard lights up after 20 seconds. Use the following query list to establish the cause of the fault.

To proceed you must first remove the cover plate (58) from the machine. The pcbs of the electronic control system are then in full view. Arrange for a specialist to carry out the tests with suitable instruments.

The LEDs on the load pcb can only be tested with the program running. In some cases this requires you to return the machine to base position after the fault occurs and to re-start the program by pressing the start button. Watch the LEDs on the load pcb.

The numbers in brackets the table refer to the exploded drawings in the Annex. The letters in brackets refer to the terminal diagrams for the pcbs.

Caution!

The pcbs are under voltage. Make sure that only authorized personnel are near the machine during repair work.

Before you leave the machine it is imperative to turn off the main switch, remove the power plug and cover the opening!

Please note:

To reach the mixing unit magnet you must first undo and lift off the holder (209) of the load pcb.

The proximity switch (240) is located on the rear of the separating plate (48) behind the V-belt pulley (8).

To check the LEDs on the proximity switches (240 + 241) you have to remove the rear panel (55).



Type of fault	possible reason of fault	fault clearance
---------------	--------------------------	-----------------

The following LEDs light up on the keyboard:

The numbers in brackets, you will find in the exploded views

LED 1: Door switch

- | | |
|-----------------------------|-----------------------|
| • Door open | • Close door |
| • Door lock (256) defective | • Replace lock switch |

LED 2: Clamp / unclamp

- | | | | |
|---|---|---|--|
| • No clamping after the start-button is pressed | • „Clamp“ LED on the load pcb does not light up | • No container in the mixing unit | • Clamp container in place, remember the minimum clamping height |
| | • „Clamp“ LED on the load pcb lights up | • Load pcb (208) is defective, replace | • Processor pcb (219) is defective |
| | | • Connecting cable (216) is defective | • Check terminal voltage (B) |
| | | • Check carbon brushes (265), limit switches and clamping | |

motor

Before checking:

Move the clamping tables apart, start the program and watch the LED on the load pcb:

- | | | | |
|--|---|---|---------------------------------------|
| • No unclamping after positioning | • „Unclamp“ LED on the load pcb does not light up | • Load pcb (208) is defective, replace | • Processor pcb (219) is defective |
| | • „Unclamp“ LED on the load pcb lights up | • Connecting cable (216) is defective, replace | • Check terminal voltage (B) |
| • When the start button is pressed, the container is clamped, but the motor is not switched off | • Diode on the proximity switch (241) shines continuously | • Check carbon brushes (265), limit switch and clamping motor | • Proximity switch (241) is defective |
| | • „Clamping table“ switch (257) is not actuated or is defective | • Check „Clamping table“ switch (257); only with the door open or there will be a risk of starting | • Check the programmable cam (242) |
| | • Programmable cam (242) is defective | | |
| • After positioning, the container is undamped but the clamping motor is not switched off, the start button shines | • Proximity switch (241) does not light up; „Clamping table“-switch is not actuated or is defective (257) is always pressed or defective. | • Check „Clamping table“ switch; only with the door open or there will be a risk of starting! | |
| • Machine is connected to supply voltage, no diodes on the load pcb light up even when the start button is pressed | • Load pcb is defective, check | • Check terminal voltage (A) and (C), replace load pcb (208) | |

LED 3: Processor

- | | |
|------------------------------|-------------------------|
| • Processor pcb is defective | • Replace processor |
| • Keyboard pcb is defective | • Replace keyboard pcb. |

LED 4: Positioning

- | | | |
|--|---|--|
| • Start-button is pressed, no clamping | • Mixing unit magnet is jammed | • Check that mixing unit magnet (243) moves smoothly |
| | • Switch (244) for mixing unit magnet not pressed | • Mixing unit magnet is defective, replace |
| • After clamping, the mixing unit does not turn, the mixing unit magnet does not pick up | • LED „mixing unit magnet“ on the load pcb does not light up. | • Load pcb is defective, replace if necessary |
| | • LED „mixing unit magnet“ on the load pcb lights up | • Processor pcb is defective, replace if necessary |
| | | • Connecting cable is defective |
| | | • Check terminal voltage (E) |
| | | • Mixing unit magnet is defective, replace |
| | | • Latching pin (250) is bent or dirty |

Type of fault	possible reason of fault	fault clearance
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LED 4: Positioning - Continued -

Before checking:

Move the clamping tables apart, start the program and watch the LED on the load pcb:

<ul style="list-style-type: none"> Magnet picks up, mixing unit does not turn 	<ul style="list-style-type: none"> „Mixing unit magnet“ switch (244) does not actuate 	<ul style="list-style-type: none"> „Mixing unit magnet“ switch (244) is defective Check fuse 14 V, 6.3 amp.
<ul style="list-style-type: none"> Repositioning at the end of the mixing cycle 	<ul style="list-style-type: none"> Proximity switch (240) is not activated, does not light up 	<ul style="list-style-type: none"> Operating distance too large (2 mm) Proximity switch (240) is defective, replace
<ul style="list-style-type: none"> Mixing unit stops between „9 and 12 o'clock“ during positioning 	<ul style="list-style-type: none"> Mixing unit magnet does not drop out 	<ul style="list-style-type: none"> Magnet (243) is jammed, check that the lock pin (250) can move smoothly Switch (244) is defective, replace Index plate (246) is loose, tighten if necessary Check fuse, replace if necessary
<ul style="list-style-type: none"> Container is clamped, mixing unit does not begin to turn 	<ul style="list-style-type: none"> Fuse 14V, 6.3 amp. on the load pcb 	

LED 5: Mixing motor (speed too high/low)

<ul style="list-style-type: none"> Fast speed is not switched on, motor does not run 	<ul style="list-style-type: none"> LED „Fast speed“ on the load pcb does not light up LED „Fast speed“ on the load pcb lights up 	<ul style="list-style-type: none"> Load pcb (208), processor pcb (217) or connecting cable (216) is defective, replace Fuse 230 V, 6.3 amp. is defective, replace
<ul style="list-style-type: none"> Mixing unit starts up at fast speed and is switched off 	<ul style="list-style-type: none"> Idling speed too high for small containers and is switched off 	<ul style="list-style-type: none"> Regulator on load pcb is set wrongly (correct setting is approx. 1 o'clock) see section 6.1 Proximity switch (240) Load pcb is defective (208)
<ul style="list-style-type: none"> Motor running, mixing unit does not turn 	<ul style="list-style-type: none"> V-belt or flat belt at drive element is broken 	<ul style="list-style-type: none"> Replace belt

LED 6 Emergency Stop pushbutton

<ul style="list-style-type: none"> Shines when Emergency Stop pushbutton is pressed Emergency Stop switching element is defective 	<ul style="list-style-type: none"> Release Emergency Stop button Replace switching element (223)
---	--

LED 1 and LED 6 light up

<ul style="list-style-type: none"> No function, signal not transmitted (damped) 	<ul style="list-style-type: none"> Door not closed, Emergency Stop pushbutton pressed Fuse "e4" defective because clamping motor under voltage 	<ul style="list-style-type: none"> Close door, release Emergency Stop button Change fuse "e4"; rectify fault: Dirt between the upper clamping plate and the support cross-arm; Microswitch on the upper clamping plate is not actuated (see page 16) Microswitch on the upper clamping plate is defect Defective cable fan the programmable cam (242) Proximity switch (241) defective; Check that the programmable cam (242) and proximity switch (241) are clean, have the correct gap (1,5mm) and coincide
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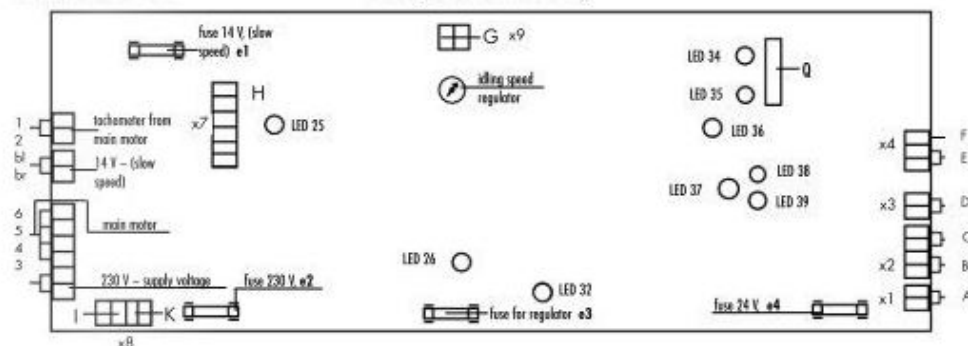
No fault signal

<ul style="list-style-type: none"> Door cannot be opened, door button shining 	<ul style="list-style-type: none"> LED „Door magnet“ on load pcb not shining LED „Door magnet“ on load pcb shining 	<ul style="list-style-type: none"> Load pcb (208), processor pcb (217) or connecting cable is defective, replace Check terminal voltage (F) Check terminals on keyboard pcb 15/16 Door lock is defective
<ul style="list-style-type: none"> After the start button is pressed, it does not light up 	<ul style="list-style-type: none"> Proximity switch (241) shining 	<ul style="list-style-type: none"> Switch „Clamping table“ (257) is always pressed Proximity switch (241) is defective

6.1 PCB terminal diagrams

Load pcb Item. 208

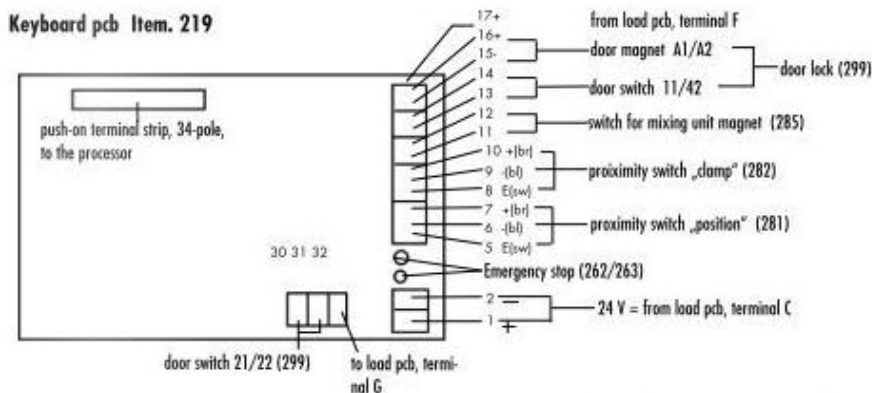
Rear panel of housing



x1	A = 24 V -
x2	B = 24 V- clamping motor
	C = 24 V- keyboard
x3	D = 5 V- processor
x4	E = 24 V = mixing unit magnet
	F = 24 V+ = door lock
x9	G = 24 V+ = relay for slow and fast speed
x7	H = external regulator
x8	I = transformer 230 V
	K = fan

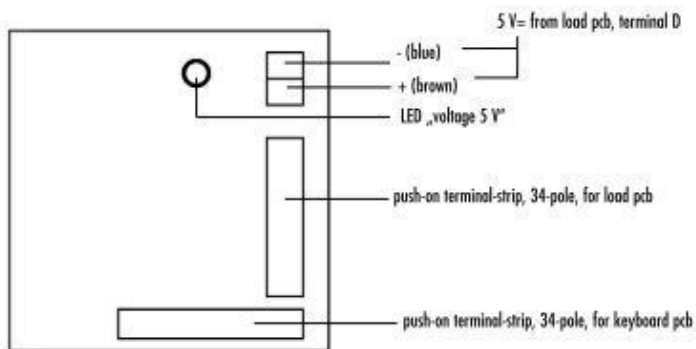
LED 25	230 V- regulator in operation
LED 26	24 V- regulator in operation
LED 32	24 V- door lock („Titan“ switch)
LED 34	door lock („Titan“ switch)
LED 35	mixing unit magnet
LED 36	slow speed
LED 37	high speed
LED 38	undamp
LED 39	clamp
e1 - e4	= 6,3 Amp.

Keyboard pcb Item. 219



The numbers in brackets correspond to the numbering used in the exploded drawings.

Processor pcb, Item. 217



7. Servicing and maintenance

Regular maintenance is essential to keep the machine in good working order. The most important parts should be lubricated in accordance with the following schedule if the machine is in continuous use.

Check the most important functions and components **every 6 months**. Make sure that all parts are clean and work smoothly.

Just how often you carry out the maintenance work will depend on the machine's operating schedule.

Pull out the power plug before starting with the work.

Remove the rear panel, both side elements and the top cover plate. All the relevant parts can then be reached.

7.1 Maintenance intervals

Every week:

Use a grease gun at the lubricating nipple on the mixing unit to lubricate the bevel gear in the hub with **Molykote 165 LT at least once a week**.

Remove any dirt from the two guide columns of the mixing unit and apply a thin coat of lubricating oil.

Every 6 months:

Lubricate the threaded spindle with **Molykote BR 2 plus**.

Check that the lock pin at the mixing unit magnet moves smoothly.

Check the tension of the V-belt. Replace the V-belt if it is worn or damaged.

Check that the bottom clamping table and the slide move smoothly. Remove any dirt.

Check that the locking lever moves smoothly and lubricate lightly with grease. Check the lever lock plate for signs of wear and replace if necessary.

Check that all ball bearings move smoothly. Ball bearings are to be found on the two clamping jaws, on the drive shaft at the transmission gear and on the clamping tables.

Check that the door pull is in good working condition.

Check that the door lock is in good working good. A special key is provided to release the titanium safety switch. See the description in the Annex.

Check the degree of wear on the carbon brushes. Minimum length is approx. 9 mm.

Every 12 months replace the PERMA lubricating cartridge with a new one. Activate the new cartridge [see Section 4.3].

The **bevel gear sets** [43] are to be replaced strictly as complete sets.

General points:

Avoid cleaning the interior with a **high-pressure cleaner** or similar equipment. This would wash the lubricating grease off the ball bearings, resulting in dry running and serious damage. **Replace dry-running ball bearings immediately.**



Housing open



1. Lubricating nipple on the hub for the PERMA cartridge
2. Guide columns
3. Slide pull out mechanism



Carbon brush seats, left and right



7.2 Dismantling and installing the mixing unit *(in special cases only!)*

The mixing unit should be dismantled in exceptional cases only. Have this work carried out by a specialist.

The carbon brushes have to be removed prior to dismantling!

Move the mixing unit into horizontal position. To do so, pull back the latching pin on the magnet mixing unit to release the mixing unit catch.

Undo the 4 socket-head screws on the hub.

Together with a helper, lift the mixing unit out of the machine and store safely.

Installing the mixing unit

Adjust the position of the V-belt pulley (8) so, that the screw (13) is vertical (12 o'clock position).

With the mixing unit in horizontal position - the approach ramp [476] has to be in 9 o'clock position - push it back fully onto the drive shaft after you have made sure that all the shims are in the hub.

Re-tighten the 4 socket-head screws.

Move the mixing unit back into vertical position so that the latching pin re-engages.

Re-connect the 4 carbon brushes.



7.3 Changing the drive motor

Remove the trough plate (47) as well to provide good access from all sides.

Undo the two screws (35) and remove the poly-V-belt (28) and the belt tensioner (29).

Undo the earthing cable (268) and the cable connector (238).

When installing, make sure that the earthing cable is re-fitted first

7.4 Adjusting the microswitch on the top clamping table

For this you will need a 1.5 mm thick adjusting plate. See the drawing.

Place a mixing container in the mixing unit.

Slacken the microswitch.

Push the adjusting plate (1) between the upper disk of the clamping table and the table cross-arm.

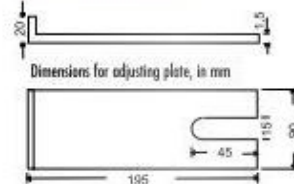
Apply the mixing unit clamp until the disk, the adjusting plate and the table cross-arm are pressed into contact with each other, then press the Emergency Stop immediately.

Adjust the microswitch so that the switching point is just reached and responds.

Re-tighten the microswitch.

Unlock the Emergency Stop pushbutton, open the mixing unit and remove the adjusting plate.

Carry out a test run with large and small containers.



7.5 Warranty

The manufacturer undertakes to provide, as part of the general terms of supply and delivery, a twelve-month warranty. This warranty applies to single-shift operation and takes effect from the date of initial start-up. It covers all defects arising from faulty material or workmanship. Please note that all warranty claims must be accompanied by the original delivery note or initial start-up report.

All essential warranty repair work is only to be carried out by adequately trained service engineers or by third parties with express prior authorization from Collomix. The carrying out of unauthorized repairs may render the warranty null and void.

Please return any defective parts or machines carriage-paid to our factory. Collomix reserves the right to decide on whether cost-free parts replacement is applicable. Parts and labor covered by the warranty will be supplied free of charge. The warranty does not cover travel costs, expenses or possible overnight accommodation resulting from warranty repairs carried out off our premises.

Any further responsibility, with particular reference to damage claims, including foregone profit or other material losses on the part of the customer, is expressly excluded.

Warranty and liability claims for personal or material damages are excluded if attributable to one or more of the following causes:

- Incorrect operation of the machine, as defined in the operating instructions
- Incorrect and/or unauthorized initial start-up, operation and/or maintenance of the machine
- Faults or damage caused by excessive accumulations of dirt and/or incorrect cleaning schedules, with particular reference to leaks and damaged containers
- Operation of the machine with defective safety and/or protection devices
- Failure to observe the instructions in the operating manual with respect to set-up, initial start-up, operation and maintenance of the machine
- Unauthorized structural modifications to the machine
- Incorrect monitoring of parts subject to wear and consumables
- Unauthorized repairs and/or the fitting of non-original spare parts
- Damage caused by the impact of foreign bodies or force majeure

We reserve the right to make amendments as a result of ongoing advances in the technical field.

8. Annex

8.1 Technical data

Supply voltage:	L1, N, PE 50; 230 V a.c.
Rated power	1,2 kW
Frequency:	50 Hz
Fuse:	6,3 Amp.
Speed/motor:	- 4.850 rpm
max. container weight:	30 kg
Clamping height, max. container height:	95 - 340 mm
max. container diameter:	330 mm
Machine weight:	176 kg
Dimensions [w x d x h]:	780 x 740 x 1015 mm
Noise emission: measured according to DIN 45.635	< 65 dB (A)
Programmversion:	O.L.D.

8.2 Declaration of CE conformity

We declare herewith that this product conforms with the following standards and standard-setting documents:

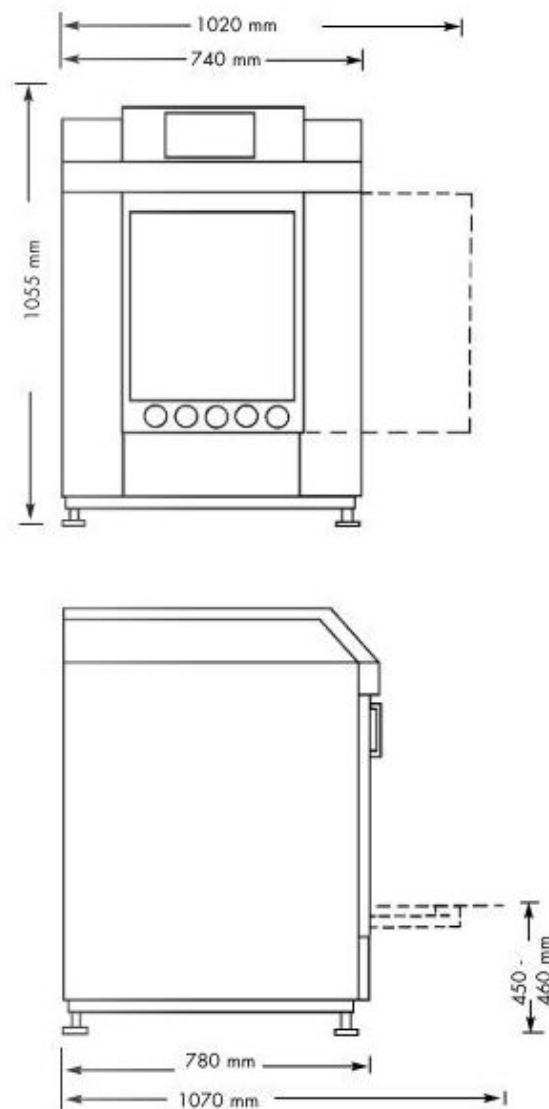
EN 292-1, EN 292-2, EN 294, EN 349, EN 954-1, EN 50082, EN 55011, EN 55014, EN 55.104, EN 60204 acc. to the directive 73/23 EEC, 98/37/EEC; 89/336/EEC

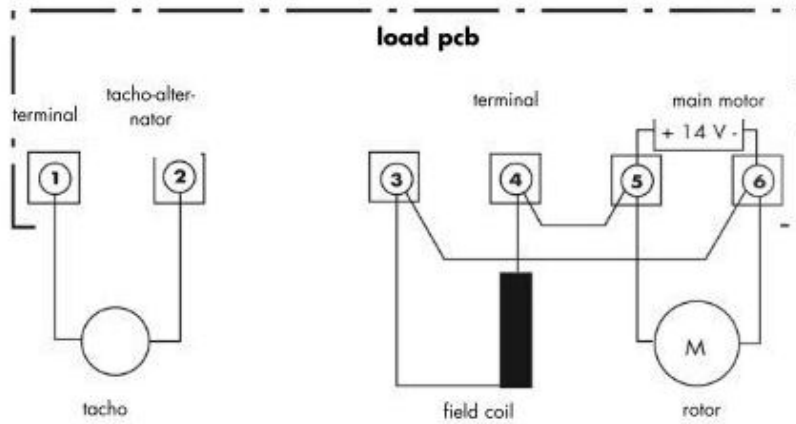
Johannes Essing

Franz Beron

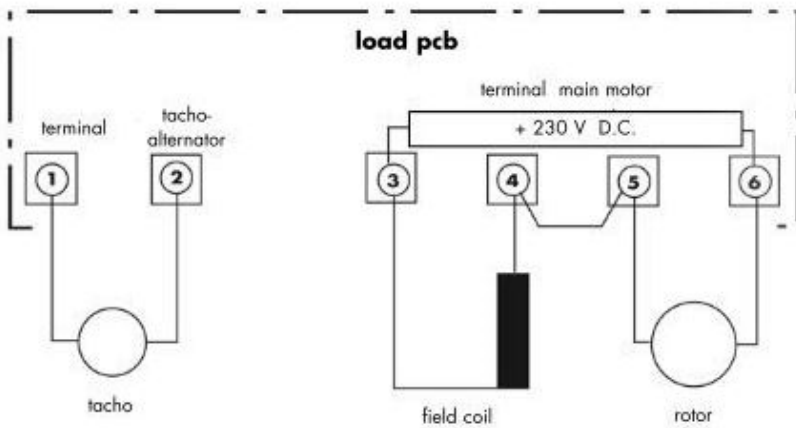
Manufacturer:
Collomix Rühr- und Mischgeräte GmbH
Horchstr. 2, D-85080 Gaimersheim
Federal Republic of Germany
Tel.: ++49 (0)8458 32 98 - 0
Fax: ++49 (0)8458 32 98 30

8.3 Dimension drawing



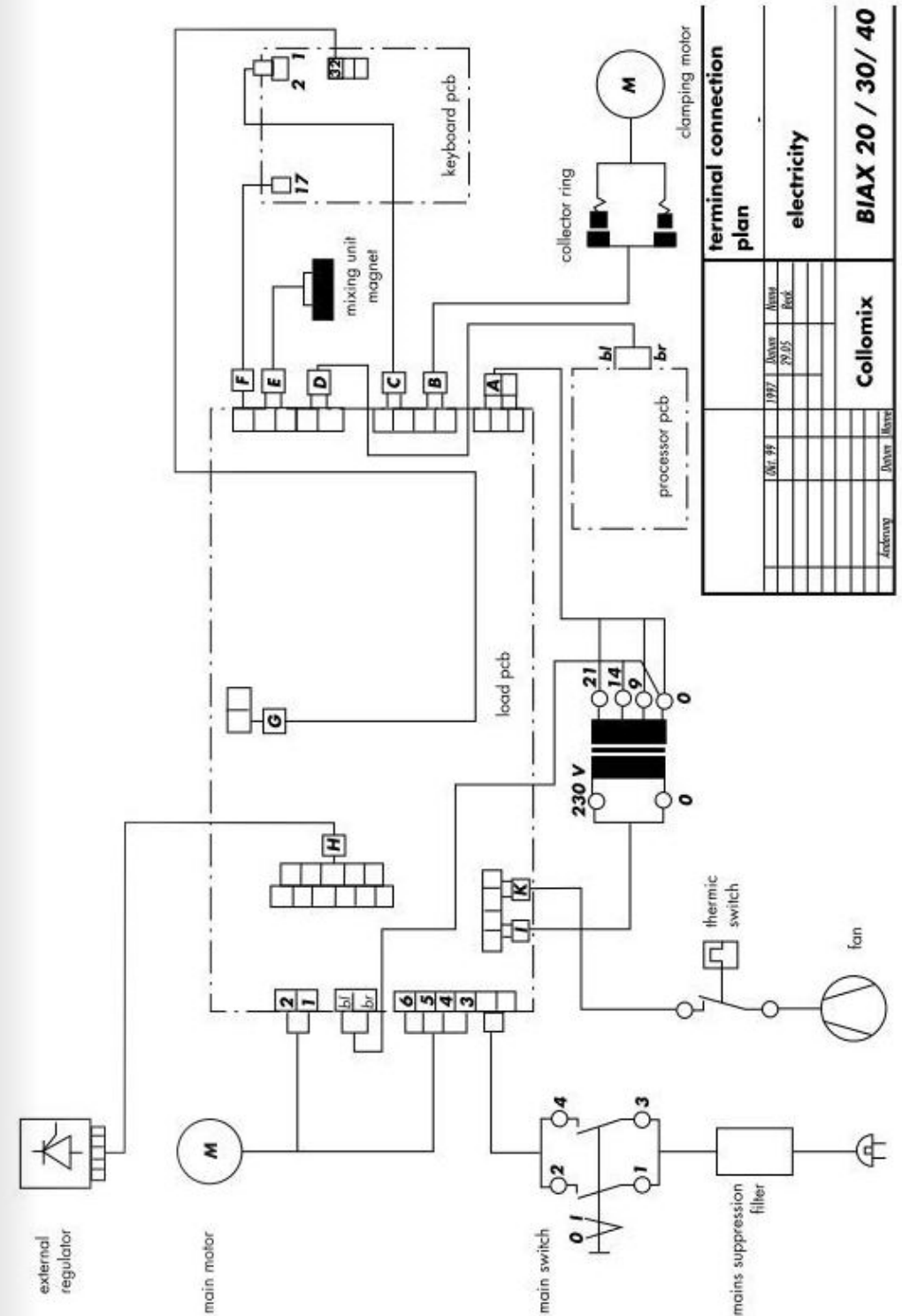


slow speed = shunt connection

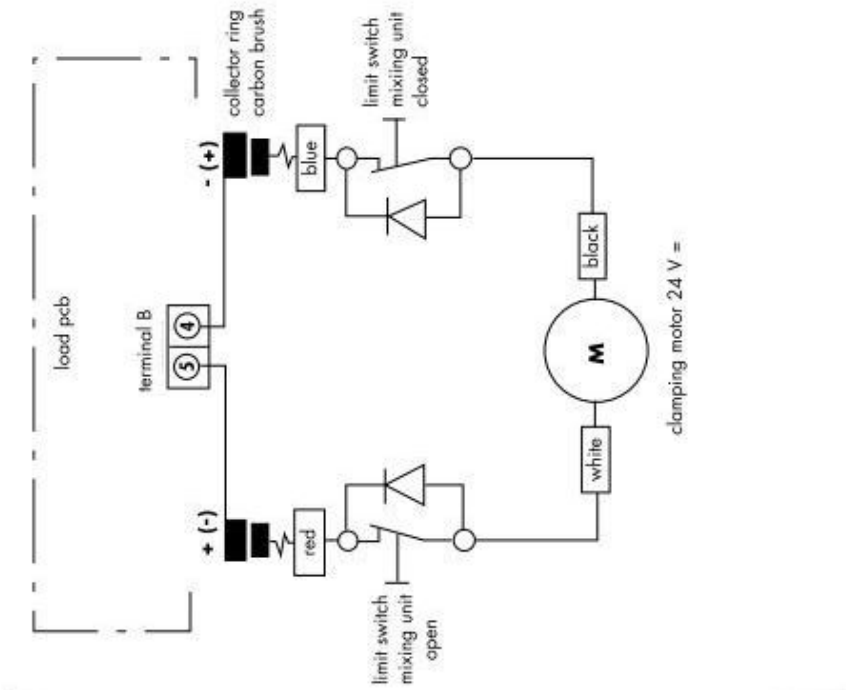
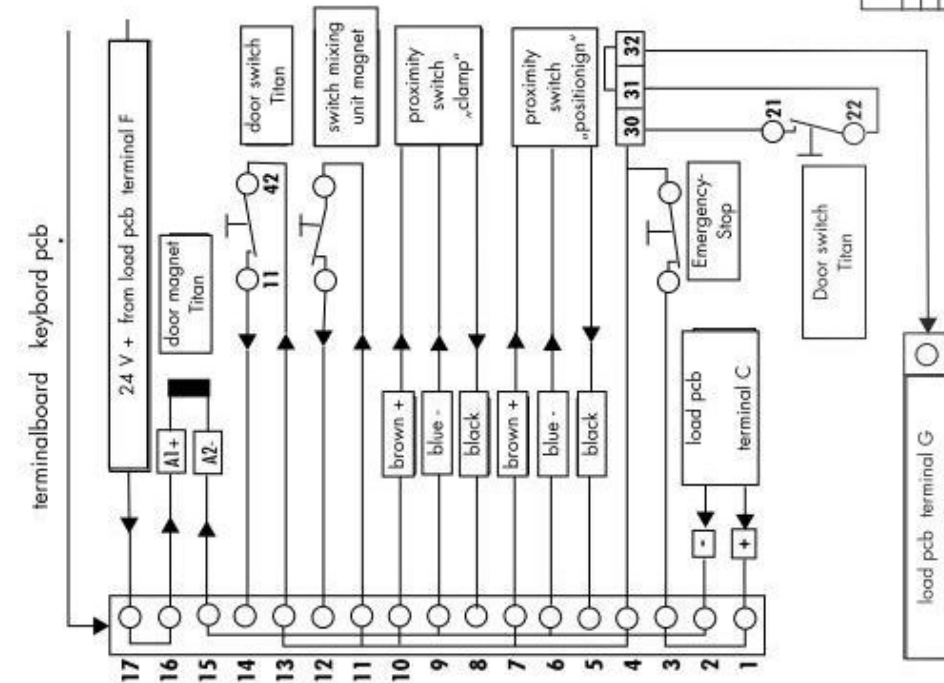


fast speed = serial connection

		6.1-00		terminal connection plan	
		1997	Datum	Name	main motor and tacho
		Bearb.	26.05		
		Gepr.			
		Norm			
		Collomix		BIAX 20_30_40	
Änderung	Datum	Name			



terminal connection plan		electricity		BIAX 20 / 30 / 40	
Änderung	Datum	Name			
		1997	Datum	Name	
		Bearb.	26.05		
		Gepr.			
		Norm			
		Collomix		BIAX 20_30_40	
Änderung	Datum	Name			



terminal connection plan	
keyboard pcb and clamping motor	
BIAX 20 / BIAx 40	
1997	Drive
	Bank: 26.05
	Genr:
	Norm:
Collomix	

- ◆ Supplies all lubrication points with grease or oil
- ◆ Fully automatic, maintenance-free, reliable and safe
- ◆ Indicates when fully discharged
- ◆ Lubricates up to 12 months, depending on type
- ◆ Can be replaced by hand, without tools
- ◆ Operates in any position, even under water

Mode of operation

- ◆ By tightening the activating screw, the gas generator falls into the liquid electrolyte. The chemical reaction builds up pressure (up to 4 bar) which causes a piston to move forward. The lubricant is continuously injected into the lubrication point. At the end of the lubrication period the discharge indicator cap becomes clearly visible, indicating that the lubricant has been fully discharged. The perma contains 120 cm³ of lubricant.
- ◆ The lubrication period is determined and defined by the colour of the activating screw.
yellow = 1 month
green = 3 months
red = 6 months
grey = 12 months
(Reference temperature +20 °C)
- ◆ Applicable are all lubricants of the standard assortment (see product catalogue). Further lubricants available upon request.

Installation

- ◆ Initial installation: Remove the grease nipple and fit adapters (see list of accessories) if needed. All lubrication points and connection tubes must be prelubricated with the same lubricant as contained in the perma. Hold the perma vertically up-side down and tighten the activating screw until the ring-eyellet tears off. Note down the date of activation on the perma. Remove plug and screw the perma into the lubrication point by hand.
- ◆ When using oil-filled perma, an oil throttle is to be installed between the perma and the lubrication point.
- ◆ The perma should not be removed from the lubrication point during discharge because the pressure is subject to drop.
- ◆ Under normal conditions the perma can be kept in stock for 1 year.
- ◆ Do not open casing - perma is still under pressure even some time after use!
- ◆ perma should be disposed of with other oil contaminated waste. Please follow the instructions of your local waste disposal authorities.
- ◆ Fields of application of perma: rolling and sliding bearings, sliding guideways, open gears, etc.
- ◆ The Safety Data Sheets for perma Classic are available at your local supplier.



Fig. No. 1000-01

Discharge periods

Average temperature	Type 1		Type 3		Type 6		Type 12	
	discharge period (months)	delay act./lubr (days)	discharge period (months)	delay act./lubr (days)	discharge period (months)	delay act./lubr (days)	discharge period (months)	delay act./lubr (days)
0 °C	4	5	8	12	15	16	>18	25
+10 °C	2	3	5	4	8	8	18	10
+20 °C	1	1	3	2	6	4	12	6
+30 °C	0,8	<1	2	1	3	2	6	3
+40 °C	0,6	<1	1	<1	2	1	3	1

The data given in the table above is the result of lab experiments. The actual discharge period is decisively influenced by e.g. the lubricant, ambient temperature and connecting parts (e.g. connection tubes).