



**VACUUM INVESTMENT MIXER  
ST. LOUIS 92 – 4 KG.**



**INSTRUCTION MANUAL**

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## **INTRODUCTION**

These notes are provided to our Customer in order to offer the information's necessary for the correct installation , operation use and maintenance of the unit purchased. Only technical staff, previously authorized by the Producer, will guarantee a correct service of the machine and its components.

Any modification or repair made without prior CIMO authorization and agreement, will immediately cancel warrenty conditions and this circumstance will save the producer from any kind of responsibility forward any person and things suffering damages that might occur. Please carefully read the instructions notes before operating the machine. CIMO is reserving the right to modify its products without previous notice.

## **WARRANTY**

**CIMO PRODUCTS ARE COVERED BY TWELVE MONTHS WARRANTY**

**STARTING FROM THE DELIVERY DATE TO CUSTOMER**

**EXCEPT ELECTRIC AND ELECTRONIC COMPONENTS THAT ARE COVERED SIX MONTHS ONLY.**

**WARRANTY IS LIMITED TO REPAIR OR CHANGE OF THE FAULT PARTS**

**UPON A PREVIOUS AUTHORIZATION AND INSPECTION BY OUR STAFF OR CIMO DELEGATE.**

**LABOUR, TRANSPORT, CUSTOMS AND OTHER COSTS WILL BE AT TOTAL CUSTOMER CHARGE.**

**THE TOTAL CHANGE OF THE COMPLETE MACHINE IS ALWAYS TO BE ESCLUDED FROM WARRANTY CONDITIONS. PARTS REPAIRED OR CHANGED WILL NOT EXTEND THE WARRANTY PERIOD.**

## **GENERAL NOTES**

St. Louis vacuum mixers are machines studied and designed for the investment mixing and flask mold filling for the lost wax casting of the jewelry making process. The main concept of the St.Louis mixing units is the total operativity under vacuum situation.

Traditionally investment was mixed with water in open air and with this process the final blend result was not really homogeneous and precise so the surface of the precious metal casted was not so smooth and complete.

More, the large quantity of gases incorporated in the mixing was giving such a huge percentage of porosity.

St.Louis mixer, with the vacuum total process and the timing, quantity and water dosing very precise, assures the best quality performing results in one of the most delicate process-step by step of the lost wax casting system.

## **THE MACHINE FEATURES**

- TOTAL INVESTMENT POWDER DEGASIFICATION INTO THE MIXING CONTAINER
- EXACT AND PRECISE WATER QUANTITY IN THE RATIO 1:40 TO BE ADDED TO POWDER
  - ADJUSTABLE MIXING SPEED
  - CORRECT AND PRESETTED MIXING TIMING
- ADJUSTABLE INTENSITY VIBRATION FOR THE INVESTED FLASKS

## **OPERATOR SAFETY**

***PROTECTION MASK FOR OPERATOR IS COMPULSORY REQUESTED***

***PROTECTION HAND GLOVES FOR OPERATOR ARE SUGGESTED***

***THIS UNIT MUST BE OPERATED BY PROFESSIONAL STAFF***

***AND FOR ITS CONCEPT PURPOSE BUILT ONLY !***

## **TRANSPORT**

THE MACHINE SHOULD BE ALWAYS TRANSPORTED IN VERTICAL POSITION AND HAS TO BE LIFTED FROM THE BOTTOM CHASSIS BASEMENT ONLY.

## **ATTENTION**

PLEASE AVOID TO HOLD, LIFT OR PULLING AND PUSHING THE MACHINE FROM ITS CENTRAL CONSTRUCTION PART ( PLEXIGLASS MIXING BOWL, FLASK CHAMBER OR MAIN MOTOR SHAFT).

### **TECHNICAL DATA**

VOLTAGE: 220 VOLTS - 50/60 HZ. SINGLEPHASE – CONSUMPTION: KW. 0,5  
PROTECTION FUSE: 6,3 AMP.  
MAX INVESTMENT DRY POWDER CAPACITY : Kg. 4  
MAX FLASK SIZE: DIAMETER 150mm. X 200 mm. HIGHT

### **VACUUM PUMP CONNECTION**

THE MIXER MUST OPERATES WITH A VACUUM PUMP OF MINIMUM CAPACITY 6 CBM/HOUR.

THE VACUUM PUMP IS SUPPLIED SEPARATELY AS OPTIONAL ACCESSORY.  
ON THE REAR PART OF THE MACHINE BASE FIND THE VACUUM PIPE HOSE CONNECTOR.

VACUUM PUMP MUST BE CONNECTED DIRECTLY TO A SEPARATE 220 VOLTS PLUG.

### **PRELIMINARY OPERATIONS**

Connect the vacuum hose from the rear part of the machine to an external vacuum pump (6 cbm/h.).  
WHENEVER THE UNIT IS SUPPLIED WITH OUR VACUUM PUMP,  
REMINDE TO FILL THE PUMP OIL TANK WITH ITS SPECIFIC OIL  
BEFORE SWITCHING ON THE PUMP MOTOR.

Connect the unit to an electrical plug that must have ground. Switch on the machine from the switch on the rear body panel.

Fill the open dosing tank ( located on the right part of the motor column of the unit ) with clean water ( temperature between 20° and 24° C. ) correctly to the top level line of the sticker indicating the water proportion quantity. ( ratio: 1 kg. powder = 400 cc. water )

**WATER DOSING TANK AND STICKER SPECIFICATIONS:**

The sticker on the dosing water tank is indicating kg. and pounds with numbers from 0 to 4 ( kg. )  
IT IS PRINTED CONSIDERING THE STANDARD RATIO: 1 KG. DRY INVESTMENT  
POWDER = 400 CC. WATER

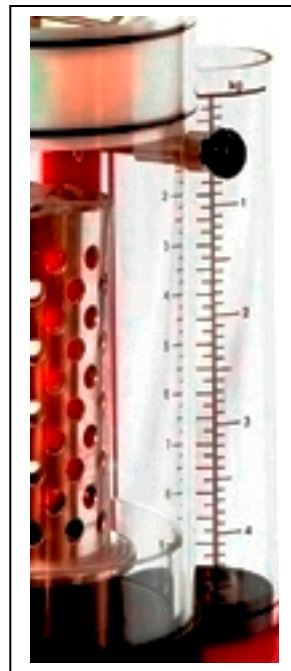
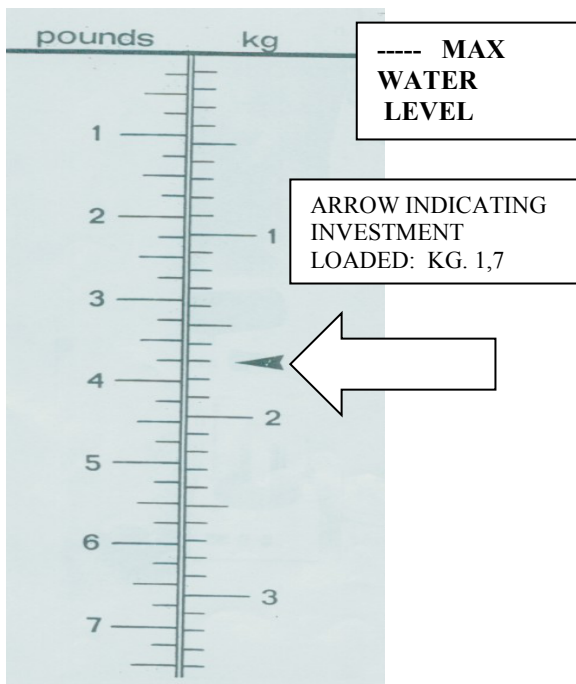
THE STICKER LINES AND NUMBERS ARE INDICATING THE DRY POWDER GRAMS ( or  
POUNDS )

FROM TOP LINE WATER LEVEL ( under KG printed ) THE QUANTITY OF WATER  
CORRESPONDING TO EACH KILOGRAM IS 400 CC.

*Practical example:*

IF WE HAVE LOADED kg. 1,700 INVESTMENT DRY POWDER INTO THE MIXING  
CONTAINER, WE HAVE TO TRANSFER INTO THE MIXING CONTAINER A QUANTITY  
OF WATER AS MUCH AS WE SEE MARKED ON THE LEVEL LINE VALUE KG 1,7 ON  
THE DOSING COLUMN STICKER IN ORDER TO HAVE THE EXACT 40% PROPORTION  
OF WATER

FOR THE INVESTMENT LOADED IN THE MIXING CONTAINER.



**MIXER USE ( part one ):**

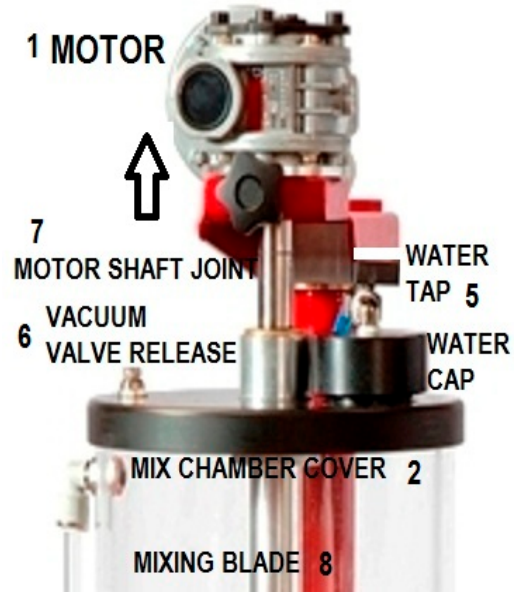
Lift-up the top motor (1) and turn it to the right side of the mixer. Remove the top black cover with the mixing blade (2) from the clear mixing chamber caring to move aside the round small cap where the water tap (5) is located.

Place the flask (with wax tree on its rubber base) on the central part of the lower black plate base of the MIXER. Load the investment powder (after its weighting ) into the mixing chamber. Check that the lower pouring valve is logically closed. The plex round disc is moved by the black round knob ( pull for opening / push for closing )

**Before loading the investment powder, be sure that the MIXING CHAMBER is dry.**

Replace the mixing chamber on its original location and insert the mixing blade on it. Replace the top cover with the blade (8). Check that the vacuum release valve (6) and the water tap (5) are closed.

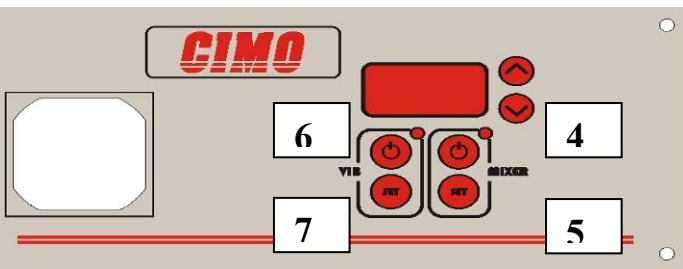
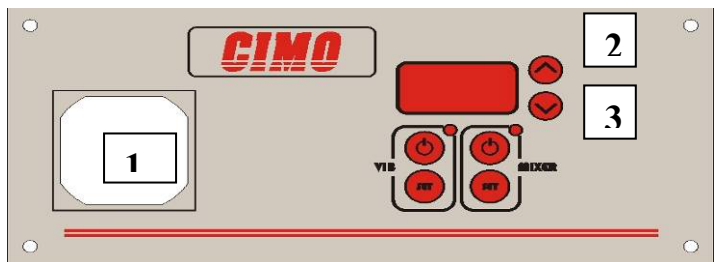
REPLACE THE TOP MOTOR ON ITS ORIGINAL POSITION inserting the shaft joint (7) into the blade-gear (8) .



**FRONT CONTROL PANEL**

- 1 vacuum gauge
- 2 increase value
- 3 decrease value

**VIB** vibration control  
**MIXER** mixing control



- 4 on – off mixing motor
- 5 motor speed
- 6 on – off vibrator
- 7 vibrator intensity

**A SELF AUTOMATIC SWITCH-OFF HAS BEEN INSTALLED IN THE MACHINE**  
Whenever the unit will remain for more than one minute without operation it will switch off automatically

**PARAMETER SETTING:**

**WHEN SWITCHING ON THE MACHINE, THE DISPLAY SHOWS THE MIXING TIME PRESETTED:**

Example: 4.5 means 4 minutes and 30 seconds / 3.0 means 3 minutes zero seconds.  
To modify the mixing time ( operation possible only when mixing motor is OFF )  
increase or decrease time by pushing “ 2 “ or “ 3 “ button.  
The value is automatically memorized.

**MIXING MOTOR SPEED:**

This value has been presetted already by CIMO srl.

To set a different mixing motor speed ( operation possible when mixing motor is ON or OFF ):

- a) push button “5” until led is flashing
- b) increase or decrease motor speed by pushing “2” or “3”
- c) after 5 seconds from the last pushing on 2 or 3 the setting procedure is over.
- d) WHEN SWITCHING OFF THE MACHINE the parameter will go back again to the initial CIMO value.

**VIBRATION INTENSITY:**

To set the vibration intensity ( operation possible when vibration is ON or OFF ):

- a) push button “7” until led is flashing
- b) increase or decrease vibration intensity by pushing “2” or “3”
- c) after 5 seconds from the last pushing on 2 or 3 the setting procedure is over.
- d) WHEN SWITCHING OFF THE MACHINE the parameter will go back again to the initial CIMO value.

**ALARMS ON DISPLAY**

- A 1 : ELECTRICAL SHORT – CONTROL BOARD DAMAGED**
- A 2 : MIXING MOTOR OVERHEATING**
- A 3 : MIXING MOTOR MECHANICAL FAULT ( too much powder loaded )**  
**( internal blade bearing dirty ) or ( mixture too much dry )**
- A 4 : LOW TENSION AT THE UNIT**

*To reset the alarms: switch off and switch on the unit*



**MIXER USE ( second part )**

WHEN THE UNIT IS PLUGGED, THE MIXER IS IN STAND-BY AND THE LED-DISPLAY SHOWS THE PRESET MIXING TIME:  
( Cimo set parameter 4.0 that means four minutes ).

START THE VACUUM PUMP MOTOR ( SEPARATE SWITCH EXTERNAL FROM THE UNIT ) AND LEAVE THE VACUUM PUMP RUNNING UNTIL THE VACUUM LEVEL GAUGE IS REACHING THE COMPLETE VACUUM CONDITION.

HOLD THE ROUND CAP ( A ) PUSHED DOWN UNTIL VACUUM IN THE CHAMBER WILL KEEP IT CLOSED.  
WHEN THE VACUUM HAS BEEN REACHED, **SWITCH OFF THE VACUUM PUMP.**

OPEN THE TOP WATER TAP ( B ) AND WATER WILL FLOW DIRECTLY INTO THE MIXING CHAMBER.  
CLOSE IMMEDIATELY THE TAP WHEN THE WATER LEVEL IN THE DOSING TANK WILL REACH THE LINE OF THE INVESTMENT QUANTITY LOADED.  
( AS FOR INSTRUCTIONS ON PREVIOUS PAGE ).

START THE MIXING BY PUSHING BUTTON “4”  
WHEN THE MIXING TIME PRESETTED WILL BE ZERO, THE MOTOR OF THE MIXING BLADE WILL STOP AND A BUZZER WILL SOUND TO WARN THE OPERATOR FOR THE IMMEDIATE POURING OF THE MIXTURE INTO THE FLASK

OPEN THE SIDE POURING VALVE KNOB ( E )  
( PULL TOWARD EXTERIOR ) IN ORDER TO FILL THE FLASK WITH THE MIXTURE. CLOSE THE VALVE ( E ) WHEN FLASK IS TOTALLY FILLED . START VIBRATION BY PUSHING BUTTON “ 6 ” AND KEEP THE VIBRATION INTENSITY SMOOTH.

STOP THE VIBRATION AND RELEASE VACUUM BY OPENING THE VALVE ( F ).

PLEASE CONSIDER THAT ALL THE PROCESS IS DONE UNDER VACUUM SO DO NOT EXPECT TO SEE “BOILING-BUBBLING” FROM THE INVESTED FLASK.  
AT THE END OF THE PROCESS WASH THE MIXING CHAMBER AND THE BLADE.

