



**OPERATION & INSTRUCTION MANUAL
VACUUM IMPREGNATION UNIT**

VACUMET 52

EC Declaration of Conformity

Manufacturer : Metkon Instruments Inc.

Address : Demirtas Dumlupinar Organize Sanayi Bolgesi
Ali Osman Sonmez Cd. No: 14 Bursa / TURKEY

Model No : VACUMET 52

Herewith declares that;

Vacuum Impregnation Unit

- is in conformity with the provisions of the Machinery Directive (**directive 2006/42/EEC**), as amended, and with national implementing legislation;

And furthermore declares that

- the following [parts/clauses of] standards have been applied

EN ISO 12100:2010, TS EN 60204-1

Authorized Person: ERCIN SENAY

Position: Manager of Research and Development Department

Year: 2019

Bursa / Turkey



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DESCRIPTION

Design

- Compact and simple
- Built-in vacuum system with Gauge
- Efficient impregnation
- Multi-specimen application.

VACUMET 52 is designed for embedding and impregnation of porous materials. It removes the trapped air from the mounting material and eliminates the gaps between the specimen and the resin.

Most mineralogical specimens have porosities, cavities, cracks, and they therefore need to be under vacuum. VACUMET 52 fulfills this requirement easily and efficiently. In addition, VACUMET 52 can also be used for glueing the specimens on the glass slides for further processing in thin section preparation.

METKON offers wide range of cold mounting consumables high quality embedding forms for different types of mineralogical application.

Only air connection is necessary to operate VACUMET 52. No electric or water connection is needed.

Embedding mineralogical specimens is very easy with VACUMET 52. Just place your specimen inside the embedding form, fill it with cold mounting resin, place it inside the VACUMET 52, close cover and turn on vacuum. That's all!

Two different operation is possible with VACUMET 52; embedding with sucking function or without sucking function. It is also possible to mount specimens with VACUMET 52, if the specimen has very low density and floating inside the resin material. VACUMET 52 has feature for fixing low-density materials.



VACUMET 52

Technical Data

Model Order No	VACUMET 52 25 06
Vacuum System	0,65 bar
Air Pressure	4,5 – 6 bar
Dimensions, WxDxH, cm.	30 x 31 x 35
Weight, kgs	8 kgs

Warranty

The VACUMET 52 is guaranteed against defective material or workmanship defects for a period of 12 months from the date of receipt by the customer or latest 18 months after the shipping date. The warranty is not valid if inspection shows evidence of misuse or unauthorized repair. Warranty covers only replacement of defective materials. If this unit need to be returned to our factory for service, please contact your distributor for authorization and include the following details: Serial Number of the unit, Invoice number and date. Transport costs belong to the customer.



NOTE

The equipment is designed to be used with METKON accessories and consumables. In case of misuse of equipment, improper installation, alteration, use of different source parts,

improper repair, METKON will accept NO responsibility for any damages to the operator or the equipment. Disassembling of any part should always be performed by a qualified technician

Safety Precautions

Read the below instructions carefully before use.

- Place the machine on a sturdy and safe table.
- The equipment must be installed in compliance with local safety regulations.
- Only use approved METKON accessories and consumables to achieve maximum safety and lifetime.
- Follow the instructions and safety regulations when lifting and carrying the equipment.
- Using gloves is recommended when working with cold mounting consumables.
- Follow the periodically maintenance.



NOTE

METKON Instruments Inc. can make any changes without notice on the equipment, accessories, consumables and miscellaneous products.

Consequently; visual or written information on the instruction manuals, technical materials, catalogues, website, product videos and other marketing materials may show inconsistencies and may be different from the product.

INSTALLATION & SET UP

Unpacking & Checking Contents of Package

Carefully unpack and check contents of the package. If any components are missing or damaged, save the packing list and materials and advise your distributor and the carrier of the discrepancy.

Carefully unpack and check that the following items have been received:

- VACUMET 52
- Silicon Tubes, 10 pieces
- Air Hose, 1.5 m, 1 piece
- Mixing Cups, 10 pieces
- Spatulas, 10 pieces
- Scale Tubes, 2 pieces

Installation and Set-Up



CAUTION

Follow approved procedures and take all necessary preventive safety measures when lifting and installing this equipment. Improper lifting can result equipment damage.

- VACUMET 52 is a bench top equipment.
- VACUMET 52 should be placed on a sturdy and safe platform. Please be sure that the platform is large enough and can stand its weight.
- In order to work with equipment comfortably, it is recommended to leave at least 30 cm space from all side of the equipment.
- You can see the dimensions and weight of VACUMET 52 as below:

Dimensions	W	D	H
	300 mm	310 mm	350 mm
Weight	Approx. 8 kgs		



NOTE

If equipment used on very high altitude (above more than 2000 meters above sea level), in this case vacuum cannot be increased to maximum level.

Electrical Installation

VACUMET 52 is not required electric connection.

Water & Drain Connections

VACUMET 52 is not required water or drain connection.

Air Connection

- VACUMET 52 requires air supply with 6 bars pressure to generate vacuum.
- A compressor, which can generate more than 6 bars and has 50 liters capacity is enough for only 1 equipment. If you have more equipment that use air supply, please consult your local compressor dealer to choose correct compressor.
- If there is a doubt about the quality and pressure of the air supply, make certain that a filtering and regulator unit for compressed air is connected to the air line before VACUMET 52.
- METKON can supply GR 0440 Air Filtering and Lubricating Unit, which regulates air pressure to 6 bars.



- Be sure that you have a suitable connection fitting to connect air hose to the airline.

Noise Level

Approx. 60 dB is measured at idle running at a distance of 1 m from the machine.

CONTROL PANEL

VACUMET 52 has an easy to use operator panel with very simple controls. It has specially designed to quick operation. A vacuum gauge allows you to observe instantaneous vacuum generation.



VACUMET 52 Control Panel

Control Button Functions

START/STOP

Activates the instrument

VACUUM GAUGE

Indicates the pressure inside the vacuum chamber. Arrange the vacuum with the vacuum valve in the middle.



NOTE

If equipment used on very high altitude (above more than 2000 meters above sea level), in this case vacuum cannot be increased to maximum level.

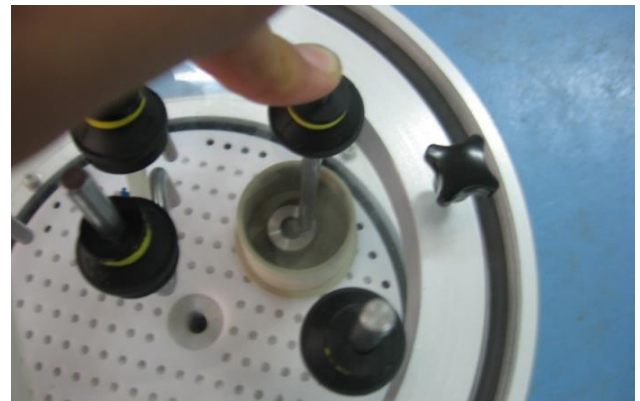
OPERATION

Without Sucking Function

- Add 100 gr/23 gr (85 ml/20 ml) Epoxy resin/Hardner into a mixing cup and mix continuously 3 minutes.
- Place the sample in the middle of mounting cup (embedding form) and fill the mounting mixture into the mounting cup.
- Place the mounting cup into the vacuum chamber.
- Close the plexyglass top cover and Switch ON (Start) the VACUMET 52.
- Adjust the vacuum to 560 mmHg with the help of vacuum gauge.
- After a short time, you can observe air bubbles on the mounting mixture.
- Regarding to the temperature and vacuum, air bubbles nearly disappear in 45 minutes.
- Then adjust the vacuum to 100 mmHg - 130 mmHg with the help of vacuum gauge.
- Hardening time is approximately 8 hours.
- After Hardening, Switch OFF (Stop) the VACUMET 52, then remove the Plexyglass cover and take the mounting cup from the vacuum chamber.

With Sucking Function

- Add 100 gr/23 gr (85 ml/20 ml) Epoxy resin/Hardner into a mixing cup and mix continuously 3 minutes.
- Place the sample in the middle of mounting cup and place this in the vacuum chamber. Please be sure that the mounting cup should be under the vacuum hose end. You can place the hose end by using the small steel pipe.
- Before Switching ON (Start), close the Plexyglass top cover.
- Insert the silicone tube into the black plastic valve.
- If your sample is light or it can be moved during the filling of cold mounting mixture, press the steel pin to the sample carefully. By this way, your sample is fixed and the surface of the sample will be parallel to the base.



Pressing the Steel Pin

- Dip the hose end into the mixture cup.
- Switch ON (Start). Open the Pressure gauge little by little and adjust the vacuum to 560 mmHg.
- Fill the mounting cup very slowly. Fill the other cups accordingly by same method. You can adjust the epoxy mixture flow rate with black-plastic head adjusting screw.
- After a short time, you can observe air bubbles on the mounting mixture.
- Regarding to the temperature and vacuum, air bubbles nearly disappear in 45 minutes.
- Pull the steel pin back when the hardening starts. Adjust the vacuum to 100 mmHg - 130 mmHg with the help of vacuume gauge.
- Hardening time is approximately 7 hours.
- After Hardening Switch OFF (Stop) the VACUMET 52, then remove the plexyglass cover and take the mounting cup from the vacuum chamber.

SERVICE AND MAINTENANCE

Maintenance

Clean the vacuum chamber at the end of operation. The cold mounting resins that left in the chamber may clog the vacuum chamber.

ACCESSORIES AND CONSUMABLES

Accessories

Order No	Cold Mounting Accessories
29-551	Spatulas, (100 pcs)
29-552	Mixing Beakers, (10 pcs)
29-553-01	Embedding Form, ø 25 mm (5 pcs)
29-554-01	Embedding Form, ø 30 mm (5 pcs)
29-555-01	Embedding Form, ø 40 mm (5 pcs)
29-556-01	Embedding Form, ø 50 mm (5 pcs)
29-601	Stainless steel clips (100 pcs)
29-602	Plastic clips (100 pcs)
29-603	Plastic multi-clips for 5 specimens (50 pcs)

Consumables

Cold mounting is preferred for samples, which are sensitive to damage from heat and pressure (like coatings, PCB, etc.) Cold mounting resins are easy to use.

Order No	CODE	DESCRIPTION
29-501	DMT 35	Powder, 1000 gr
29-502	DMT 35	Fluid, 500 ml
29-511	DMT 20	Powder (Transparent), 1000 gr
29-512	DMT 20	Fluid (Transparent), 500 ml
29-513	DMT CON	Conductive cold mounting powder 500 gr
29-514	DMT CON	Conductive cold mounting fluid 500 ml
29-515	DMT ACE	Cold mounting powder, soluble with acetone 1000 gr
29-516	DMT ACE	Cold mounting fluid, soluble with acetone 500 ml
29-003/20	BAK-S	Light Brown Phenolic powder, 20 kgs
29-505	EPOCOLD-R	Epoxy Resin (2 x 500 gr)
29-506	EPOCOLD-H	Epoxy Hardener (200 gr)

TECHNICAL DOCUMENTATION

Recommended Spare Part List

Order No	Description
YM 2854-00	MANOMETER Ø50/-760MM HG.AP.VKL
YM 2855-00	MECHANICAL VALVE S3B-M5
YM 2953-00	PLEXY GLASS UBE, VACUMET 52
YM 2955-01	PLEXYGLASS, COVER VACUMET 52
YM 2956-00	Sealing, K21-160 NBR, VACUMET 52
YM 2960-00	THROTTLE 2839 1/8
YM 2961-00	VACUUM PUMP, VTX 10B (VTEC MARKA)
YM 2962-00	SUCKER, VB20-N-M518MF (3209)
YM 2964-01	Base plate plastic, Chamber, VACUMET 52
YM 2968-00	CLAMP S3-HL
YM 2969-00	Hose, 4X6, VACUMET 52

Customer Service

Our factory-trained assembly personal is at your disposal for customer service.
Please contact the following address:

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