# UELZENER

# Maschinen GmbH



PNEUMATIC PRESSURE CHAMBER CONVEYING AND SPRAYING UNIT

T 115

**OPERATOR'S MANUAL** 

Art:-No.115.00.001

Stand: 12.97 hav/cr/ar

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## Contents

		page
1.	Preface	2
2.	Function	3
3.	Technical Data	4
4.	General Safety Regulations	5
5.	Installation and Operating Instructions	7
5.7 5.8	Transport Mounting Installation of unit Filling of vessel Adjustment of conveying capacity/compressed air quantity Check of readiness for working Start of operation End of operation Work breaks	8 9
6.	Troubleshooting	10
7. 7.1 7.2 7.3	Maintenance Preventive steps Cleaning of unit Maintenance work	12

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## 1. Preface

Before you start your UELZENER T 115, please read this operator's manual very carefully. The operators of this machine should know very well how to handle the machine to avoid mistakes and damages.

Conscientious maintenance and correct operating will give your machine a long life and good performance.

Please note that guarantee expires, if your machine is not operated and maintained appropriately. For questions, please do not hesitate to contact us or our branches and agents at home and abroad. We will be pleased to give you any information you may desire.

The manufacturer or his agents do not assume any liability for spare-, wear and other parts which have not been delivered by the manufacturer or his agents. No guarantee will be given for damages arising as a result of using non-original spare parts.

Claims against the manufacturer cannot be asserted out of this operator's manual, in particular not those related to construction of the machine.

These operator's manual and spare parts list are subject to modifications in the interest of a permanent improvement of the machine.

Please note that the present operator's manual is valid for different versions of this type of pump. Changes of the described technical equipment of this machine version are not possible.

When you order spare parts, please let us know the order-numbers shown in the spare parts list, the type of machine and machine number.

We wish you success with your new UELZENER T 115.

#### **UELZENER MASCHINEN GMBH**

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# 2. Function

The conveying and spraying unit UELZENER T115 is suitable for dry, fine grained bulk material.

The ragged framework enables an easy transport by crane or fork lift. The UELZENER T115 is designed especially for refractory operations. The unit is suited for maintenance and repair of electric furnaces, converters or channels.

The wear of UELZENER T115 is extremely low, because the unit has no rotating parts for bulk materials.

The constant feeding of dry material into the conveyor line is achieved by adjustable ratio of conveying and vessel pressure depending on the applied material.

By constant feeding a steady conveying is attained.

The unit is controlled automatically. This system controls all essential functions like adjustable time for no-load operation before and after conveying, opening and closing of material outlet flap, pressure build-up and discharges of vessel.

Misoperation is almost impossible.

The unit is filled by big-bags. A special detachable frame for big-bags can be put on the unit by crane or by fork lift.

The entire volume of vessel and big-bag amounts to max, 2m<sup>3</sup>.

# 3. Technical Data

Theoretic capacity of vessel	: approx. 1,1m <sup>3</sup>	
Effective capacity of vessel	: approx. 1,0 m <sup>3</sup>	
Max. working pressure	: 6 bar	
Compressed air connection	: R2" (or2x	
	1"GK)	
Required compressed air :		
Quantity	: 4-8 m³/min *	
Pressure	: min. 4-6 bar	
	3,4	
Conveying capacity	: 0,5-3 m³/h	
Conveying distance, horizontal	: approx. 100 m *	
Conveying distance, vertical	: approx. 40 m	
Max. grain size	: 12 mm	
* Depending on quality of material,		
diameter and length of conveying line.		
Dimensions and weight:		
Total length	: 1400 mm	
Total width	: 1400 mm(without ladder)	
Total height	: 2820 mm	
Weight empty	: 860 kg	
Article No.	: 115.00.001	

# 4. General Safety Regulations

We would like to inform you on the most important safety regulations of the UELZENER T 115 in order to ease your work and to ensure a safe operation.

#### **OPERATING INSTRUCTIONS**

- 1. UELZENER T 115 has been constructed for the conveying and spraying of mineral construction materials. When operating the machine, observe operating instructions of manufacturer carefully.
- 2. The manager has to employ only reliable staff trained in operating and maintaining the machine. The personnel must study these operating instructions carefully.
- 3. Install the machine on a hard leveled area and secure it with suitable devices to prevent unintentional motion.
- 4. Before starting the machine, ensure that no one will be endangered by the machine in operation.
- 5. Do not reach into the material inlet flap.
- 6. Any safety installations must not be changed nor be removed and have to be operated according to the instructions.
- 7. Conveying hoses are to be laid in such a way that the vibrations can be controlled by suitable retaining points (hose hooks). This applies especially to vertical lines.
- 8. Conveying hoses are to be laid in such a way that they cannot be damaged. At places where the direction changes, the radius of curvature may not be less than 6 times the outer line diameter.
- 9. After actuation or failure of the machine's safety devices, its operation is to be interrupted until elimination of fault.
- 10. Before disconnecting any hoses or other pressure-bearing parts of the conveying system, it has to be ensured that there is no pressure in the system.
- 11. All safety and accident prevention devices are not to be changed or removed, and are to be operated properly.
- 1 2. Disconnect pressure air supply during all cleaning and repair works.

- 13. Check safety devices before starting the machine. As soon as any faults are discovered, they have to be repaired immediately. If necessary, inform the supervisor or in case of faults which endanger a safe operation, stop the unit.
- 14. Accidents which are due to non-compliance with the accident prevention regulations or the responsible liability insurance company or the legislation of your country or lack of care and attention, will be attributed to the responsibility of the machine operator by the legislation or of the supervisory personnel if the machine operator cannot be held liable because of the lack of training or basic knowledge.

### Please observe the particular safety regulations!

### **Safety Check and Testing of Machine**

- 1. The operator has to check the machine for apparent defects before every work shift.
- 2. A technical expert has to check the machine for its reliable operating condition, when required, but at least once a year.

Technical experts are persons who, on the basis of their technical training and experience, have adequate knowledge in the field of spraying machines. They are sufficiently familiar with the relevant state labour protection regulations, accident prevention regulations, guidelines and generally recognized rules of technology and they can evaluate the safe working condition of this machine.

#### Personal Protection Equipment for the Machine Operator

The operator has to wear protective glasses during spraying operation and when eliminating blockages.

# 5. Installation and Operating Instructions

## 5.1 Transport

The UELZENER T11 5 can be transported by crane or fork lift. By fork lift it can be moved upright or in horizontal position. Width of forks: 1100mm 4 jack rings

# 5.2 Mounting

For mounting every plain ground is suitable with sufficient carrying force for the loaded unit.

There is no need for special basement.

#### 5.3 Installation of unit

- Connect to compressed air supply.
- Lay conveying line and connect to blow-off chamber.
- Connect spray gun or lance to conveying hose and water hose.

## 5.4 Filling of vessel

- Press button "Material inlet flap OPEN".
- Fill vessel with material from big-bag.
- Close flap by pressing button "Material inlet flap CLOSE".

# 5.5 Adjustment of conveying capacity/compressed air quantity

Adjustment is necessary only at initial operation or in case of changing material or conveying hose. Adjustment can be done only during operation.

#### Conveying capacity:

The conveying capacity is mainly depending on vessel pressure. It is regulated by pressure reducing valve for vessel air.

Setting conveying capacity with the material outlet flap should be avoided (increase of wear!)

#### Compressed air quantity:

A too high quantity of air for conveying increases the wear of hoses and excessive bounce of material.

### Adjustment of conveying capacity:

- Prepare the unit (see 5.1 to 5.4).
- Set pressure reducing valve for vessel air to approx. 2 bar.
- Set pressure reducing valve for conveying air to approx. 3 bar.
- Start working (see 5.7).
- Check manometer during conveying:

If pressure of conveying air increases up to 3 bar or if conveying capacity is too high:

- Stop conveying by pressing "Automatic-OFF".
- Reduce aperture angle of material outlet flap by screwing down the hexagon screw at pneumatic drive.
- Restart conveying.

Conveying capacity is too low in spite of open material outlet flap:

- Increase vessel pressure by opening pressure reducing valve until requested capacity is reached.
- Check conveying pressure.
- If conveying pressure increases to 3 bar, stop increasing vessel pressure.

#### Write down setting values:

Material name			
Compressed air supply pressure	min.	bar	
	max.	bar	
Max. vessel pressure		bar	
Max. conveying pressure		bar	
Aperture angle of outlet flap	approx.		
Effective conveying pressure		bar	

### 5.6 Check of readiness for working

- Connect compressed air supply.
- Drain water from separator by opening the drain plug.
- Check pressure of air supply (6 bar, min. 4 bar).
- Setting values adjusted (see 5.5).
- Are conveying hose and spray gun or lance installed correctly?
- Check material level by knocking at the vessel.
- If required refill material (see 5.4).

#### 5.7 Start of operation

- Spray gun or lance in working position
- Press "AUTOMATIC-START"

Further operations are controlled automatically:

- Deaeration flap is closed and valve for vessel air is opened, thus the vessel is put under pressure
- Simultaneously the conveying air is switched on and blows the remainder material out of the hose.
- Once the preset time is elapsed the material outlet flap will open.
- Conveying operation starts.
- Open the water cock at spray gun or lance,
- Regulate water amount until required consistence is reached.

#### 5.8. End of Operation

- Press "AUTOMATIC-STOP"
- Close water cock at spray gun or lance when conveying of material ends.

Further stop-operation is automatically controlled :

Material outlet flap closes immediately.

After an adjustable timing the conveying air is switched off, thus the conveying hose is blown out.

- Finally the deaeration flap opens.
- End of operation.

#### 5.9 Work Breaks

Short breaks - unit is ready for next operation

Longer than 3 weeks - empty vessel

clean vessel

- disconnect compressed air supply

- drain water from separator on control box

- deaerate pneumatic control system via water separator

# 6. Troubleshooting

Fault	Cause	Correction
Material inlet flap does	Vessel under pressure	Press button
not open	Automatic is switched on Flap is locked	"Automatic OFF"
	No compressed air for drive	Check compressed air supply
Material feeding to hose	Solids or lumps prevent OFF-	Disassemble flap and clean
cannot be switched off completely	position of flap (see position of arrow head)	Check wear in housing and flap
	OFF-position can be set	Replace flap
	(flap is worn through)	
No conveying air	Conveying line or blow-off	Press "Automatic-OFF"
(in spite of open valve)	chamber blocked (Manometer indicates pressure)	<ul> <li>Wait until manometer indicates no pressure</li> <li>Uncouple hose</li> <li>Empty conveying line</li> <li>Disassemble blow-off chamber and clean it</li> <li>Especially clean air inlet</li> </ul>
Conveying line blocked	Narrowing of conveying line,	Clean conveying line and
often (unit did work before without problems)	blow-off chamber or air inlet by material residuals	blow-off chamber
	Compressed air quantity too	Drain water, clean separator,
	low, water separator dirty or filled with water	if possible use dry compressed air
	Diameter of air supply hose	Air supply hose min. 1 34"
	too small Or Compressed air capacity too small	Check compressed air supply
No conveying in spite of	Bridging of material in vessel	Switch on pneumatic vibrator
operative unit		If no changer for better: Material with too much moisture or Material not suitable for handling

Fault	Cause	Correction
Sudden variations in conveying capacity	Wrong setting of air pressure in vessel Or Wrong setting of material outlet flap	Regulate pressure reducing valve for vessel Regulate aperture angle of material outlet flap by screwing the bold
Conveying in batches (tends to blockage)	Max. conveying pressure too low	Regulate pressure reducing valve for conveying air
Conveying pressure increases during operation	Narrowing of conveying line, blow-off chamber and air inlet by material residual Material quantity in conveying air flow too much	Clean conveying line and blow-off chamber  Decrease pressure in vessel  Or  Decrease aperture angle of material outlet flap
Extreme wear of conveying line and extreme exhaust speed of material	Conveying air quantity too high	Decrease pressure reducing valve for conveying air
Variations in conveying capacity only at start of operation	Adjustable time for no-load operation before conveying too short	Adjust timer "Before conveying"
Conveying line not blown out after end of operation	Adjustable time for no-load operation after conveying too short	Adjust timer "After conveying"
Vessel under pressure after operation	Deaeration flap does not open Deaeration flap blocked	Open ball valve on top of vessel by hand and dearate Clean deaeration flap and line

# 7. Maintenance

Conveying and spraying unit UELZENER T115 needs only a little maintenance care.

## 7.1 Preventive steps

- Use suitable material (pour able, dry, lump-free etc.)
- Air has to be dry and lubrication-free
- Avoid moisture in vessel from condensation water or dripping water
- Empty vessel when more than 3 weeks not in operation

# 7.2 Cleaning of unit

- Blow out conveying line
- Clean blow-off chamber and air inlet

#### 7.3 Maintenance work

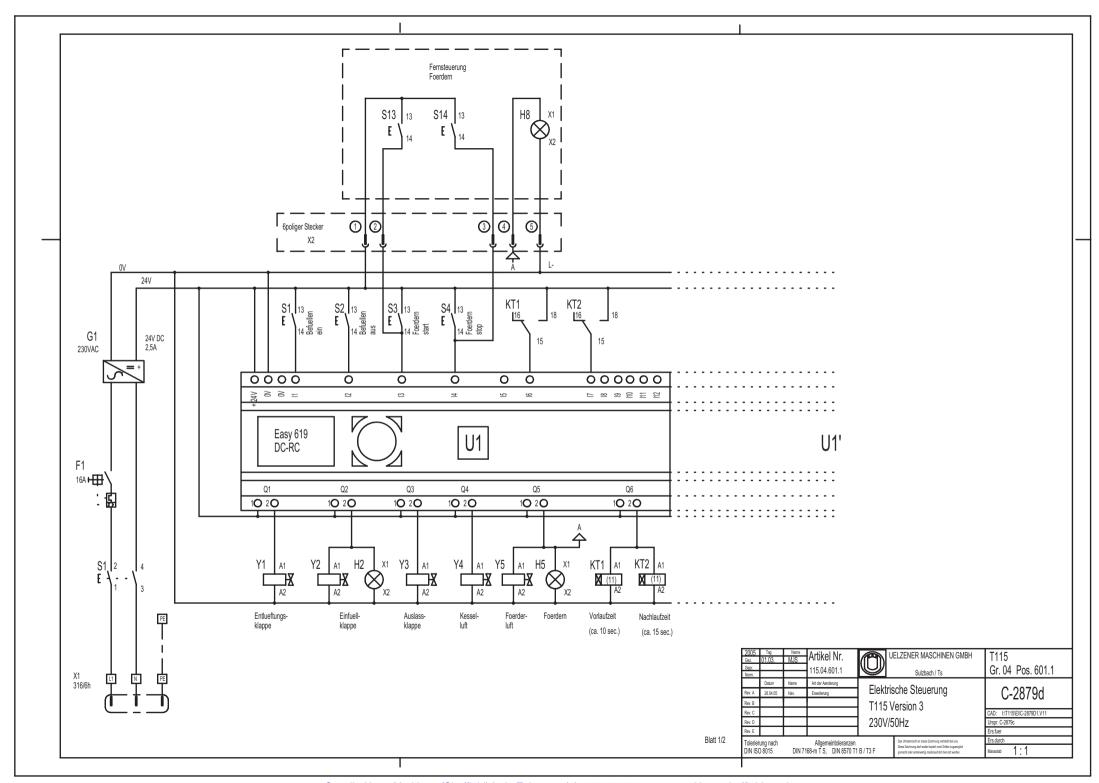
<u>Daily:</u> Drain water at separator

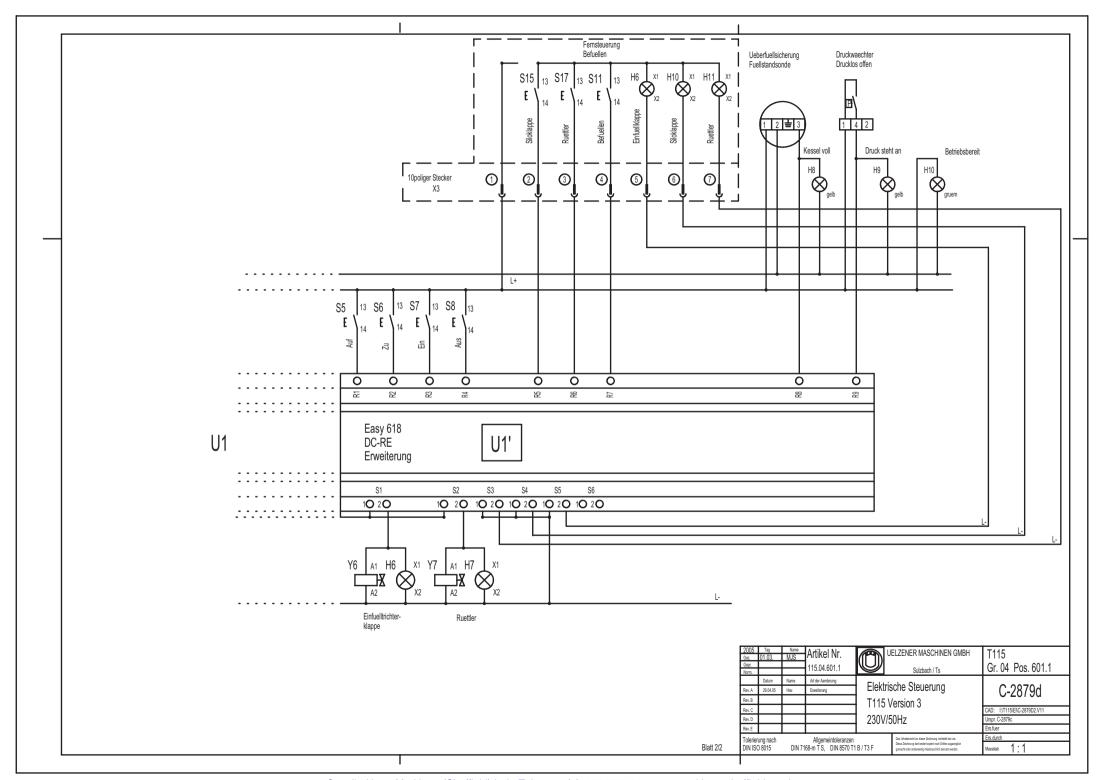
#### Weekly: Pressure check:

- 1. Switch off automatic
- 2. Open manually vessel air
- 3. Put vessel under pressure
- 4. Close manually vessel air
- Watch manometer vessel pressure If pressure decreases quickly look for leak and repair it

# Monthly: - Clean filter cartridge in separator If necessary exchange it

- Clean conveying line and blow-off chamber
- Check the wear of:
  - material inlet flap
  - material outlet flap
  - blow-off chamber
  - conveying hose





# UELZENER

## Maschinen GmbH

# Das **UELZENER** Maschinen-Programm

#### Für den Hochbau

- Verputzmaschinen mit Mischer
- Mischpumpen für Fertigmörtel
- Mörtelpumpen
- Estrich- Misch- und Förderanlagen
- Fließestrichpumpen
- Betonförderer
- Förderanlagen für Fertigmörtel

#### Für den Bergbau

- Hinterfüll-Mischpumpen
- Schaummörtel- Mischpumpen
- Schneckenpumpen für Bergbaumörtel
- Durchlaufmischer für Bergbaumörtel
- Mischanlagen für Verfüllmörtel
- Rohrschneckenförderer

#### Für den Tunnel- und Tiefbau

- Anker-Verpreßpumpen
- Injektions- und Verfüllanlagen
- Tübbing- Hinterfüll-Anlagen
- Pneumatische Betonförderer
- Betonnassspritzmaschinen

#### Für den Feuerfestbereich

- Mischpumpen für Tundish- Spritzmassen
- Misch- und Förderanlagen für Vibrationsmassen
- Kolbenpumpen für Feuerfestmassen
- Durchlaufmischer für Feuerfestmassen
- Trockengutmischer für Feuerfestmassen

#### Für Industrie, Umwelt und Entsorgung

- Dickstoff-Pumpen
- Vermörtelungsanlagen für Abfallstoffe
- Kalkmilch-Mischanlagen
- Schlamm-Kalk-Behandlungsanlagen
- Mörtel-Beschichtungsanlagen
- Mehrkomponenten- Misch- und Förderanlagen

# The **UELZENER** Machine Programme

#### For Building Construction

- Plaster- and rendering machines with mixer
- Mixing pumps for ready-mixed mortars
- Mortar pumps
- Mixing and conveying systems for floor screed
- Self-levelling floor screed pumps
- Concrete conveyors
- Conveying systems for pre-mixed dry materials

#### **For Mining**

- back filling mixing pumps
- Foam-cement mixing pumps
- Worm-type pumps for mining mortar
- Continuous mixers for mining mortar
- Mixing units for filling mortar
- Pipe-type worm conveyors for mining mortar

#### For Tunneling and Civil Engineering

- Anchor filling pumps
- Injection and filling units
- Concrete tiles back- filling units
- Pneumatic concrete conveyors
- Wet shotcrete machines

#### **For Refractories**

- Mixing pumps for tundish spraying masses
- Mixing and conveying systems for vibration materials
- Piston pumps for refractories
- Continuous mixers for refractories
- Dry material mixers for refractories

#### For Industry, Environment and Waste Disposal

- pumps for thick matters
- mortar systems for waste disposal
- Lime slurry mixing systems
- Slugde-lime processing units
- Mortar coating units
- Mixing and conveying units for multiple components



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