

TECHNICAL SPECIFICATION

for the devices defined as component parts of the stand for the laboratory manufacture of the absorption materials (of level of single kilograms)

Delivery contains the component parts of the stand for laboratory manufacture of the absorption materials:

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| 1. Lapping Machine | 1 pc |
| 2. Granulator/ Homogeniser | 1 pc |
| 3. Device for the polyurethane injection to the moulds | 1 pc |

Table 1: Technical data of the lapping machine

Parameter	Requirements needed
Quantity	1
Surface treatment: obtainment of flat parallelism of the lapped surfaces	Concurrent two-sided surface treatment
Type of the applied abrasive suspension	Suspension of silicone carbide (SiC), diamond suspension, alumina suspension
Rotation speed adjustment	0-30 r/min
Automatic dispensing of abrasive suspension	NO
Measurement of thickness of the workpiece	Accuracy 0,01 mm Digital measurement 0,01 mm
Maximum number of the machined moulder at a time	12
Maximum diameter of the moulders at lapping 4 pcs concurrently	10 cm
Possibility to set a program with automatic switching the process off after the required thickness of the lapped element is obtained	YES
CE mark	YES

Table 2: Technical data of the granulator/ homogeniser

Parameter	Requirements needed
Quantity	1
Possibility for granulation of materials of any kind	Powders of ceramic materials
Possibility for granulation / homogenization of mixture with the use of various liquids	YES
Type of liquid used	Water, ethyl alcohol, ethylene glycol
Size of the obtained granulate	0,1- 3 mm
Smooth electronic adjustment of rotations (rotor/ bowl)	YES
Method of the operating time adjustment within 0-60 min	Manual
Possibility to replace the bowl/ rotor	YES
Volume of the bowl	0,5 dm ³
Material of which the bowl and rotor are made	Stainless steel
CE mark	YES

Table 3: Technical data of the device enabling the injection of polyurethane to the moulds

Parameter	Requirements needed
Quantity	1
Possibility to inject polyurethane of quick curing time e.g. 30 s	YES
Possibility to use the filler in the form of ceramic powders	YES
The range of grains/ granules size of the applied filler	0,1-50 µm
Proportion for mixing the PU components (A component and B component)	1:1, 1:2
Maximum volume of dispensed mixture dm ³ /min	3,5-5 dm ³ /min

Total cubic capacity of the dispensers (A component + B component)	10 dm ³
Integrated mixer	YES
Function allowing for spraying of polyurethane on the surface of an item	YES
Possibility for extension of the device	YES
CE mark	YES

Warranty requirements:

- Warranty covering the subject of the tender minimum 24 months.

Other requirements:

- Documentation in the Polish language – the operational and technical documentation (DTR) including:
 1. Specification which contains:
 - a) A list of the machine and device components,
 - b) technical data and parameters,
 - c) composition of the computer hardware and software (if applicable).
 2. Installation instructions regarding:
 - a) Climate conditions,
 - b) media connections,
 - c) transport,
 - d) requirements as for the location and working space.
 3. Instruction – Service and Operation Manual
 4. Instruction – Programming Manual
 5. The Maintenance Instructions:
 - a) Schedule and scope of inspections, maintenance + a list of maintenance products,
 - b) A list of spare parts and consumable parts (Part List) + drawings showing the arrangement in the machine (device),
 6. Industrial Safety and Hygiene Guidelines (notes and recommendations)
 7. Service Manual



- a) the diagnostic and test procedures,
 - b) the repair and service procedures (including but not limited to adding of software and parameters, replacement of battery supporting the software, tuning and control),
 - c) a list of parameters,
 - d) a list of codes of errors and alarms,
 - e) block, concept and electric schemes,
 - f) hydraulic, pneumatic and kinematic schemes.
8. Catalog sheets of main sub-assemblies of the device/ machine (e.g. controllers, converters, servo-drivers etc.).
 9. EC Declaration of Conformity.
 10. Hygienic certificates (if required).
 11. Information regarding the noise emission.
 12. Information concerning the operator and other personnel exposure to the non-ionizing radiation produced by the machine.
 13. Certificates and licenses for the use of software (if applicable).
 14. Original version of the system software (DOS, WINDOWS etc.).
 15. Backup of the machine /device software – application.
 16. Documentation related to the elements subject to the UDT (The Office of Technical Inspection). The Seller is obliged to provide it to the Awarding Party immediately upon starting the purchase procedure, following the agreeing of completeness with The Office of Technical Inspection.
 17. In the absence of “original instruction” in the Polish language, the translation should have the annotation: “Translation of the original instruction”.
 - Servicing by a representative in Poland,
 - The operational and technical documentation (DTR) should specify the parts excluded from warranty,
 - The availability guarantee for spare parts (min 10 years) under post-warranty period and the proposal of service program by producer /supplier,
 - Delivery, assembly and commissioning of the device,
 - Training of the operators - specifying the level of training,



- Training of the maintenance engineers – specifying the level of training, the level of intervention by the maintenance engineers under the warranty - and post-warranty period.