

Instruction Manual

for

Screw Dispenser Typ SKP-M-300 (Vers. 2.5) - Patents -



Hammer Automationstechnik

Bei den Eichen 16
72227 Egenhausen

Tel.: 07453 8108; Fax: 07453 1774

Before introduction the manual is exactly to be read absolutely!!

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1. Technical Data

1.1 Konformitätserklärung

EC Declaration of Conformity

im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II A)
according to EC directive 2006/42/EC on machinery (Annex II A)

Name und Anschrift des Herstellers ggf. Name und Anschrift seines in der EU

*Name and address of the manufacturer: niedergelassenen Bevollmächtigten
where appropriate his authorised representative in EU*

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Diese Erklärung bezieht sich nur auf die Maschine in dem Zustand, in dem sie in Verkehr gebracht wurde; vom Endnutzer nachträglich angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt. Die Erklärung verliert ihre Gültigkeit, wenn das Produkt ohne Zustimmung umgebaut oder verändert wird.

This declaration relates exclusively to the machinery in the state in which it was placed on the market, and excludes components which are added and/or operations carried out subsequently by the final user. The declaration is no more valid, if the product is modified without agreement.

Hiermit erklären wir, dass die nachstehend beschriebene Maschine / Anlage

Herewith we declare, that the machinery described below

Produktbezeichnung / *product denomination*: Schrauben- und Kleinteileportionierer

Serien- / Typenbezeichnung / *model/type*: **SKP-M-300**

Baujahr / *Year of manufacture*: 2011

allen einschlägigen Bestimmungen der Maschinenrichtlinie 2006/42/EG sowie der Richtlinie 2004/108/EG über elektromagnetische Verträglichkeit entspricht.

Die Schutzziele der Richtlinie 2006/95/EG über elektrische Betriebsmittel werden eingehalten.
is complying with all essential requirements of the Machinery Directive 2006/42/EC and Directive 2004/108/EC relating to electromagnetic compatibility..

The safety objectives of the Directive 2006/95/EC relating to electrical equipment are observed.

Ggf.: Angewandte harmonisierte Normen / *Where appropriate: Harmonised Standards used*

(Beispiel, muss für jede Maschine ermittelt werden! /

Example to be identified for each machine!)

EN ISO 12100-1 Sicherheit von Maschinen -

4/2004 Grundbegriffe / *Safety of Machinery- Basic concepts*

EN 61000-6-4 EMV – Fachgrundnorm:9/2007 Störaussendung Industriebereiche

EMC - Generic standard: Emission for industrial environments

EN ISO 12100-2 Sicherheit von Maschinen -4/2004 Technische Leitsätze /

Safety of Machinery - Technical principles

EN 61000-6-2 EMV – Fachgrundnorm:3/2006 Störfestigkeit Industriebereiche

EMC - Generic standards: Immunity for industrial environments

EN 60204-1 Elektrische Ausrüstung von Maschinen 6/2007

Electrical equipment of machines

Ggf.: Angewandte sonstige technische Normen und Spezifikationen

Other technical standards and specifications used:

ggf. Name, Anschrift und Kennnummer der benannten Stelle, das EG-Baumusterprüfverfahren durchgeführt hat, sowie die Nummer der EG-Baumusterprüfbescheinigung oder die das umfassende Qualitätssicherungssystem genehmigt hat.

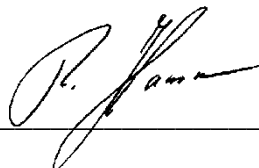
where appropriate, the name, address and identification number of the notified body which carried out the EC type-examination and the number of the EC type-examination certificate or which approved the full quality assurance system

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen (EU-Adresse)

The person authorised to compile the relevant technical documentation (must be established within EU):

Hammer Automationstechnik Bei den Eichen 16, 72227 Egenhausen email: info@hammer-automation.de

Egenhausen 14.01.2011 Reiner Hammer Inhaber



1.2 Electrical connection

Operating voltage : 220V 50Hz
Control voltage : -----
Power consumption : 40 W

1.3 Dimensions and weight

Length : 400 mm
Width : 400 mm
Height : 380 mm
Weight : 19 kg
Ambient temperature : max. 40°C

1.4 Other Data

Filling quantity : around 2 litres
Filling weight : max. 4 kg

2. General

2.1 General information

For reasons of clarity, this documentation does not contain all details about every variant of the product described and can also not take into consideration every conceivable assembly, operation or upkeep. If you should require further information or have problems not described sufficiently in this documentation, please request the required information from Hammer Automationstechnik.

Please do not hesitate to contact us should you still have any queries.

Hammer Automationstechnik

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2.2 Safety regulations

Please observe the following accident prevention regulations of the employers' liability insurance association in particular:

VBG 1	General regulations
VBG 4	Electrical systems
VBG 5	Accident prevention regulations
VBG 121	Noise protection
UVV 10.0	Resolving disruptions in the workflow
UVV 43	Construction work

Hammer Automationstechnik reserves the right to make technical changes that are necessary to improve the screw scoop.

The operator is responsible for adhering to these regulations in order to ensure a safe workflow.

2.3 Normal operation

Any working methods that might endanger safety are to be avoided.

The screw scoop may be operated only in a fully functional, safe state! This is only the case if all protection measures and safety-relevant components are present.

During operation with the carriage, ensure a safe and vibration-free base is used!!

The screw scoop is to be checked at least once per shift for damage and flaws. If damage, a flaw or any other alteration is found, the screw scoop must be taken out of service immediately. The screw scoop may be brought back into service only after the issue has been properly resolved. Prior to each screw scoop start-up, a check must be made that no other persons are at risk from the operating machine.

2.4 Intended use

The screw scoop we supply is state of the art and complies with technical safety rules that are regulated by European standards. Nevertheless, please note that improper use can result in danger to life and limb to the operator or third party.

The screw scoop may be only used for its intended use, e.g. the function specified by the manufacturer and detailed in the specifications he provides. The manufacturer shall accept no liability for damage owing to improper use. The operator shall bear the risk alone. To ensure correct use, the operator must adhere to the operating manual as well as to the maintenance and inspection conditions.

The screw scoop may be operated only in a fully functional state. Disruptions that impair safety are to be resolved by authorised technical staff immediately.

Safe operation of the screw scoop presupposes proper transport, assembly and conscientious operation.

3. Risks and safety

3.1 General

The warning information in this documentation and on the screw scoop are there for your personal safety.

Risks and safety instructions on the screw scoop must be complied with.

The risk and safety instructions on the screw scoop must be complete and easily legible at all times.

If any alterations should occur on the screw scoop that could affect safety or its operational behaviour, it must be taken out of service immediately.

Changes to the screw scoop may be made only with the manufacturer's approval.

3.2 Staff

Unqualified adjustments or non-compliance with the warning instructions given in this documentation or on the scoop may lead to severe bodily injury or property damage. Only appropriately qualified staff may make adjustments to the scoop.

Qualified staff, for the purposes of safety-specific information, are those that are

- familiar with the screw scoop's safety concept as project or operational staff;

Any worker assigned to the screw scoop must have read the operating manual prior to starting work. This applies to both operating staff as well as workers who are only assigned to the screw scoop on a temporary basis.

Risiko- und Gefahren-Analyse nach DIN EN ISO 12100

Personenkreis: Werker, normaler Betrieb und Störfälle

Bezeichnung/ Funktion: Typ	Schraubenportionierer SKP-M-300		Nr. Risiko- und Gefahrenanalyse: 1 Ersteller mech. / Datum: 08.03.2008		Steuerungs- Kategorie										
Lieferant:	Hammer Automationstechnik														
	Sonderfreigabe für/ durch:														
ifd. Nr.	IST-Zustand; Gefahr durch	Gefährdungsursache/-ort und Einschätzung (Kräfte, Temp,...)	S	H	RF	Risikobewertung Schutzziele festlegen	Maßnahmen zum Erreichen des Schutzzieles	S	H	RF	B	1	2	3	4
1	Entnahme- Schleber	Quetschen der Gliedmaßen öffnen	1	1	1	nicht erforderlich	keine	1	1	1					X
2	Drehscheibe	Quetschen der Gliedmaßen durch rotierender Drehscheibe	2	1	2	Eingriff bei laufender Maschine	Absicherung durch Abdeckung	1	1	1					X
3	Abweiser auf Drehscheibe	Einklemmen der Gliedmaßen durch die rotierender Drehscheibe mit Mitnehmer	2	2	4	Eingriff in laufende Maschine	Abdeckscheibe mechanisch verriegeln	2	1	2					X
4	Ausführung mit Bunkeraufsatz	Einklemmen der Gliedmaßen durch die rotierender Drehscheibe mit Mitnehmer	1	1	1	nicht erforderlich	keine	1	1	1					X

3.4 Staff requirements

All work may be conducted only by staff who are qualified to do so.

4. Service and commissioning

4.1 General

When the scoop is open, certain components that are under hazardous voltage levels become accessible.

The maintenance activities specified in the operating manual must be stringently adhered to.

4.2 Disruptions and resolving disruptions

Hub does not turn after removal of components

- motor fuse (micro-fuse 2.5A) defective : replace
- No mains power supply : check the voltage supply
- Maximum time has expired (LED blinks) : acknowledge with ESC key
- Lid was opened during operation : close lid
- Screws have been left in the chute : clean the chute
- Component lying in light barrier area : light barrier error displayed

5. Maintenance, upkeep, repairs and other work

5.1 General

The machine is to be cleaned prior to maintenance, upkeep and/or repair work.

The screws removed from the screw scoop during this work must always be replaced afterwards.

If technical safety features must be removed from the screw scoop, they are to be carefully installed and checked prior to the scoop returning to service. The screw scoop cannot be taken back into service until this has been ensured.

All wearing parts are to be checked that they are in proper condition and replaced if defective. Care must be taken that the components, cables and other objects are functioning properly. They may not become jammed by the scoop movement nor lead to short circuits.

The following maintenance work is to be conducted at the stated intervals. Any flaws that occur are to be resolved.

5.2 Maintenance plan

- clean the hub and chute (**daily**)

5.3 Error

Confirm quantity disruption with 'Esc' key; To many or too few parts, deviating from the preset (Menu 1, 'amount' and/or Menu 2 'Max. time')

Confirm lid disruption with 'Esc' key The lid was opened during the feeding process

Display backlight flashes for error messages.

5.4 Environmental protection, waste disposal

The general applicable environmental protection provisions are to be adhered to.

The plant owner is responsible for the safe and environmentally suitable disposal of fuels and consumables.

6. Electrical systems

6.1 General

All electrical connections are to be re-tightened once the screw scoop has been assembled in its final location.

If disruptions to the electronics occur, the power supply must be switched off.

When replacing fuses, only use those approved by the manufacturer (specified power rating and switching behaviour).

Work on electrical systems may be conducted only by electricians.

The screw scoop must be under zero voltage during maintenance and repair work. Ensure this is the case before beginning work.

6.2 Terminal allocation

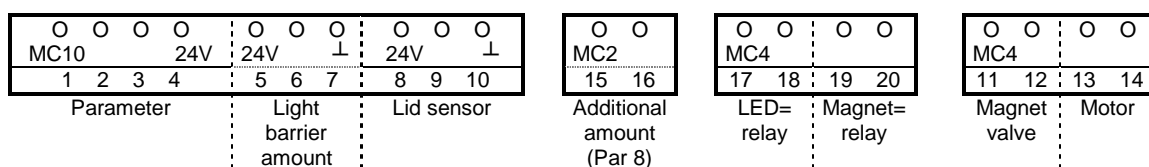
Terminal allocation:

1	Input for set of selection parameters
2	Input for set of selection parameters
3	Input for set of selection parameters
4	+24VDC for parameter – selection
5	+ 24VDC light barrier
6	Impulse light barrier (PNP input)
7	Light barrier 0 V (GND)
8	Initiator + 24 VDC
9	Impulse initiator (PNP input)
10	Initiator 0 V (GND)
11	Hub magnet + 24 VDC
12	Hub magnet 0V (switched)
13	Motor + 4..8 VDC
14	Motor 0V
15	Additional quantity for setting the set of parameters 8
16	Additional quantity for setting the set of parameters 8
17	LED switched in parallel with relay (potential-free)
18	LED switched in parallel with relay (potential-free)
19	Magnetic switched in parallel with relay (potential-free)
20	Magnetic switched in parallel with relay (potential-free)
PE	Protective earth
N	Zero mains connection 230 V AC
L	Phased mains connection 230 V AC

The inputs for selecting parameters can also be controlled via an external 24 VDC. The GND from terminals 7 and 10 serve as reference potential for this.

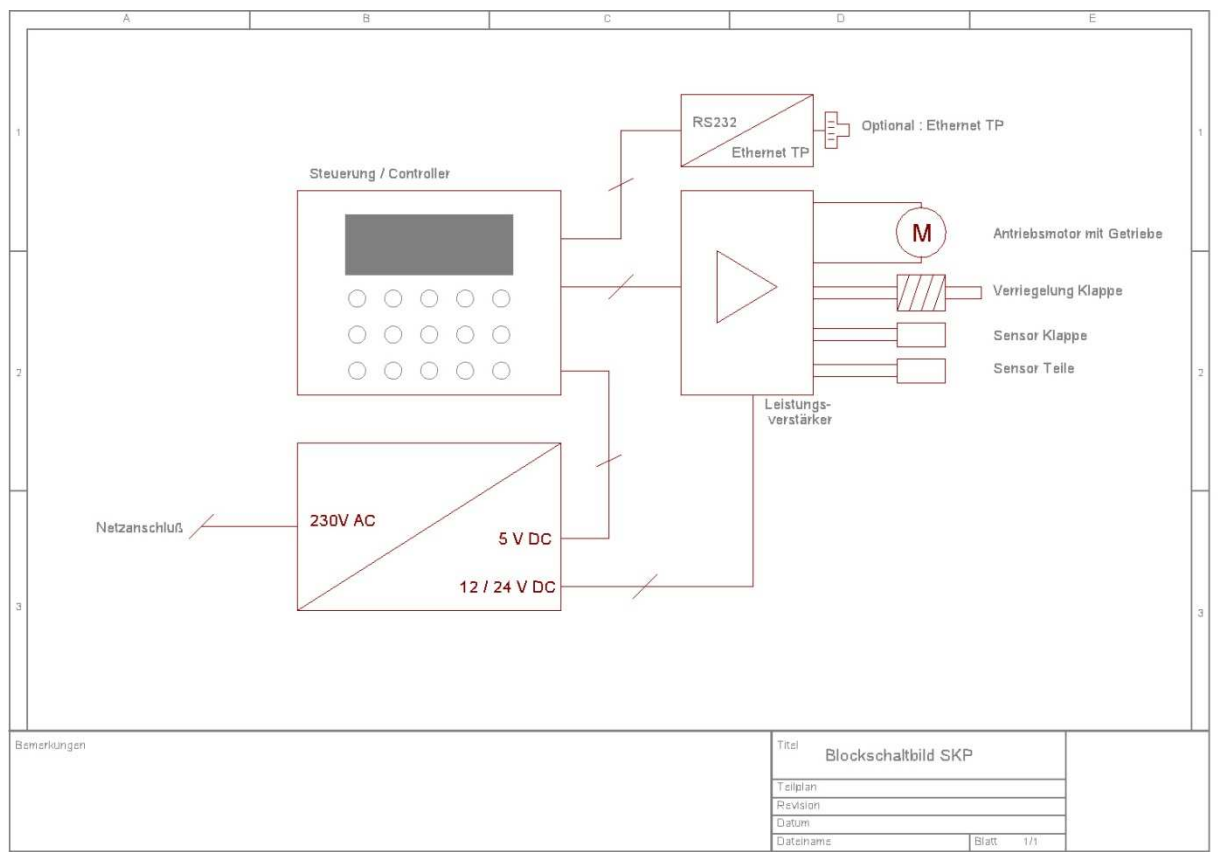
The parameter set must be selected, otherwise the error 'Waiting for parameter set' will appear!!

Overview of terminal allocation



Connection– connector for expert testing – optional front-side island possible

6.3 Block diagram



6.4 High voltage/insulation testing according to DIN 61010

The test voltage is: 2210 V AC or 3130 V DC

Measurement category III

Prüfprotokoll

Name des Prüflings,
Typenbezeichnung

Hammer SKP-M-300
Dosiersteuerung

Umbau Ringkern KW45/2007

Durchzuführende
Messungen.
Bei Normgerechten
Messungen, Norm
angeben.

Störfestigkeit Burst;

Prüfaufbau nach EN61000-4-4 EMV Grundnorm für Prüf- und
Messverfahren der Störfestigkeit / Burst;

Anforderungen nach EN61000-4 -4 ; Klasse 3 Industrieumgebung

Messaufbau und
Beschreibung.
Gegebenenfalls
mit Foto

Verwendete Geräte:

Burstgenerator EMTEST EFT5

Messdiagramme
bzw. Prüfwerte
eintragen

Netzleitungen: direkte Einkopplung 2,0kV, 5kHz, 15ms, beide Polaritäten,
für 3min: keine Verhaltensänderungen / Bewertung A

Datum: 12. Nov. 2007

Neumessung
Erstmessung #

Geprüft: Fricke-Begemann
(Name)

HAMMER AUTOMATIONSTECHNIK

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7. Programming instructions

7.1 Procedure

The procedure begins by opening and closing the lid. In doing so, the lid must remain open for a minimum amount of time (see parameter settings). The parts start to feed into the hopper opening once the lid is closed. Once the target amount of parts is reached, the feeding process is stopped, the LED lights up in green to indicate the feeding process is complete, and the process begins again.

If the target-part amount is not reached within a pre-set period of time (menu 2, see below), the feeding process is cancelled and a disruption is indicated by a flashing display accompanied by an error message. The cause of the disruption must then be resolved. A normal operating process is then re-started by opening and closing the lid.

7.2 Setting parameters (menu)

The parameters can be set via two menus. The corresponding menu is selected by entering a password. The (fixed) password for the menus are:

9999	Menu 1	Number of screws that are to be counted
Manufacturer	Menu 2	Manufacturer stipulations

7.3 Accessing password entry

Hold down the '0' and 'Enter' keys whilst starting up the machine until the 'Password' message appears. The password can now be entered. By pressing the < ← > key a correction can be made, and pressing 'Enter' completes the entry. The appropriate menu is selected depending on the password entered (see above).

7.4 Selecting and entering parameters

The parameters can be selected by pressing the < ← > and < → > keys. By pressing the 'Enter' key the selected parameter can be re-entered. Pressing 'Enter' again completes the entering process.

The 'Esc' key ends the entry without accepting the value. Pressing the 'Esc' key during parameter selection starts the normal operating procedure.

A parameter must be selected to start a counting process, i.e. there must be at least one wire connection between terminal 4 and terminals 1, 2 and/or 3. If no parameter is selected (terminals 1,2 and 3 are open), no counting process can be started.

Parameter set coding:	Parameter set 1 = Terminals	1 to 4
	Parameter set 2 = Terminals	2 to 4
	Parameter set 3 = Terminals	4+1 to 4
	Parameter set 4 = Terminals	3 to 4
	Parameter set 5 = Terminals	1+3 to 4
	Parameter set 6 = Terminals	2+3 to 4
	Parameter set 7 = Terminals	1+2+3 to 4

Menu 1

The 3 different target quantities are entered in menu 1.

Up to 4 portions per workpiece possible

The parameter shown in the second line of the display : "Target quantity Px zzz" (where x = 1 - 3 and zzz = the quantity entered). 999).

The display shows:

Please enter Px
Target counter n zzz

where x = parameter (1...3), n = counter-no. (1...4), zzz = quantity (0..999)

Entry is completed in the "piece" field.

The counters can be used to separate the total quantities into different individual counter processes.

The counters run in succession. If a counter has the target quantity 0, or if the fourth counter has run through, the counting process begins again from counter 1.

If the process is interrupted, the current counter starts again.

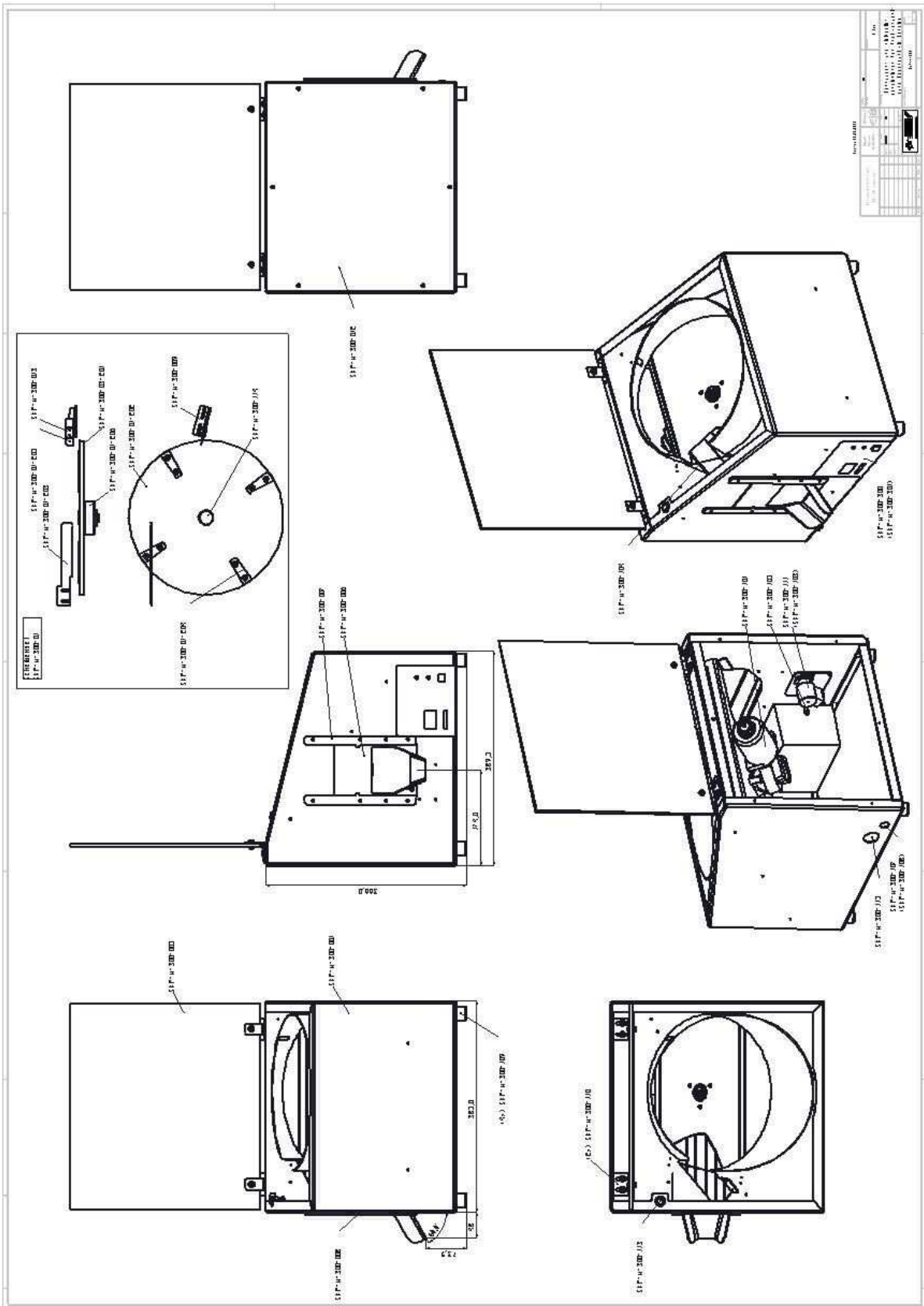
Menu 2(can only be changed with the manufacturer's consent)

In menu 2 the individual working parameters are set.

Explanation

- **Number of revolutions:** speed of the turntable
- **Max. time:** max. time in which all pieces have to be delivered up to the target quantity. If this time is exceeded, an error is triggered.
- **Post-run:** time in which the motor continues to run after the target quantity has been reached
- **Flap opening time:** the shortest time the opening flap must be opened to start a new process
- **Bounce record:**debouncing time required by the light beam to count the parts. When a piece is counted, impulses during this period are not counted

8. Dimension sheet



9. Replacement – wear and tear list

Replacement- and wear and tear list (E/V)

Part No.	Article No.	Name	Amount			
SKP-M-300-102	402426	Motor	1		V	
SKP-M-300-104	EX-11 EBPM	Counting light barrier		2		E
SKP-M-300-105	IS 33 D	Slider sensor	1	E		
SKP-M-300-106	10 100033 001	Controller Vers.2.3	1		E	
SKP-M-300-111	G006518001	Locking solenoid	1	V		
SKP-M-300-005		Plexiglas lid	1	E		
SKP-M-300-109	1047360	Rubber-metal foot	4		V	
SKP-M-300-110	I000178	Hinge	2	V		
SKP-M-300-113	701281-15	Motor shut-down button	1		V	
SKP-M-300-115		Micro-fuse 2.5 A	1	V		

The SKP-M-300-01 disc set consists of:

SKP-M-300-01-201		Aluminium plate		1		E
SKP-M-300-01-20		Sheet of metal		1		V
SKP-M-300-01-203		Deflector	1		E	
SKP-M-300-01-205		Deflector sheet s=0.08	1		V	
SKP-M-300-01-20		Disentangler plate		4		V
SKP-M-300-01-206		Motor adapter (H=18.5)	1		E	
SKP-M-300-005		Deflector holder	1		E	
SKP-M-300-005		Clamping sheet	1		E	

Hopper attachment (optional)