Technical documentation

technische Dokumentation

Universal Mixer

DIOSNA Dierks & Söhne

D- 49009 Osnabrück, Postf. 1980 Telefon +49 541/33104-0
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EG-Konformitätserklärung

Im Sinne der Maschinenrichtlinie 98/37/EG (Anhang II - Kapitel A)

GB EC declaration of conformity: as defined by machinery directive 98/37/EC (Annex II - Chapter A)
FR Déclaration CE de conformité: conformément à la divecive CE relative aux machines 98/37/CE (annexe II – chapitre A)
ES Déclaration CE conformidad: conforme con la Directiva CE sobre màquinas 98/37/CE (anexo II, capítulo A)
NL EG-verklaring van overeenstemming: inzake richtlijn van de raad betreffende machines 98/37/EG (aanhangsel II - hoofdstuk A)
IT Dichiarazione CE di conformità: ai sensi della direttiva CE 98/37 (Allegato II - Capitolo A)
PT Declaração CE de conformidade: segundo directiva CE 98/37/CE (Suplemento II-Capítulo A)
SE EU-försäkran om överensstämmelse: såsom definierad i maskindirektiv 98/37/EU (appendix II – kapitel A)
DK EF Overensstemmelseserklæring: dækket af Maskindirektivet 98/37/EF (tillæg II-kapitel A)
CZ Prohlášení o shodě – EU: ve smyslu EU-směrnice pro stroje 98/37/EG (dodatek II – kapitola A)
EE EÜ vastavusavaldus : vastavalt direktiivile 98/37/EÜ (II lisa punkt A)
HU EC gyártói nyilatkozat : EK megfelelősségi nyilatkozat a 98/37/EK a gépek biztonságáról szóló irányelv alapján (II. Melléklet – B fejezet)
LT EK Gamintojo deklarācija iekārtu pamatlīnijai 98/37/EK (Pielikums II – nodala B)
LV ES Ražotāja atbilstības deklarācija : pagal mašinų direktyvą 98/37/ES (II priedas – B skyrius)
PL Deklaracja producenta WE: w rozumieniu dyrektywy maszynowej 98/37/EG (Suplement II – rozdział B)
SK Vyhlásenie výrobcu ES: v zmysle smernice o strojoch 98/37/ES (Príloha II – Kapitola B)
SL ES Razlaga proizvajalca: v skladu z Direktivo o strojih 98/37/ES (Priloga II – Poglavje B)
GR Δήλωση συμμόρφωσης ΕΚ: όπως καθορίστηκε από την οδηγία περί μηχανημάτων 98/37/ΕΚ (Παράρτημα II - Κεφάλαιο Β)
RO Declarația producătorului CE: așa cum este definită în Directiva privind mașinile industriale 98/37/CE (Anexa II - Capitolul B)
BG Декларация на производител ЕС: съгласно определеното в директива за машини 98/37/ЕС (Анекс II - Глава В)

Hiermit erklären wir, dass die gelieferte Maschine

GB Herewith we declare that the supplied model of
FR Par la présente, nous déclarons, que le modèle fourni de
ES Por la presente, declaramos que el modelo suministrado
NL Hiermede verklaren wij, dat de in de handel gebrachte machine
IT Si dichiara che il modello fornito della
PT Com a presente, declaramos que o modelo fornecido da
SE Härmed förklarar vi att den av oss levererade typen av
DK Herved erklærer at den maskine
CZ Tímto prohlašujeme, že dodaný stroj
EE Käesolevaga avaldame, et tarnitav masin
HU Ezennel kijelentjük, hogy a szállított készülék, típusa:
LT Ar šo mēs deklarējam, ka piegādātā iekārta
LV Patvirtiname, kad pristatytas gaminys
PL Niniejszym oświadczamy, że dostarczona maszyna
SK Týmto prehlasujeme, že dodaný stroj
SL S tem izjavljamo, da je dobavljeni stroj
GR Με την παρούσα, δηλώνουμε ότι το παραδιδόμενο μοντέλο
RO Prin prezenta declarăm că modelul furnizat de
BG С настоящето декларираме, че доставения модел на

- Universal Mixer -

Type: V 100 **No.:** 384-006

nach folgenden Richtlinien konstruiert wurde

GB was designed according to the following directives
FR a été construit selon les normes harmonisées ci-après
ES ha sido construida según las siguientes directrices
NL geconstrueerd werd volgens de volgende richtlijnen
IT è stato costruito in conformità delle seguenti direttive
PT foi construído em conformidade com as directivas seguintes
SE har konstruerats enligt följande riktlinjer
DK er blevet bygget iht. følgende direktiver
CZ byl konstruován podle následujících směrnic
EE on konstrueeritud järgmiste direktiivide kohaselt
HU a következő irányelveknek megfelelően készült
LT ir konstruēta saskaņā ar sekojošām direktīvām
LV buvo sukonstruotas laikantis šių direktyvų
PL skonstruowana została wg następujących dyrektyw
SK bol konštruovaný podľa nasledujúcich smerníc
SL izdelan v skladu z naslednjimi direktivami
GR κατασκευάστηκε σύμφωνα με τις ακόλουθες οδηγίες
RO a fost proiectat în conformitate cu următoarele directive
BG е проектиран в съответствие с следните директиви

- **EC declaration of conformity: as defined by machinery directive 98/37/EC (Annex II - Chapter A)**
- **Low voltage directive 2006/95/EC**
- **EMV – directive 2004/108/EC**
- **Atex 94/9/EC – For details see chapter 3 of the operating manual**
- **Pressure tank regulation 87/404/EC**

Osnabrück, 11.09.2009
Place, Date

Avermann / Development and Construction

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that

Diosna Dierks & Söhne GmbH
Am Tie 23
D-49086 Osnabrück

has established and applies
a Quality Management System for

Development, manufacture and sale of mixing, kneading and stirring machines and equipment as well as waste bread crumbing machines, elevating and discharge stations for the food industry as well as mixing, granulating, drying and coating machines and equipment for the pharmaceuticals, chemicals and plastics industries

An audit was performed, Report No. **70004634**

Proof has been furnished that the requirements
according to

ISO 9001: 2000

are fulfilled. The certificate is valid until **2009-11-14**

Certificate Registration No. **12 100 7071 TMS**

Munich, 2006-11-17

QMS-TGA-ZM-07-92

Operating manual

Betriebsanleitung

Universal Mixer

DIOSNA Dierks & Söhne

D- 49009 Osnabrück, Postf. 1980 Telefon +49 541/33104-0
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Contents

Foreword

These operating instructions are designed to familiarize the user with the machine/plant and its designated use.

The instruction manual contains important information on how to operate the machine/plant safely, properly and most efficiently. Observing these instructions helps to avoid danger, to reduce repair costs and downtimes and to increase the reliability and life of the machine/plant.

The instruction manual is to be supplemented by the respective national rules and regulations for accident prevention and environmental protection.

The operating instructions must always be available wherever the machine/plant is in use.

These operating instructions must be read and applied by any person in charge of carrying out work with and on the machine/plant, such as

- **operation** including setting up, troubleshooting in the course of work, evacuation of production waste, care and disposal of fuels and consumables
- **maintenance** (servicing, inspection, repair) and/or
- **transport**

In addition to the operating instructions and to the mandatory rules and regulations for accident prevention and environmental protection in the country and place of use of the machine/plant, the generally recognized technical rules for safe and proper working must also be observed.

This manual was prepared with utmost care. In case you should find out any mistakes however, we would be glad to receive corresponding notice from you.

1 Safety instructions

1.1 General instructions

These operating instructions provide the necessary information to install, operate, maintain and repair the described machine.

Qualified personnel concerned with the installation, operation, maintenance and repair of the plant in the user's company, must have read and understood these operating instructions, but particularly the chapter on safety instructions.

According to these operating instructions, qualified personnel must have received competent training on all aspects of installing, commissioning, operating, maintaining and repairing the plant or have the equivalent qualifications.

The DIOSNA-machine/plant has been built in accordance with state-of-the-art standards and the recognized safety rules. Nevertheless, its use may constitute a risk to life and limb of the user or of third parties, or cause damage to the machine and to other material property.

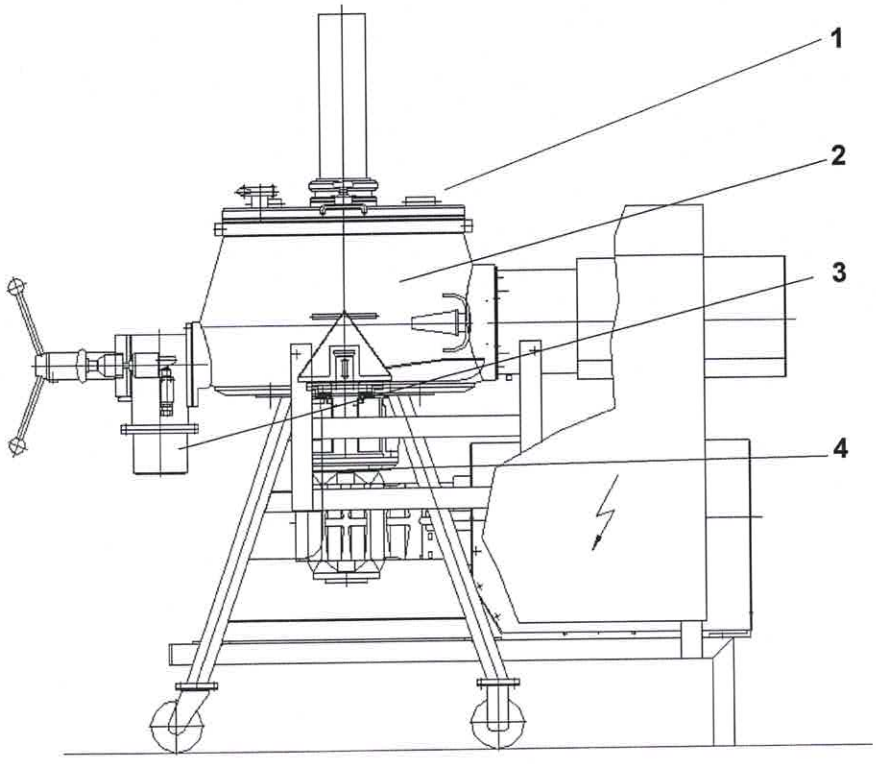

Fig. 1-1 Hazardous point on the Universal mixer

1	Area of movement of the container lid:	Danger of being crushed and knocked
2	Area of movement within the container:	Danger of being cut, crushed, pulled-in and knocked
3	Area of movement of the outlet:	Danger of being cut, crushed, pulled-in and knocked
4	Driving mechanism of the tools:	Danger of being crushed and pulled-in
	+ see chapter - Danger by the batch	

1.2 Danger by the batch

Danger that toxic components escape through openings (lid, service openings, etc.) or sockets and degasing filter not being installed correctly, when corresponding product are mixed and granulated.

The degasing filter must be equipped with a hood, and the plant must be connected to an extraction system at site, especially when fine grained, toxic, gaseous products are processed.

Danger that dust and gas (toxic) escape through non dust-proof or gas-proof connections during discharge and feeding of the machine.

If alcohol is used as granulating liquid for mixers with automatic feeding, the mixer lid must be opened after every mixing cycle. Possible residual mixing material must be removed. If this is not done there is danger of explosion.

1.3 Work and safety instructions

The machine must only be used in technically sound condition in accordance with its designated use and the instructions set out in the operating manual, and only by trained personnel who are fully aware of the risks involved in operating the machine/plant. Any functional disorders, especially those affecting the safety of the machine/plant, should therefore be rectified immediately.

Never make any modifications, additions or conversions at the machine which might affect safety without the supplier's approval. This also applies to the installation and adjustment of safety devices and valves as well as to weld-ing work on load-bearing elements.

The feed intakes for connection by the customer are fitted with provisional protection against manual intervention. They may only be removed after the final connection.

Be careful when handling hot materials! (risk of burning or scalding)! The personnel must be equipped with safety clothing protecting the body as well as with protective gloves and protection mask for the face! Unprotected personnel must keep off the 5 m danger area around the machine!

The machine must not be cleaned with a jet of water (see chapter on cleaning).

Doors and flaps must be locked to ensure that only authorized and trained staff can open them.

1.4 Examination

The operator must ensure that an expert checks all safety devices, locks and couplings for their safe condition at regular intervals, but at least once a year. The result of these examinations must be recorded in a test certificate (a simple note with date and a signature).

1.5 Warnings and symbols

The following things and designations are used in the manual to designate instructions of particular importance:

Refers to special information

Refers to special information and/or orders and prohibitions directed towards preventing damage

In addition to the operating instructions, observe and instruct the user in all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection.

2 Details concerning the machine

2.1 Manufacturer's address

DIOSNA
DIOSNA Dierks & Söhne GmbH
D-49009 Osnabrück, Postfach 1980
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Telefon +49 541/33104-0
Telefax +49 541/33104-10
e-mail info@diosna.de
www.diosna.de

2.2 Designation of the types

Example of type designation:

V 100 V = Universal mixer 100 = type number

2.3 Technical specifications

The machine is equipped with a fixed container and a vertical axis.

The principal machine parts are:

- **Mixing bowl**
  The vertical, thick-walled bowl is designed cylindrical with an upper conical part which cause an optimal vortex-like movement of the material. The transitions of the vertical part to the conical one and to the bottom are rounded to assure optimal streaming of the product.
  The bottom, the strengthened container rim, the gear connection, the shaft passages and the discharge opening are machined precisely to keep narrowest tolerances.
- **Mixer lid**
  Completely hinged. The lid closes dust-free by means of quick fasteners and a seal made of silicone at the lid rim. The lid is equipped with an inspection flap and a filter.
  From size V 25 on actuation of the lid is facilitated by means of gas springs. The operation of the machine at open lid is avoided by a limit switch.
- **Outlet**
  The outlet housing is flanged laterally to the bowl flushing with the bowl bottom. The outlet is closed by means of a cylindrical piston, circumferentially equipped with a seal made of NBR. It is actuated by means of a threaded spindle.
  The front part is hinged and can be swung aside together with the closing piston to ease cleaning and inspection. Operation of the machine with open housing is prevented by a limit switch.

- **Mixing tool**
  The mixing tool is made of one piece, with three blades, running close to the bowl bottom. The tool is fastened to the vertical drive shaft.
- **Chopper**
  The chopper is installed in the bowl wall. It is screwed to the horizontal drive shaft.
- **Drive**
  The chopper is driven by a three-phase motor, from size V 200 on pole-changing for two speeds.
- **Shaft seals**
  The two shaft seals are designed as air purge seals. An air stream keeps the mixing material away from the mechanical sealing area. The air quantities are adjustable and are measured and controlled.
- **Machine frame**
  The machine frame is designed as pipe construction. The mixing bowl is mounted in the frame. The gear motor is placed below the bowl. The switch cabinet is fixed laterally to the frame. The frame is made of stainless steel
- **Electrical Equipment**
  The electrical equipment consists of a fixed switch cabinet in protection class IP 54, provided with:
  1 power unit with all necessary fuses, motor protection devices and contactors
  1 set of operating elements, incl. the main switch and a timer
  1 connection for the power supply
  The electrical lines at the machine are installed ready for operation.
- **Pneumatic Equipment**
  Incl. a maintenance unit with connection for the air supply. The pneumatic devices (see shaft seals) and the compressed air lines at the machine are installed ready for operation.
- **Operating safety**
  Operating safety is guaranteed by manufacture according to the regulations for prevention of accidents of the Professional Association (UVV) and the CE machinery guidelines. Limit switches or safety grids prevent the running mixing tools from being touched. The electrical equipment complies with the relevant European-standards, especially EN 60 204, part 1.
-

2.4 Technical data

Type, Universal mixer		V 100
Container capacity	ltrs	122
Max. useful contents	ltrs	110
Compressed air supply	bar	7 - 10
Continuous sound pressure level	dB(A)	74
Drive, mixing tool		
Design		B 3
Protection class		IP55
Capacity, P	kW	3,7 / 4,4
Current, I_n	A	8,5 / 10,0
Speed	rpm	98 / 196
Drive, chopper tool (Option)		
Design		B 5
Protection class		IP55
Capacity, P	kW	2,0 / 2,8
Current, I_n	A	5,1 / 7,6
Speed n	rpm	1500 / 3000
Gear		
Type		BK
Type size		40
i=		9,31
Weight		
Machine	kgs	abt. 700
Mixing tool	kgs	abt. 15
Fusing (injection)		
400 V	A (1)	25
3/PE~50 Hz	mm^2 Cu	4

(1) slow

Air consumption (Volume at atmospheric pressure)

- Outlet/Lid actuation: (for 10 charges per hour) . . . . . .max. 0.22 m^3/h
- Air purged seal of the main shaft at the mixing tool . . . abt. 4 - 6 m^3/h
- Air purged seal of the main shaft at the chopper . . . . . abt. 3 - 5 m^3/h
  (The pressure of the air supplied for the air purged seals (>6 bar) is reduced to 2 bar over pressure.)

The quantity of air escaping at the air purged seals is to be adjusted by the throttle non-return valve to prevent the mixing material from penetrating into the sealing area. (see drawing)
This is to be determined under operating conditions. (see chapter Setting into operation)

Lubricants

- Gear oil, consumption for 1 change of oil . . . . . approx. 3,5 ltrs
  (see operating instruction of the manufacturer)

2.5 Dimensions

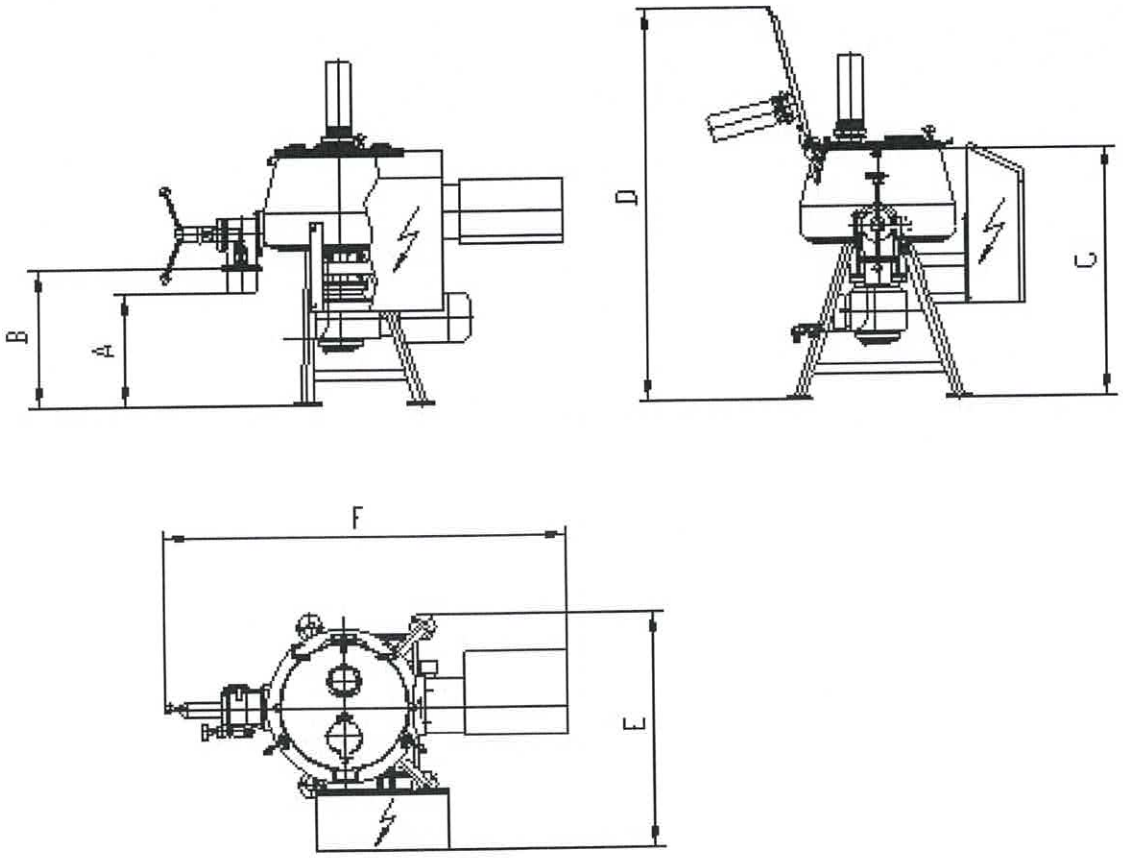


Fig. 2-1 Dimensions Front view

Tabelle 1: Basic design

type / dimension	A	B	C	D	E	F
V 10	550	-	850	1230	900	1270
V 25	595	600	925	1365	930	1510
V 50	515	620	995	1550	950	1610
V 100	515	520	1125	1770	1075	1800
V 200	565	650	1200	2050	1200	2150

3 Operation of the machine as directed

The machine is designed exclusively for intensive mixing, dispersion, homogenizing and pellesting of powdery and pourable materials as well as granules.

Operation for other purposes is no use as directed.

Operating the machine/plant within the limits of its designated use also involves observing the instructions set out in the operating manual and complying with the inspection and maintenance directives.

Combustible and hazardous powders, granules and liquids must only be used in the scope of the classification 94/9/EG (ATEX) indicated at the type plate and the operating instructions.

If the machine (plant) is not provided with information in the sense of 94/9/EG, the processing of combustible, hazardous powders, granules and liquids is considered to be irregular use.

The only permissible gases for the air purged seal and the gas stripping openings are:

- **Air, if using non-combustible solvents and / or normally inflammable dusts in a non-pressure shock proof closed plant /machine**

The quality of the outcome depends on individual product and process properties and should be tested in front-end-tests.

Regular use includes the observance of the operating manaul and the adherence to the inspection and maintenance conditions.

The following definition of the raw materials and products according to material codes must be observed.

The Ex-designation (type plate of the machine) must be observed.

Aspiration of the plant / machine must not be conducted in endangered areas and especially not close to persons. In case of open feeding and discharging dust aspiration devices (source aspiration) must be provided at site.

The use of raw materials and products (especially solvents) for production in this plant / machine is only considered as regular use in connection with the resistance of the materials used for the machine.

3.1 Definition of raw materials/products according to substance code data

3.1.1 General information

Basically, the application ranges differ as follows:

- Combustible dusts (normally inflammable, only basic protective measures)
- Combustible dusts (very easily inflammable, additional protective measures) - **not allowed on this machine**
- Combustible dusts with solvents (hybrid mixtures) - **not allowed on this machine**

If one of the stipulated restrictions cannot be guaranteed with adequate safety, effective avoidance of igni-tion sources cannot be ensured. As a rule, additional protective measures are then required.

3.1.2 Combustible dusts (normally inflammable)

In the case of solvent-free applications, dry, combustible dusts are processed in the air. Potential explosive dust-air combinations arise through the rubbed-off parts of

- Granulates (active ingredients and excipients such as lactose and starches) and
- Powder
- With coating: pellets, granulates and tablet cores.

With normally inflammable dusts, preventive protective measures are suitable for the equipment.

With normally inflammable dusts, basic protective measures are sufficent. That means this dryer can be used with normal combustable dusts.

Basic protective measures are e.g.:

- Earthing of the machine and its attachment parts

- Correct installation of all plant components

Limit values for deposited dust (normally inflammable)			
Code number	**Limit value**	**Unit**	**Comment**
Combustion code	≤ 5	-	Reference to significant tendency to ignite
Specific volume resistance	/	Ωm	No restriction N.B.: Special requirements relating to electrical operating equipment must be stipulated with conductive dusts (< 10^4 Ωm).
Glow temperature (ignition temperature of a 5 mm layer)	> 215	°C	**Maximum surface temperature 140 °C** N.B.: maximum permissible glow temperature must lie within a safety clearance (generally 75 °C) above the surface temperature
Self-inflammatory temperature (1.000 ml)	According to the process	°C	The self-inflammatory temperature (1.000 ml) must lie above the process temperature.

Limit values for swirling dust (normally inflammable)			
Code number	**Limit value**	**Unit**	**Comment**
Lower explosive limit	/	g/m³	No restriction
Oxygen limit concentration	/	Vol.-%	Irrelevant
Minimum ignition energy (measured without inductivity)	> 3	mJ	No ignition-sensitive substances N.B.: The temperature-related minimum ignition energy must be used.
Ignition temperature of dust cloud	> 250	°C	Maximum surface temperature 140 ° The surface temperature must not exceed 2/3 of the ignition temperature. Regardless of the maximum surface temperature, substances with ignition temperatures below 250 °C are classed as very easily ignitable.
Maximum explosion excess pressure	/	bar	Irrelevant
Dust constants K_{St}	< 300	bar m s^{-1}	Irrelevant if minimum ignition energy and ignition temperature are set, otherwise do not provide pre-ventive protection for any St 3 dusts
Dust explosion class	St 1 and 2	-	Irrelevant if minimum ignition energy and ignition temperature are set, otherwise do not provide pre-ventive protection for any St 3 dusts

Examples for normally inflammable dust:					
Substance	**Lactose** (2041)	**Maize starch** (2072)	**Milk sugar** (2100)	**Potato starch** (2070)	**Wheat flour 550** (2093)
Combustion code < 5	3	2	5	2	Similar: 2
Ignition temperature of the deposition in °C > 215°C	>450	>450	melts	>450	>450
Self-inflammatory temperature > process temperature (>100°C)	>140	>140	>140	>140	>140
Minimum ignition energy > 3mJ	80 similar >10	295	14	>3200	>100 similar >10
Inflammatory temperature of dust cloud in °C > 250°C	450°C	520	440	520	470
If minimum inflammatory energy and ignition temperatures are unknown:					
Dust constants K_{St} < 300 barm/s	29	128	75	89	42
Dust explosion class < St3	St1	St1	St1	St1	St1

Source: Brenn- und Explosionskenngrößen von Stäuben, Bielefeld 1987 (Erich Schmidt Verlag GmbH & Co.), www/hvbg.de/service/datenbank/.../ GESTIS-StAUB-EX-Datenbank (database) and Inburex (Hamm)

The calculation is made according to VDI 2263 sheet 1 and the future European standards for a fraction with a particle size of less than 63 µm (the substance examples partly correspond to other particle sizes). The minimum ignition energy is to be determined without inductivity in the discharge environment.

Furthermore, the addition of the following substances is to be excluded:

- **Combustible liquids**
- **Explosives or chemically unstable substances (they do not come under directive EU 94/9/EC)**
- **Fire-promoting substances (e.g. peroxides according to ADR/ GGVS 5.1)**
- **Impact- and friction-sensitive substances (e.g. substances according to ADR/GGVS 4.1)**
- **Deflagrant substances (exothermic degradation reaction), e.g. certain dye pigments**
- **Sulphur**

Furthermore, the substances used must not trigger any exothermic chemical reactions under the stipulated technical conditions either through interaction with each other or with the equipment materials.

3.1.3 Organisational measures

Organisational measures must be taken to avoid dust waves and dust deposits.

For every run of the machine a corresponding case of use must be determined and the corresponding additional protection measures must be adhered on.

Adherence to the maintenance intervals.

Check of the mixing area regarding impurities and defects at the tools before and after operation.

Use of aspiration and functional check. Above all during the feeding process safe operation of the aspiration must be guaranteed.

Non-conductive assembly parts incl. all pipes and hoses must be earthed safely. After maintenance works an earting test must be made.

Check of earthing in connection with maintenance works. Defects must be removed immediately.

Wrong fillings are to be avoided.

It is urgently recommended to switch the chopper off during filling and discharging.

Organisational measures must be taken to avoid dust clouds and dust deposits.

Risk of suffocation in case of high concentration of nitrogen.

If nitrogen is used, additional measuring and protection systems must be installed in the production zone.

The corresponding explosion protection in the installation area of the machine / plant must be guaranteed.

4 Description of the machine - functions

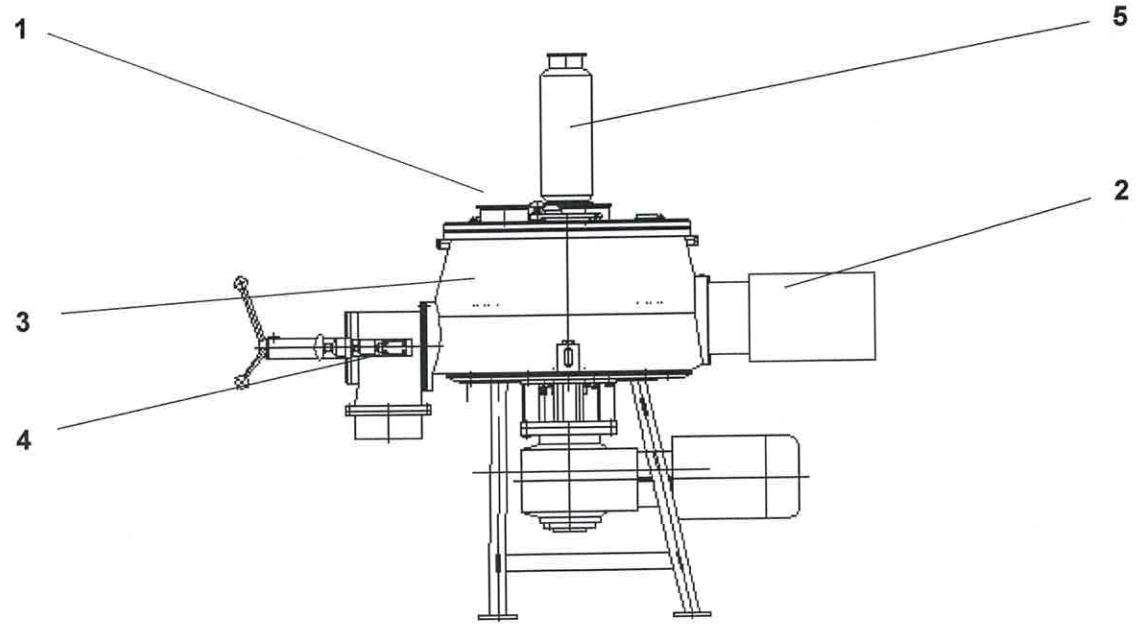


Fig. 4-1 DIOSNA-Pharma Mixer

The machine is equipped with a fixed container and vertical axis.

1	Feeding is effected through the opened lid .
2	The chopper tool is driven by an electro-motor.The chopper crushes lumps and compacts the moistened material.
3	The mixing tool is driven by an electro-gearmotor, equipped with two speeds. The mixing tool is to mix the powder intensively with the additives.
4	To discharge the mixing material the outlet can be opened while the mixer motor is running. The outlet will be opened manually.
5	The air escapes from the container through a filter with suction cap.

The machine is operated with a switch cabinet at the machine frame.

All functions of the machine can be done by an operator panel.

5 Description of the protective devices

Main switch:
The machine is disconnected from the mains by actuating the main switch.

Interruption in the event of danger:
Program flow is interrupted with actuation of the EMERGENCY STOP key. The machine can only be restarted after the EMERGENCY STOP key has been unlocked.

Drive (Mixing tool/chopper):
The motors are protected by overcurrent relays/PTC Thermistors.
If they are tripped due to overloading, a fault in the power supply or too high temperature, the machine will be once again operable after approx. 1 minute. However, it is advisable to find the fault to avoid major damage.

Lid protection:
The lid of the machine is equipped with a limit switch.

- the mixer cannot be started when the lid is open but only when it is closed.
- the mixing tool has come to a standstill when the lid is opened.
- the outlet can only be opened if the lid is open.

The delay time of the lid actuation is set to the max. slow-down time of the mixing tool at works. The delay time must not be changed.

The container rim must be kept free from any impurities when the lid is lowered.

Outlet protection:
The outlet housing of the machine is equipped with a limit switch.
It is to effect that:

- the mixer cannot be started with the outlet housing open.
- the tool(s) has (have) come to standstill before the outlet housing(s) is (are) opened.
- the outlet piston cannot be actuated with the outlet housing open.

Openings in the lid:
The openings in the mixer lids are equipped with protection bars which prevent the running mixing tools from being touched.

Discharge opening:
The discharge opening is protected by gratings to prevent access to the tool.

Pneumatics:
The machine can only be run, when the operating pressure exceeds ca. 6 bar. This is ensured by a pressure controller.

6 Transport

The machine is supplied in a fully assembled condition, ready for connection, usually on a wooden frame.

Packing depends on the mode of transport (by truck, in container or in wooded case).

Transport with a lifting truck: The machine can be lifted with a lifting truck by using the wodden Frame.

Installation in the production area

Transportation with lifting gear: The machine can be lifted by suitable-belts.

Ensure adequate lifting capacity! (see chapter for technical data).

Ensure that the machine does not tilt while it is being transported.

1 The machine must be set up on a firm level base.

2 Collect pneumatic hoses and electrical cables according to the electrical circuit diagrams.

Make connections according to:

electrical circuit diagram,	see drawing:	3-384-711-006-02
pneumatic control,	see drawing:	3-384-882-005

7 Erecting and setting into operation

All maintenance work on the machine must only be performed after the main switch has been turned off and is safeguarded.

7.1 Setting up

The machine must be set up on a firm level base. The machine is anchored with foundation bolts.

The machine must be set up in such a manner that the surrounding area can be easily cleaned.

- Space requirements - see chapter for dimensions!

7.2 Connecting conditions

The operating voltage for the machine is specified on the type plate. This voltage must coincide with the operating voltage of the three-phase mains at the point of installation.

Please refer to the chapter for technical data for the ratings of the fuses to be installed by the customer.

The permanent connection must only be installed by a qualified electrician in conformity with EN 60204, DIN VDE 0100, or equivalent connecting conditions.

7.2.1 Supply media and connections

Compressed air (air gap seal):	Connection 1/2" Pressure 7 - 10 bar 25 m_N^3/h
Voltage supply:	3/PE 400 V Connection: 4 x 4mm^2 Fusing 25A

7.3 Setting into operation/Functional testing

Before start-up the following works have to be done:

1. Open compressed air supply line (7-10 bar necessary).
2. Turn on the main switch
3. Regulator check (Mixing tool + chopper): 2 bar

After the first test with material the sealing areas are to be checked and the flow is to be increased or reduced, if necessary.

The flow rate is indicated at the flowmeter and is regulated at the throttle return valves.

With the lid open the air flow is reduced.

When the actual value falls below the limit value, the concerned motor is switched off.

Start-up without mixing material:

1. Close container lid, outlet and outlet housing.
2. Start - see chapter: Control/control description

After all functions of the machine have been checked in a test run, especially the correct direction of rotation of the motors (the directional arrows placed above the outlets/choppers outside the container have to be paid attention to).

In case of wrong rotational direction, two phases of the electrical supply must be exchanged by an electrical expert.

Functional testing, see chapter:
- Description of the protective devices
- Control (control description)

7.4 Cleaning

The machine must not be cleaned with a jet of water, as this can result in damage to the electrical and mechanical systems (e.g. bearings).

If water or other liquids are used for cleaning, the container and all other parts must be dried completely afterwards, either by means of warm air or by wiping them dry to avoid any electro-chemical corrosion.

This measure must also be taken with stainless steel machines and especially for longer times of standstill.

Use only a gentle, commercially available laboratory detergent (for metall, glass and plastic) to clean.

Use dust-free cleaning rags!

Do not interrupt main air supply when feeding or cleaning the container.

Incorrect cleaning invalidates the guarantee!

Advices for washing the needle felt filter hoses

Washing process:	Gentle washing at 40°C or manual washing Strong mechanical stress must be avoided absolutely; washing is to be done with high water level, perhaps in washing bags. Careful and sufficient rinsing is necessary in any case.
Washing additive:	Fine washing agent with high dispersing power for dusts
Drying:	at maximally 60°C, at room temperature
Note:	According to the preceding mechanical and chemical stress the washing process can result in a modification of the felt structure and the surface condition.

Washed, tested filter material does not fulfill the critera according to BIA Certificate category G/C any more.

Only to be done by authorized, trained personnel with personal safety clothes (face and body protection, gloves etc.).

7.5 Setting out of operation

To set the machine out of operation the following steps must be done:

1.) Dislock the lid

2.) Open the outlet

3.) Shut down the voltage

4.) Close the supply media connections

Before the machine is set into longer stand still times, measures for corrosion protection must be taken.

8 Control

General

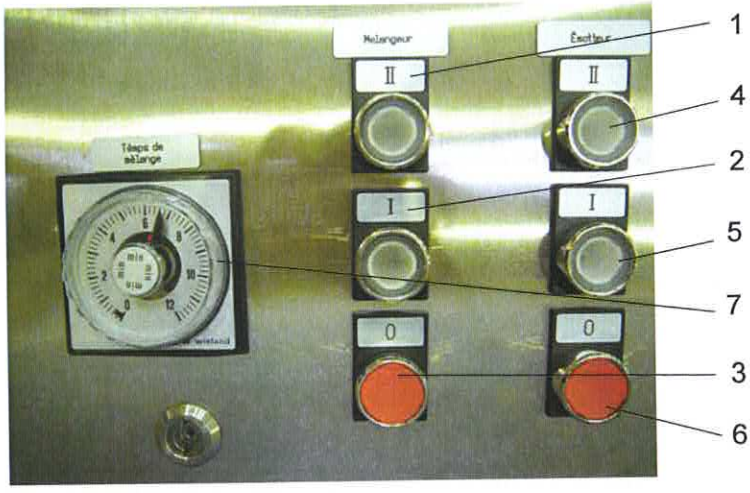
All supply lines of the switching elements (limit switches, valves etc.) installed at the mixer are connected on a terminal strip in the switch cabinet.

The electrical supply line is to be led through a cable duct being installed in the switch cabinet and to be clamped to the terminals L1, L2, L3 (N) and PE.

The switching elements necessary for the control are mounted on a detachable mounting plate in the switch cabinet resp. in the door of the switch cabinet. The minimum cross section of the flexibles lines being used for wiring is 1 mm² Cu.. The line ends are equipped with cable sokkets.

The installed mainswitch in the door of the switch cabinet is also the emergency stop.

8.1 Structure of the control



1	Illuminated push button mixer motor 2nd speed
2	Illuminated push button mixer motor 1st speed
3	Push button mixer motor off
4	Illuminated push button chopper motor 2nd speed
5	Illuminated push button chopper motor 1st speed
6	Push button chopper motor off
7	Time relay mixing time (0 - 12 min)
8	Main switch / emergency stop (in front of the switch cabinet)

8.2 Operation of the control

- The machine is ready for operation when the main switch (8) has been switched on.
- The mixing procedure, the sequence of additives, the batch size, and the mixing time differ from one formulation to the next, and should be determined through test runs.
- The signal lamp of the active functional keys light.

Function of the keys

Mixer motor 1st speed / 2nd speed: The mixing tool can be started with the [I] (2) or [II] (1) key.

Chopper motor 1st speed / 2nd speed: The chopper can be started with the [I] (5) or the [II] (4) key.The chopper can be switched on if the mixer motor runs. Direct switching back from the second to the first speed is possible.

OFF key Mixer: The tool motor is switched off, when the Off button is actuated. The timer is reset to the starting position.

OFF key chopper: The motor is switched off, when the Off button is actuated.

If the motor protection system has responded to an overload, then the machine is only operable again after a cooling off period of approx. 60 seconds. However, it is advisable to find out why the motor protection system was tripped (see chapter on the elimination of faults).

9 Maintenance and repairs

All maintenance work on the machine must only be performed after the main switch has been turned off and is safeguarded.
Be careful when handling hot materials!

The personnel must be equipped with safety clothing protecting the body as well as with protective gloves and protection mask for the face! Unprotected personnel must keep off the 5 m danger area around the machine! (risk of burning or scalding)!

9.1 Maintenance plan

With extreme operating conditions p.e. high humidity, aggressive environment conditions and high fluctuation of temperature shorter maintenance intervals are advantageous.

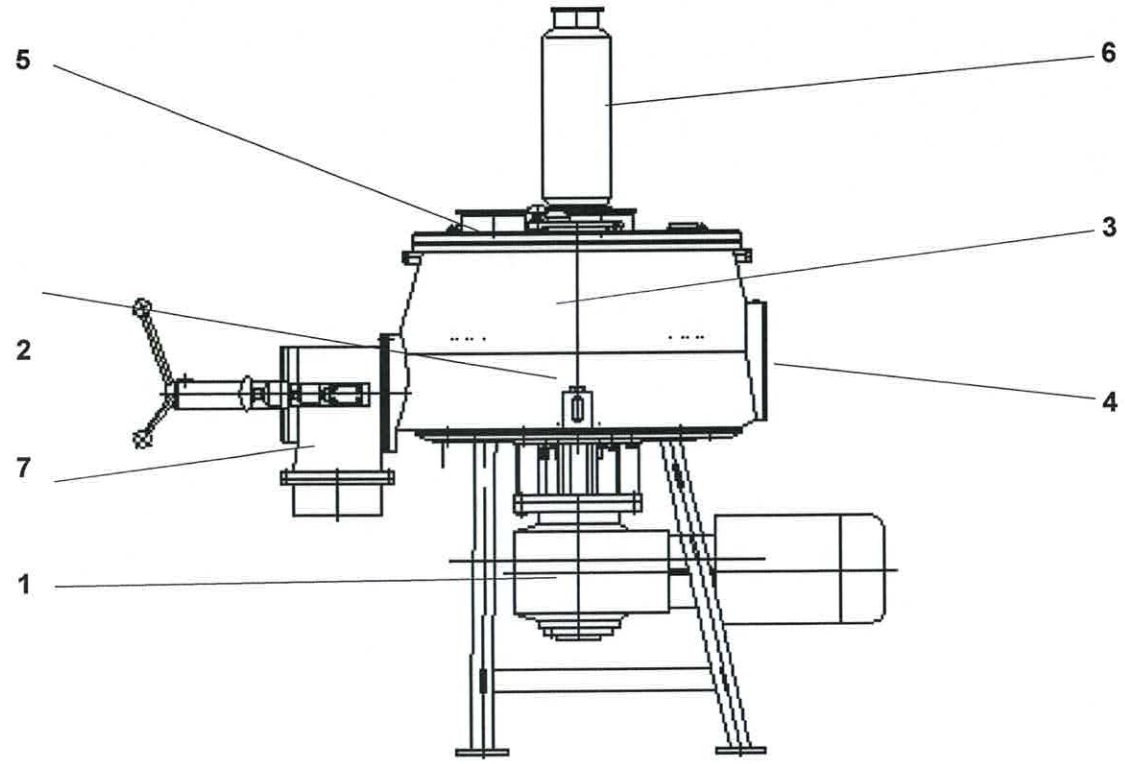


Fig. 9-1 Maintenance plan

1	Drive
2	Sealing
3	Bowl
4	Chopper bearing (Option)
5	Lid
6	Degassing filter
7	Outlet, pneumatic

9.2 Check list for preventive maintenance (every three months)

Designation of assembly group	Works to be done	Result		Remarks
		o.k.	not o.k.	
Frame 3-209-031-011	Visual check regarding corrosion Check regarding correct installation			
Three phase motor Mixing tool 8-05-0760	Visual check regarding cleanness, clean if necessary Visual check of the cable entries			
Drive 3-209-281-007	Visual check regarding damages Gear: check of oil level Oil change: (**see operating instruction of the manufacturer**)			
Sealing 3-384-204-001	Check of the mixer shaft seal regarding cleanness and damages (replace them if necessary)			
Mixing tool 5-503202	Visual check of the surface regarding damages Check of the distance of the bowl bottom, should be between 1-3 mm.			
Three phase motor Chopper 8-2730	Visual check regarding cleanness (clean if necessary) Visual check of the cable entries			
Chopper bearing 3-209-212-005	Smooth running of the shaft Check regarding running noise (replace bearing if necessary)			
Chopper tool 3-209-372-007	Visual check of the surface regarding damages Cutting edges sharp Tool blade deformed			
Bowl 3-209-412-012	Visual check of the surface regarding damages Check of the add-on pieces regarding correct installation			
Lid 3-384-520-003	Visual check of the surface regarding damages Check of the add-on pieces regarding correct installation Functional check of the tension lever			

Designation of assembly group	Works to be done	Result		Remarks
		o.k.	not o.k.	
Degassing filter 3-239-861-006	Check of the filter cloth regarding damages and cleanness (replace if necessary) Check of the connection regarding correct installation Check of the clamp seals			
Lid protection 3-385-581-001	Control of the function and cleanness (clean if necessary)			
Outlet 3-382-615-001	Check of the stripper sleeve regarding damages and cleanness Check of the O-ring regarding damages (replace if necessary) Check of the connections regarding damages			
Pneumatics 3-384-882-005	Check of the adjustments: FAL-M205 Function of the level indicator Check of the hoses regarding tightness Drain of condensate in the regulating valves			
Connecting lines electrics and pneumatics	Check of the condition and installation			

Dismount / Assemble tool

The mixing tool can be drawn from the shaft from above.

For this purpose a suitable lifting device should be used (crane, swivel arm) which can be positioned **directly above the mixing tool**.

Avoid touching the container wall

Before installation of the tools the cleaned shaft must provided with a thin grease film at any rate to prevent scuffing damages of the tools and the shaft.

Recommended lubricants: Klübersynth UH1 14-151; -45°C...+120°C, producer Klüber Lubrication

The tool must be reset onto the shaft carefully without tilting. If edge crushes or scuffing signs occur nevertheless, they must be removed, for example by polishing or scraping.

Shaft sealing of mixing tool

The sealing of the shaft is effected by means of an air purged seal. The sealing rings to seal the shafts are subject to normal wear. Depending on material and procedure their endurance is different. It is recommended to check them regularly especially within the first few months after starting and to replace them in due time.

If the seals must be renewed, proceed as follows:

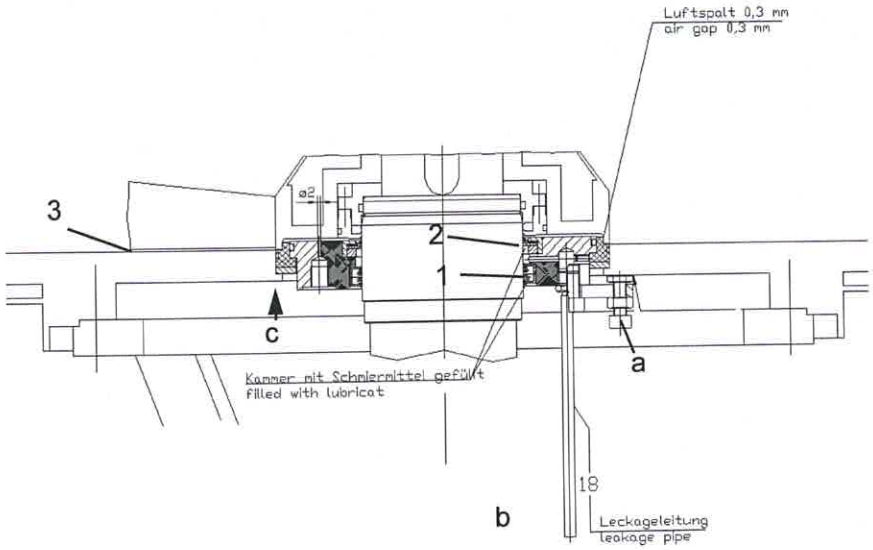


Fig. 9-2 Gasket

- Dismount tool.
- Machine frame: unscrew covering sheets.
- Remove the sealing as the following steps
  a) Remove the cylinder screws from inside the frame
  b) Disconnect the pipes of the air gap seal and the leakage pipe
  c) Force out the complete cover disc into the bowl

- Check wearing part, replace defective parts, renew grease film before assembly.
  Mount the shaft sealing rings in opposite direction
  Fill the chamber between the rings with lubricant
- Press the „Garlock" sealing into the cover disc by using the old one as a tool.
  Fix the cover disc constantly with the scews (position a)
- After all check the distance between tool and bottom of the bowl.
  Near the cone: 0,5 mm
  At the tool tips: 0,1 mm

After placing the mixing tool at the shaft repeat a test run because the „Garlock“ sealing must grind in his housing

Provided the customer is not able to ensure competent dismantling and repair works, please call for the "DIOSNA" after-sales service.

Chopper-Shaft sealing

The sealing of the shaft is effected by means of an air purged seal. The shaft seal rings to seal the mixer shaft behind the air purged seal are subject to normal wear. Depending on material and procedure their enduracne is different. It is recommended to check them regularly especially within the first few months after starting and to replace them in due time.

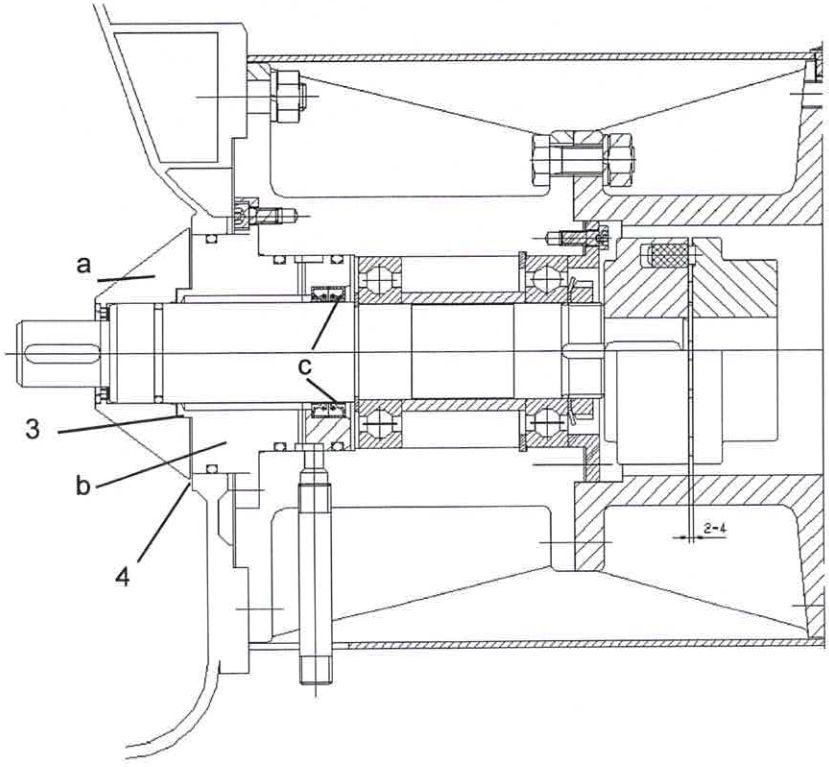


Fig. 9-3 Chopper-shaft sealing

If the seals must be renewed, proceed as follows:

- a) Dismount tool and the turbulence ring. Clean both.
- b) Turn out the sealing by using two long M5 screws. Screw them into both holes and the complete sealing comes out.
  c) Check wearing part, replace defective parts, renew grease film before assembly.

Mount the sealing as follows

1.) Mount the shaft sealing rings in opposite direction
Fill the chamber between the rings with lubricant

2.) Fix the sealing by using two M6 screws. Turn them constantly in.

3.) Check the gap at the shaft: approx 0,1 - 0,2 mm

4.) Mount the turbulence ring
Check the gab between ring and bowl wall: approx 0,3 mm

After placing the chopper tool at the shaft repeat a short test run

Provided the customer is not able to ensure competent dismantling and repair works, please call for the "DIOSNA" after-sales service.

9.3 Trouble shooting

FAULT	CAUSE	REMEDY
Machine does not start	Main fuses	Check, measure voltage; replace if necessary
	Main switch is not turned on	Turn on the main switch
	Air flow for mixer tool or chopper tool, FAL M205, M305	Adjustment of air supply and air flow. Check the pipes and hoses are not broken or damaged, check flow switch.
	Air pressure not sufficient	Adjustment of air pressure supply (7...10 bar necessary)
Operation is interrupted	Motor protection-has responded	Overload: Check power supply line and motor ventilation - Reduce batch size
	Main fuse has responded	Fuse rating too small (only use slow fuses); see chapter for technical data
	Air pressure not sufficient	Adjustment of air pressure supply (7...10 bar necessary)
	Outlet does not open or close	Lid protection, close the lid Outlet protection, close the outlet and lid -outlet housing handle - close the handle of the outlet housing completely
	(dried) product remains on the piston sealing	Clean outlet and change stripper if necessary, see spare parts list
	Product remaining on piston sealing	Remove product and clean the outlet
	Air flow for mixer tool or chopper tool, FAL M205	Adjustment of air supply and air flow. Check the pipes and hoses are not broken or damaged, check flow switch.
Tool touches container bottom	Tool not mounted correctly	Mount tool correctly

10 Version administration

Version	Reason of change	Date	Author
Version 1	Original version	09.09.09	ET

Wiring diagram

Schaltplan

Universal Mixer

DIOSNA Dierks & Söhne

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Phone. : (049) 541 33104-0
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www.diosna.de

Customer	: Ceraver France
Plant designation	: V 100
Drawing number	: ES 3-384-711-006-02
Machine number	: 384-006

Service voltage	: 400V/50Hz/3~/PE
Control voltage AC	: 230V/50Hz
Control voltage DC	:
Total power	: 8,0 kW
Line current	: 19 A
Supply line	: 4Gx4 mm²
Pre-fuse	: 25 A inert

Valid: This Current circuit diagram true for the up named Project
Dieses Dokument wird gültig nach Genehmigung.
Erstellung und Prüfung: Die Erstellung und Prüfung dieses Dokumentes erfolgt durch die auf dem Deckblatt genannten Personen
Genehmigung: Die Genehmigung dieses Dokumentes erfolgt durch die auf dem Deckblatt genannten Personen

Document made:

DIOSNA : _____ Date: _____ Sig.: _____

Document tested and approved:

DIOSNA : _____ Date: _____ Sig.: _____

Customer : _____ Date: _____ Sig.: _____

Highest page number	: 15
Number of the side	: 15

	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Title page
			Name	AMA			
			Plot	14. Sep. 2009			

ES 3-384-711-006-02 | = / +

3-384-711-006-04 | 384-007 | Version 2.0 | Sh. 1 / 15 Shs

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WUPJ0010 24.02.1994

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4	Survey Revision history		14.09.09	AMA
5	Current circuit diagram Main current		14.09.09	AMA
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9	Reserve terminals		14.09.09	AMA
10	Location diagram		14.09.09	AMA
11	Electrical parts list		14.09.09	maiß
12	Electrical parts list		14.09.09	maiß
13	X1 Power 400V Switch cabinet - Machine		14.09.09	AMA
14	X2 Control 230V Switch cabinet - Machine		14.09.09	AMA
15	X4 Control Switch cabinet - Machine Low voltage		14.09.09	AMA

D I O S N A - Prescriptions

Wiring

Execution the Switching plant to
VDE 0660 Part 5. IEC 439

Instructions for assembled switchgear
device combination up to 1000 V:

Rated insulation voltage: 660 V
VDE 0110. DIN 57100
DIN VDE 0113. EN 60 204

Protection class : IP 55 EEx ☐ Zone:
Ambient temperature: max. 40 C

The Wiring effected flexible.

drawn Lines and Cable amounts 1 qmm.
The Wiring effected according to Current circuit diagram.

Line colours:

L1. L2. L3	= black
PE	= green / yellow
N	= bright blue
Control voltage AC (L)	= red
Control voltage AC (N)	= red / white
Control voltage DC+	= dark blue
Control voltage DC-	= blue / white
Measuring cable	= brown
GND	= bright blue
Customer potential	= orange

Remarks

Switch cabinet:

Cable inlet: ☒ at the bottom ☐ on top ☐ at the rear

Main switch: with Door locking

Wire marking: ☐ yes ☒ no

Customers prescriptions: ☐ yes ☒ no

(possibly. Denomination) ----------

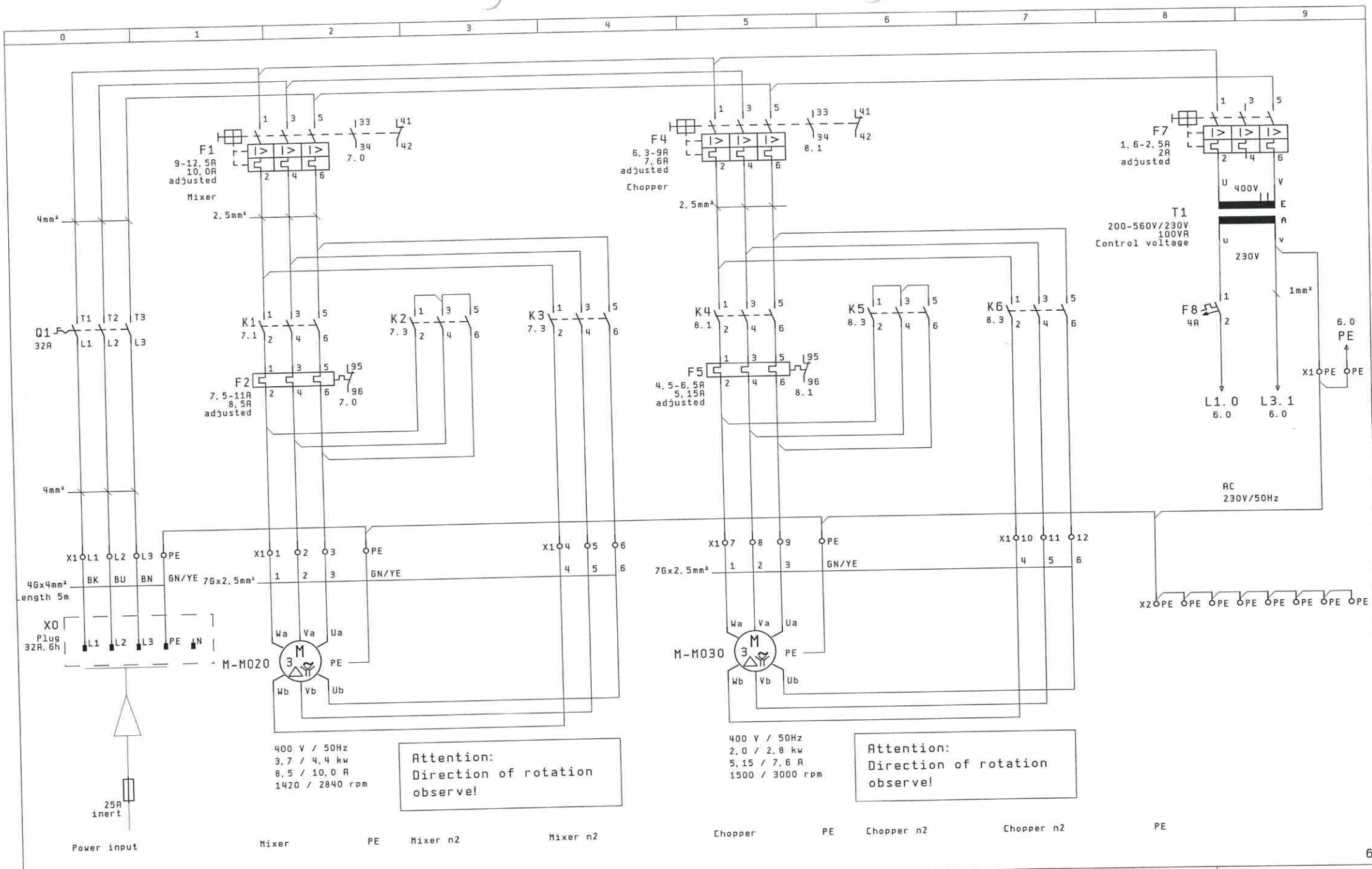
language of wiring diagram: english ----------

Label text: french ----------

Cable connections:

Connection cable see Location diagram.

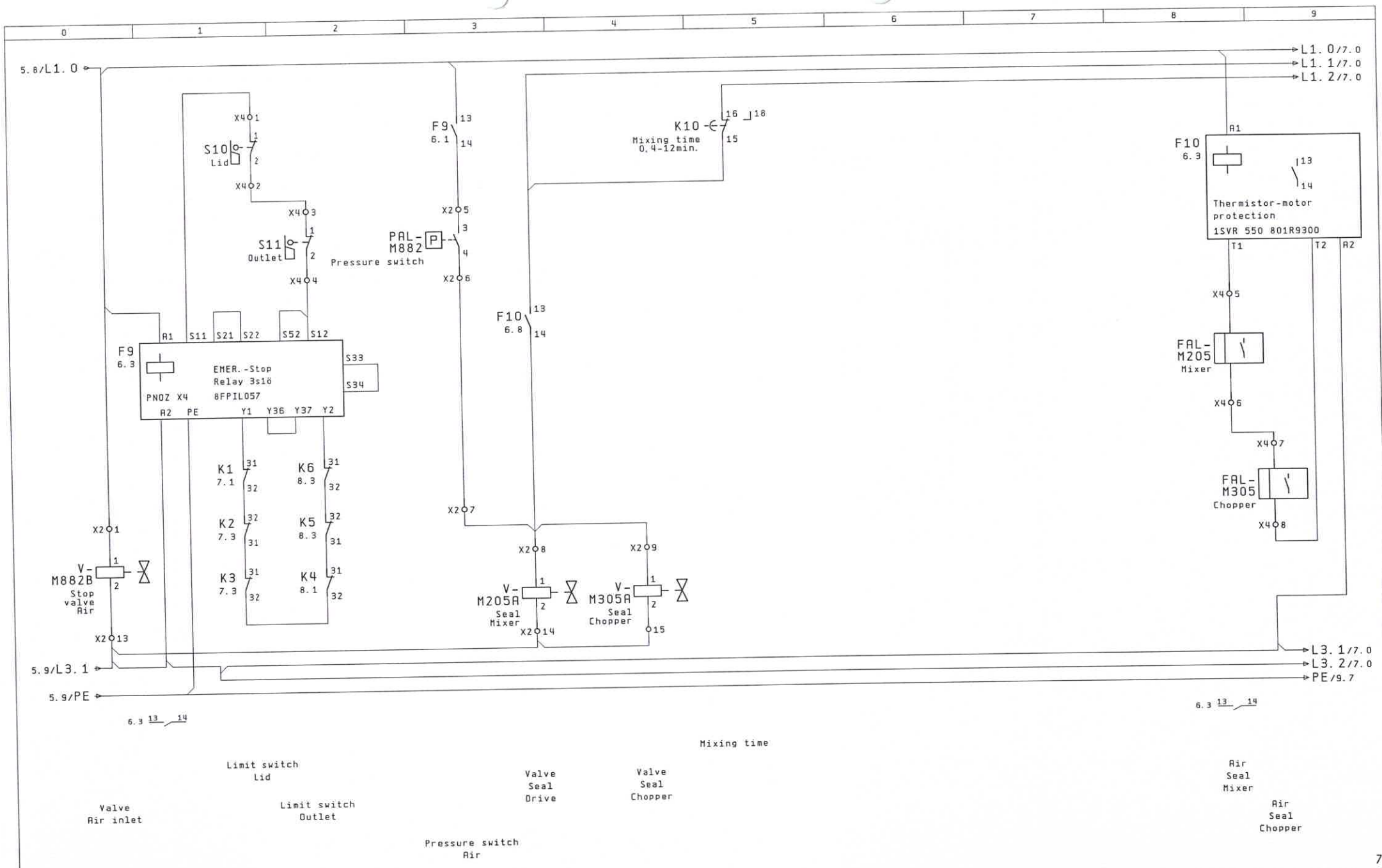
Versions-No.	Cause of revision	Date	Revior
1.0	Basic version	10.07.2009	A. Maiß
2.0	as built at Diosna	14.09.2009	A. Maiß



	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Current circuit diagram Main current
			Name	AMA			
			Plot	14. Sep. 2009			

ES 3-384-711-006-02

3-384-711-006-04 | 384-007 | Version 2.0 | Sh. 5 | 15 Sh



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	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Current circuit diagram	ES 3-384-711-006-02
			Name	AMA				3-384-711-006-04 384-007 Version 2.0
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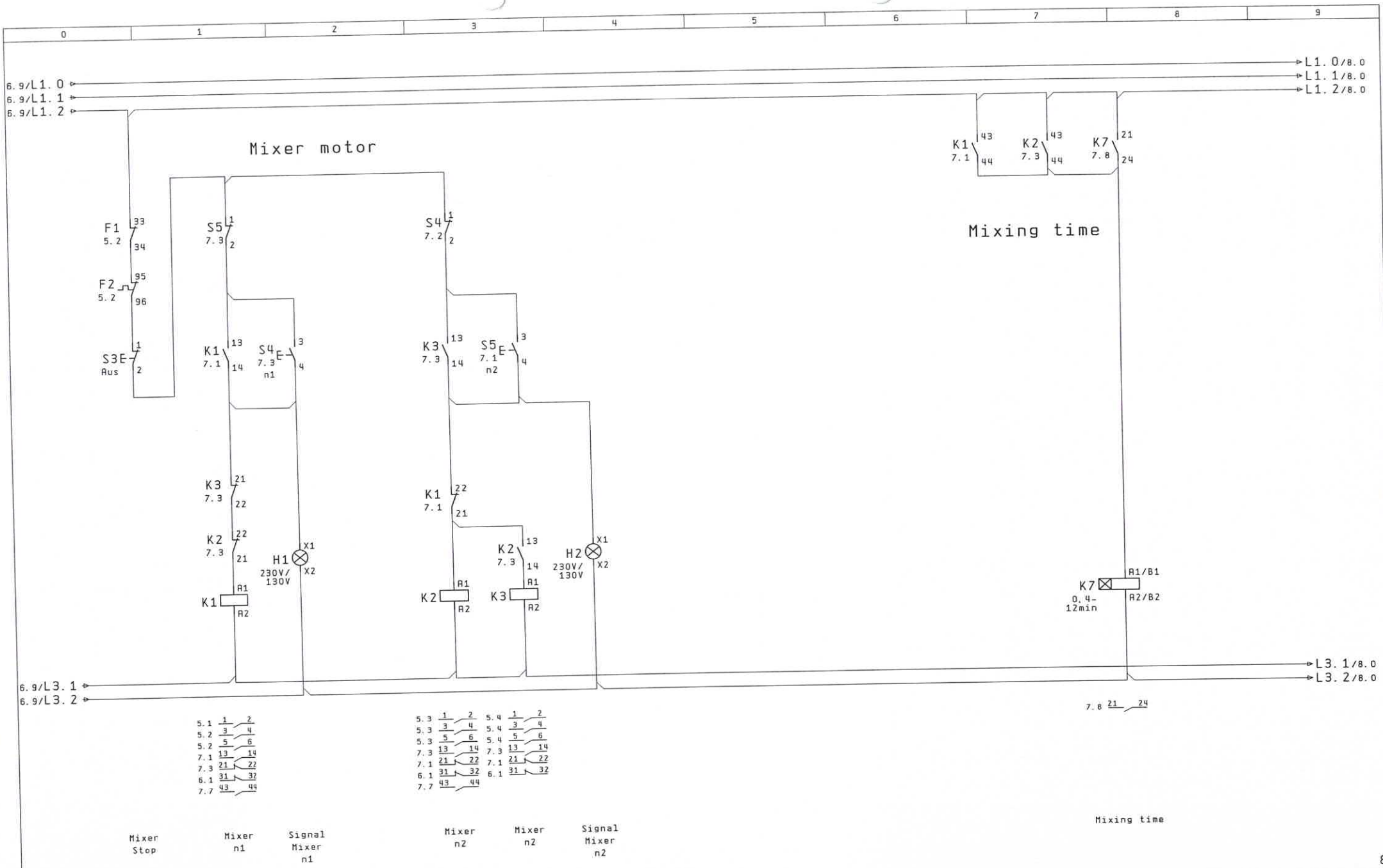
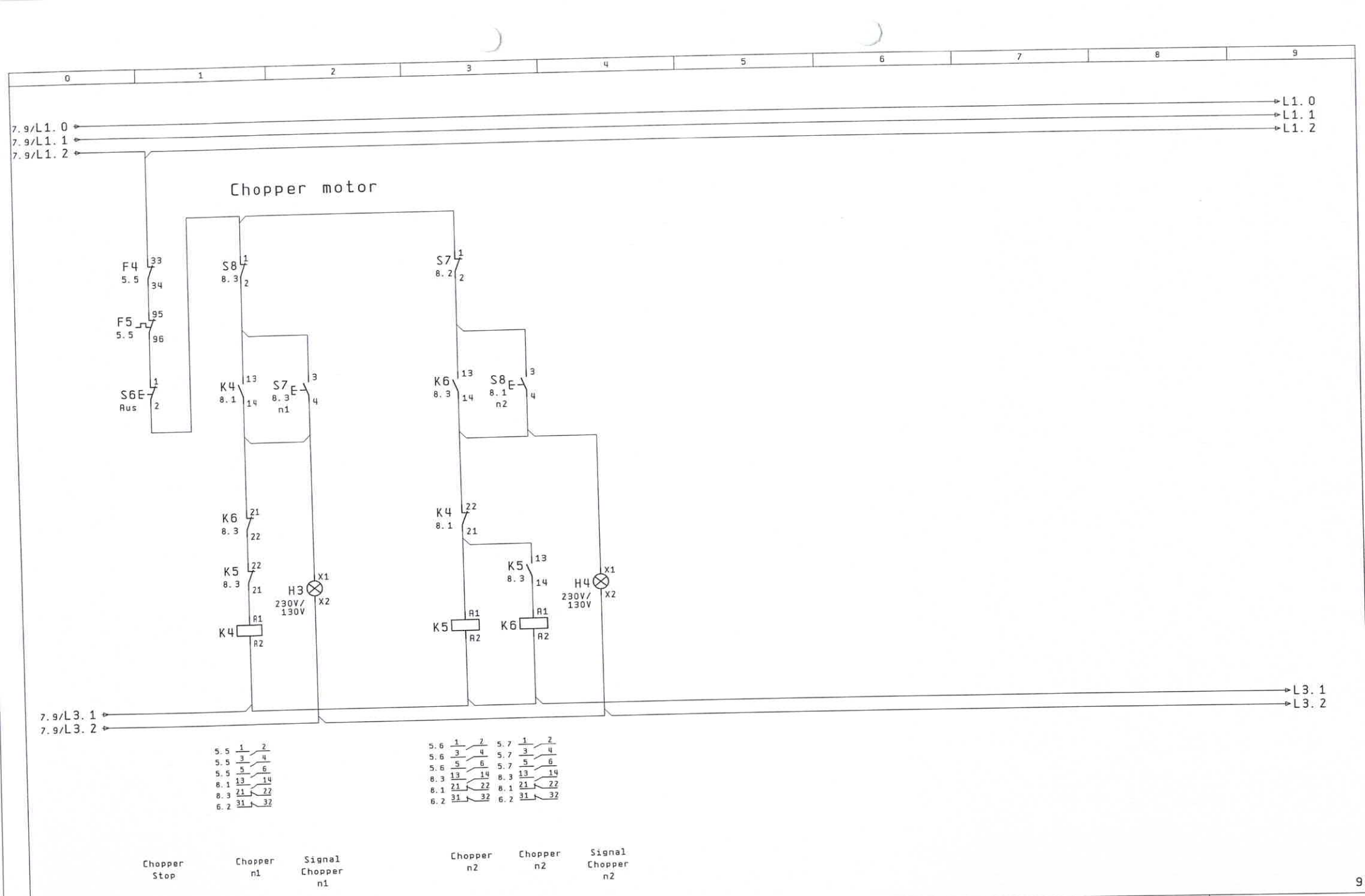


	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Current circuit diagram Mixer motor Mixing time	ES 3-384-711-006-02
			Name	AMA				3-384-711-006-04 384-007 Version 2.0
			Plot	14. Sep. 2009				Sh. 7 15 Sh


0
1
2
3
4
5
6
7
8
9
L1.0
L1.1
L1.2
7.9/L1.0
7.9/L1.1
7.9/L1.2
Chopper motor
F4
5.5
33
34
F5
5.5
95
96
S6E
Aus
1
2
S8
8.3
1
2
K4
8.1
13
14
S7
8.3
n1
3
4
K6
8.3
21
22
K5
8.3
22
21
H3
230V/
130V
X1
X2
K4
A1
A2
S7
8.2
1
2
K6
8.3
13
14
S8
8.1
n2
3
4
K4
8.1
22
21
K5
8.3
13
14
H4
230V/
130V
X1
X2
K5
A1
A2
K6
A1
A2
L3.1
L3.2
7.9/L3.1
7.9/L3.2
5.5 1 2
5.5 3 4
5.5 5 6
8.1 13 14
8.3 21 22
6.2 31 32
5.6 1 2
5.6 3 4
5.6 5 6
8.3 13 14
8.1 21 22
6.2 31 32
5.7 1 2
5.7 3 4
5.7 5 6
8.3 13 14
8.1 21 22
6.2 31 32
Chopper
Stop
Chopper
n1
Signal
Chopper
n1
Chopper
n2
Chopper
n2
Signal
Chopper
n2
7
9
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Ceraver
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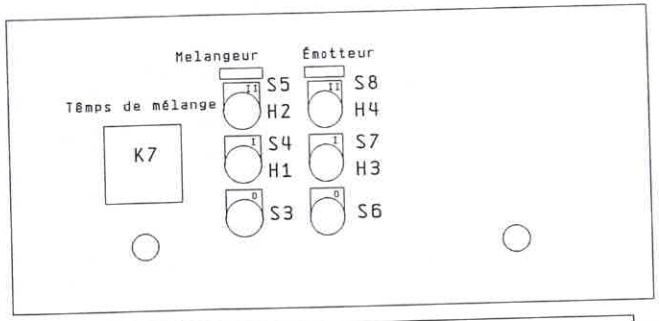
D I O S N A
Dierks & Söhne
Current circuit diagram
Chopper
ES 3-384-711-006-02
3-384-711-006-04
384-007
Version 2.0
Sh. 8
15 Sh

X1=X1 Power 400V Switch cabinet - Machine	
X2=X2 Control 230V Switch cabinet - Machine	X2 2 3 4 10 11 12 16 17 18 6.9/PE PE PE PE PE
X4=X4 Control Switch cabinet - Machine Low voltage	X4 9 10 X4 PE

Reserve PE

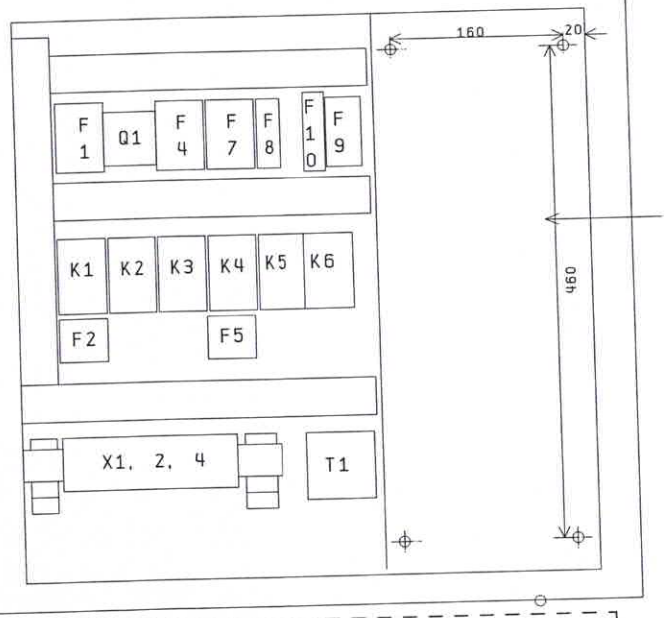
	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Reserve terminals	ES 3-384-711-006-02
			Name	AMA				3-384-711-006-04 384-007 Version 2.0
			Plot	14. Sep. 2009				Sh. 9 15 Shs

Switch cabinet

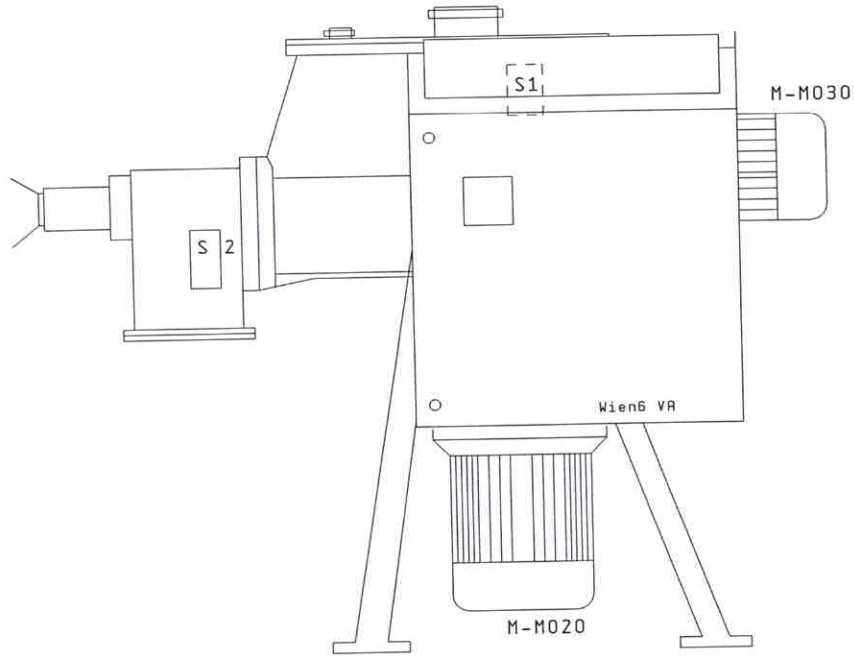


Melangeur — Mixer
Émotteur — Chopper
Têmps de mélange — Mixing time

Achtug:
beim Aufbau der Eisatzplatte
Einbauten beachten!



PAL-M882
FAL-M205
FAL-M305
V-M882B
V-M205A
V-M305A



Attention:
Electrical equipment with Makrolon to cover!

Machine

9

11

	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Location diagram	ES 3-384-711-006-02
			Name	AMA				3-384-711-006-04 384-007 Version 2.0
			Plot	14. Sep. 2009				Sh. 10 15 Sh

WUP0005D 25.08.2004

Parts list

Assembly part designation	Page. path	Quantity	Designation	Type number/ Reference	Supplier	Article no.	Check o.k.
F1	5. 1	1	Protective motor switch MS325-12,5; 9-12,5A	1SA M15 0005 R 0011	Asea Brown Boverie	8FABB813	
F2	5. 1	1	Bi-Relay TA25DU/7,5-11,0A V1000	1SAZ 211301 R1043	Asea Brown Boverie	8FABB523	
F4	5. 5	1	Protective motor switch MS 325-9; 6,3-9A	1SAM 150 005 R 0010	Asea Brown Boverie	8FABB812	
F5	5. 5	1	Bi-Relay TA25DU/4,5-6,5A V1000	1SAZ 211301 R1038	Asea Brown Boverie	8FABB521	
F7	5. 8	1	Protective motor switch MS325-2,5; 1,6-2,5A	1SAM 150 005 R 0007	Asea Brown Boverie	8FABB807	
F8	5. 8	1	Fuse 1p. S201-K4	2CDS 251 001 R0337	Asea Brown Boverie	8FABB105-1	
F9	6. 1	1	Emer.-Stop Switch and Safty gate guard	PNOZ X4 230VAC, 774 738	Pilz	8FPIL057	
F10	6. 8	1	Thermistorschutz CM-MSE,1s; 230VAC	1SVR 550 801 R 9300	Asea Brown Boverie	8FABB951	
FAL-M205	6. 8	1	Flow meter 2-9Nm³/h-2bar rel.	KSK-2150-CS-RS-LUFT	Kobold	8-3000	
FAL-M305	6. 9	1	Flow meter 2-9Nm³/h-2bar rel.	KSK-2150-CS-RS-LUFT	Kobold	8-3000	
H1	7. 2	1	Lampholder BA 9s, AC 230V	3SB34 00-1C	Siemens	8H3SIE007	
H2	7. 4	1	Lampholder BA 9s, AC 230V	3SB34 00-1C	Siemens	8H3SIE007	
H3	8. 2	1	Lampholder BA 9s, AC 230V	3SB34 00-1C	Siemens	8H3SIE007	
H4	8. 4	1	Lampholder BA 9s, AC 230V	3SB34 00-1C	Siemens	8H3SIE007	
K1	7. 1	1	Contactor A12, 5,5kw, 230V; 50/60Hz, 3S2Ö	1SBL 161001 R8032	Asea Brown Boverie	8KABB131	
K2	7. 3	1	Contactor A12, 5,5kw, 230V; 50/60Hz, 3S2Ö	1SBL 161001 R8032	Asea Brown Boverie	8KABB131	
K3	7. 3	1	Contactor A16, 7,5kw, 230V; 50/60Hz, 3S2Ö	1SBL 181 001 R8032	Asea Brown Boverie	8KABB132	
K4	8. 1	1	Contactor A9, 4kw, 230V; 50/60Hz, 2S2Ö	1SBL 141 001 R8022	Asea Brown Boverie	8KABB130	
K5	8. 3	1	Contactor A9, 4kw, 230V; 50/60Hz, 2S2Ö	1SBL 141 001 R8022	Asea Brown Boverie	8KABB130	
K6	8. 3	1	Contactor A9, 4kw, 230V; 50/60Hz, 2S2Ö	1SBL 141 001 R8022	Asea Brown Boverie	8KABB130	
K7	7. 8	1	Timer 0,4-12min.	DZ12-SL, 230V, 50/60HZ	Schleicher	8KSCH925	
K7	7. 8	1	Plugging socket	B7	Schleicher	8KSCH991	
K7	7. 8	1	Seal for Control panel installation 72x72	Z1	Schleicher	8KSCH992	
M-M020	5. 1	1	Motor 3,7/4,4 kw, 8,5/10,0 A, 400V	BK40-34VW/DXS11LR42-TF	Danfoss	8-05-0760	
M-M030	5. 5	1	Motor 2,0/2,8 kw, 400V50Hz	100LA4-2	EMOD	8-2730	
PAL-M882	6. 3	1	Pressure switch pneum.	PEV-1/4-B	Festo	8-155221	
Q1	5. 0	1	Main switch 32A OT 32E3	1SCA 02 2283 R 9010	Asea Brown Boverie	8QABB070	
Q1	5. 0	1	Grip f.Main switch OT16...125A	1SCA 02 2353 R 2840	Asea Brown Boverie	8QABB075	
Q1	5. 0	1	Extension shaft OX 455	1SCA 02 2459 R 8300	Asea Brown Boverie	8QABB079	
Q1	5. 0	1	Terminal shroud OTS 32T3	1SCA 02 2353 R 6670	Asea Brown Boverie	8QABB080	
S3	7. 0	1	Push-button met.. red	3SB36 01-0AA21	Siemens	8S3SIE120	
S3	7. 0	1	Tag holder for Siemens 3SB3	3SB39 22-0AV	Siemens	8S3SIE701	
S4	7. 2	1	Illuminated push button met.. clear	3SB35 01-0AA71	Siemens	8S3SIE551	
S4	7. 2	1	Tag holder for Siemens 3SB3	3SB39 22-0AV	Siemens	8S3SIE701	
S4	7. 2	1	Switch unit 1s1ö, Front fixing	3SB34 00-0A	Siemens	8S3SIE602	
S5	7. 3	1	Illuminated push button met.. clear	3SB35 01-0AA71	Siemens	8S3SIE551	
S5	7. 3	1	Tag holder for Siemens 3SB3	3SB39 22-0AV	Siemens	8S3SIE701	
S5	7. 3	1	Switch unit 1s1ö, Front fixing	3SB34 00-0A	Siemens	8S3SIE602	
S6	8. 1	1	Push-button met.. red	3SB36 01-0AA21	Siemens	8S3SIE120	
S6	8. 1	1	Tag holder for Siemens 3SB3	3SB39 22-0AV	Siemens	8S3SIE701	
S7	8. 2	1	Illuminated push button met.. clear	3SB35 01-0AA71	Siemens	8S3SIE551	
S7	8. 2	1	Tag holder for Siemens 3SB3	3SB39 22-0AV	Siemens	8S3SIE701	
S7	8. 2	1	Switch unit 1s1ö, Front fixing	3SB34 00-0A	Siemens	8S3SIE602	
S8	8. 3	1	Illuminated push button met.. clear	3SB35 01-0AA71	Siemens	8S3SIE551	
S8	8. 3	1	Tag holder for Siemens 3SB3	3SB39 22-0AV	Siemens	8S3SIE701	
S8	8. 3	1	Switch unit 1s1ö, Front fixing	3SB34 00-0A	Siemens	8S3SIE602	
S10	6. 1	1	Limit switch 1s1ö, IP67	3SE3 120-0D	Siemens	8-171072	
S11	6. 2	1	Limit switch, Roller tappet	EEX 95 R 10/1S	Schmersal	8-03-0905	
T1	5. 8	1	Transformer 200 up to 560V +-5% 100VA	MBST-100VA	ELKO Vertriebs GmbH	8TEK0510	
V-M205A	6. 3	1	3/2-Way-Solenoid valve without Coil	MFH-3-1/4-S	Festo	8-0629	

tested by DIOSNA: Date: _____ Signature: _____

tested by Customer: Date: _____ Signature: _____

	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Electrical parts list
			Name	AMA			
			Plot	14. Sep. 2009			

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Parts list

WUP0005D 25.08.2004

Assembly part designation	Page. path	Quantity	Designation	Type number/ Reference	Supplier	Article no.	Check o.k.
V-M205A	6. 3	1	Solenoid 230V, 50/60Hz	MSFW-230V, 50/60HZ	Festo	8-148290	
V-M305A	6. 4	1	3/2-Way-Solenoid valve without Coil	MFH-3-1/4-S	Festo	8-0629	
V-M305A	6. 4	1	Solenoid 230V, 50/60Hz	MSFW-230V, 50/60HZ	Festo	8-148290	
V-M882B	6. 0	1	3/2-Way-Solenoid valve without Coil	MFH-3-1/4-S	Festo	8-0629	
V-M882B	6. 0	1	Solenoid 230V, 50/60Hz	MSFW-230V, 50/60HZ	Festo	8-148290	
X0	5. 0	1	Plug CEE 5x32A	CT 532/6H	Gautzsch	8XGAU002	

tested by DIOSNA: Date: _____ Signature: _____ _____

tested by Customer: Date: _____ Signature: _____ _____

	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	Electrical parts list	ES 3-384-711-006-02	= +
			Name	AMA				3-384-711-006-04	384-007
			Plot	14. Sep. 2009				Version 2.0	Sh. 12 15 Shs
Changes	Date	Name							

Page/path		5.0	5.0	5.0	5.1	5.1	5.2	5.2	5.4	5.4	5.4	5.2	5.5	5.5	5.5	5.7	5.7	5.7	5.5	5.9	5.9
						x	x	x	x	x	x		x	x	x	x	x	x	x	x	x
		x	x	x																	
Cable designation	Cable type																				
Terminal strip designation X1	Connection	L1	L2	L3		2	4	6	2	4	6		2	4	6	2	4	6	PE	V	PE
	Desti-nation	Q1	Q1	Q1		F2	F2	F2	K3	K3	K3		F5	F5	F5	K6	K6	K6	X2	T1	X2
	Terminal name																				
	JUMPER																				
	Termial number	L1	L2	L3	PE	1	2	3	4	5	6	PE	7	8	9	10	11	12	PE	PE	PE
	Connection					Wa	Va	Ua	Wb	Vb	Ub		Wa	Va	Ua	Wb	Vb	Ub		PE	
	Desti-nation					M-M020	M-M020	M-M020	M-M020	M-M020	M-M020	PE	M-M030	M-M030	M-M030	M-M030	M-M030	M-M030	PE	X2	
Cable designation	Cable type																				
WX1-MM020						1	2	3	4	5	6										
WX1-PE												GN/YE	1	2	3	4	5	6	GN/YE	
WX1-MM030																				X	
Function		Power input	=	=	=	Mixer	=	=	Mixer n2	=	=	PE	Chopper	=	=	Chopper n2	=	=	PE	=	=

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	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	X1 Power 400V Switch cabinet - Machine	ES 3-384-711-006-02
			Name	AMA				3-384-711-006-04 / 384-007 / Version 2.0
			Plot	14. Sep. 2009				Sh. 13 / 15 Shs
Changes	Date	Name						

WUP10060 / 27.02.1996

Terminal strip designation: X2

Page/path		5.8	5.8	5.8	5.8	6.0	9.4	9.4	9.5	6.3	6.3	6.3	6.3	6.4	9.5	9.5	9.5	6.0	6.3	6.4	9.5	9.6	9.6	9.7	9.7	9.7	9.7	5.9	5.9	5.9	5.9
																		x													
		x				x				x			x											x							
Cable designation	Cable type																														
	Connection	PE				2				14			14					V						PE							
	Destination	X1				F8				F9			F10					T1						X1							
	Terminal name					A1																									
	JUMPER																														
	Termial number	PE	PE	PE	PE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	PE	PE	PE	PE	PE	PE	PE	PE
	Connection					1				3	4		1	1				2	2	2				PE							
	Destination					V-M882B				PAL-M882	PAL-M882		V-M205A	V-M305A				V-M882B	V-M205A	V-M305A				X4							
Cable designation	Cable type																														
						x				x	x		x	x				x	x	x				x							
Function		PE	=	=	=	Valve Air inlet	Reserve	=	=	Pressure switch Air	=	=	Valve Seal Drive	Valve Seal Chopper	Reserve	=	=	Valve Air inlet	Valve Seal Drive	Valve Seal Chopper	Reserve	=	PE	=	=	=	=	=	=	=	=

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	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	X2 Control 230V Switch cabinet - Machine
			Name	AMA			
			Plot	14. Sep. 2009			
Changes	Date	Name					

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0	1	2	3	4	5	6	7	8	9

Page/path		6.1	6.1	6.2	6.2	6.8	6.8	6.9	6.9	9.4	9.4	9.7
		x			x	x			x			x
Cable designation	Cable type											
Terminal strip designation X4	Connection	S11			S12	T1			T2			PE
	Desti-nation	F9			F9	F10			F10			X2
	Terminal name											
	JUMPER		●	●			●	●				
	Termial number	1	2	3	4	5	6	7	8	9	10	PE
	Connection	1	2	1	2							
	Desti-nation	S10	S10	S11	S11	FAL-M205	FAL-M205	FAL-M305	FAL-M305			
Cable designation	Cable type											
		x	x	x	x	x	x	x	x			
Function		Limit switch Lid	=	Limit switch Outlet	=	Air Seal Mixer	=	Air Seal Chopper	=	Reserve	=	PE

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	14. Sep. 2009	AMA	Date	10. Jul. 2009	Ceraver V 100	D I O S N A Dierks & Söhne	X4 Control Switch cabinet - Machine Low voltage
			Name	AMA			
			Plot	14. Sep. 2009			
Changes	Date	Name					

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3-384-711-006-04 | 384-007 | Version 2.0 | Sh. 15 | 15 Shs