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# Bedienungsanleitung

# Operating Instructions

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**ExOn7 3x400V, DX315**



We retain all copyrights of all descriptions, drawings and schedules contained in these operating instructions which may not be reproduced nor be made accessible by third parties or by competitors, neither in whole nor in part, unless we have expressly consented thereto.

Before start-up these operating instructions must be examined carefully because we will not assume any liability for any failures resulting from improper use. No warranty claims will be accepted if the hand-held welding and extruding machine has been modified unless this has been done in consultation with the manufacturer/ supplier.

**The extruder shall be used for extrusion weld works only !**

**These operating instructions should always be accessible by the operator.**

**For after-sales service and orders please contact:**

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**english**

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## **1. Type**

Art.-no/Type of machine :	DX315 ExOn7 3x400V
Machine no. :	.....
Required voltage :	400 V / 50 – 60 Hz
Heating unit for extruder :	1200 W
Heating unit for air :	3300 W
Extruder drive unit :	1500 W-400V

## **2. Safety**

Pursuant to sec. 55 of VDE 0 100 (Regulations of the Association of German Electrotechnical Engineers), the extruder must be operated using a protective switch or an isolation transformer.

Keep extruder dry.

Operating hand-held welding and extruding machines is subject to applicable national regulations. Observe applicable regulations for the prevention of accidents as well as technical rules for safe and professional operation.

Directive 92 / 57 / EWG dated June 24, 1992, shall be applicable by analogy.

### **Utilisation:**

Hand-held welding and extruding machines are manufactured according to the latest state of the art and in compliance with safety requirements.

Any improper use may result in dangers for the operator or third parties or may adversely affect machines and assets.

Only use hand-held welding and extruding machines if in technically perfect condition and for the purposes for which they are intended while observing the operating instructions.

The manufacturer / supplier will not accept any liability for any failure to comply with the above or for damages resulting therefrom.

Any utilisation of the hand-held welding and extruding machine for other purposes than those for which it is intended is subject to the consent of the manufacturer / supplier.

Work on electrical parts of the hand-held welding and extruding machines may only be performed by an electrical engineer in compliance with electro-technical rules.

### **Special risks:**

All hand-held welding and extruding machines may only be held and operated using the handles provided for this purpose.

A risk of burning exists on all **uncovered metal parts**. Avoid contact with these parts because they may achieve temperatures of up to 350 °C.

**Safety area:**

The hot air stream of the hand-held welding and extruding machine may not be directed to temperature-sensitive objects or living things. Ensure that a safety distance of 2 m is observed in all directions.

**Operation:**

Never use hand-held welding and extruding machines without air supply. In case of external air supply ensure that the feed line is of sufficient size.

The pressurised air that is supplied must be free of oil and water.

**Safety:**

Check for correct nominal voltage before connecting the hand-held welding and extruding machine to the mains voltage.

Mains voltage must be identical to the nominal voltage shown on the type plate of the hand-held welding and extruding machine.

Pursuant to sec. 55 of VDE 0 100 the hand-held welding and extruding machine must be operated using a protective switch or an isolation transformer.

**Extension cords:**

When using extension cords the minimum diameter of cables must be observed.

Length up to 18 m: diameter 2.5 mm<sup>2</sup>

Length up to 50 m: diameter 4.0 mm<sup>2</sup>

Extension cords must be approved and marked for their place of utilisation.

**Stop operating the hand-held welding and extruding machine if:**

- connecting line or plug have been damaged
- safety installations have been damaged
- foreign objects or liquids have entered the hand-held welding and extruding machine
- changes occur in the operating state

**Never spray water on hand-held welding and extruding machines  
(risk of short circuit)**

**Never use** hand-held welding and extruding machines in hazardous or inflammable areas.

### **3. Start-up**

#### **General:**

Observe the notes on safety contained in these operating instructions. In addition, the regulations on the prevention of accidents and the national regulations shall apply.

#### **Assembling the hand-held welding and extruding machine**

When dispatched, our hand-held welding and extruding machines are almost completely assembled.

What remains to be done is to screw the enclosed handle to the machine.

For machines with external air supply the air supply hose must be connected.

Ensure sufficient supply with air which is free of oil and water (min. 300 l/min).

We recommend our air compressor, item no. DX 011. Connect extruder with control box.

#### **Weld shoe**

The machine is supplied with two weld shoes blank which can be machined to suit your requirements.

Note: please observe guideline DVS 2207 part 4.

If you indicate your required form of seam and thickness of plates we will supply two weld shoes machined ready for use.

#### **Start-up of hand-held welding and extruding machine**

Observe the section concerning safety of these operating instructions.

Hand-held welding and extruding machines may not be used without air supply. This would inevitably result in damages of the extruder.

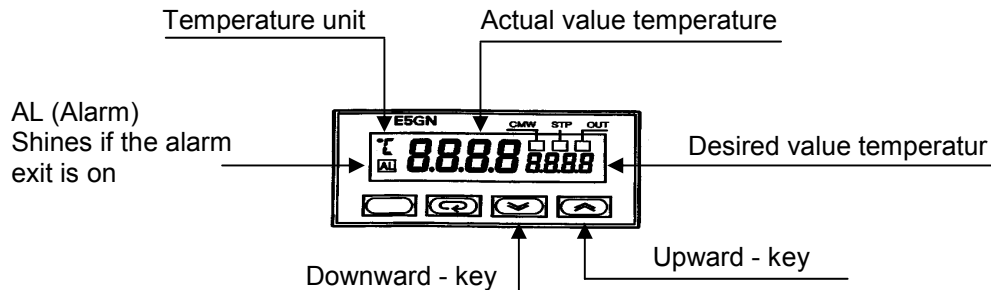
Before connecting the extruder to the mains supply please check that

- the On/Off switch of the heating unit is in OFF position
- air supply is connected correctly
- the driving machine has not been put to permanent operation
- now switch on air supply
- and put plug into socket.

**All our hand-held welding and extruding machines are provided with patented mass measurement (the thermoelement is installed directly in the melting unit, between worm and die) and with cold start protection.**

Now put the On/Off switch of the heating unit into ON position. The machine will heat up to the last selected temperature value. For information on how to modify the desired temperature value please refer to the section on the adjustment of the controlling unit.

## Display and control elements of front part of control unit

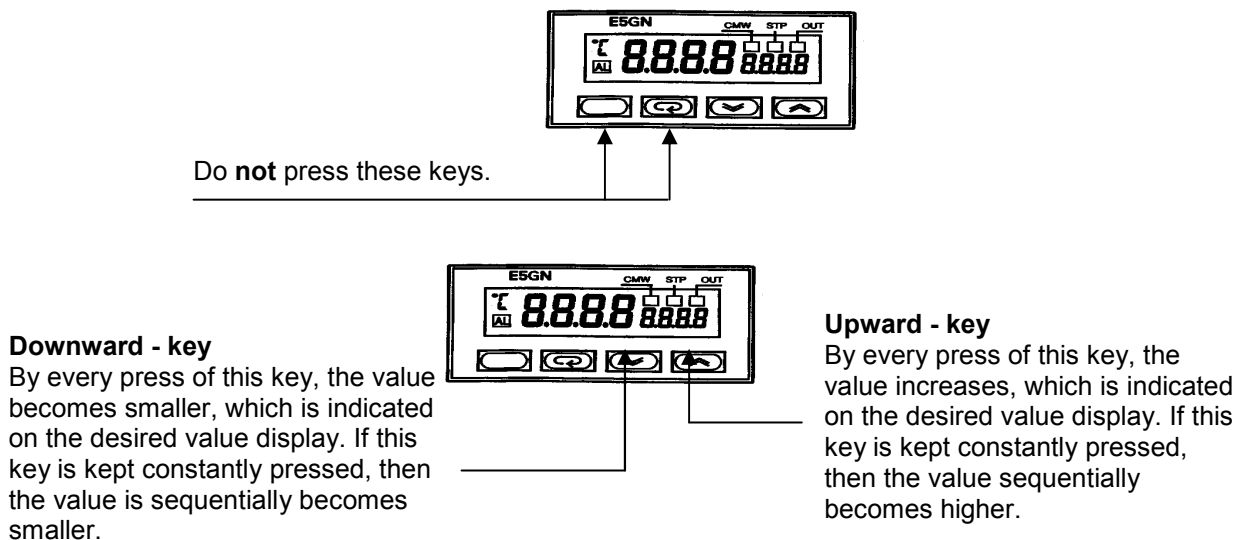


### Controller – desired value setting

All controllers can be changed only in the desired value and are electrically locked against wrong inputs.

### Change the desired value

The controller indicates actual and desired value temperature at the same time. To change the desired value temperature proceed as follows:



### **Changing the welding filler**

Heat up the hand-held welding and extruding machine until operating temperature is reached to ensure that no welding filler is present in the machine, remove the weld shoe and exchange the die (caution, left-handed thread) by a new one or by a die used with the material to be applied now.

### **Caution: Risk of burning when working on the heated machine**

After removing the old die and before placing the new one run the machine for approx. 1 min. on new **Welding filler**.

### **Interruption of welding operations**

Never leave the hand-held welding and extruding machine unattended.

Air supply may not be broken.

Caution: When processing PVC or PVDF, hand-held welding and extruding machines may not be stopped for more than 3 min.

In such a case or if welding operations are completed a cleaning run must be performed on the machine for about 2 min. using PE or PP welding filler.

### **Switching-off the hand-held welding and extruding machine**

Place hand-held welding and extruding machine onto the support stand included in the scope of supply.

Put the On/Off switch into OFF position and pull the plug after about 2 min.

**Caution: Even after 15 minutes there is still a risk of burning present on uncovered metal parts.**

Never use water or other substances to speed up the cooling process.

### **Maintenance**

Always disconnect the machine from power supply before performing any maintenance work.

Maintenance work may only be performed by skilled electricians.

**Observe section on safety contained in these operating instructions!**

### **Inspection**

After an operating time of about 500 hours the hand-held welding and extruding machine and the drive unit must be cleaned, re-filled with new grease and tested.

This work may only be performed by skilled electricians.

### **Drive unit**

Check carbon brushes of the drive unit approximately every 100 operating hours and replace them, if necessary.

### **Thrust bearing / extrusion worm**

It is recommended to clean thrust bearing and extrusion worm and to re-grease the bearing approximately every 200 operating hours.

## 4. Error tracing

### Malfunctioning    Error– No.

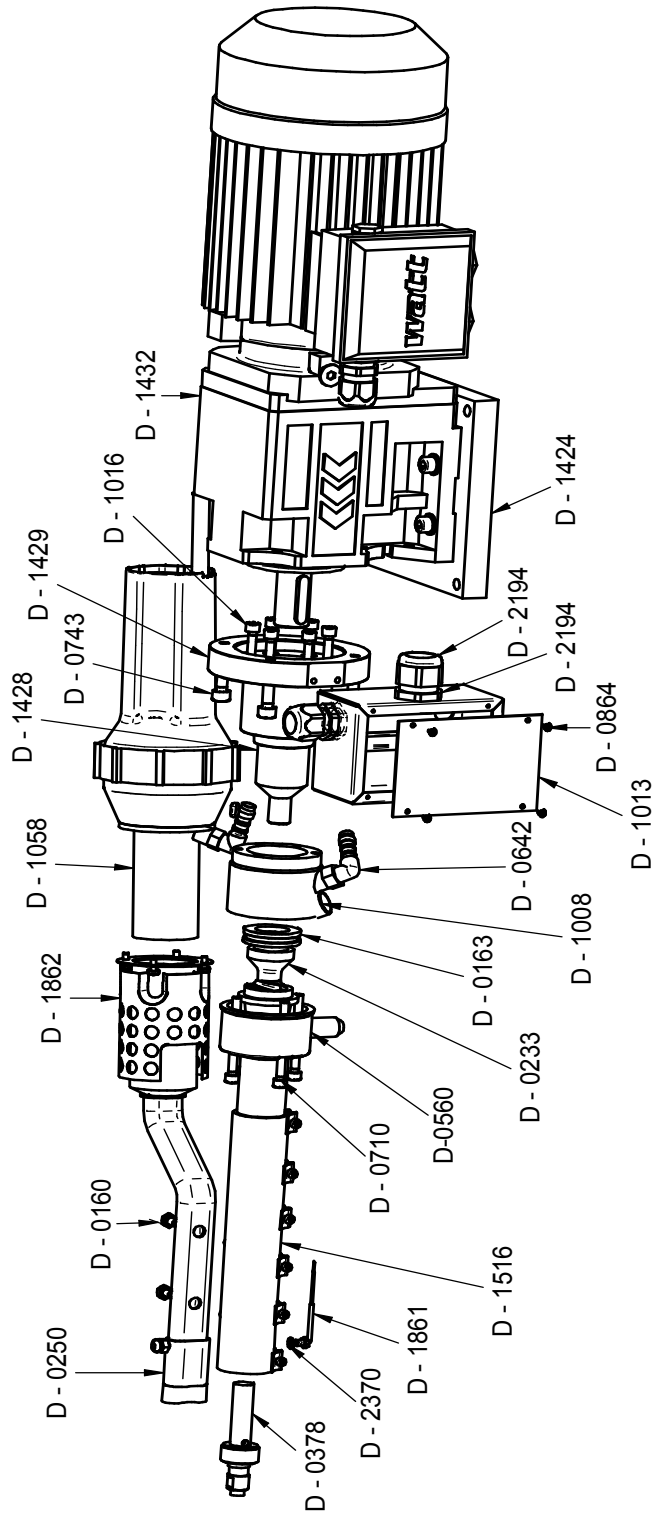
Driving motor does not start	01,02,04,05,06,07,08,09,10,11,12
Driving motor switches off	03,04,05,06,07,08,09,10
Extruder remains cold	04,05,06,07,08,09,15,17
Hot air remains cold	05,07,08,09,12
Hot air temperature is under desired value	11,13
Extrusion temperature is under desired value	11
Extruder does not deliver extruded material from the die	11
Display does not light up	01
Display shows: S . e r r	15
Display not constant	17
Display shows direction of action: -	18

<u>Error-No.</u>	<u>possible cause</u>	<u>Elimination of error</u>
01	No power supply	Provide power supply
02	Incorrect mains voltage	Have checked by skilled technician
03	Extension cord becomes hot	Check cable diameter Run out cable completely from reel
04	Thermoelement for mass defective	Exchange thermoelement
05	Thermoelement for air defective	Exchange thermoelement
06	Temperature control unit for mass defective	Exchange temperature control unit
07	Temperature control unit for air defective	Exchange temperature control unit
08	On/Off switch for heating units in OFF position	Put switch to ON position
09	Defect on cable connections	Have checked by skilled technician
10	Carbon brushes of drive motor worn	Replace by new carbon brushes
11	Pre-heating time too short	Heat up extruder
12	External air supply not connected	Connect external air supply
13	Air flow too high when using external air supply	Reduce to prescribed quantity
15	Breakage of monitoring thermoelement	Replace thermoelement
16	Unsuccessful attempt to change a blocked parameter	Blockage can only be removed by a skilled technician
17	Thermoelement failure or loose connections	Check thermoelement Check connections
18	Sensor incorrectly connected, + and – mistaken	Check connections



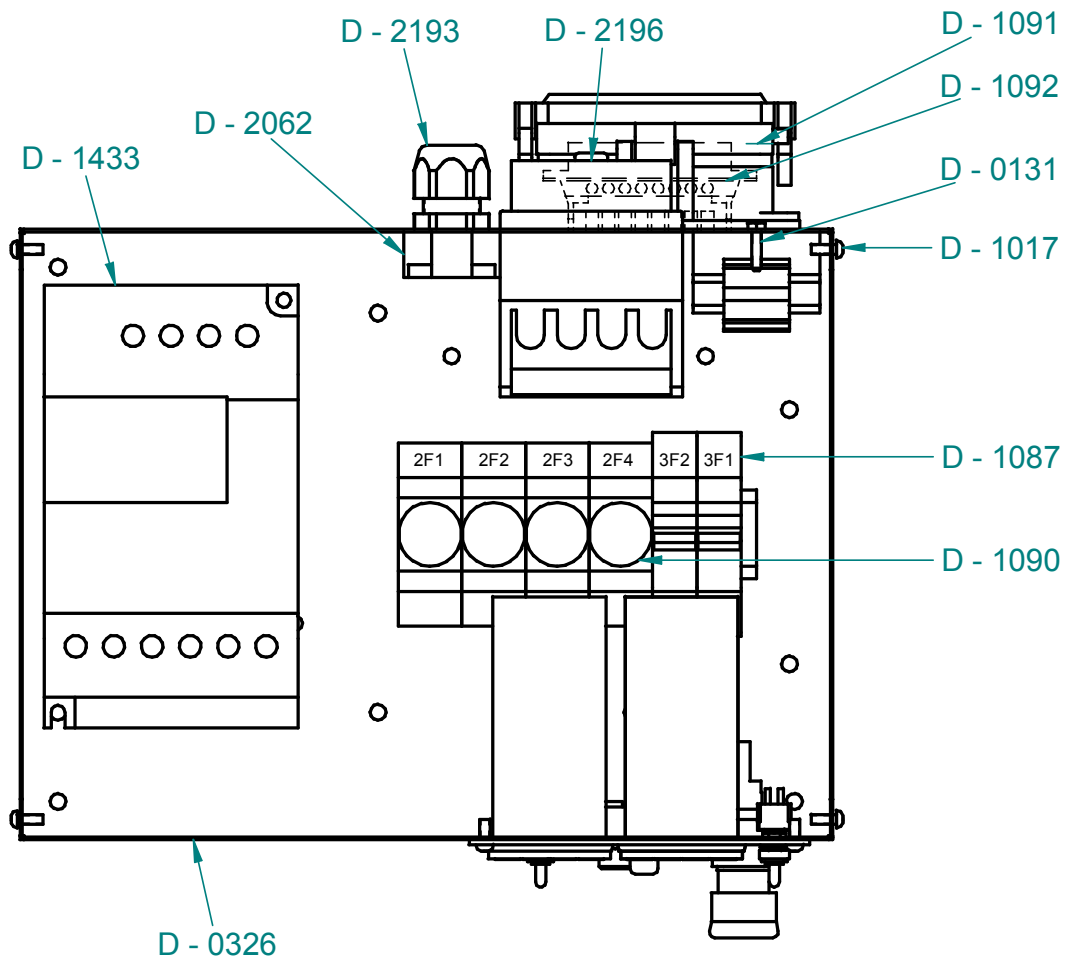
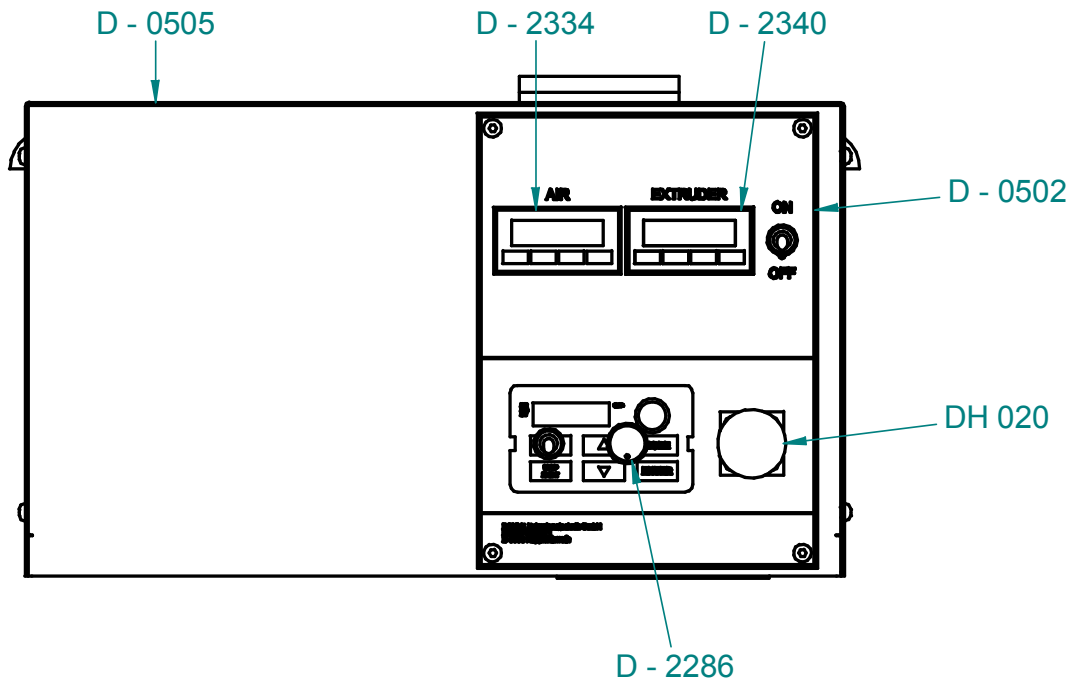
## 5 Drawings, Informations

### DX315 ExOn7 3x400V



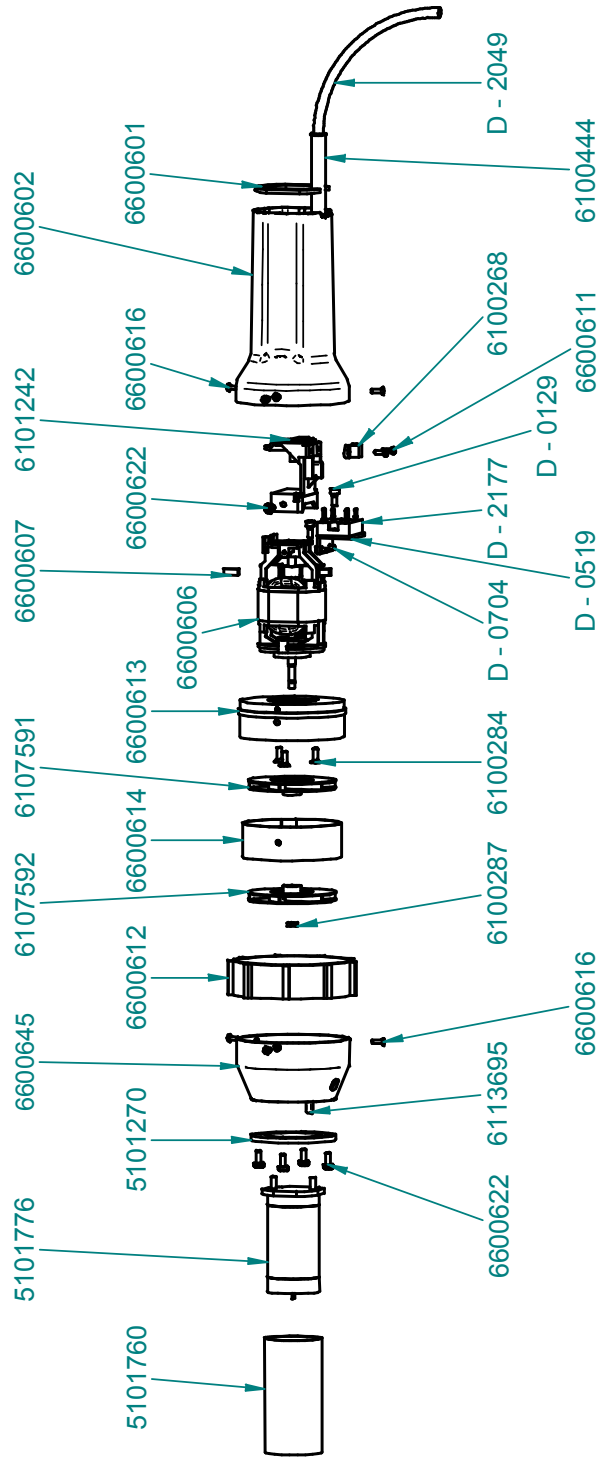
Article-Nb	Description	Qty
D- 0126	screw M5x10 DIN912	2
D- 0160	screw M6x10	2
D- 0163	deep groove ball thrust bearing	1
D- 0170	disc 8,4 DIN 125-A	4
D- 0233	worm type 5000	1
D- 0250	Extension burner pipe 30mm	1
D- 0378	die 5000	1
D- 0386	threaded stud	2
D- 0484	screw M8x25 DIN912	4
D- 0642	elbow screwed plug WES 10/R3/8	1
D- 0710	screw M6x65 DIN912	3
D- 0743	screw M8x35 DIN912	4
D- 0864	screw 29x6.5 DIN7981	4
D- 1008	cylinder draft 5007-400V complete	1
D- 1013	connecting box 5007-6007	1
D- 1016	screw M6x55 DIN912	6
D- 1017	US screw M4x10	4
D- 1058	Eron SSR 5007-6007	1
D- 1424	floor plate	1
D- 1428	adaptor shaft 5012-6012	1
D- 1429	flange 5012-6012	1
D- 1432	spur gear	1
D- 1516	strip heater Ex05-6	1
D- 1861	thermo element extruder Ex05-6	1
D- 1862	blow pipe Ex07-8 Eron	1
D- 2193	screwed cable FG6	3
D- 2194	screwed cable FG21	1
D- 2224	nut FG6	3
D- 2280	nut FG21	1

**control box**

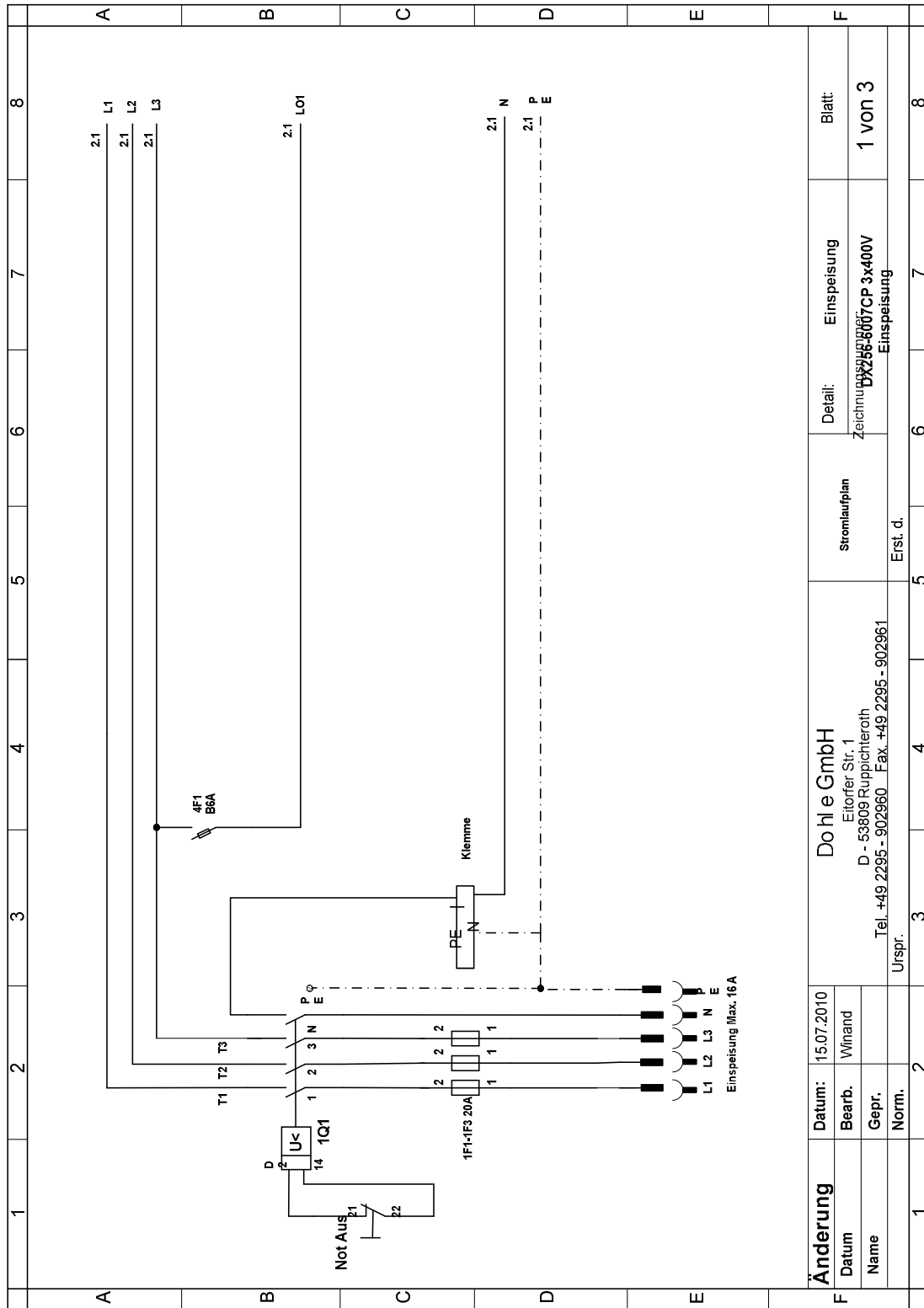


article-no	description	qty
D - 0131	screw M4x16 Ms	1
D - 0326	control box 5000-6000	1
D - 0502	front paneel	1
D - 0505	head control box	1
D - 1017	ULS screw M4x10	12
D - 1087	fuse automat B16A	1
D - 1088	fuse automat 2A	1
D - 1089	fuse 3pol Neozed 16A	1
D - 1090	fuse 1pol Neozed 16A	1
D - 1091	mounting case	1
D - 1092	bush insert	1
D - 1433	frequenzgenerator	1
D - 2012	switch on-off 2-pol	1
D - 2062	solid state	1
D - 2082	switch-heater	1
D - 2193	screwed cable PG16	1
D - 2196	main switch	1
D - 2224	nut PG16	1
D - 2286	potenziometer 47k	1
D - 2334	AIR temp controller	1
D - 2340	Melt temp controller	1
DH 020	emergency stop	1
HS 024	actuator frequency converter	1

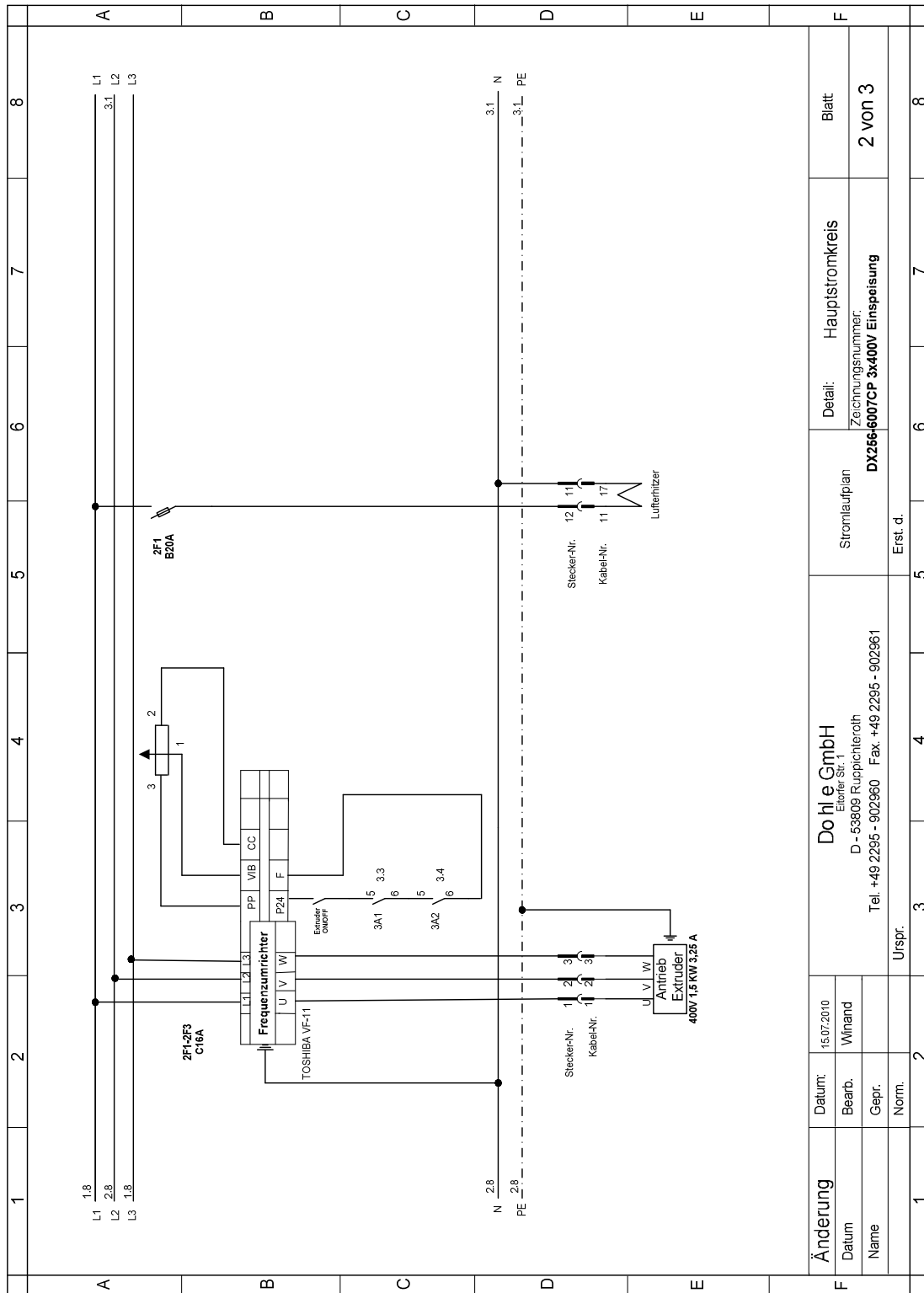
**Eron SSR, Art-Nr: D - 1058**



article-no	description	qty
5101270	gasket 70x48x4	1
5101760	mica tube 47,6x95	1
5101776	heating element 230V/2200W	1
6100268	strain relief	1
6100284	countersunk screw M4x12 TX	3
6100287	hexagon nut M5	1
6100444	cord guard 9,6x75	1
6101242	connecting shackle	1
6107591	turbine	1
6107592	turbine	1
6113695	temperatur limit switch 135°C	1
6600601	air filter	1
6600602	handle	1
6600606	motor 230V SL	1
6600607	carbon brush	2
6600611	PT fillister head screw M3x8 TX	2
6600612	rubber ring	1
6600613	turbine housing lower part	1
6600614	stripper	1
6600616	countersunk screw M3x10 TX	6
6600622	fillister head screw M4x10 TX	5
6600645	turbine housing upper part with hole1/4"	1
D - 0129	screw M4x10 DIN912	2
D - 0519	angle head SSR Eron	1
D - 0704	screw M3x8	2
D - 2048	Ölflex 2x0,5	1
D - 2063	supply cable	1
D - 2177	solid state relais	1

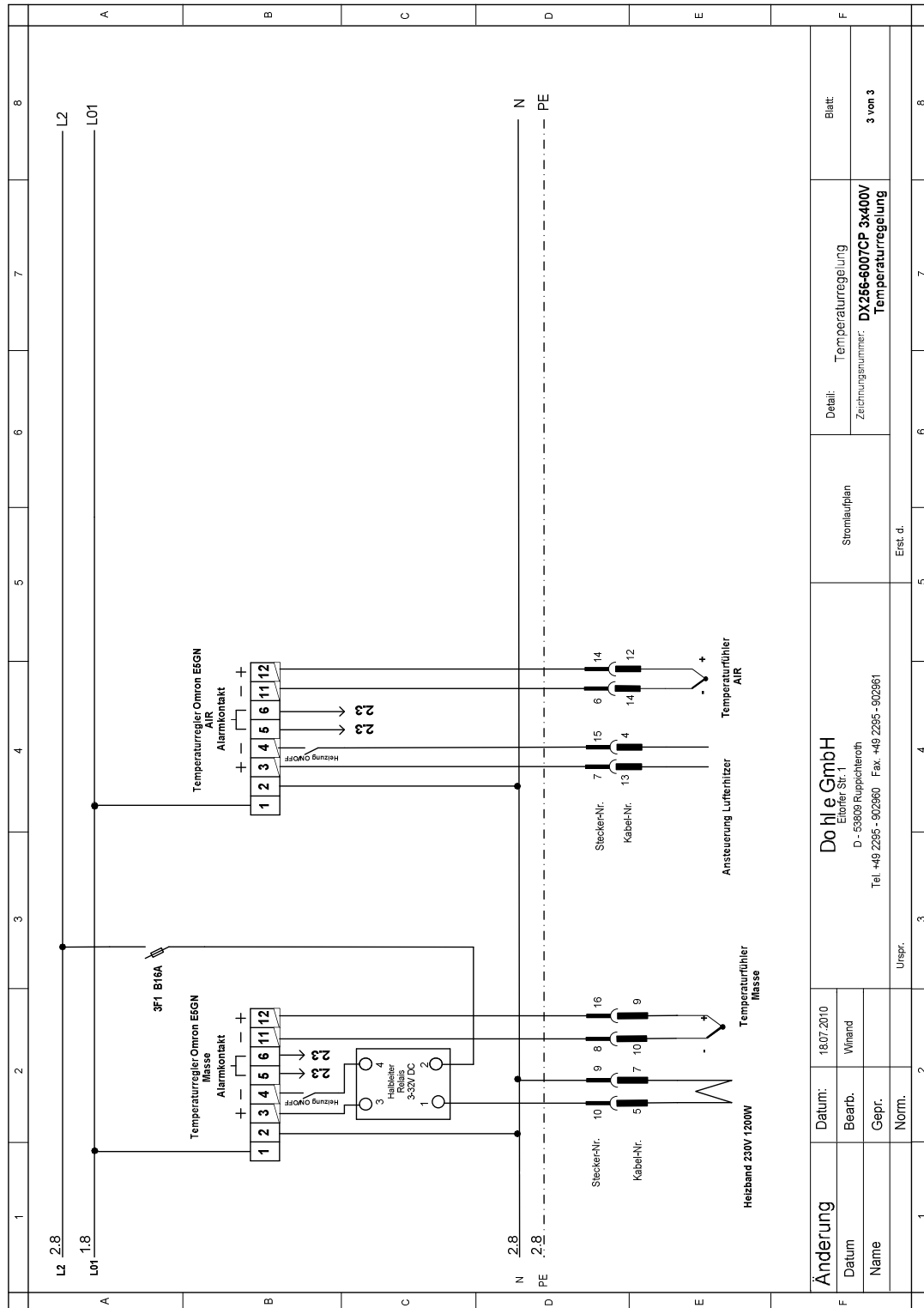


Änderung	Datum:	15.07.2010	Do h l e GmbH		Detail:	Einspeisung	Blatt:
	Bearb.:	Winand	Eitorfer Str. 1		Stromtauplan	DX315 ExOn7 CP 3x400V	1 von 3
	Gepr.:		D - 53809 Ruppichterath		Zeichnungsnummer	Einspeisung	
	Norm.:		Tel. +49 2295 - 902960 Fax. +49 2295 - 902961		Erst d.		
			Urspr.:				



Änderung	Datum:	15.07.2010	Dohle GmbH		Detail:	Hauptstromkreis	Blatt:
	Bearb.	Winand	Eitorfer Str. 1		Stromlaufplan		
	Gepr.		D - 53809 Ruppichterath		Zeichnungsnummer:	DX256-6007CP 3x400V Einspeisung	2 von 3
	Norm.		Tel. +49 2295 - 902960 Fax. +49 2295 - 902961		Erst. d.		
1	2	3	4	5	6	7	8



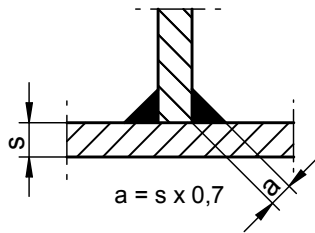


Änderung		Datum:	18.07.2010	Do hle GmbH		Stromaufplan		Detail:		Temperaturregelung		Blatt:	
Datum		Bearb.	Wlmand	Eitorfer Str. 1				Zeichnungsnummer:		DX266-6007CP 3x400V		3 von 3	
Name		Gepr.		D - 53809 Ruppeleroth				Temperaturregelung					
Norm.		Unspr.		Tel. +49 2285 - 902960 Fax. +49 2285 - 902961		Erst. d.							
1	2	3	4	5	6	7	8						

## Welding Shoes

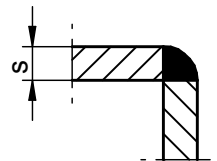
**s = thickness of material**

### fillet weld



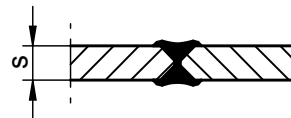
thickness of material	order - no.
5-8	D-0174
10-12	D-0175
15	D-0177
20	D-0178
25	D-0179
30	D-0180
35	D-0181
40	D-0182

### corner weld



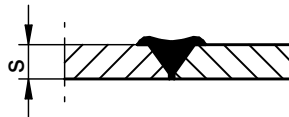
thickness of material	order - no.
5-8	D-0195
10-12	D-0196
15	D-0197

### X - weld



thickness of material	order - no.
10	D-0198
15	D-0199
20	D-0200
25	D-0201
30	D-0202
35	D-0203
40	D-0204

### V-seam

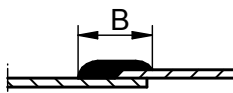


thickness of material	order - no.
5-8	D-0183
10	D-0184
12	D-0185
15	D-0186
20	D-0187
25	D-0188
30	D-0189
35	D-0190
40	D-0191

### welding shoe, round

	order - no.
Ø15	D-0600
Ø20	D-0366
Ø25	D-0337

### overlap weld



width of weld B	order - no.
25	D-0192
30	D-0193
35	D-0194
40	D-0599

### welding shoe - unshaped

size	order - no.
30 x 30 x 45	D-0223
30 x 40 x 50	D-0224
30 x 45 x 45	D-0225
50 x 60 x 80	D-0247
50 x 70 x 80	D-0248
Ø35	D-0598

please require for shoes for special application