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Originalfassung

DE BETRIEBSANLEITUNG **DRUCKLUFT INVERTER PLASMA SCHNEIDANLAGE**

Übersetzung / Translation

EN USER MANUAL **WELDER INVERTER PLASMA CUTTER**

CE

DIPA40 DIPA100

YOUR JOB. OUR TOOLS.

Edition: 16.05.2023 – Revision - 00 – EcC - DE/EN

2 SICHERHEITSZEICHEN / SAFETY SIGNS

DE	SICHERHEITSZEICHEN BEDEUTUNG DER SYMBOLE	**EN**	SAFETY SIGNS DEFINITION OF SYMBOLS

DE **CE-KONFORM!** - Dieses Produkt entspricht den EU-Richtlinien.

EN **CE-Conformal!** - This product complies with the EC-directives.

DE BETRIEBSANLEITUNG LESEN! Lesen Sie die Betriebs- und Wartungsanleitung Ihrer Maschine aufmerksam durch und machen Sie sich mit den Bedienelementen der Maschine gut vertraut, um die Maschine ordnungsgemäß zu bedienen und so Schäden an Mensch und Maschine vorzubeugen.

EN READ THE USER MANUAL! Read the user and maintenance carefully and get familiar with the controls in order to use the machine correctly and to avoid injuries and machine defects.

DE Maschine vor Reparatur, Wartung oder Pausen ausschalten und Netzstecker ziehen

EN Switch off the machine before repairing, servicing or stopping work and disconnect mains plug from electrical outlet

DE Persönliche Schutzausrüstung tragen!

EN Wear personal protective equipment!

DE Gefährliche elektrische Spannung

EN Dangerous electrical voltage

DE Warnung vor heißer Oberfläche

EN Warning of hot surface

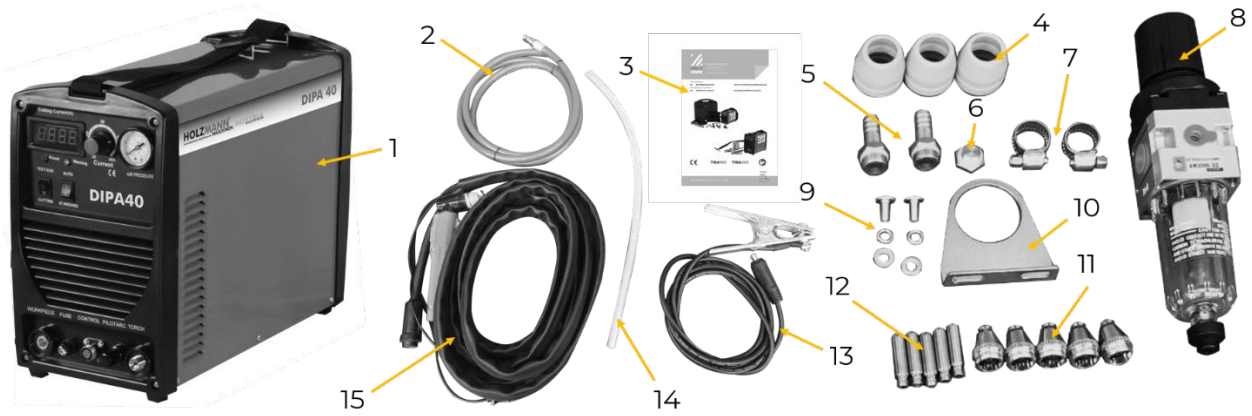
DE **Warnschilder und/oder Aufkleber an der Maschine, die unleserlich sind oder die entfernt wurden, sind umgehend zu erneuern!**

EN **Missing or non-readable safety stickers have to be replaced immediately!**

3 TECHNIK / TECHNICS

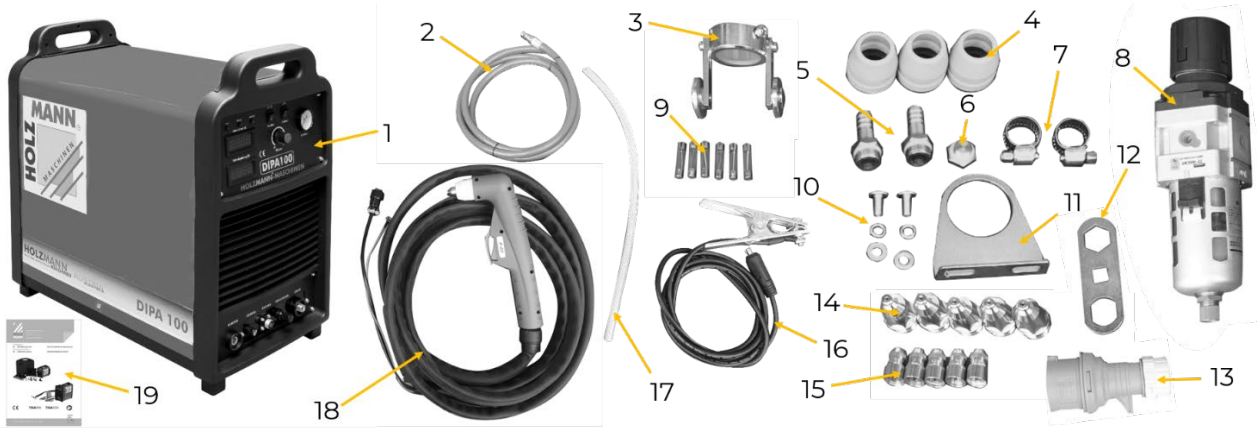
3.1 Lieferumfang / Delivery content

DIPA40



1	Maschine / machine	
2	Lufteingangsschlauch / air inlet hose	
3	Betriebsanleitung / user manual	
4	Keramikhülse / ceramic sleeve	3x
5	Luftanschluss Druckminderer / air connector pressure relief	2x
6	Dichtungskappe Druckminderer / seal cap pressure relief	
7	Schlauchklemme / hose clamp	2x
8	Druckminderer / pressure relief	
9	Schraube, Sicherungsring, Scheibe / screw, circlip, washer	2x
10	Halterung Druckminderer / bracket pressure relief	
11	Schneiddüse / cutting nozzle	5x
12	Elektrode / electrode	5x
13	Massekabel / earth cable	
14	Verbindungsschlauch / connection hose	
15	Schneidbrenner mit Absstandhalter / cutting torch with spacer	

DIPA100



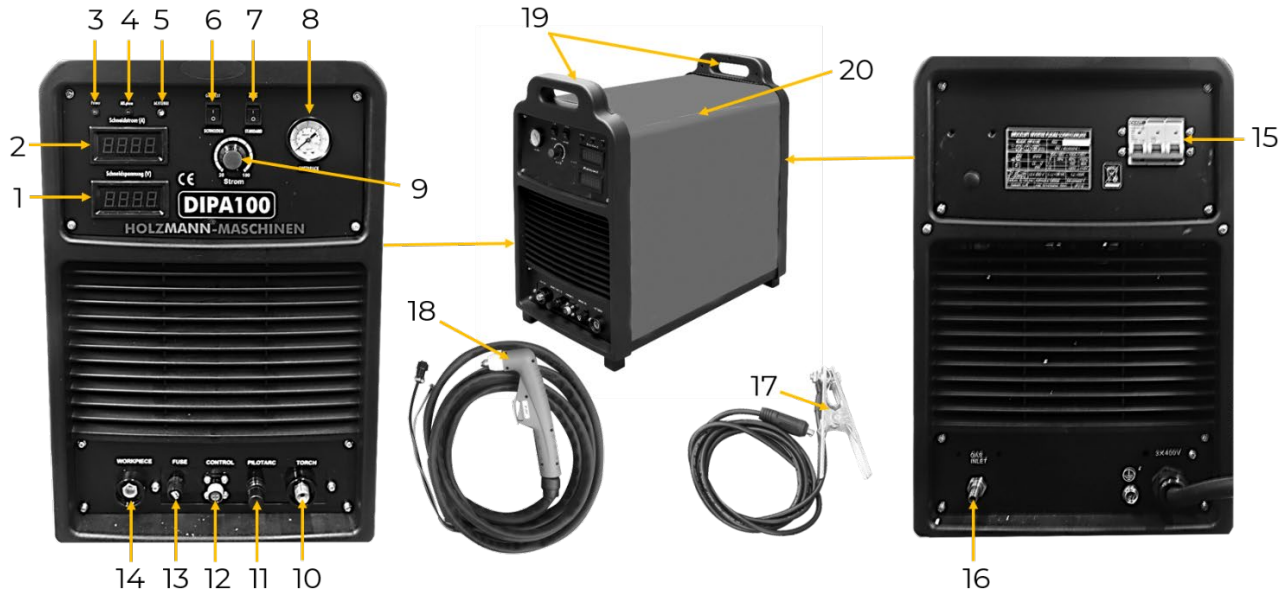
1	Maschine / machine	
2	Lufteingangsschlauch / air inlet hose	
3	Abstandhalter / spacer	
4	Keramikhülse / ceramic sleeve	3x
5	Luftanschluss Druckminderer / air connector pressure relief	2x
6	Dichtungskappe Druckminderer / seal cap pressure relief	
7	Schlauchklemme / hose clamp	2x
8	Druckminderer / pressure relief	
9	Glassicherung 30A / glass fuse 30A	5x
10	Schraube, Sicherungsring, Scheibe / screw, circlip, washer	2x
11	Halterung Druckminderer / bracket pressure relief	
12	Schlüssel / wrench	
13	CEE Stecker 400V / CEE plug 400V	
14	Schneiddüse / cutting nozzle	5x
15	Elektrode / electrode	5x
16	Massekabel / earth cable	
17	Verbindungsschlauch / connection hose	
18	Schneidbrenner / cutting torch	
19	Betriebsanleitung / user manual	

3.2 Komponenten / Components

DIPA40

1	Wahlschalter Luft (0 = Schneiden, 1 = Test) / selector air (0 = cutting, 1 = test)
2	Betriebskontrollleuchte / power indicator light
3	Display Schneidstrom / display cutting current
4	Schneidstromregler / cutting current controller
5	Luftdruckmanometer / air pressure gauge
6	Warnleuchte Überlastschutz / warning lamp overload protection
7	Wahlschalter Schneidmodus (0 = Standard, 1 = Automatik) / Selector cutting mode (0 = standard, 1 = automatic)
8	Schneidbrenneranschluss / cutting torch terminal
9	Pilotlichtbogenanschluss / pilot arc terminal
10	Steuerungsanschluss / control plug
11	Sicherungshalter / fuse holder
12	Buchse Masseklemme / terminal earth clamp
13	Ein-Aus-Schalter (Leistungsschalter) / ON-OFF switch (circuit breaker)
14	Lufteingang / air input
15	Masseklemme / earth clamp
16	Schneidbrenner / cutting torch
17	Trageriemen / carrying strap
18	Gehäuse / housing

DIPA100



1	Display Schneidspannung / display cutting voltage
2	Display Schneidstrom / display cutting current
3	Betriebskontrollleuchte / power indicator light
4	Phasenkontrollleuchte / phase indicator light
5	Warnleuchte Überlastschutz / warning lamp overload protection
6	Wahlschalter Luft (0 = Schneiden, 1 = Test) / selector air (0 = cutting, 1 = test)
7	Wahlschalter Schneidmodus (0 = Standard, 1 = Automatik) / Selector cutting mode (0 = standard, 1 = automatic)
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16	Lufteingang / air input
17	Masseklemme / earth clamp
18	Schneidbrenner / cutting torch
19	Tragegriffe / carrying handles
20	Gehäuse / housing

3.3 Technische Daten / Technical data

Parameter / parameters	DIPA40	DIPA100
Spannung (Frequenz) / voltage (frequency)	230 V (50/60 Hz)	400 V (50/60 Hz)
Eingangsleistungskapazität / input power capacity	6 KVA	17 KVA
Leerlaufspannung / no load voltage	200 V	230 V
Schutzart / protection mode	IP21S	IP21S
Schutzklasse / protection class	F	F
Schneidstrombereich / cutting current range	20A / 88V – 40A / 96V	20A / 88V – 100A / 120V
max. Primärstrom I_{1max} / max. rated input current I_{1max}	28,5 A	28,5 A
max. effektiver Primärstrom I_{1eff} / max. effective input current I_{1eff}	23 A	23 A
min. Energieeffizienz der Stromquelle / min. power source efficiency	81 %	85 %
max. Leistungsaufnahme im Leerlaufzustand / max. idle state power consumption	75 W	160 W
Masseklemme / earth clamp	200 A	200 A
Massekabellänge / earth cable length	3 m	3 m
Schneidbrennerlänge / cutting torch length	4 m	3 m
Luftschlauchlänge / air hose length	2 m	2 m
Anschlusskabel / cord	H05VV-F 3G 2,5mm²	H05RR-F 4G 4mm²
Anschlusskabellänge / cord length	2,3 m	4,6 m
Kühlung / cooling	Lüfter / fan	Lüfter / fan
Einschaltdauer (MMA) / duty cycle (MMA)	60% 40A 100% 31A	60% 100A 100% 80A
max. Schnittstärke / max. cutting capacity	12 mm	35 mm
Betriebsluftdruck / air pressure	2 – 3,5 bar (0,2 – 0,35 MPa)	2 – 4 bar (0,2 – 0,4 MPa)
Luftdurchflussmenge / air flow rate	30 – 100 l/min	30 – 100 l/min
Luftnachströmzeit / air post flow time	10 s	10 s
Netto-Gewicht (mit Zubehör) / net weight (with equipment)	13,5 (16) kg	41 (44) kg
Brutto-Gewicht / gross weight	18,5 kg	58 kg
Verpackungsmaße (L x B x H) / packaging dimensions (L x W x H)	530 x 350 x 395 mm	690 x 410 x 680 mm
Maschinenmaße (L x B x H) / machine dimensions (L x W x H)	415 x 185 x 325 mm	570 x 315 x 570 mm

(DE) Das Gerät erzeugt einen maximalen Schallleistungspegel <80dB(A) bei Leerlauf sowie in der Kühlungsphase nach Betrieb entsprechend dem maximal zulässigem Arbeitspunkt bei Normlast gemäß EN 60974-1.

Ein arbeitsplatzbezogener Emissionswert kann beim Schweißen (und Schneiden) nicht angegeben werden, da dieser verfahrens- und umgebungsbedingt ist. Er ist abhängig von den verschiedensten Parametern wie z.B. Schweißverfahren (MIG/MAG-, WIG/TIG-Schweißen), der angewählten Stromart (Gleichstrom, Wechselstrom), dem Leistungsbereich, der Art des Schweißgutes, dem Resonanzverhalten des Werkstückes, der Arbeitsplatzumgebung u.a.m.

(EN) The unit generates a maximum sound power level <80dB(A) at no load as well as in the cooling phase after operation according to the maximum permissible operating point at standard load in accordance with EN 60974-1.

A workplace-related emission value cannot be specified for welding (and cutting), as this is process and environment dependent. It depends on various parameters such as the welding process (MIG/MAG-, WIG/TIG- welding), the type of current selected (direct current, alternating current), the power range, the type of material to be welded, the resonance behaviour of the workpiece, the workplace environment, and many more.

11 PREFACE (EN)

Dear Customer!

This operating manual contains information and important notes for safe commissioning and handling of the WELDER INVERTER PLASMA CUTTER DIPA40 and DIPA100, hereinafter referred to as "machine".

The manual is an integral part of the machine and must not be removed. Keep it for later use in a suitable place, easily accessible to users (operators), protected from dust and moisture, and enclose it with the machine if it is passed on to third parties!

Please pay special attention to the chapter Safety!

Due to the constant further development of our products, illustrations and contents may differ slightly. If you notice any errors, please inform us.

Technical changes reserved!

Check the goods immediately after receipt and make a note of any complaints on the consignment note when the delivery person takes them over!

Transport damage must be reported separately to us within 24 hours.

Holzmann Maschinen GmbH cannot accept any liability for transport damage not noted.

Copyright

Court of jurisdiction is the Landesgericht Linz or the competent court for 4170 Haslach, Austria!

Customer service contact

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AUSTRIA
Tel +43 7289 71562 - 0
info@holzmann-maschinen.at

12 SAFETY

This section contains information and important notes on safe start-up and handling of the machine.

For your own safety, read these operating instructions carefully before putting the machine into operation. This will enable you to handle the machine safely and prevent misunderstandings as well as personal injury and damage to property. In addition, observe the symbols and pictograms used on the machine as well as the safety and hazard information!

12.1 Intended use of the machine

The machinery is intended exclusively for the following operations: for plasma cutting with direct current and supply of air of electrically conductive metals, each within the prescribed technical limits.

NOTE	
	HOLZMANN MASCHINEN GmbH assumes no responsibility or warranty for other activities and any resulting property damage or injuries!

12.1.1 Technical restrictions

The machine is intended for use under the following ambient conditions:

Rel. Humidity:	max. 50 % at 40 °C; max. 90 % at 20 °C
Temperature (Operation)	-10 °C to +40 °C
Temperature (Storage, Transport)	-20 °C to +50 °C

12.1.2 Prohibited Applications / Hazardous misapplications

- Operating the machine without adequate physical and mental aptitude.
- Operating the machine without knowledge of the operating instructions.
- Changes in the design of the machine.
- Operating the machine in rooms that do not have sufficient ventilation.
- Operating the machine in a damp or wet environment.
- Operating the machine in a potentially explosive environment (machine can generate ignition sparks during operation).
- Operating the machine close to flammable materials.
- Operating the machine to defrost pipes.
- Operating the machine close to people who have a pacemaker.
- Operating the machine outside the technical limits specified in this manual.
- Remove the safety markings attached to the machine.
- Modify, circumvent or disable the safety devices of the machine.

The improper use or disregard of the versions and instructions described in this manual will result in the voiding of all warranty and compensation claims against Holzmann Maschinen GmbH.

12.2 User Requirements

The machine is designed for operation by one person. The physical and mental aptitude as well as knowledge and understanding of the operating instructions are prerequisites for operating the machine. Persons who, because of their physical, sensory or mental abilities or their inexperience or ignorance, are unable to operate the machinery safely must not use it without supervision or instruction from a responsible person.

Basic knowledge of welding and metal working especially the correlation of material, electrodes, and current.

Please note that local laws and regulations may determine the minimum age of the operator and restrict the use of this machine!

Put on your personal protective equipment before working on the machine.

Work on electrical components or equipment may only be carried out by a qualified electrician or under the instruction and supervision of a qualified electrician.

12.3 Safety devices

The machine is equipped with the following safety devices:

	• Overload protection: Warning lamp lights up in case of overload. Let the machine cool down!
DIPA40  DIPA100 	• Circuit breaker: Switches the machine off at too high current

12.4 General safety information

To avoid malfunctions, damage and health hazards when working with the machine, in addition to the general rules for safe working, the following points must be observed:

- Before start-up, check the machine for completeness and function. Only use the machine if the guards and other non-parting guards required for machining have been fitted, are in good operating condition and have been properly maintained.
- Choose a level, vibration-free, non-slip surface for the installation location.
- Ensure sufficient space around the machine!
- Ensure sufficient lighting conditions at the workplace to avoid stroboscopic effects.
- Ensure a clean working environment.
- Keep the area around the machine free of obstacles (e.g. dust, chips, cut workpiece parts etc.).
- Only use perfect tools that are free of cracks and other defects (e.g. deformations).
- Remove tool keys and other adjustment tools from the machine before switching it on.
- Check the machine connections for strength before each use.
- Never leave the running machine unattended. Switch off the machine before leaving the working area and secure it against unintentional or unauthorised recommissioning.
- The machine may only be operated, serviced or repaired by persons who are familiar with it and who have been informed of the dangers arising during this work.
- Ensure that unauthorised persons maintain a safe distance from the machine and keep children away from the machine.
- When working on the machine, never wear loose jewellery, loose clothing, ties or long, open hair.
- Hide long hair under hair protection.
- Wear close-fitting protective clothing (flame resistant) and suitable protective equipment (eye protection, welding helm, welding screen, ear protection, welding gloves, stout footwear).
- Metal dust can contain chemical substances that can have a negative effect on health. Work with the machine should only be carried out in well-ventilated rooms. If necessary, use a suitable extraction system.
- If there are connections for dust extraction, make sure that they are properly connected and in working order.
- Always work with care and the necessary caution and never use excessive force.
- Do not overload the machine!
- Shut down the machine and disconnect it from the power supply before carrying out any adjustment, conversion, cleaning, maintenance or repair work
- Before starting any work on the machine, always wait until all tools or machine parts have come to a complete standstill and secure the machine against unintentional restarting.

- Do not work on the machine if it is tired, not concentrated or under the influence of medication, alcohol or drugs!
- Do not use the machine in areas where vapours from paints, solvents or flammable liquids represent a potential danger (danger of fire or explosion!).

12.5 Electrical safety

- Make sure that the machine is grounded.
- Only use suitable extension cables.
- A damaged or tangled cable increases the risk of electric shock. Handle the cable with care. Never use the cable to carry, pull or disconnect the power tool. Keep the cable away from heat, oil, sharp edges or moving parts.
- Proper plugs and outlets reduce the risk of electric shock.
- Water entry into the machine increases the risk of electric shock. Do not expose the machine to rain or moisture.
- The machine may only be used if the power source is protected by a residual current circuit breaker.
- Use the machine only when the ON-OFF switch is in good working order.
- Before connecting the machine always make sure that it is switches off.

12.6 Special safety instructions for this machine

- Only electrodes and cutting nozzles suitable for the machine may be used.
- Never immerse the cutting torch in liquids for cooling.
- Never touch the cutting torch when the power source is switched on.
- Do not expose yourself or other persons without protection to electric arc or hot metal. Spraying welding pearls may cause burns.
- Do not carry out welding or cutting work on sealed tanks, vessels or pipes unless these have been prepared in accordance with the relevant national and international standards.
- Do not carry out welding or cutting work on containers that are being or have been used to store gases, propellants, mineral oils or similar products. Residues pose an explosive hazard.
- Workplaces shall be shielded in such a way that persons in the vicinity are protected.
- Keep your face away from welding/cutting fumes and gases.
- Ensure an adequate supply of fresh air. Otherwise, a welding helmet with an air supply must be worn.
- Sparks and pieces of hot metal may also get into adjacent areas through small gaps or openings. Take appropriate precautions to prevent any danger of injury or fire.
- A suitable, tested fire extinguisher must be available and ready for use.
- Make sure that you and others are protected with an adequately insulated, dry base or cover for the earth or ground potential. This base or cover must extend over the entire area between the body and the earth or ground potential.
- Do not wrap cables or leads around the body or parts of the body.
- Ensure that the earth clamp is firmly connected to the workpiece as close as possible to the welding/cutting point. Make sure that the connection at the contact point is metallically bright!

12.7 Hazard Warnings

Despite the intended use, certain residual risks remain.

- Never touch the workpiece during or after welding/cutting
  - risk of burns
- Slag can jump off cooling workpieces
  - The specified protective equipment must therefore also be worn when reworking workpieces and steps must be taken to ensure that other people are also adequately protected.
- Risk of electric shock if incorrect electrical connections are used.
- Risk of tripping due to supply lines on the floor.
  - Properly route supply lines and cables

Residual risks can be minimized if the "Safety instructions" and the "Intended use" as well as the operating instructions are observed. Due to the design and construction of the machine,

hazardous situations may occur when handling the machines, which are identified in these operating instructions as follows:

DANGER
A safety instruction designed in this way indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING
Such a safety instruction indicates a potentially hazardous situation which, if not avoided, may result in serious injury or even death.

CAUTION
A safety instruction designed in this way indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE
A safety notice designed in this way indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Irrespective of all safety regulations, your common sense and appropriate technical suitability/training are and will remain the most important safety factor for error-free operation of the machine. Safe working primarily depends on you!

13 TRANSPORT

For proper transport, follow the instructions and information on the transport packaging regarding centre of gravity, attachment points, weight, means of transport to be used and prescribed transport position, etc.
Transport the product in its packaging to the place of installation. When lifting, carrying and depositing the load, make sure that you are in the correct posture:

- **Lifting, Depositing** Ensure stability when lifting / setting down (legs hip width). Lift / lower load with bent knees and straight back (like weightlifter). Do not lift / lower the load jerkily.

- **Carrying** Carry load with both hands as close to body as possible. Carry load with straight back.

Always secure the assembled product during transport in the transport position to prevent damage to the product.

- Do not lift or transport operational devices
- Switch off devices before transport or lifting
- Before transporting the device detach the shielding gas cylinder

14 ASSEMBLY

14.1 Preparatory activities

14.1.1 Checking delivery content

Always note visible transport damage on the delivery note and check the machine immediately after unpacking for transport damage or missing or damaged parts. Report any damage to the machine or missing parts immediately to your retailer or freight forwarder.

14.1.2 Site requirements

Place the machine on a level (max. permissible tilt angle ≤10°) solid surface. The space required by the machine and the required load-bearing capacity of the subfloor result from the technical data (dimensions, weight) of your machine. When designing the working area around the machine, observe the local safety regulations. When dimensioning the required space, ensure there is an all-round clearance of 0.5 m to ensure that cooling air can flow in and out freely and take into account that the operation of the machine must be possible without restrictions at all times. The selected installation location must ensure a suitable connection to the power supply.

Use spot extraction and room extraction. Ensure sufficient fresh air supply - ventilation rate of at least 20 m^3 / hour.

14.1.3 Assembling

The machine is pre-assembled, the parts removed for transport must be assembled (instructions at the respective configuration) and the connection to mains have to be made.

Assembly pressure relief

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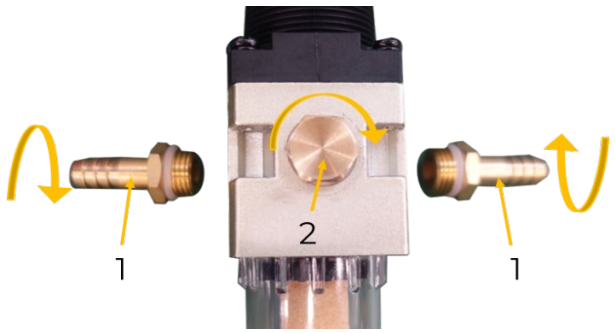
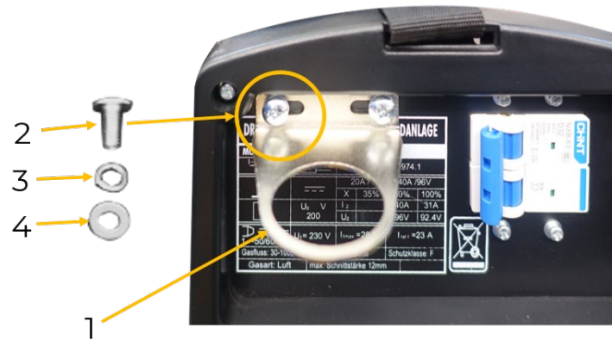
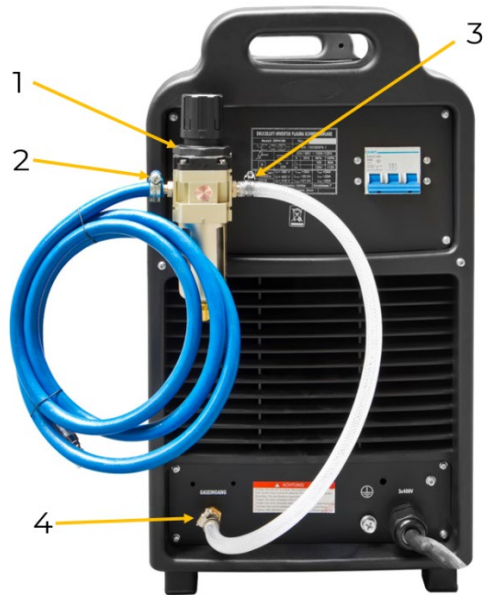
<tr>
<td> 
</td>
<td>• Remove protective caps
• Screw in air connectors (1) and seal cap (2)

NOTE
Absolute cleanliness must be ensured during assembly!</td>
</tr>
<tr>
<td> 
</td>
<td>• Fix the bracket (1) with screw (2), circlip (3) and washer (3) into the mounting holes</td>
</tr>
</table>



- Insert the pressure relief (1) into the bracket and fix it with the fastening nut.
- Push the air inlet hose onto the air connection (IN) and fix it with the hose clamp (2).
- Push the connecting hose onto the air connector (OUT) and fix it with the hose clamp (3).
- Push the other end of the connection hose onto the air input and fix it with the hose clamp (4).

14.2 Electrical connection

WARNING

Dangerous electrical voltage!

→ The machine may only be connected to the power supply and the associated checks carried out by a qualified electrician or under the instruction and supervision of a qualified electrician!

- Check, whether the neutral connection and the protective grounding function properly.
- Check, whether the supply voltage and the frequency correspond to the specifications of the machine.

NOTE

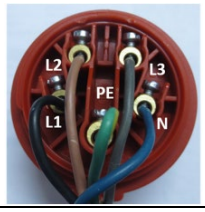
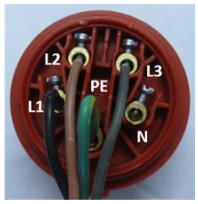
Deviation of the supply voltage and frequency!

A deviation from the value of the supply voltage of ±5 % is permissible.
A short-circuit fuse must be provided in the power supply system of the machine!

- Use a supply cable that fulfils the electrical requirements (e.g. H07RN, H05RN) and take the required cross-section of the supply cable from a current carrying capacity table. Pay attention to the measures for protection against mechanical damage.
- Make sure that the power source is protected by a residual current circuit breaker.
- Connect the device only to a properly grounded outlet.
- When using an extension cable, make sure that the dimension matches the connected load of the machine. The connection power can be found in the technical data, the correlation of cable cross-section and cable lengths can be found in the technical literature or obtain information from a specialist electrician.
- A damaged cable must be replaced immediately.

14.2.1 Setting up a 400 V machine

- The grounding conductor is yellow-green.
- Connect the supply cable to the corresponding terminals in the input box (L1, L2, L3, N and PE). If a CEE plug is available, the connection to the mains is made through an appropriately powered CEE coupling (L1, L2, L3, N and PE).

Plug connection 400V:	5-wire: **with** N-conductor	
	4-wire: **without** N-conductor	

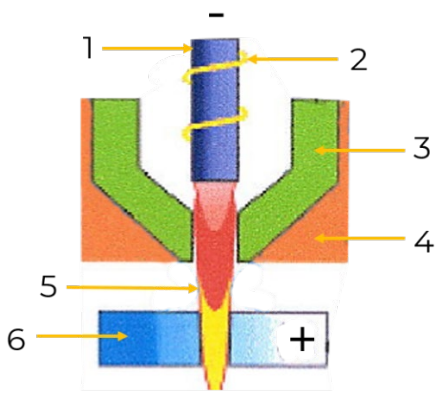
- After the electrical connection, check the correct running direction. If the machine runs in the wrong direction, swap two conductive phases, e.g. L1 and L2, at the connection plug.

NOTE

- Operation is only permitted with residual current device (RCD) with maximum residual current of 30 mA. Mains fuse 16 A (C).

15 OPERATION

15.1 Basic knowledges



1) Electrode
2) Cutting gas (air)
3) Cutting nozzle
4) Ceramic sleeve
5) Arc
6) Parent material

Plasma cutters are operated by pushing pressurised gas, e.g. air, through a small pipe. In the centre of the pipe, there is a negatively charged electrode that is directly above the cutting nozzle. The plasma is forced into a rapid rotational movement. If you supply the negative electrode with current and make the tip of the cutting nozzle touch the metal, this connection creates a closed, electrical circuit. A powerful spark occurs between the electrode and the metal. While the gas flows into the pipe, the spark heats up the gas until it has reached the plasma condition. This reaction causes a current from the controlled plasma with a temperature of 17.000 °C or more that moves at speed of 6.1 m/s and the metal transforms into steam and molten discharge. The plasma itself conducts electrical current. The working circuit that allows the arc to occur remains as long as current is supplied to the electrode and the plasma remains in contact with the metal to be processed. The cutting nozzle has a range of further channels. These channels generate a constant flow of protective gas around the cutting area. The pressure of the gas flow controls the radius of the plasma jet.

NOTE

This machine is designed to use compressed air as “gas” only.

Note: Before working on the actual workpiece, first gain some experience on residual or test pieces.

15.1.1 Notes on operation

Setting the cutting current

The current is set using the amperage on the plasma cutter. It depends on the material to be cut on the one hand and on the cutting nozzle size on the other.

Cutting speed

Large cutting nozzle diameter and high cutting current = high cutting speed.

Cutting quality

Small cutting nozzle, low cutting current and low cutting speed = high cutting quality

Adjusting the air pressure

A constant air pressure is necessary to prevent the cutting arc from interrupting.

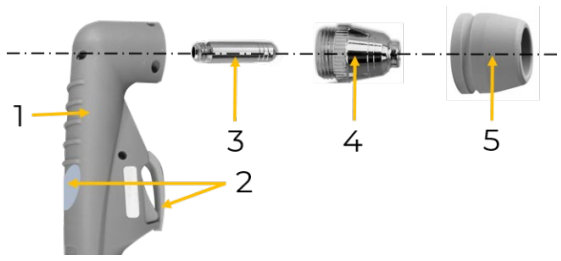
If the pressure is too high, the electrodes will wear out faster. If the pressure is too low the cutting nozzle can be damaged. In addition the cut becomes unclean.

Generally: The pressure is set in a plasma cutter when the air is flowing.

15.1.2 Cutting torch

The cutting torch is the plasma cutter's tool. Its function has a significant impact on the cutting quality. The torch is connected to the plasma cutter via the hose package. The cutting current lead runs through the hose package, along with the air supply and the control lead which allows various functions to be switched on and off using the switch on the torch.

Design:

	**1:** Handle
	2: Cutting torch button
	3: Electrode
	4: Cutting nozzle
	5: Ceramic sleeve

15.2 Operating the machine

WARNING

Danger due to electrical voltage!

Handling the machine with connected power supply may result in serious injury or death.

→ Always disconnect the machine from the power supply before maintenance or repair work and secure it against unintentional reconnection.

CAUTION

Danger of personal injury and damage to property due to electric shock.

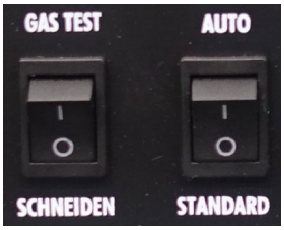
As soon as the machine is switched on, the electrode is live. Make sure that the electrode does not touch any persons or electrically conductive or earthed parts (e.g. housing, etc.).

15.2.1 Switch the machine on and off

DIPA40:		Position right: Switch on Position left: Switch off

DIPA100:		Up position : Switch on Down position right: Switch off

15.2.2 Set selector switch

	Selector air: 0 = cutting 1 = test	Selector cutting mode: 0 = standard 1 = automatic

Selector air:

0 = Cutting: Set for cutting

1 = Test: Set for testing the air supply

Selector cutting mode:

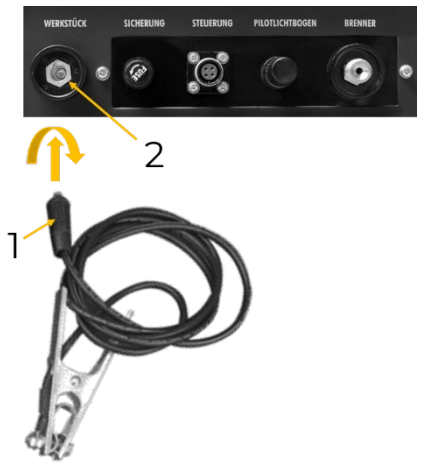
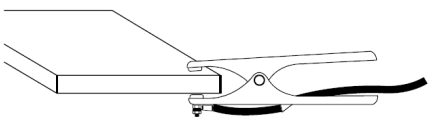
0 = Standard: Arc ignites when the cutting torch button is pressed and goes out when the cutting torch button will be released

1 = Automatic: Arc ignites when the cutting torch button is pressed and goes out when the cutting torch button will pressed again

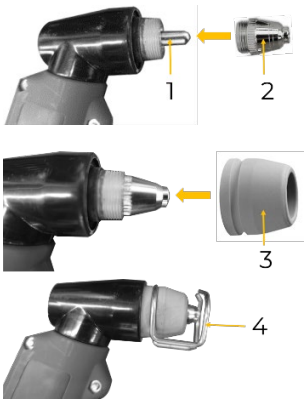
NOTE

Do not make settings with the selector switches during the cutting process. This may cause irreparable damage to the machine.

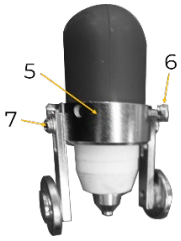
15.2.3 Connecting the earth clamp

	Plug the earth cable (1) into the terminal earth clamp (2) and lock it by turning.
	Use the earth clamp to make a connection with the workpiece

15.2.4 Clamping the electrode and cutting nozzle



- Screw in electrode (1)
- Screw in the cutting nozzle (2)
- Put on the ceramic sleeve (3)
- Put on the spacer (4)



Spacer DIPA100:

- Put on the spacer (5)
- Fix with screws (6)
- Set the distance and fix with screws (7)

15.2.5 Configuration DIPA40

- Connect the compressed air supply with the air inlet hose
- Plug in the earth cable and lock it by turning
- Connect the cutting torch

Details:

1: Earth cable 2: Control

3: Pilot arc 4: Cutting torch

Compressed air supply: 30 – 100 l/min

NOTE: Only use filtered and regulated compressed air

15.2.6 Configuration DIPA100

- Connect the compressed air supply with the air inlet hose
- Plug in the earth cable and lock it by turning
- Connect the cutting torch

Details:

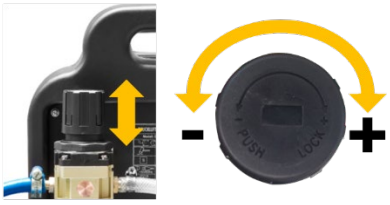
1: Earth cable 2: Control

3: Pilot arc 4: Cutting torch

Compressed air supply: 30 – 100 l/min

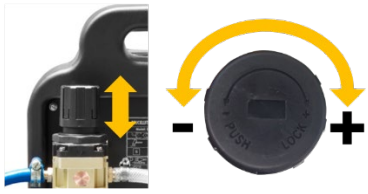
NOTE: Only use filtered and regulated compressed air

15.2.7 Plasma-Cutting DIPA40



- Switch on the machine
- Power indicator light lights up
- Set selector air to 0 (cutting)
- Select cutting mode
- Set cutting current with cutting current controller
- Set pressure of compressed air
- Perform cutting process

15.2.8 Plasma-Cutting DIPA100



- Switch on the machine
- Power indicator light lights up
- Set selector air to 0 (cutting)
- Select cutting mode
- Set cutting current with cutting current controller
- Set pressure of compressed air
- Perform cutting process

16 CLEANING, MAINTENANCE, STORAGE, DISPOSAL

WARNING

Danger due to electrical voltage!
Handling the machine with connected power supply may result in serious injury or death.
→ Always disconnect the machine from the power supply before maintenance or repair work and secure it against unintentional reconnection.

16.1 Cleaning

Regular cleaning guarantees the long service life of your machine and is a prerequisite for its safe operation.

NOTE

Incorrect cleaning products can attack the finish of the machine. Do not use any solvents, nitro thinners or other cleaning products that could damage the machine's finish.
Observe the specifications and instructions of the cleaning agent manufacturer.

Therefore, clean the device after each use of chips and dirt particles.

16.2 Maintenance

The machine is low-maintenance and only a few parts have to be serviced. Nevertheless, any faults or defects which may affect the safety of the user must be rectified immediately!

- Before each start-up, make sure that the safety devices are in perfect condition and function properly.
- Check all connections for tightness at least once a week.

- Regularly check that the warning and safety labels on the machine are in perfect and legible condition.
- Only use original spare parts recommended by the manufacturer.

16.2.1 Inspection and maintenance plan

The type and degree of machine wear depends to a large extent on the operating conditions. The following intervals apply when the machine is used within the specified limits:

Interval	Component	Action
Before start of work or after every maintenance or servicing	Cable and plug	Check for damage and replace if necessary
Monthly	Screw connections	Check for tightness
If needed	Cooling holes	Cleaning
If needed	Pessure relief	Drain the water separator by pressing the drain valve

16.3 Storage

NOTE

Improper storage can damage and destroy important components. Only store packed or unpacked parts under the intended environmental conditions!

Store the machine in a dry, frost-proof and lockable place when not in use. Disconnect the machine from the power supply. Make sure that unauthorised persons and especially children do not have access to the machine.

16.4 Disposal

Observe the national waste disposal regulations. Never dispose of the machine, machine components or equipment in residual waste. If necessary, contact your local authorities for information on the disposal options available.
If you buy a new machine or an equivalent device from your specialist dealer, he is obliged in certain countries to dispose of your old machine properly.

17 TROUBLESHOOTING

WARNING

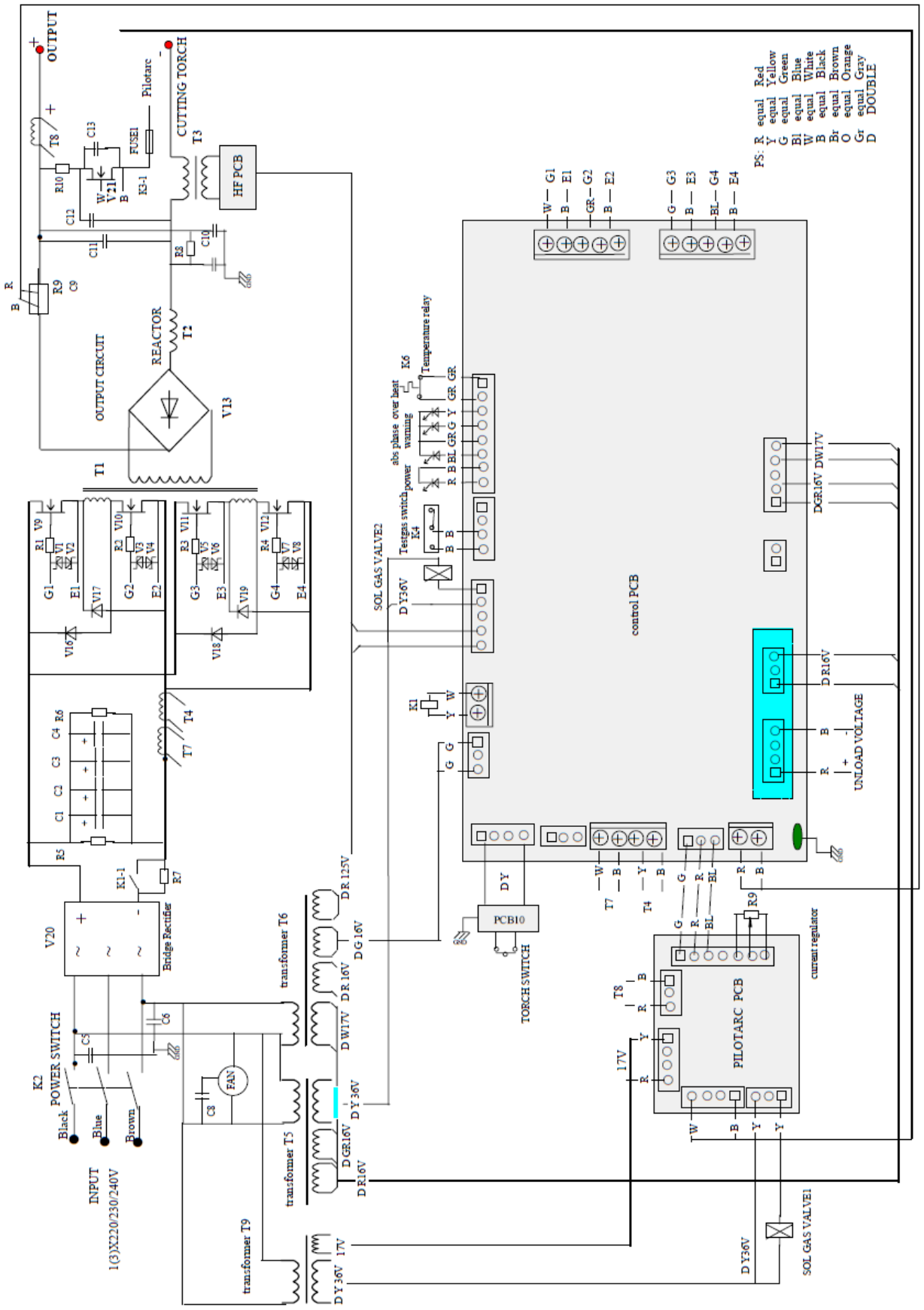
Danger due to electrical voltage!
Handling the machine with connected power supply may result in serious injury or death.
→ Always disconnect the machine from the power supply before maintenance or repair work and secure it against unintentional reconnection.

Many possible sources of error can be excluded in advance if the machine is properly connected to the power supply.
If you are unable to carry out necessary repairs properly and/or do not have the required training, always consult a specialist to solve the problem.

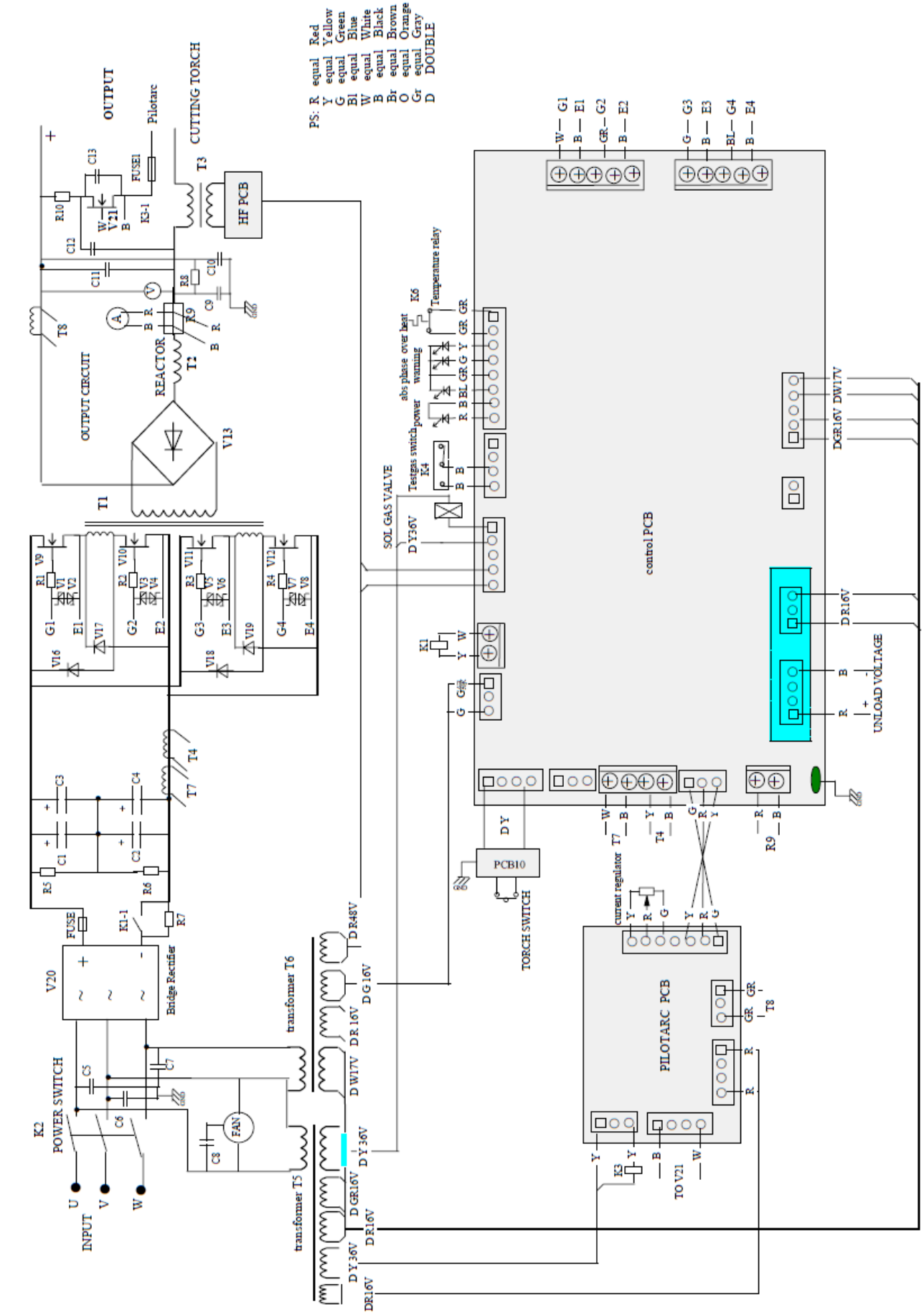
Fault	Possible cause	Correction
Machine does not start	Power supply incorrect	Check all electrical connections
	Defective switches	Exchange
	Fuse or contactor broken	Change fuse, activate contactor
Overheated machine	Overload	Let the machine cool down
No cutting current	Earth connection incorrect	Ensure good contact at earth clamp
Bad ignition	Wear parts (electrode, cutting nozzle) damaged or worn	Change wear parts
	Pilot arc terminal	Ensure good contact

18 ELEKTRISCHER SCHALTPLAN / WIRING DIAGRAM

DIPA40



DIPA100


PS: R equal Red
Y equal Yellow
G equal Green
Bl equal Blue
W equal White
B equal Black
Br equal Brown
O equal Orange
Gr equal Gray
D DOUBLE
OUTPUT
CUTTING TORCH
Pilotarc
HF PCB
T3
FUSE1
K3-1
V21
C13
R10
C12
C11
C10
R8
C9
R9
T8
OUTPUT CIRCUIT
REACTOR
T2
V13
T1
V9
V10
V11
V12
V1
V2
V3
V4
V5
V6
V7
V8
V16
V17
V18
V19
G1
E1
G2
E2
G3
E3
G4
E4
T4
T7
C1
C2
C3
C4
R5
R6
R7
FUSE
K1-1
V20
Bridge Rectifier
POWER SWITCH
K2
C5
C6
C7
C8
FAN
U
V
W
INPUT
transformer T6
transformer T5
D R48V
D G 16V
D R 16V
D W17V
D Y 36V
D GR16V
D R16V
D Y36V
DR16V
W— G1
B— E1
GR— G2
B— E2
G— G3
B— E3
BL— G4
B— E4
Temperature relay
K6
abs phase over heat warning
power
Testgas switch
K4
SOL GAS VALVE
D Y36V
control PCB
DGR16V DW17V
D R16V
UNLOAD VOLTAGE
K1
D Y
PCB10
TORCH SWITCH
current regulator
T7
T4
R9
PILOTARC PCB
T8
K3
TO V21

19 ERSATZTEILE / SPARE PARTS

19.1 Ersatzteilbestellung / Spare parts order

(DE) Mit HOLZMANN-Ersatzteilen verwenden Sie Ersatzteile, die ideal aufeinander abgestimmt sind. Die optimale Passgenauigkeit der Teile verkürzen die Einbauzeiten und erhöhen die Lebensdauer.

HINWEIS

Der Einbau von anderen als Originalersatzteilen führt zum Verlust der Garantie! Daher gilt: Beim Tausch von Komponenten/Teile nur vom Hersteller empfohlene Ersatzteile verwenden.

Bestellen Sie die Ersatzteile direkt auf unserer Homepage – Kategorie ERSATZTEILE.

oder kontaktieren Sie unseren Kundendienst

- über unsere Homepage – Kategorie SERVICE – ERSATZTEILANFORDERUNG,
- per Mail an service@holzmann-maschinen.at.

Geben Sie stets Maschinentype, Ersatzteilnummer sowie Bezeichnung an. Um Missverständnissen vorzubeugen, empfehlen wir mit der Ersatzteilbestellung eine Kopie der Ersatzteilzeichnung beizulegen, auf der die benötigten Ersatzteile eindeutig markiert sind falls sie nicht über den Online-Ersatzteilkatalog anfragen.

(EN) With original HOLZMANN spare parts you use parts that are attuned to each other shorten the installation time and elongate your products lifespan.

NOTE

The installation of parts other than original spare parts leads to the loss of the guarantee! Therefore: When replacing components/parts, only use spare parts recommended by the manufacturer.

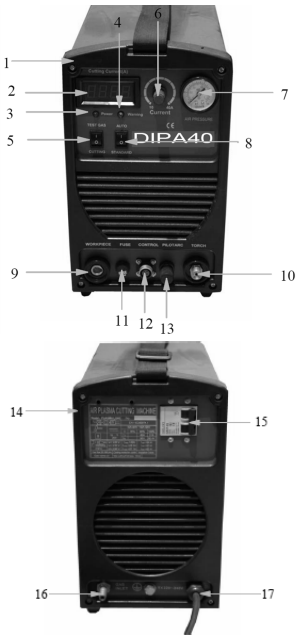
Order the spare parts directly on our homepage – category SPARE PARTS or contact our customer service

- via our Homepage - category SERVICE - SPARE PARTS REQUEST,
- by e-mail to service@holzmann-maschinen.at.

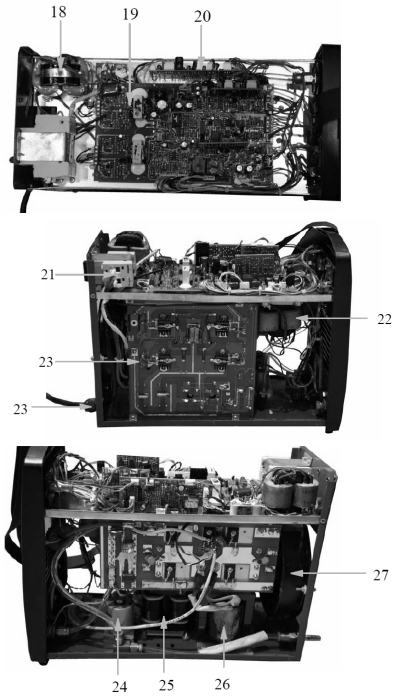
Always state the machine type, spare part number and designation. To prevent misunderstandings, we recommend that you add a copy of the spare parts drawing with the spare parts order, on which the required spare parts are clearly marked especially when not using the online-spare-part catalogue.

19.2 Ersatzteilliste / Spare parts list

DIPA40



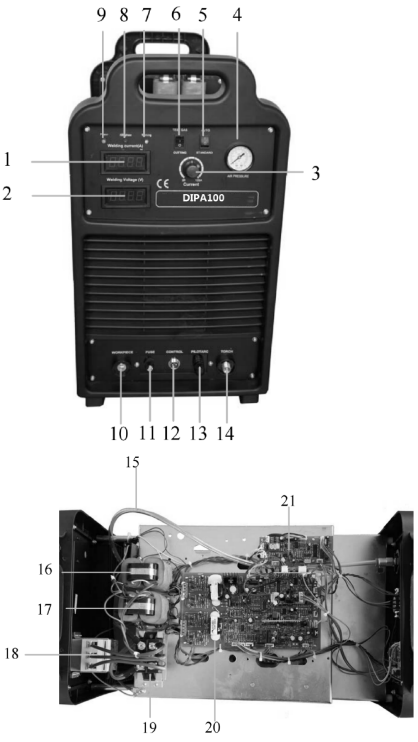
No.	Description
1	Front plastic panel
2	Display cutting current
3	Power indicator light
4	Warning lamp overload protection
5	Selector air (test/cutting)
6	Cutting current controller
7	Air pressure gauge
8	Selector cutting mode (auto/standard)
9	Terminal earth clamp
10	Cutting torch terminal
11	Fuse holder
12	Control plug
13	Pilot arc terminal



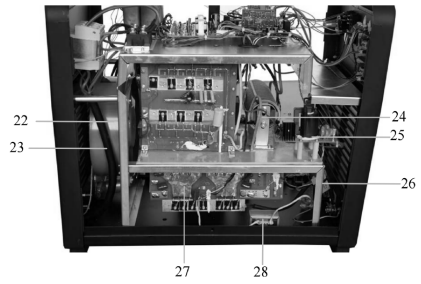
14	Rear plasstic panel
15	ON-OFF switch (circuit breaker)
16	Air input
17	Cord
18	Aux transformer
19	Main control board
20	Pilot control board
21	Power switch
22	Aux transformer 2
23	Cord holder
24	Gas valve
25	Reactor
26	Main transformer
27	Coling fan

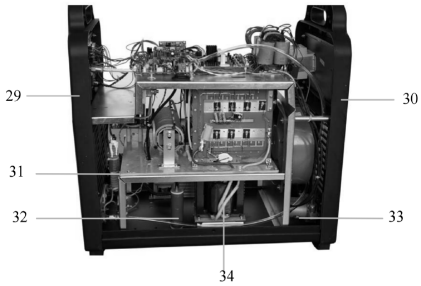
Schneidbrenner / torch	Ersatzteilset / spare part box
Druckminderer / pressure relief	Schneiddüse gerillt / cutting nozzle grooved
Brennerkappe / back cap	

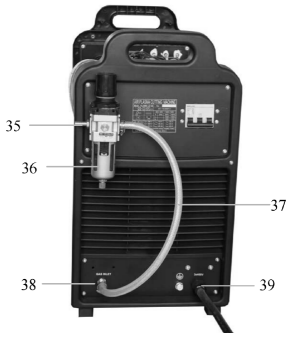
DIPA100



No.	Description
1	Display cutting current
2	Display cutting voltage
3	Cutting current controller
4	Air pressure gauge
5	Selector cutting mode (auto/standard)
6	Selector air (test/cutting)
7	Warning lamp overload protection
8	Phase indicator light
9	Power indicator light
10	Terminal earth clamp
11	Fuse holder
12	Control plug
13	Pilot arc terminal
14	Cutting torch terminal
15	Gas hose inside
16	Aux transformer #1
17	Aux transformer #2
18	ON-OFF switch (circuit breaker)
19	Input bridge







20	Main control board
21	Pilot arc control board
22	Cooling fan
23	Cord
24	Reactor
25	HF board
26	Current sensor
27	Output part
28	Pilot arc reactor
29	Front plastic panel
30	Rear plastic panel
31	HF coil
32	RJ20-50W-10
33	Gas valve
34	Main inverter transformer
35	Gas inlet connector
36	Pressure relief
37	Connection hose
38	Air input
39	Cord holder

Schneidbrenner / torch	Ersatzteilset / spare part box
Abstandshalter / spacer	Keramikhülse / ceramic sleeve
Druckminderer / pressure relief	

20 ZUBEHÖR / ACCESSORIES

((DE) Optionales Zubehör finden Sie online auf der Produktseite, Kategorie EMPFOHLENES ZUBEHÖR ZUM PRODUKT.

(EN) Optional accessories can be found online on the product page, category RECOMMENDED PRODUCT ACCESSORIES.