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# Bedienungsanleitung

# Operating Instructions

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**ExOn1, DX 297**



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 :	DX297, ExOn1
Machine No. :	.....
Required voltage :	230 V / 50 - 60 Hz
Unit total :	2710 W / 12A

## **2. Safety**

Pursuant to section 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. Always 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 there from.

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.

**Caution: Heat can reach combustible materials!**

### **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 2m is observed in all directions.

**Don't concentrate the heat stream long time on the same area.**

**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.**

**Overhead work:**

When working overhead always wear appropriate safety devices (such as hard hat, goggles etc.).

**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

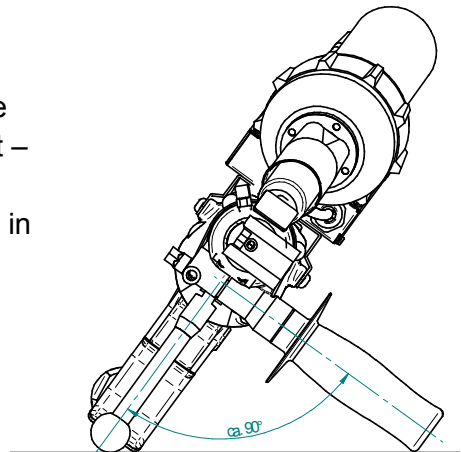
**Never spray water on hand-held welding and extruding machines  
(risk of short circuit)**

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

**To park the tool:**

To save the stand, click the machine base out and put the tool on the three points (machine base – handle drive unit – pivoted handle).

Make sure that the machine base to the pivoted handle is in angle of 90°.



### **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.

#### **Weld fitting**

The machine is supplied with two blanks for weld fittings 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 fittings machined ready for use.

#### **Start-up of hand-held welding extruder**

**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:

- 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.

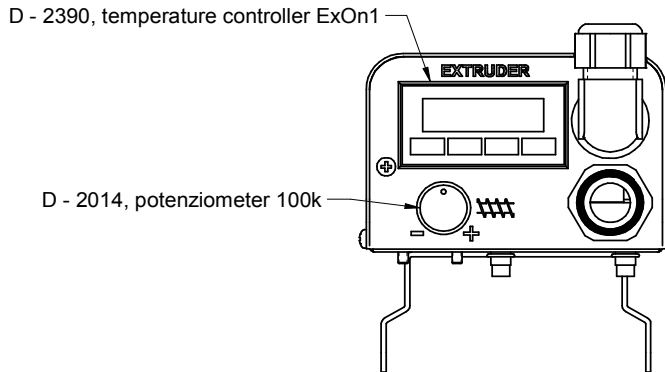
If you give now the power supply plug to a suitable plug socket (230V, 16A), press that On - Off switch on the air heater on position ON.

The machine heats now up.

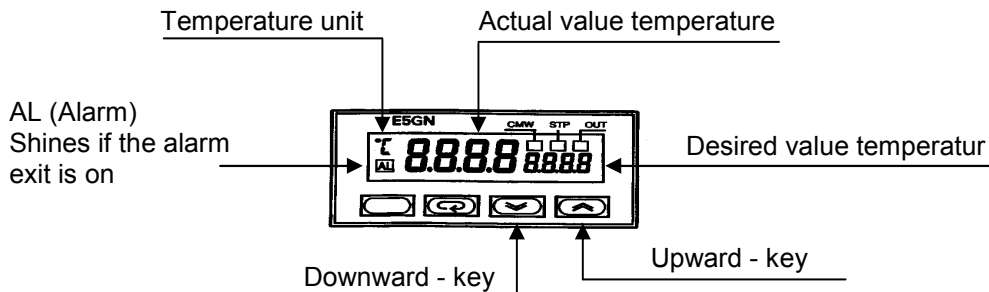
#### **Make sure by each switching on of the machine, that the on-off switch of the drive engine is switched off.**

After a heating-up time of approx. 15 minutes, start the machine using the welding material wished by you and examine the air and welding material temperature with a suitable temperature measurement. By changing the temperature of the air heater consider the reaction response time of the system .

**View – controller front – steering box**



**Display and control elements off he controller front**

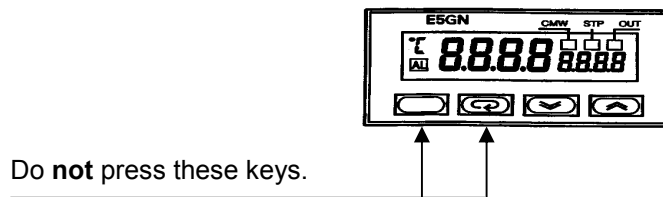


**Controller – desired value setting**

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

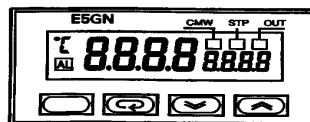
**Change the desired value**

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



**Downward - key**

By every press of this key, the value becomes smaller, which is indicated on the desired value display. If this key is kept constantly pressed, then the value is sequentially becomes smaller.



**Upward - key**

By every press of this key, the value increases, which is indicated on the desired value display. If this key is kept constantly pressed, then the value sequentially becomes higher.

### **Change of the welding shoe**

In order to be sure that no more old welding rod is in the hand welding extrusion, heat up the machine on operating temperature, remove the welding shoe and change the nozzle (**note: left hand thread!**).

### **Note: with work on heated machine burn danger.**

When the nozzle is changed drive for approx. 1 min. the new welding rod in the hand welding extrusion.

### **Interruption of the welding**

Do not leave the hand welding extruder unsupervised.  
The air supply must remain maintained

### **Switch off the hand welding extruder**

Bring the potentiometer of the air heater in position 0 and pull after ca.2 minutes the power supply plug.

### **Note:**

**Also after 15 minutes still exists on bright metal parts burn danger.**

No water or other materials for accelerating the cooling procedure must be used. .

### **Maintenance**

Before maintenance work on the equipment, pull power supply plug!  
Maintenance work may be accomplished only by electrical specialists.

### **Consider the security chapter!**

After approximately 500 operation hours the hand welding extruder, including the drive unit must be cleaned, greased and controlled. These work may be implemented only by electrical specialists.

### **Drive**

The carbon brushes conductors of the drive must be examined approx. every 200 operation hours and renewed if necessary.

### **Deep groove ball thrust bearing /barrel extruder**

The deep groove thrust bearing and the barrel extruder should be cleaned approx. every 200 operation hours and again be greased

**Note: Only high temperature grease can be used. Our art. no.: D-0581**

## **4. Error tracing**

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### **Malfunctioning**

### **Error- No.**

Driving motor does not start 01,02,08,09,10,11,12

Driving motor switches off 03, 08, 09, 10

Extruder remains cold 09,

Hot air remains cold 08, 09,12

Hot air temperature is under 13

desired value

Extrusion temperature is under 11

desired value

### **Error- possible cause**

### **Elimination of error**

### **No.**

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01 no current supply provide current supply

02 wrong rated voltage leave examine from specialist/expert

03 extension cord becomes hot examine line cross section  
unroll completely cable drum

08 On/off switch on OFF Switch on ON

09 defect on cable connection leave examine from specialist/expert

11 Carbon brushes of drive motor worn Replace the carbon brushes  
11 pre-heating time too short Heat up the extruder

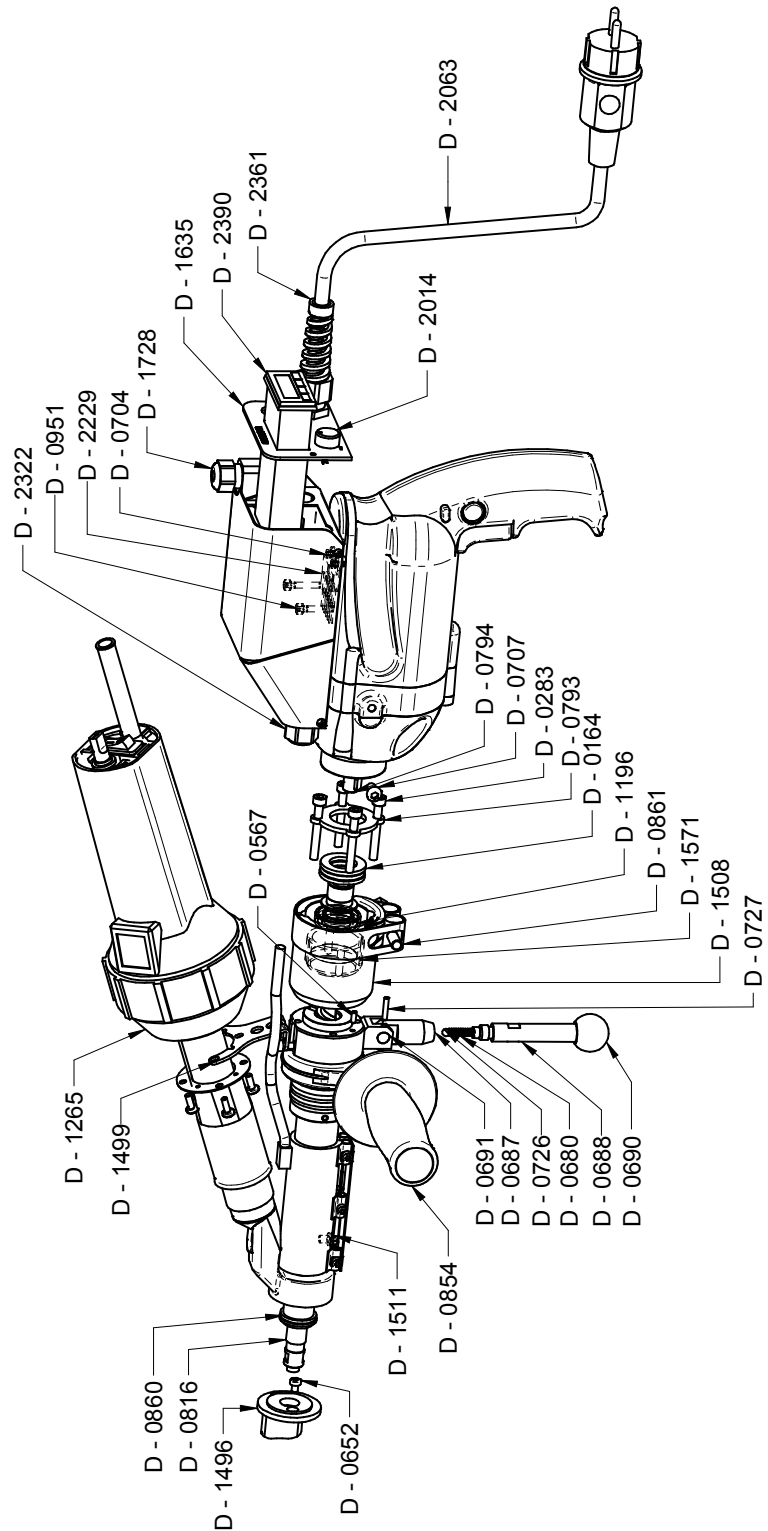
12 external air supply not connected Connect external air supply

13 Air flow too high when using reduce to prescribed quantity



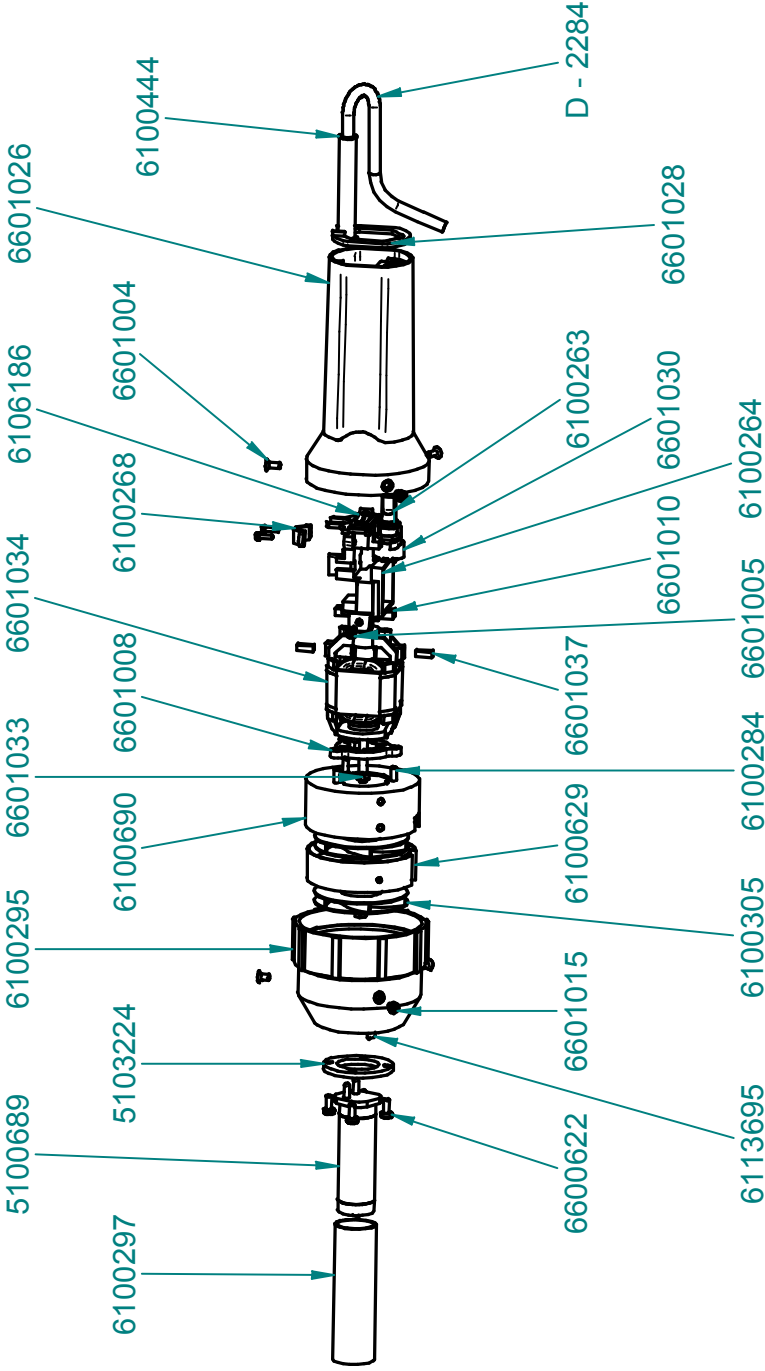
## 5 Drawings, informations

### DX297 ExOn1



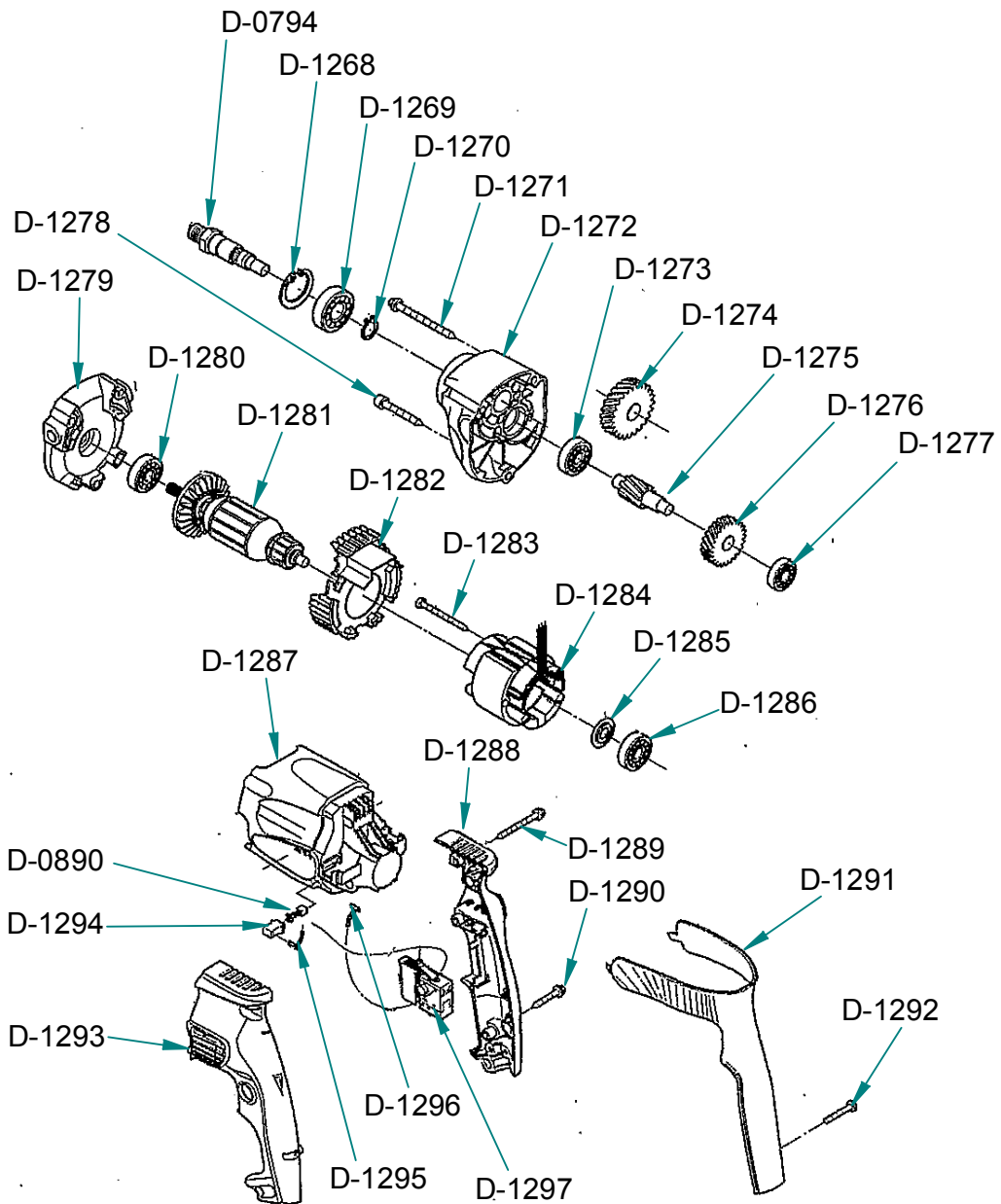
article-no	description	qty
D - 0129	Socket head cap screw M4x10 DIN912	2
D - 0164	deep groove ball thrust bearing	1
D - 0283	screw M5x40	4
D - 0567	Cylindrical pin 3x8 DIN7	1
D - 0652	screw M4x6	1
D - 0680	compression spring handle	1
D - 0687	link	1
D - 0688	link joint 1502-3002	1
D - 0690	ball button 1502 - 6002	1
D - 0691	axis	1
D - 0707	ULS screw M6x10	2
D - 0726	ball	1
D - 0727	press sleeve 3x16	1
D - 0793	disc Mini	1
D - 0794	output shaft	1
D - 0816	die Mini	1
D - 0854	handle	1
D - 0858	drive unit Mini, 230V	1
D - 0860	sealing ring CU	1
D - 0861	hinge pin for hose clamp	1
D - 0864	screw 2.9x6.5 DIN 7981	5
D - 1063	mainboard Mini	1
D - 1196	Deep groove ball bearing 61903 2Z	1
D - 1245	feather key 4x4x10	1
D - 1265	RION 230V/1600W	1
D - 1493	burner pipe ExOn1	1
D - 1496	air nozzle ExOn1	1
D - 1499	holder ExOn1	1
D - 1507	worm ExOn1	1
D - 1508	draft ExOn1	1
D - 1511	thermoelement extruder ExOn1	1
D - 1517	strip heater ExOn1	1
D - 1528	cylinder ExOn1	1
D - 1529	heating tape cover ExOn1	1
D - 1571	bearing ring ExOn1	1
D - 1634	control box ExOn1	1
D - 1635	front paneel ExOn1	1
D - 1728	angle screwed cable M16x1,5	1
D - 2014	potenziometer 100k	1
D - 2063	main cable 8m	1
D - 2229	Triac 25A	2
D - 2322	screwed cable M16x1,5	1
D - 2361	cable screw fitting M16x1,5	1
D - 2390	temperature controller ExOn1	1

RION, Art-No : D - 1265



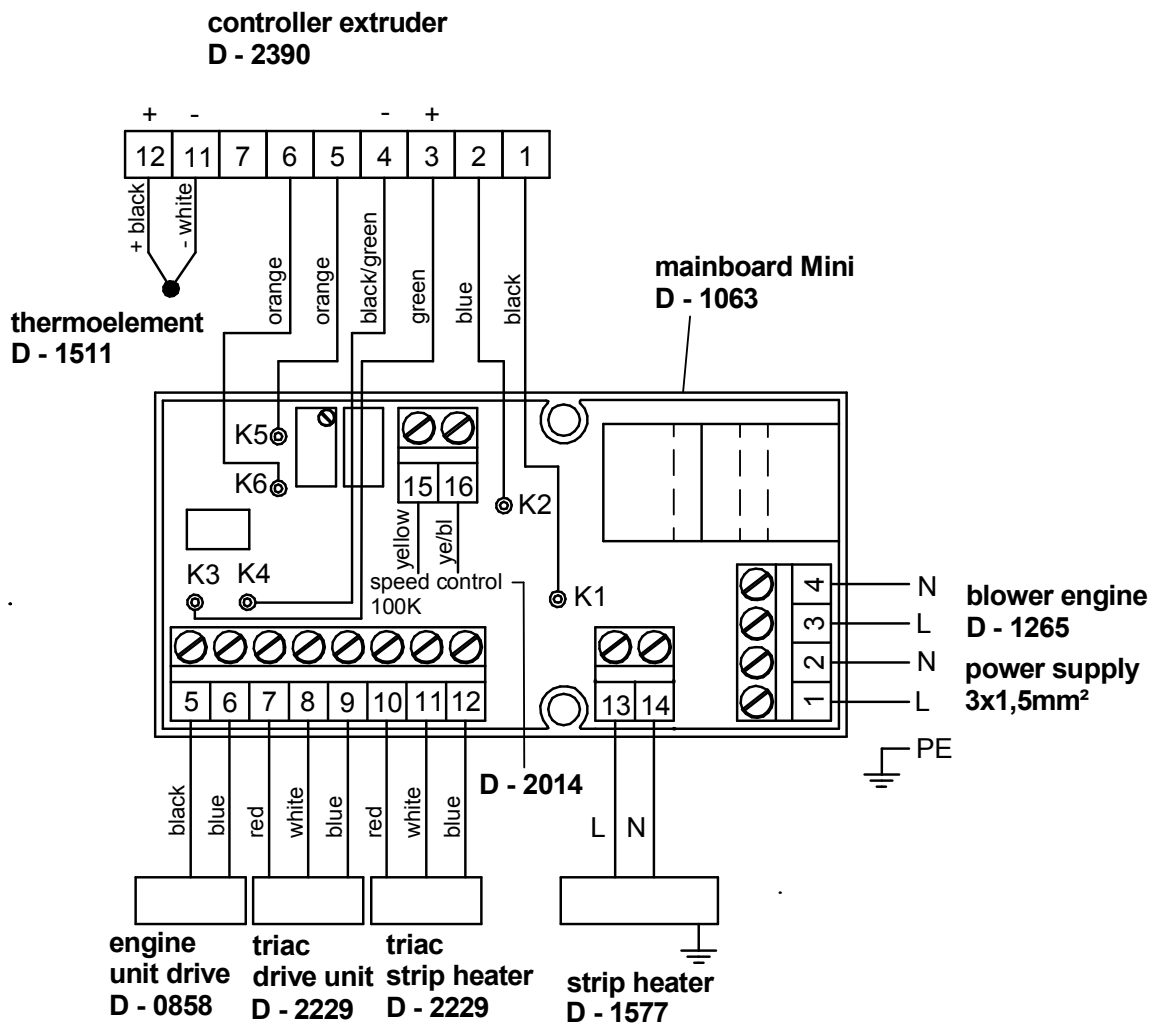
article-no	description	qty
5100689	heating element 230V-1550W	1
5103224	gasket 30/50x4	1
6100263	potentiometer knob red	1
6100264	connecting piece complete	1
6100267	pt-screw KL30x10	2
6100268	strain relief	1
6100284	countersunk screw M4x12 TX	3
6100287	hexagon nut M5	1
6100295	rubber ring	1
6100297	mica tube	1
6100305	turbine	2
6100444	cord guard 9,6x75	1
6100629	stripper	1
6100690	turbine housing	1
6106186	rocker switch	1
6106193	connecting head	1
6113695	temperatur limit switch 135°C	1
6600615	phototransistor	1
6600622	fillister head screw M4x10 TX	4
6601004	screw M4x10 TX	3
6601005	pt-screw KL40x10 TX	2
6601006	electronic circuit board 230V	1
6601008	flange turbine housing	1
6601010	flange connecting piece	1
6601015	screw M4x8 TX	3
6601026	handle	1
6601028	air filter	1
6601030	potenziometer 10KOhm	1
6601033	distance bush	1
6601034	motor RION, 230V	1
6601037	carbon brush 230/120V	2
D - 2284	power supply cord H07 2x1	1

drive D - 0858



<b>article-no</b>	<b>description</b>	<b>qty</b>
D-0794	output shaft Mini	1
D-1268	retaining ring D32 inside	1
D-1269	ball-bearing 6002 VV C7MFA	1
D-1270	retaining ring D15	1
D-1271	tapping screw D 5x60 with flange	2
D-1272	gear cover	1
D-1273	ball-bearing 627 VVM	1
D-1274	end gear	1
D-1275	second gear	1
D-1276	first gear	1
D-1277	ball-bearing 606 ZZM	1
D-1278	tapping screw D 5x40	1
D-1279	inside housing	1
D-1280	ball-bearing 608 DDM	1
D-1281	rotor 230V Mini	1
D-1282	ventilatorguide	1
D-1283	tapping screw	2
D-1284	stator 230V Mini	1
D-1285	washer	1
D-1286	ball-bearing 608 VVM	1
D-1287	housing A+B Set	1
D-1288	handle	1
D-1289	tapping screw D 4x35 with flange	2
D-1290	tapping screw D 4x20 with flange	1
D-1291	handle cover	1
D-1292	srew D 4x25	2
D-1293	handle	1
D-1294	carbon bracket DIV.	2
D-1295	connector wire blue	1
D-0890	corbon brushees pair	1
D-1296	connector wire brown	1
D-1297	switch Mini	1

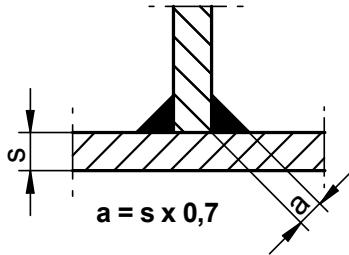
**circuit diagramm**



## Welding shoes ExOn1

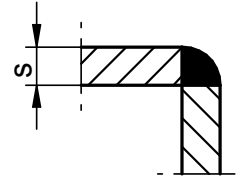
**s = thickness of material**

### fillet weld



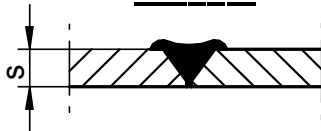
thickness of material	order - no.
5-6	D-0827
8	D-0828
10	D-0829
12	D-0830

### corner weld



thickness of material	order - no.
5-8	D-0837
8-12	D-0838

### V-seam

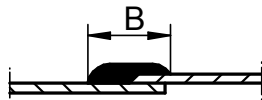


thickness of material	order - no.
5-6	D-0831
8	D-0832
10	D-0833
12	D-0834

### welding shoe, round

	order - no.
Ø10	D-0839
Ø15	D-0840
Ø20	D-0841

### overlap weld



width of weld B	order - no.
20	D-0835
25	D-0836

size	order - no.
30 x 40 x 30	D-0842
Ø30	D-0843

please require for shoes for special application