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OWNERS MANUAL

DCM 161 MINI TUMBLE

BLAST CABINET

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1 Scope of manual

This manual is valid only for the Mini tumble DCM-161 part 100757.

2 Scope of application and restrictions

2.1 Suitable media

- Glass beads 200 to 800µm
- Corundum 200 to 800µm

Note: Corundum causes a high wear.

2.2 Permissible pressure

Max. **7bar** (recommended: 1.5 ... 4bar, due to high wear))

2.3 Not suitable parts for blasting are:

- fat, wet or oily parts
- with temperatures a) less than 0°C
  b) higher than 50°C
- parts with coatings or dirt parts witch contain harmful substances
- extremely dusty parts

2.4 Explosion hazard

The cabinet is suitable only for hazardous location use St 1 (see cap 9).

3 General description

The DCM 161 machine is designed to clean, deburr or peen small parts of various shapes and sizes in a tumbling or rotating basket. This machine utilizes one blast gun on a stationary gun mount placed within the cabinet door. The gun is positioned to allow blasting media to reach parts to be processed in the bottom of the tumbling basket. This tumbling action of the parts presents an ever-changing surface to the stream of blast media.

Assembling - see section 7.

4 Operation

4.1 Requirements for setting up and reinstalling

- • Electrical services : 230V; 50 Hz; 1 phase electric service to the cabinet, min. 0,6kW
- • Air requirements:
- dry, oil-free
- maximum pressure 7 bar – optimal 1,5 to 4 bar (because of wearing)
- Air consumption (at 4 bar) = 0,5 m³/min
- connect 1/2“ air line to the unit. If distance is greater than 10m from air supply a larger line is required.
- • Install on a firm base
- Check and tighten all hose connections
- • Ground the cabinet (wire cross section min 10mm²)
- • Check the rotation of paddle wheel (the rotation should be clockwise)
- If needed-connect dust bag to blower outlet with clamp provided

4.2 Start up

- Open cabinet door
- Load hopper with media (max. 4,5kg)
- Place parts to be processes inside the tumble basket (max. 8kg)
- Close cabinet door / secure toggle type latch
- Adjust the air regulator to the desired operating pressure
- Turn main switch to "I" □ fan is running
- Set the blast time (0 - 60min.) □ see also the clock operating instructions
- Press "Start" on the clock □ The blast process is beginning, the drum rotates
- When time cycle is complete, blasting process will be interrupted.
- Press "Stop" to stop the blasting process prematurely.

5 Trouble shooting

Caution! The blower system must be in operation.before any blasting begins

5.1 Reduction of blasting efficiency

A. Low media level in hopper can reduce the flow of media. Check and fill if low.

B. Improper air/metering valve adjustment on hopper return media line can reduce volume of media flow. To adjust, open the ½ “ball valve gradually (see pneumatic layout plan) until the blast media flow is set to the most effective operation. When mixed correctly, a slight mist appears at the nozzle outlet.

C. Reduced air pressure may be caused by malfunctioning regulator, dirty moisture trap, ruptured air line ore loose fitting. Check these parts and replace, tighten or clean as necessary.

C. Foreign material in media line or gun may occur as a result of extremely dirty parts being processed. Accumulation of oil or greases in media line or gun restrict flow of media. Disassemble gun and media hose and clean or replace as necessary.

E. Worn gun parts, such as nozzle or orifice, will reduce cleaning efficiency. Disassemble gun and replace worn parts.

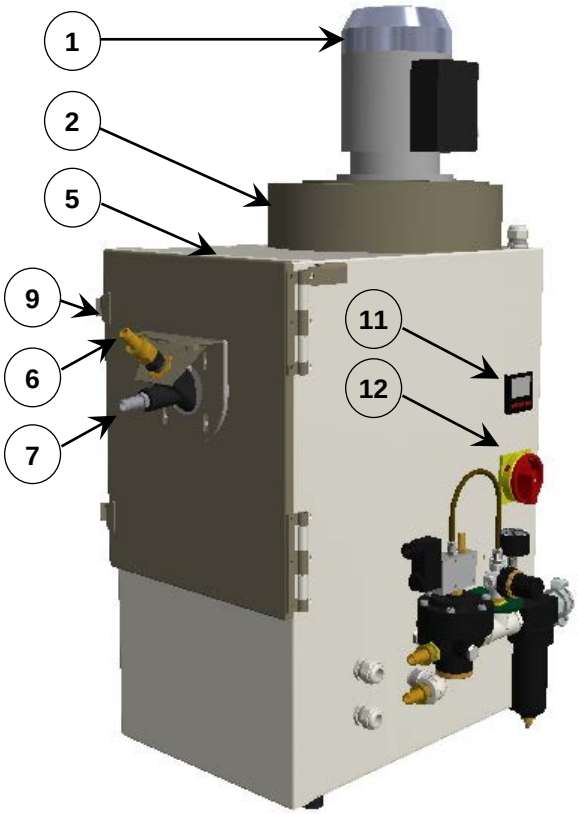
F. Dirty media will reduce efficiency. Media must be changed periodically to maintain consistent results.

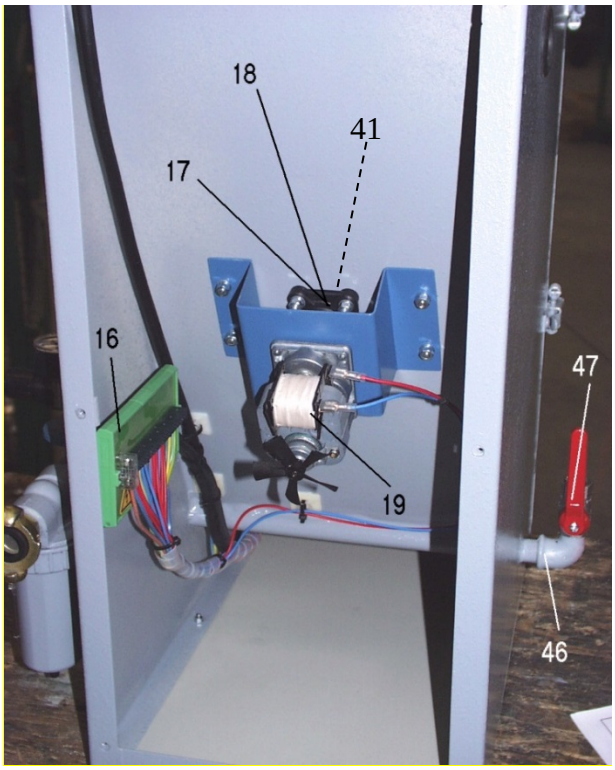
6 Maintnance

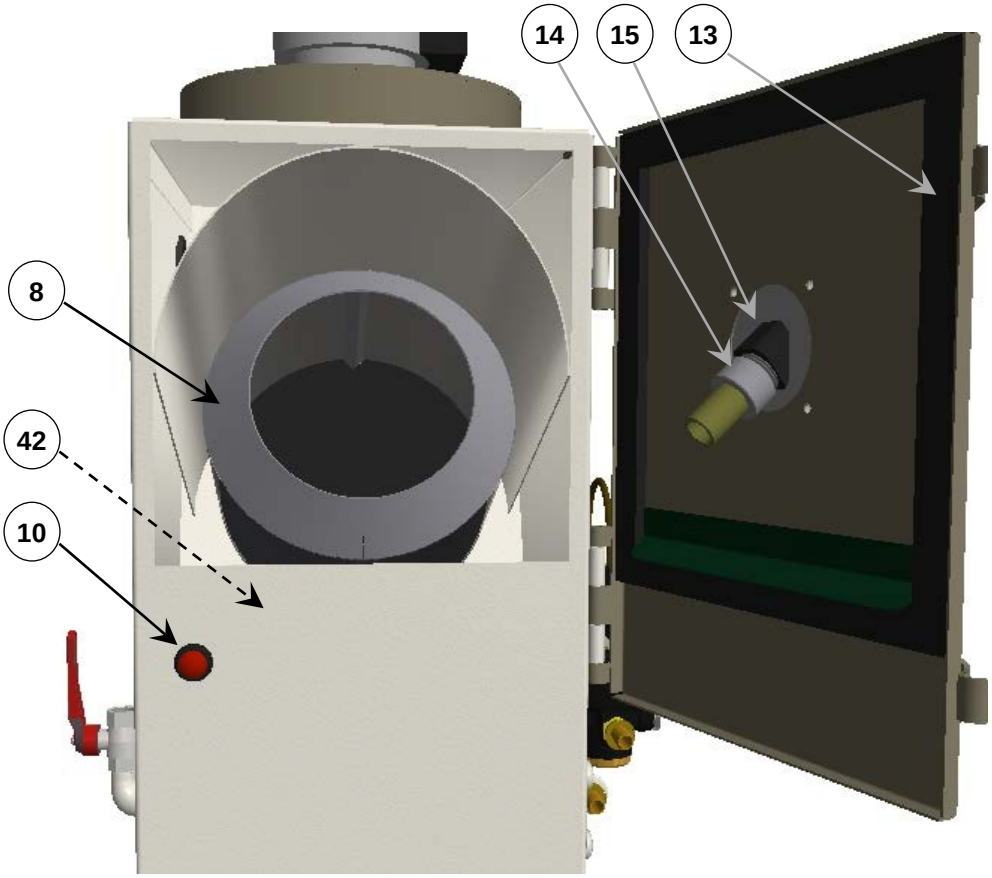
- Clean exhaust bag – depending on the type of blast operation and used media - less than one hour. Check the wear. Frequency depends on the abrasive and pressure

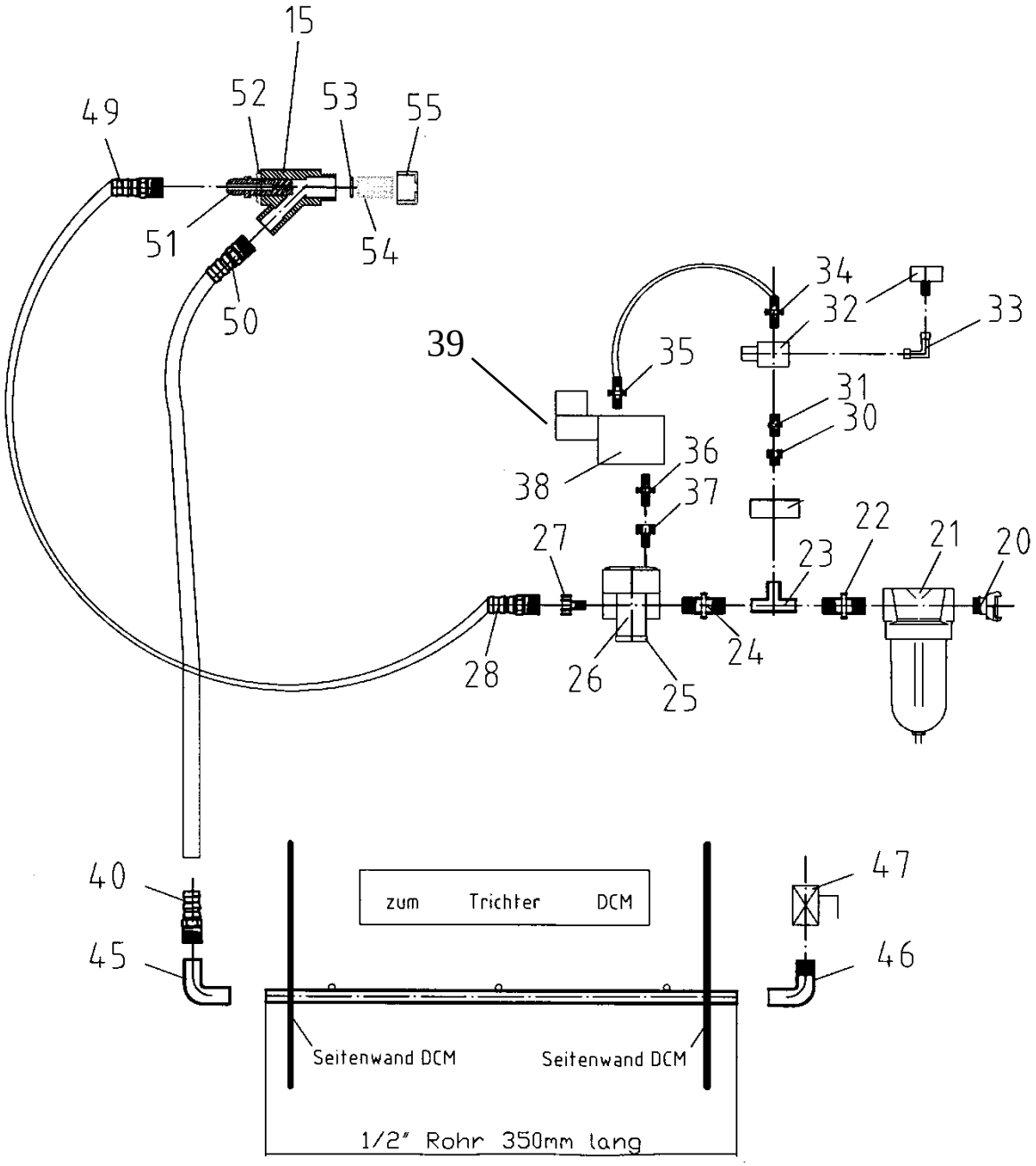
  Blast gun a) nozzle
  b) orifice
  media hose
  tumble gasket
  gaskets – door gasket, shaft gasket
- . Media must be changed periodically.

7 Replacement parts





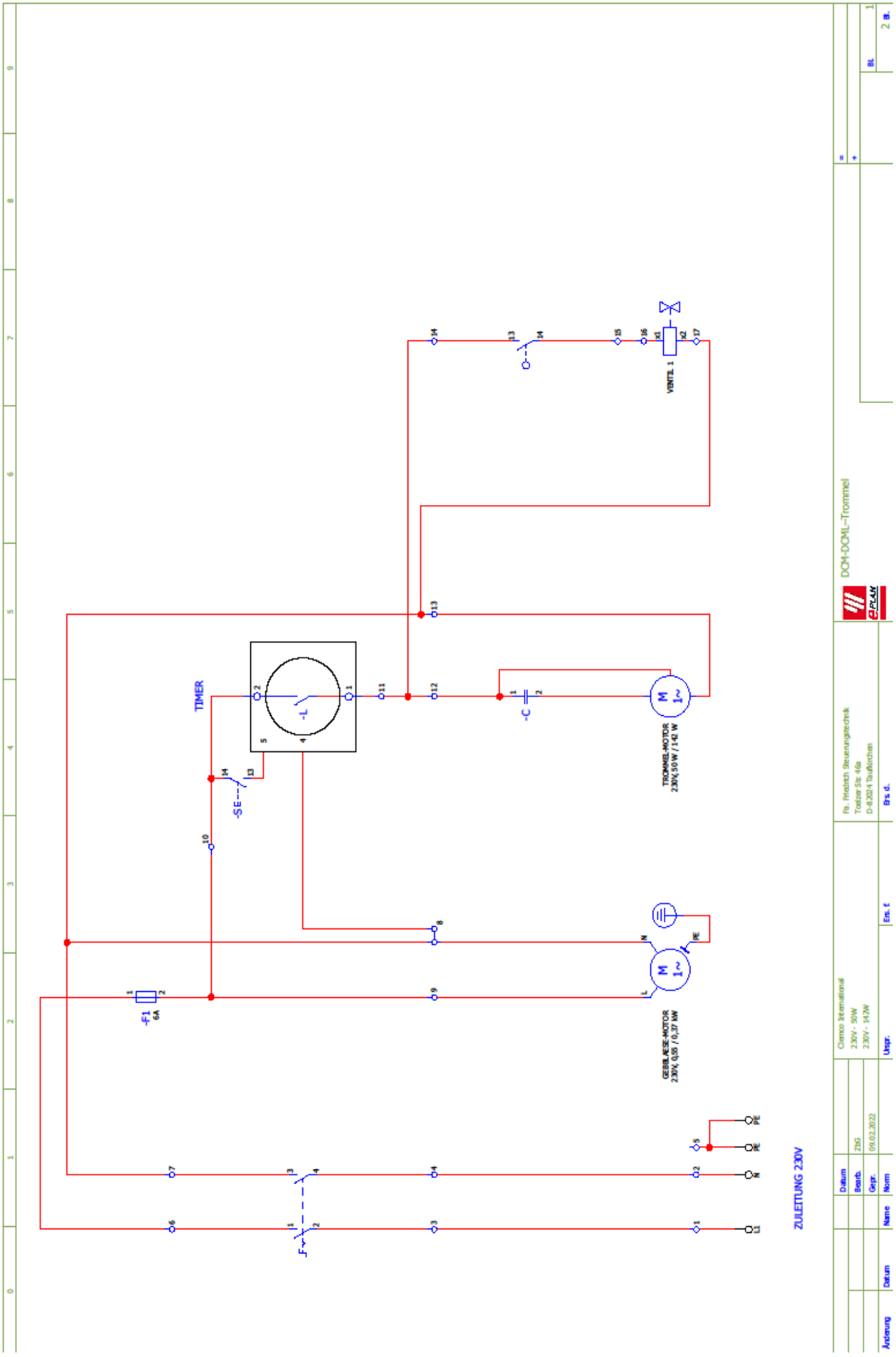


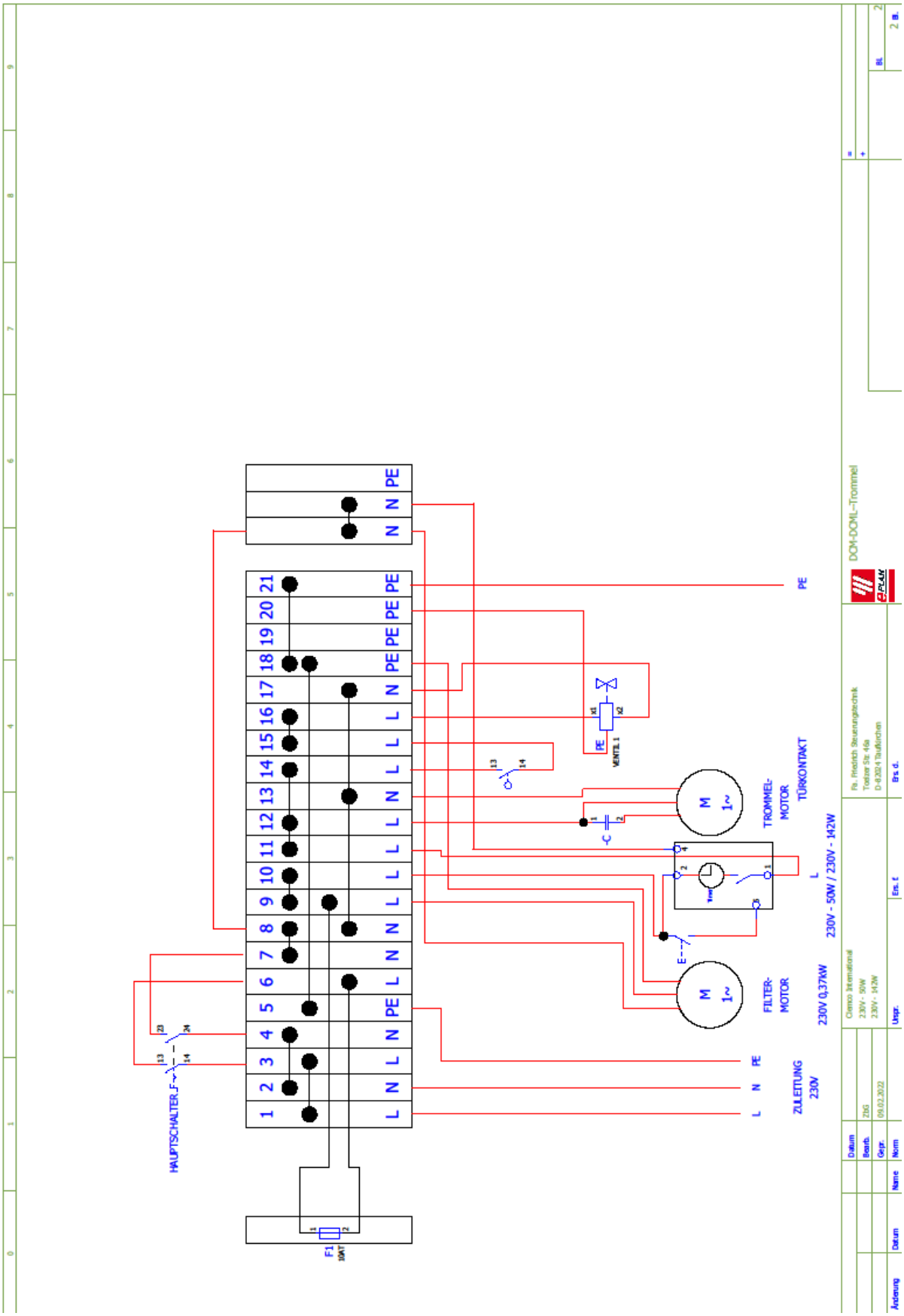


Pneumatic scheme

Pos. No.:	Part number	Number	Description
1	100943	1	Motor 0,55 KW, 230V-B5,2
2	100765	1	Paddle wheel
3	11576Z	1	Clamp
4	11500Z	1	Dust bag
5	100761	1	Housing DCM 161
6	12472Z	1m	Air hose ½“
7	12476Z	1m	Media hose
8	100758	1	Tumble DCM 161
9	12263Z	2	Latch assembly
10	100763	1	Door contact
11	27300D	1	Digital Timer
12	100961	1	Switch
13	12434Z	1m	Door gasket
14	11914Z	1	Nut 0347-0124
15	12276Z	1	Gun body
16	100764	1	Circuit board
17	100760	1	Bearing DCM 161
18	30552Z	1	Drive shaft DCM 161
19	30551Z	1	Tumble motor (i=737,4; 4,6W)
20	90002D	1	Coupling KAG-12
21	100688	1	Moisture ½“
22,24	90304D	2	Hex nipple ½“ Nr. 280
23	90004D	1	T-piece ½“ Nr. 130
25	01950D	1	Pipe plug ¼“
26	10709D	1	Pressure regulator ½“
27	01802D	1	Reducer ½“x 3/8“ Nr. 241
28,40,50	11724Z	3	Push look fitting 0219-34
30	01802Z	1	Reducer ½“x 3/8“ Nr. 241 – (made of steel)
31	02808D	1	Hex nipple ¼“ MS
32	100061	1	Pressure regulator ¼“ with gauge
33	100448	1	Angle 1/8“ inside - outside
34	99468Z	1	Union Schott ¼ x 4
35	99717Z	1	Union Schott 1/8“ x 4
36	02139D	1	Hex nipple 1/8“ MS
37	02010D	1	Reducer ¼“x 1/8“ Nr. 241
38	100741	1	E-valve 1/8“
39	99697D	1	Spool E-valve 230V
41	JH190009	1	Gasket for shaft
42	ENG-038250	1	Sieve insert
45	100171	1	Angle ½“ Nr. 90
46	90491D	1	Nipple 0473-0005
47	01241D	1	Pipe plug 371-0053
49	11723Z	1	Union 0219-30
51	11959Z	1	Orifice Nr. 4
52	11918Z	1	Nut 0347-0266
53	12031Z	1	O-ring 0423-0007
54	11935Z	1	Nozzle-ceramic 8mm Nr. 4
55	11914Z	1	Brass nut 0347-0124

8 Wiring diagram




DOM-DOML-Trommel
HAUPTSCHALTER.F
F1
10AT
VENTIL 1
TROMMEL-
MOTOR
TÜRKONTAKT
FILTER-
MOTOR
230V 0,37KW
230V - 50W / 230V - 142W
ZULEITUNG
230V
PE
N
L

9 Drum operating with digital timer

Main switch on➔Filter motor starts

Setting timer time for blasting:

Briefly press once the [PROG] button. The hour digit in the timer display flashes. Use the [+] or [-] button to set the hour digit to the desired value. If you press the [PROG] button again, the minute digits flash. Set the value as described above.
After pressing the [PROG] key again, the seconds digit flashes. Set the value as described above.
The next time the [PROG] key is pressed, the timer changes back to timer mode.

Starting and stopping the timer:

Start the timer with the [START / STOP] key
The blasting process begins until the preset timer time. The time in the display decreases every second.
After the set time has elapsed, an acoustic signal sounds twice, the blasting process is ended and the display returns to the initially set time.
The next blasting process can be started again with the [START / STOP] key.

Notes:

The blasting process can also be stopped at any time by pressing the [START / STOP] key. When the [START / STOP] button is pressed again, the clock continues at the previously stopped time.
Example: Preset time 30 seconds. Press key [START / STOP] - blasting process
starts.
After 5 seconds the button is pressed again [START / STOP] - The blasting process is stopped.
The display now shows 25 seconds. Press the [START / STOP] key again - the blasting process continues for another 25 seconds.
If the blasting process has stopped at 25 seconds, but should be started again after 30 seconds, then press the [RESET] key. The timer display now shows 30 seconds again

Deleting the previously set time:

Briefly press the [PROG], [+] and [-] buttons.

The last set time is also saved in the timer display when the DCM drum is de-energized!

10 Supplementary Information

10.1 Noise level

10.1.1 Way of measurement

- Closed room, object in middle
- Sound level instrument corresponding to DIN 45633, IEC 123, BS 3489 and ANSI S1.4 Type 2
- 1m distance to blasting object

10.1.2 Results

The noise level dependents of:

- • higher blast pressure➔ rising level
- • bigger nozzle diameter ➔ rising level
- • more distance between blast nozzle and blasting object ➔ falling level
- • incident angle
- • geometry of blast medium
- • kind of blast medium

The following examples gives a better survey between the blast pressure and the sound level.

Blasting pressure [bar]	***Sound level[dB (A)]***	***Comments***
0	< 75	No blasting
3	80 ... 88	Nozzle 6mm
4	83 ... 92	Blast medium: glass beads BT-8
5	88 ... 96	
6	92 ... 100	
7	95 ... 105	

Table 4: Sound level – depending on blast pressure

There could appear differences up to ±15% by using other blast medium or different nozzle diameters.

10.2 Residual hazards and protective agents

10.2.1 Noise pollution

The sound level is dependent on blasting parameters.
If it is > 85 dB (A), ear protection has to be worn.

10.2.2 Dust exposure

When cabinet is closed – dust exposure is < 5 mg/m³. In this case, no supplementary requests has to be taken.

10.2.3 Protection of unintended blasting

The blast process is interrupted when the door will be opened.

10.2.4 Escape of accelerated blast medium from worn parts

Blasting causes a high consumption which can be dangerous.
Therefor the maintained measures from chapter 6 had to be strictly followed.
Especially the blasting hose has to be checked in order to diminish the danger.

10.2.5 Risk of explosion

Blasting can produce a mixture of dust, which can lead to a risk of explosion. Our cabins are not suitable for St 2 and St 3 explosiveness. ◊The user has to give us specific information about the explosiveness. Otherwise, we recommend carrying out a specific analysis. Source: BIA manual or GESTIS substance database on the Internet (http://www.hvbg.de/d/bia/fac/zesp/zesp.htm).