



OPERATING INSTRUCTIONS  
Plasma arc cutting  
**BARRACUDA RTC 60/100/150**

**REHM SCHWEISSTECHNIK**



## Product Identification

**Designation** Plasma cutting equipment

**Type** BARRACUDA RTC 60  
BARRACUDA RTC 100  
BARRACUDA RTC 150

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# 1 Introduction

## 1.1 Foreword

Dear customer,

You have purchased a REHM plasma cutting machine, a brand-name German product. We would like to thank you for the confidence you have placed in our high quality products.

Only components of the highest quality are used in the development and manufacture of REHM plasma cutting equipment. In order to achieve a long life-span even in heavy-duty use, only parts which fulfil REHM's stringent quality requirements are used for REHM plasma cutting equipment. BARRACUDA plasma cutting equipment has been developed and manufactured in accordance with generally recognised safety and technical regulations. All the relevant legal requirements have been observed, and the equipment is supplied with a declaration of conformity as well as the CE symbol.

REHM plasma cutting equipment is produced in Germany and carries the "Made in Germany" quality mark.

As REHM tries to make immediate use of technical advances, we reserve the right to adapt and modify the design of this plasma cutting equipment to conform with the latest technical requirements.

**Areas of application**

except where expressly stated otherwise in writing by REHM, REHM plasma cutting equipment is only intended for sale to commercial or industrial users and only for use by such users.



BARRACUDA plasma cutting equipment should only be used

- a) for the purpose intended and
- b) in a safe condition

**Qualifications of operating personnel**

REHM plasma cutting equipment may only be operated by personnel trained and instructed in the use and maintenance of plasma cutting equipment. Only qualified, authorised and trained staff may work on and with the equipment.

**Purpose of the document**

These operating instructions contain important information on the safe, correct and economic operation of the equipment. A copy of the instructions must be kept at all times in an appropriate place where the equipment is being used.. Please make sure that you read the information summarised in this operating manual before using the equipment. You will gain important information regarding the use of the equipment which will enable you to use the technical advantages of your REHM equipment to the full. In addition, you will find details regarding maintenance and upkeep, as well as operating and functional safety.



These operating instructions are no substitute for training given by REHM service staff.

The documentation relating to any optional accessories installed must also be noted.

**Alterations to the equipment**

No alterations to the equipment are permitted, nor are the attachment or installation of any additional equipment. Such actions will result in cancellation of any right to make warranty and liability claims.

Warranty rights will also be forfeited if any work is performed on the unit by third parties or if any safety devices are deactivated.

## 1.2 General Description



Fig.1 BARRACUDA

### 1.2.1 Performance features of BARRACUDA cutting equipment

- **Housing in REHM design**

Improved ergonomics thanks to systematic and continuing enhancement of the REHM design. The protected and well thought-out design means that protection class IP23 is achieved. The equipment can therefore be used for cutting outdoors.

- **REHM high-performance transformers**

High-performance transformer with double enamelled wire, insulation class H (180°C).

High-quality enamelled copper wire is used for all transformers.

All transformer windings are wound in layers, with inter-layer insulation.

- **REHM thermal protection**

All REHM equipment is protected against overheating by thermal sensors.

- **REHM transistor heavy-duty circuit breaker**

The patented REHM transistor heavy-duty circuit breaker, proved in tens of thousands of instances, permits fine control of the cutting current, which is continuously adjustable. Precise control with voltage compensation means that cutting current can be held constant for maximum cut quality. The high duty cycle values of 60% (10 mins.) are achieved safely through use of only high-grade service components.

- **REHM safety system**

With the monitoring of torches and wearing parts, with active early warning and automatic safety shutdown aimed at damage prevention, the logic control system offers the maximum safety for man and equipment.

- **REHM cost-effectiveness**

Because the controlled pilot current is switched off during cutting and a soft start function is standard, service life is longer and wear and tear is reduced. Dependable ignition using REHM Zetronik is possible both for contact and distant cutting. The quick start function permits immediate ignition, even during the post-purge gas flow time. The post-purge gas flow time is demand-oriented. Changing a torch on the central connector is simple and quick. Material-oriented regulation of high-speed pilot and cutting current allows uninterrupted cutting of perforated sheets.

### 1.2.2 Principle of plasma arc cutting

In plasma arc cutting operations, the material is melted using a high-energy arc. In the plasma torch, air or gas is heated to such high temperatures that an electrically conductive plasma is produced. The plasma issues from a nozzle as a concentrated jet at high speed and thus forms the contact between electrode and workpiece. The high energy density of the jet melts the material to be cut and simultaneously blows it out of the kerf.

### 1.2.3 Area of application of plasma cutting equipment

BARRACUDA cutting machines are direct-current sources. All conductive metals can be cut using plasma arc cutting. The maximum material thickness to be cut in each case depends on the arc power of the current source, the type of material and the cutting speed used.

### 1.2.4 Function principle of REHM BARRACUDA cutting equipment

All *REHM BARRACUDA cutting equipment* is continuously adjustable. This means that it is possible for the user to quickly adapt it to the specific cutting tasks. The cutting arc is extremely stable within broad limits thanks to internal regulation of current. Fluctuations in the power supply are compensated in the range between +6% and -10%.

High performance reserves guarantee the optimum material penetration and constant cutting performance even under extreme requirements.

With *REHM BARRACUDA cutting equipment* both contact and distant cutting is possible. In the case of contact cutting, however, the cutting current should not exceed 50A.

In the development and design of this equipment, the priorities were the best cutting characteristics, high efficiency, low wear and tear and simple operation and handling.

All the components were tested extensively under practical conditions for heavy-duty and industrial usage.

### 1.2.5 Proper use

REHM plasma cutting equipment is designed to cut all conductive metals. Please note also any special regulations which may apply to your application. Please contact your safety officer or REHM Customer Service if you have any queries.

Except where expressly stated otherwise in writing by REHM, REHM plasma cutting equipment is only intended for sale to commercial or industrial users and only for use by such users. It must be operated only by people who have been trained and are qualified in the use and maintenance of plasma cutting equipment.

Cutting current sources must not be positioned in areas where there is a significant electrical hazard → see **Chapter 5, Commissioning**.

These operating instructions contain rules and guidelines for the proper use of your equipment. Only use in accordance with these operating instructions will be deemed to be proper use. Any risks which arise from other forms of use are the responsibility of the operator. For special requirements, it may be necessary to observe special additional conditions as well.

Please contact your safety officer or REHM Customer Service if you have any queries.

Attention should be paid to the specific directions regarding proper use referred to in the delivery documentation.

Any national regulations which are more stringent than the requirements of these operating instructions also apply.

Proper use also includes compliance with the specified conditions for installation, dismantling, re-installation, commissioning, operation, maintenance and disposal measures. Please heed in particular the information in the chapter on safety.

The equipment may be operated only under the above-mentioned conditions. Any other form of use is deemed as not being proper use. The operator will be liable for any consequences arising from improper use of the equipment.

## 1.3 Symbols used

### Typographical conventions

Lists preceded by bullet point: general list

- Lists preceded by square: working or operating steps which must be carried out in the order listed.

➔ **Section 2.2, Warning symbols on the equipment**

**Cross-reference: in this case to Section 2.2, Warning symbols on the equipment**

**Bold type** is used for emphasis



**Note:**

... Indicates **user tips and other particularly useful information.**

### Safety symbols

For the safety symbols used in this manual, ➔ **Section 2.1.**

## 2. Safety Instructions

### 2.1 Safety symbols in these operating instructions

#### Warnings and symbols



You will find this symbol or one which specifies the danger more precisely by all safety instructions in these operating instructions where there is a risk to life and limb.

One of the following words (Danger!, Warning!, Caution!) indicates the extent of the hazard:

**Danger! ... There is an immediate danger.**  
If the hazard is not avoided, then death or serious injury will occur.

**Warning! ... There is the possibility of a dangerous situation.**

If the danger is not avoided, then death or serious injury could occur.

**Caution! ... There is the possibility of a harmful situation.**

If this is not avoided, light or minor injury could occur and damage could be caused to property.

#### Important!



Reference to a possibly harmful situation. If it is not avoided, then the product or something in the vicinity may be damaged.



Substances which are injurious to health and/or the environment. Materials / fuels which have to be handled and/or disposed of in accordance with legislation.

### 2.2 Warning symbols on the equipment

indicate hazards and sources of danger on the equipment.



#### Danger!

**Dangerous electrical voltage!**

Disregarding the danger can lead to death or injury.

## 2.3 General

### Dangers of disregarding safety instructions



The equipment was designed and manufactured in accordance with generally recognised technical regulations.

Nevertheless, risks of personal injury to the user or third parties or damage to the equipment or to other material assets could arise during use.

Under no circumstances may any safety mechanisms be dismantled or taken out of service, as this will result in exposure to danger and proper use of the equipment is no longer guaranteed.

Dismantling of safety mechanisms during set-up, repair and maintenance is described separately. Immediately after this work has been completed, the safety mechanisms must be re-installed.

The operator of the equipment must ensure its safety during the use of external agents (e.g. solvents for cleaning).

All safety and warning notices and the nameplate on the equipment must be kept in a legible condition and must be heeded.

### Safety instructions



Safety instructions are intended to promote occupational health and safety and prevent accidents. They must be observed.

It is important to observe not only the safety instructions listed in this chapter but also the special safety instructions given throughout these operating instructions.

In addition to the instructions in these operating instructions, general safety and accident prevention regulations (in Germany among others *UVV VGB15* on welding, cutting and associated processes, especially the references to arc welding and cutting, or the appropriate national regulations) must also be observed.

Please observe the safety notices in the operator's workshop as well.

## 3 Description of Function

### 3.1 Preparations for cutting

#### 3.1.1 Mains connection and power-up

*REHM cutting equipment* is fitted with a Euro CEE plug for 3x400V three-phase alternating current. The equipment is connected to the power supply voltage via the main switch on the front side. The control lamp MAINS ON shows that the equipment is ready for operation.

#### 3.1.2 Adjustment of compressed air – gas test

The pressure and the flow rates for cooling and cutting air must in each case be appropriately adjusted to the torch used. If the gas pressure is incorrectly set, cutting quality will be reduced, wear and tear will be higher and, under extreme conditions, the torch could be destroyed. The necessary air pressure must be adjusted using the adjustment knob provided for this purpose on the control panel.

To do so, turn the function selection switch to the “GAS TEST” position and pull the blue adjustment knob upwards. Continue turning in this position until the pressure displayed on the pressure gauge corresponds exactly to the required air pressure. Then push the rotary knob back down to lock it. The setting is now protected against inadvertent adjustment. After that, to begin cutting operation, switch the function selection switch back to 2-step or 4-step operating mode.

#### 3.1.3 Operating modes

##### 3.1.3.1 2-step operating mode

In this operating mode, the torch button is kept pressed down throughout cutting until cutting is terminated. Releasing the torch button terminates the cutting operation, just as does extinguishing of the arc.

This operating mode is recommended for short, alternating cutting operations.

##### 3.1.3.2 4-step operating mode

After ignition of the cutting arc, the torch button can be released. Reactivation and release of the torch button terminates the cutting operation, just as does extinguishing of the arc.

In this operating mode, it is possible to operate the torch effortlessly for extended periods.

#### 3.1.4 Choosing the cutting current

The current required depends essentially on the type of material to be cut and on the material thickness. Continuous adjustment of the cutting current supplied to *REHM BARRACUDA cutting equipment* permits optimum adjustment to particular cutting tasks.

If the current is set too high, this will lead to higher wear and tear of nozzle and torch electrode. If the current is set too low, then either no material penetration occurs or else this is too slow.

### 3.1.5 Nozzle selection

A plasma nozzle that is appropriate to the cutting current setting must be selected. If the nozzle is too big, cutting performance is impeded, while too small a nozzle will cause thermal overload and hence higher wear and tear.

To make the correct choice of nozzle, the areas of application of the various nozzle diameters are shown on the cutting current adjustment dial.

Only replace parts with original REHM spare parts (see Chapter 4).

## 3.2 Cutting operation

### 3.2.1 General description

To achieve an optimal cutting quality, the choice of cutting current, nozzle and cutting speed must take into account the type of material to be machined and the thickness of the work piece.

Where light gauge sheet metal is to be cut, better cutting quality is achieved when the torch is in contact with the material.

If thick sheets are to be cut, higher cutting performance is needed. Therefore cutting must be performed with the torch held at a distance. The relevant spacer elements will be found in the appendix entitled "Torches and accessories".

In **hand cutting operations**, the quality of the cut and the amount of wear and tear sustained by the torch components depends not only on the factors already mentioned, but also on the skill of the user in handling the plasma torch.

Press torch button and move torch with pilot arc to the point at which the cut is to start.

Following ignition of the cutting arc, draw the torch across the work piece at a constant speed. The optimal cutting speed is achieved when the cutting jet is facing towards the direction of cut and is inclined at approx. 10° from the kerf.

The pilot arc should not be ignited unnecessarily, as this will result in higher wear and tear of the torch components.

With straight cuts, it is recommended using a stop rail to guide lateral movement of the torch. To obtain even and stick-slip free movement of the torch, we recommend using a torch carriage (see Chapter 4).

### 3.2.2 The REHM control panel

The plasma cutting equipment is operated using the REHM control panel shown in Fig. 3.1.

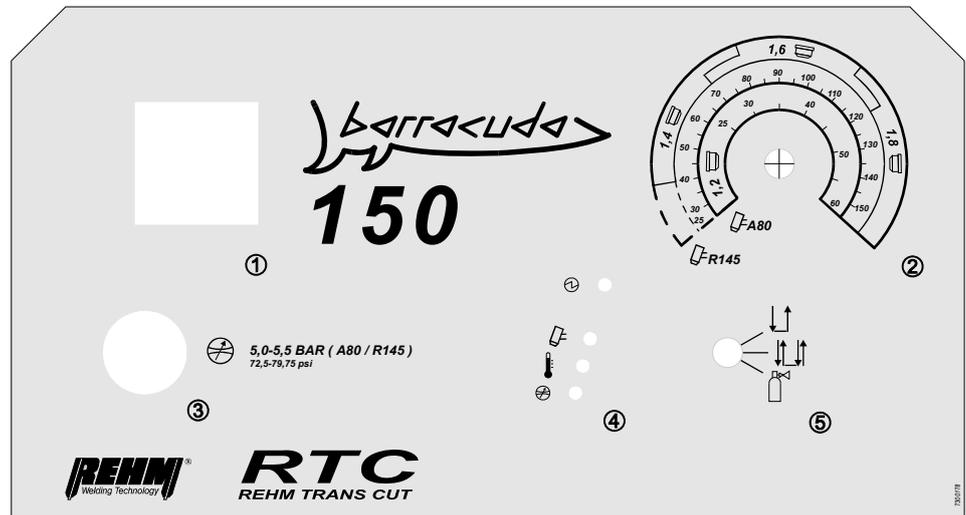


Figure 3.1 Control panel on the BARRACUDA RTC 150 (RTC 60 and RTC 100 layouts are similar)

The control panel is divided into the following areas:

- ① Measuring instruments for the compressed air setting
- ② Cutting current selection knob
- ③ Rotary knob for compressed air setting
- ④ Control lamps
- ⑤ Function selection switch 2-step, 4-step, gas test

### 3.2.3 Symbols and their meanings

The symbols used on the control panel have the following meanings:

	The cutting equipment is currently in 2-step cutting mode (see Section 3.2.4.1).
	The cutting equipment is currently in 4-step cutting mode (see Section 3.2.4.2).
	The cutting equipment is set to gas test. By pulling upwards and then turning the blue adjustment knob, it is possible to set the required air pressure using the pressure gauge (see Section 3.1.2).
	Blue adjustment knob used to set the required air pressure. To do so, pull the adjustment knob upwards and continue turning in this position until the pressure displayed on the pressure gauge corresponds exactly to the required air pressure (see Section 3.1.2).
1,4 	Recommended range of adjustment on the current scale, using an electrode diameter of 1.4 mm (the symbol is modified appropriately with other sizes).
 R145	Current scale for torches R145 and R145P (see Section 4.3.2.2, "Machine configuration").
 A80	Current scale for torch A80 (see Section 4.3.1.2, "Machine configuration").
	<b>Control lamps</b>
	Wear and tear on the torch parts is displayed as follows: Flashing: Early warning of increased level of wear and tear. It is recommended that the wear parts are changed. Continuous: Wear has exceeded permitted limits. Equipment will shut down. The point in time at which the wear parts are changed is determined by the user.
	There is a voltage at the torch. The pilot current is active, or following ignition of the cutting arc the set cutting current is flowing.
	The air pressure is no longer sufficient to supply the torch. Equipment will shut down.
	The cutting equipment has shut down due to excessive temperature. After it has cooled down, the cutting equipment automatically reverts to operating mode. When heavily loaded, especially when cutting work takes place in a hot environment, the overtemperature protection can switch off the welding current. This is indicated by the control lamp.
I O	Power supply voltage switch is switched on, power supply voltage is on (only with RTC 60).

### 3.2.4 Operating modes

#### 3.2.4.1 2-step function sequence

Step 1 - Press torch button

- Gas pre-flow time 4 seconds.
- Pilot arc is ignited.
- On contact with work piece, the cutting arc is ignited and the compressed air is increased to the required throughput rate.

If contact is not made with the work piece within four seconds, the equipment switches itself off automatically (safety shutdown).

Step 2 - Release torch button

- Cutting current is interrupted, cutting voltage is switched off.
- Post-purge gas flow time (demand-oriented).
- If the torch button is pressed once again during the post-purge gas flow time, no gas pre-flow will occur. Functional sequence is immediately restarted (quick start).

#### 3.2.4.2 4-step function sequence

Step 1 - Press torch button

- Gas pre-flow time 4 seconds.
- Pilot arc is ignited.
- On contact with work piece, the cutting arc is ignited and the compressed air is increased to the required throughput rate.
- If contact is not made with the work piece within four seconds, the equipment switches itself off automatically (safety shutdown).

Step 2 - Release torch button

- Prior to ignition of the cutting arc
  - Equipment switches to the basic setting (safety shut-down).
- After ignition of the cutting arc
  - Cutting operation is resumed.
  - If the torch is withdrawn during cutting, the arc is extinguished. This has the effect of interrupting the cutting current and the equipment shuts down. This function corresponds to the fourth step.

Step 3 - Press torch button

- Cutting operation is resumed.

Step 4 - Release torch button

- Cutting current is interrupted, cutting voltage is switched off.
- Post-purge gas flow time (demand-oriented).
- If the torch button is pressed once again during the post-purge gas flow time, no gas pre-flow will occur. Functional sequence is immediately restarted (quick start).

### 3.3 Possible applications

#### 3.3.1 Cutting of perforated sheets

Interrupted cuts, for example, cutting of perforated sheets, gratings etc., can only be carried out in “2-step” operating mode. The functional sequence is identical to the sequence involved in “2-step” mode up to beginning of the hole.

Moving towards the beginning of the hole:

- Cutting current interrupted and/or cutting arc extinguished.
- Compressed air is reduced.
- Pilot current flowing / pilot arc active.

Moving towards the end of the hole:

- When contact with material is resumed, the cutting arc is ignited and the compressed air increases.

If contact is not made with the work piece within four seconds, the equipment switches itself off automatically (safety shutdown).

#### 3.3.2 Hole-piercing

Place torch obliquely across the work piece and ignite. Then slowly move the torch to a vertical position until the material is penetrated.

Since during hole-piercing the molten spray can be released from the material before the arc has penetrated the full material thickness, the torch nozzle is particularly highly stressed due to splash back of the material and thermal reflex reflection.

If the material is too thick, it is recommended to drill an appropriately sized through-hole in advance so that it is possible for the material to flow.

#### 3.3.3 Gouging

Hold torch at an appropriate slant depending on the desired depth of penetration and move it forwards in the direction of the molten material. This will then be blown out of the groove as a result of the plasma pressure.

Depending on the type of seam preparation or machining desired, various nozzles and/or torch configurations can be used for gouging (see Chapter 4).

#### 3.3.4 Weld preparation

Move torch with appropriate nozzle (see Chapter 4) out of the vertical position towards the side until the deviation corresponds to the desired angle of the chamfer. Maintain position and move torch with even, adjusted speed.

#### 3.3.5 Circle cutting

Use of the circle cutting jig is recommended here in combination with the carriage (see Chapter 4).

## 3.4 Machine Functions

### 3.4.1 Gas pre-flow

A gas pre-flow occurs prior to the start of cutting. This avoids inadvertent ignition of the pilot arc (safety). Moreover, it also means that the torch bundle is flushed thoroughly and ensures even with unusually long hose bundles that the volume of air needed for cutting is available to the torch. The predetermined time is four seconds. This pre-flow time can be shortened using the quick start function.

### 3.4.2 Soft start

*REHM BARRACUDA cutting equipment* is equipped with a soft start function. On ignition of the cutting arc, the cutting current is raised steadily to the pre-set value. This increases the service life of the torch's wear parts.

### 3.4.3 Quick start

The gas pre-flow time can be reduced by pressing twice on the torch button. This function makes it possible to start a work sequence rapidly. During the post-purge gas flow time, pressing the torch button once is sufficient to interrupt the post-flow time and immediately resume cutting operation.

### 3.4.4 Safety shut-down

If no cutting current arrives within four seconds when the pilot arc is on, the equipment shuts down automatically. This avoids undue wear and tear on the torch.

### 3.4.5 Post-purge gas flow time

To cool the torch sufficiently, the gas continues to flow after the end of cutting. The post-purge gas flow time is based in a demand-oriented manner on the cutting performance available during the cutting operation, divided into stages of 32, 64 or 96 seconds. If the torch button has been activated, but no cutting operation occurred, the post-purge gas flow time is set to 12 seconds.

#### **Important!**

**Under no circumstances should the equipment be shut down before the post-purge gas flow time has finished, as otherwise the torch components will not be adequately cooled.**

### 3.4.6 Safety contact in plasma torch

All torches are fitted with a safety contact which only permits functioning to commence if the torch is assembled in the proper manner. When wear parts are changed, the contact is automatically interrupted for safety reasons so that cutting operations cannot resume.

### 3.4.7 Detection of phase failure

*REHM BARRACUDA cutting equipment* is provided with automatic phase failure detection. This prevents the equipment from being overloaded as a result of the failure of one phase of the supply voltage. Depending on which phase fails, either the green MAINS ON control lamp goes out and the equipment cannot be made to work, or else, on ignition of the pilot arc, the power component switches off again immediately (one can tell that this has occurred because the power contactor pulls in and is then immediately released).

## 4 Accessories

### 4.1 Standard Accessories

- 1 earthing cable with terminal (4m)
- 1 mains cable with connector (5m)
- 1 mono-gas plasma torch with central connector and safety switch (6m)
- 1 set of operating and functional instructions
- 1 set of wear parts (see appendix, "Torches and accessories")

### 4.2 Options

#### 4.2.1 80A torch for RTC 100 and RTC 150

Optional 60A torches enabling cutting of light gauge sheet metal with a smaller nozzle are also available for the *RTC 100* and *RTC 150* units. From the coding of the torch, the equipment can tell that an 80A torch has been connected. The cutting current is automatically limited to 60A. The inside scale then applies to the cutting current settings.

The permitted equipment duty cycle is based under this combination on the maximum duty cycle of the 80A torch (see Section 4.3).

#### 4.2.2 Automatic torch

Appropriate automatic torches can be employed for automated operations, e.g. on cutting machines. The specification details will be found in Section 4.3.

When an automatic torch is used, a mechanised interlock may be necessary. Please contact your supplier for further information about this.

#### 4.2.3 Torch accessories

Details of accessories for the various types of torch will be found in Section 4.3.

#### 4.2.4 Air filter attachment

If the *REHM BARRACUDA cutting equipment* is used in an environment in which the air is heavily polluted, then use of an air filter attachment is recommended.

This consists of a protective frame and a filter unit which is very easy to replace when heavily clogged. The air filter attachment can be retrofitted without difficulty.

#### 4.2.5 Mechanised interlock

For automated use of the *BARRACUDA equipment*, an interface can be provided, the signals of which are metallically separated.

- Outputs:
- Current-flowing message (CFL) for message "Cutting arc on"
  - Group alarm
  - Arc voltage (U) (e.g. for arc voltage height control)

- Inputs:
- Cutting on (external contact instead of torch button)
  - Cutting current (Iset)

Your supplier will be able to tell you about the various options for automated use of *REHM plasma cutting equipment*.

#### 4.2.6 Special voltages

*REHM BARRACUDA cutting equipment* can be supplied with a variety of power supply voltages.

Please ask your supplier for further details.

### 4.3 Torches and accessories

All plasma torches for the *BARRACUDA* series are fitted with a special REHM pin configuration on the central connector.

#### 4.3.1 RTC 60 machine configuration

##### 4.3.1.1 Standard accessories for RTC 60

Description	Order no.
Earthing clamp with terminal	360 0004
Mains cable with connector	360 0110
Plasma torch A80	766 0806
Set of wear parts	750 0727
Set of operating and functional instructions	730 0275

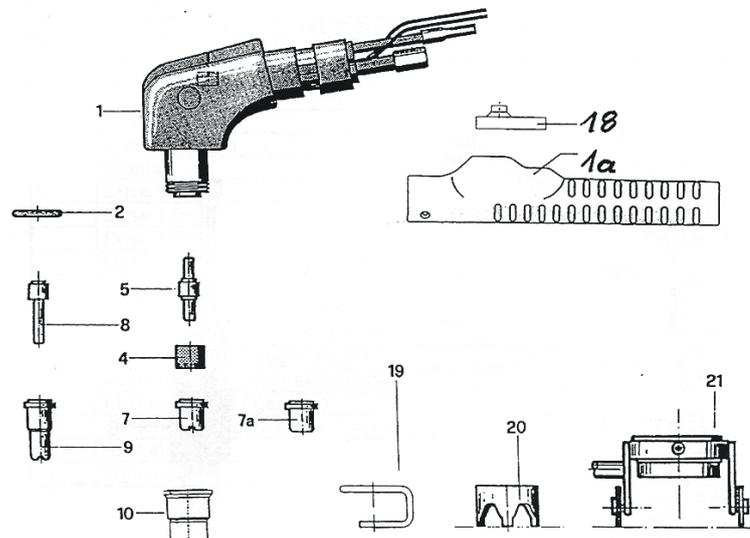
### 4.3.1.2 Plasma torches A80 and P80 Aut

Torch: Plasma torch A80 (order no. 766 0806)  
 Plasma torch P80 Aut (order no. 766 0816)

Mono-gas plasma torch 6m with central connector and safety switch

Technical data for A80 torch

Maximum cutting current: 60A  
 Duty cycle at  $I_{max}$ : 60%  
 Air pressure: 5-5.5 bar  
 Air flow rate: 105 l/min  
 Nozzle diameter: 1.2 mm for current range 10-60A  
 Set of wear parts: 2 nozzles diameter 1.2mm  
 1 double electrode



Item	Description	Order no.	Suitable for torch	
			A60	A80
1	Torch body A80	776 0507	x	x
1a	Gripper tube A80	776 0607		x
	Torch body A80 Aut	776 0508		x
	Torch sleeve A80 Aut	776 0608		x
2	O-ring A60/80	776 3501	x	x
4	Diffuser A60/80	776 6120	x	x
5	Double electrode A60/80	776 6003	x	x
7	Nozzle 1.2mm A60/80	776 6110	x	x
8	Electrode long A60/80	776 6004	x	x
9	Plasma nozzle long A60/80	776 6111		x
10	External protective nozzle A80	776 6312		x
18	Switch for A80	776 0606		x
19	Spacer spring A60/80	776 6404	x	x
20	Spacer with 4 castellations	776 6405	x	x
	Adapter to adapt A60 to A80	776 0614	x	
21	Carriage A80	776 7013		x
	Circle cutting unit, complete	776 7009		x

### 4.3.2 Machine configuration RTC 100 / RTC 150

#### 4.3.2.1 Standard accessories RTC 100 / RTC 150

Description	Order no. RTC 100	Order no. RTC 150
Earthing clamp with terminal	360 0004	360 0111
Mains cable with connector	360 0134	360 0135
Plasma torch A80	766 1456	766 1456
Set of wear parts	750 0728	750 0729
Set of operating and functional instructions	730 0275	730 0275

#### 4.3.2.2 Plasma torches R145 and R145P

Torch: Plasma torch R145 (order no. 766 1456)

Plasma torch R145 automatic torch (order no. 766 1466)

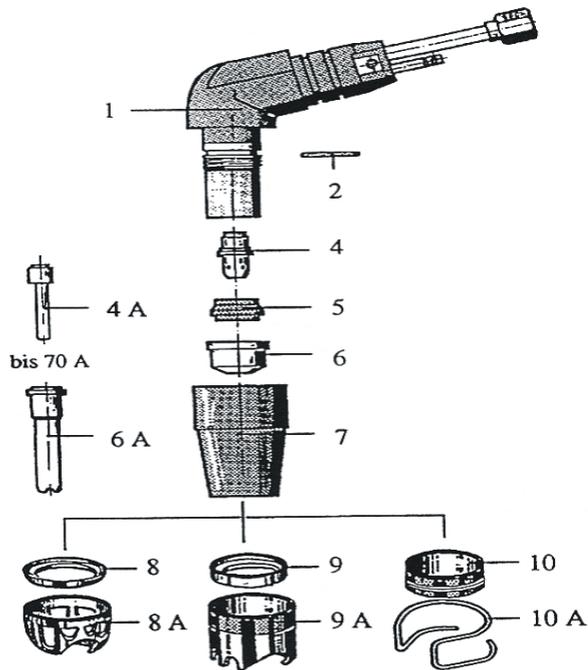
Mono-gas plasma torch 6 m with central connector and safety switch

##### Technical Data

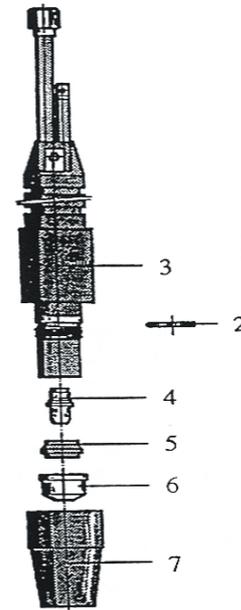
(Technical data for R145P is the same as for torch type R145)

Maximum cutting current:	150A
Duty cycle at $I_{max}$ :	100%
Air pressure:	5-5.5 bar
Air flow rate:	230 l/min
Nozzle diameter:	1.4mm for current range 40-60A 1.6mm for current range 70-120A 1.8mm for current range 110-150A 3.0mm for gouging
Set of wear parts:	Nozzle diameter 1.4 mm (RTC 100 / RTC 150) 1 nozzle diameter 1.6mm (RTC 100 / RTC 150) 1 nozzle diameter 1.8mm (RTC 150) 2 electrodes (RTC 100) 3 electrodes (RTC 150)

Torch R145

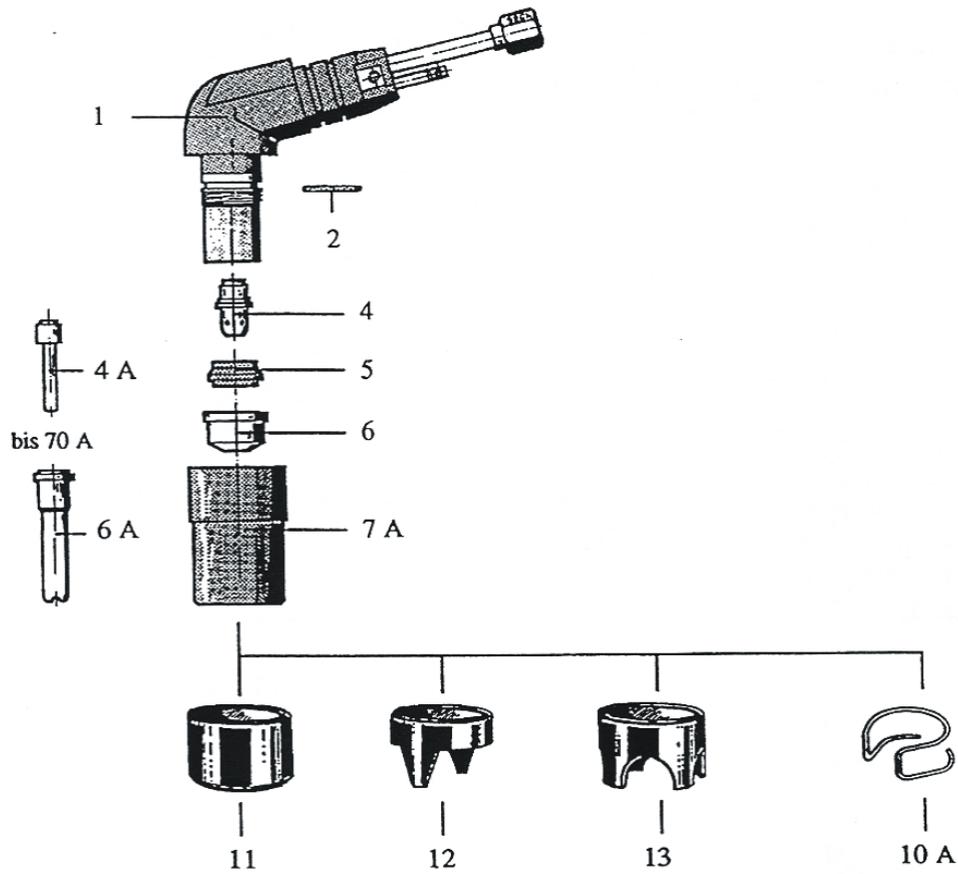


Automatic torch R145P



Item	Description	Order no.
	Plasma torch R145 6m with central connector	766 1456
	Automatic torch R145P 6m with central connector	766 6119
1	Torch body R145	766 0505
3	Torch body R145P	766 0506
2	O-ring	776 3502
4	Electrode	776 6005
4 A	Electrode, long	776 6006
5	Insulator	776 3503
6	Nozzle, 1.4mm	776 6112
	Nozzle, 1.6mm	776 6113
	Nozzle, 1.8mm	776 6114
	Nozzle 3.0mm (for gouging)	776 6116
6 A	Plasma nozzle, long	776 6119
7	External protective nozzle (tapered)	776 6301
8	Spacer – contact plate	776 6406
8 A	Spacer (rounded)	776 6302
9	Spacer – contact plate	776 6407
9 A	Spacer (straight)	776 6303
10	Spring retainer support for no. 7 with two spacer rings	776 6413
10 A	Spacer spring	776 6409
	Carriage	776 7016

4.3.2.3 Accessories for torch R145



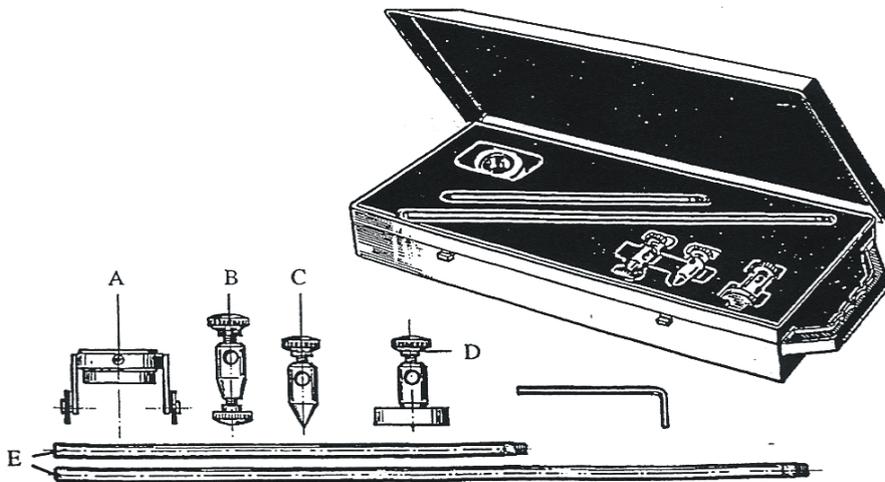
No.:	Description	Article no.:
4 A	Electrode, long	776 6006
6 A	Plasma nozzle, long	776 6119
7 A	External protective nozzle (cylindrical)	776 6304
10 A	Spacer spring	776 6409
11	Spacer for gouging and weld preparation	776 6410
12	Spacer with 2 castellations	776 6411
13	Spacer with 4 castellations	776 6412

### 4.3.3 Circle cutting equipment and magnet clamps

Circle cutting equipment, complete, consisting of:

- Carriage (A)
- Threaded bracket (B)
- Centrepoint (C)
- Magnet clamp standard (D)
- Extendable compass bar (250mm and 400mm) (E)

Order number for RTC 60: 776 7010  
 for RTC 100 / RTC 150: 776 7015



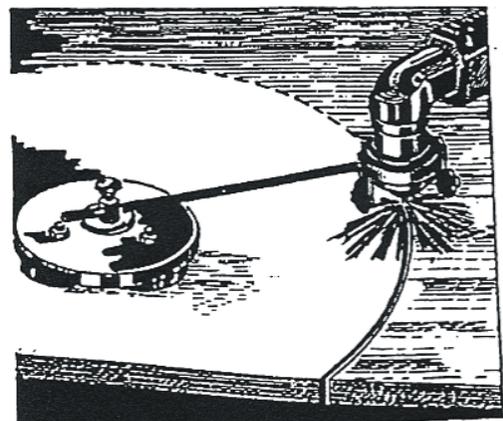
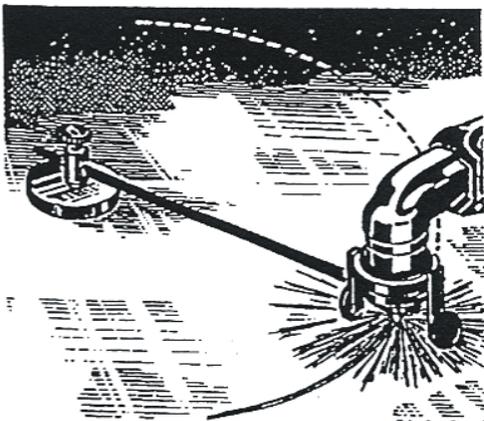
#### Magnet clamp:

Standard (D) included in circle cutting equipment.

Diameter: 40mm

Maximagnet: article number 776 7017

Diameter: 75mm



## 5 Commissioning

### 5.1 Safety instructions

Please read the operating instructions carefully, especially → **Chapter 2, Safety Instructions**, prior to commissioning of the equipment and before you begin working on this cutting current source.



#### **Warning!**

**REHM plasma cutting equipment may only be operated by personnel trained and instructed in the use, maintenance and safety provisions of plasma cutting equipment.**

**Always wear protective clothing during cutting and ensure that other people who are in the vicinity are not endangered by UV radiation from the arc.**

### 5.2 Working under increased electrical danger in accordance with the provisions of IEC 974, EN 60974-1 and VBG 15 (S)

REHM plasma cutting equipment complies with the above regulations.

Care should be taken that the cutting current source is not set up in this area when working under increased electrical danger. Please observe regulations EN 60974-1 and VBG 15.

### 5.3 Transport and set-up of the plasma cutting equipment

Set up the REHM plasma cutting equipment so that the user has sufficient room in front of the equipment to monitor and operate the controls.

Set up the REHM plasma cutting equipment so that there are no obstructions of the air intake and outlet. The stated duty cycle of the equipment can only be achieved if there is adequate air throughput.

When transporting the unit, always comply with the applicable accident prevention regulations. When transporting the unit with a crane, use the lifting rings attached to the housing.



#### **Danger! Electric voltage**

**Do not use the plasma cutting equipment in the open air when it is raining!**

## 5.4 Connection of the plasma cutting equipment

Connect the REHM cutting current source to the power mains in accordance with the current provisions of VDE (Association of German Electrical Engineers) and also observe the regulations of the appropriate safety authorities.

*REHM cutting equipment* is fitted with a Euro CEE plug for 3x400V three-phase alternating current. When connecting the unit, observe the information regarding the supply voltage and fuse protection. Automatic circuit breakers and fuses must always be rated for the current indicated. You will find the necessary details in → **Chapter 12, Technical Data.**

Always switch off the equipment when it is not in use.



Where shielding gas cylinders are used, set these up separately and secure them against falling over. Screw the cylinder pressure regulator onto the cylinder thread and check the connection for tightness. Always close the cylinder valve after working. Observe the appropriate regulations of the competent safety authorities.

## 5.5 Cooling of the plasma cutting equipment

Set up the REHM plasma cutting equipment so that there are no obstructions of the air intake and air outlet. The stated duty cycle of the power components can only be achieved if there is adequate ventilation (see “Technical Data”). Ensure that no grindings, dust, metal parts or other foreign matter can get into the equipment.

## 5.6 Compressed air supply

The rapid plug-and-socket connection for the compressed air supply is located on the back of the equipment. The pressure must be at least 7 bar to ensure that the cutting equipment has a sufficient supply.

The compressed air line must be adequately dimensioned. Where compressed air lines are relatively long, the next higher cross-section should be chosen.

The compressed air provided must be clean, dry and oil-free. If the compressed air is significantly contaminated, the unit should also be fitted with a fine mesh microfilter (see *REHM catalogue of accessories*).

## 5.7 Guidelines for working with cutting current sources

Only skilled workers or operators who have received appropriate instruction in the equipment and procedures should be entrusted with cutting work. Always wear protective clothing during cutting work and make sure that no one else who is close by is exposed to any hazard. Following completion of the cutting work, you should leave the equipment switched on for a few more minutes to allow the fan to continue to run and the heat in the unit to be dissipated.

## 5.8 Connection of work piece return cables/torch

### Connection of the earthing cable

The appropriate cable is inserted into the socket on the front side and locked in position. The earthing clamp must be attached at an exposed place on the workpiece or on the cutting table. Take care to ensure that the current can be transferred smoothly.

### Connection of the torch

REHM-RTC cutting equipment is fitted with rapid plug-and-socket connections (central connector with REHM inscription) for connection of the plasma torch. The torch is inserted and must then be connected securely by manually tightening the coupling nut. This entails pressing the safety pin on the central connector with the patent key. The patent key is fastened above the central connector and must be used both to connect and to disconnect the torch.



### Important!

To avoid unnecessary energy losses during cutting, take care to ensure that all work piece return cable connections are properly tightened and well insulated.

## 5.9 Recommended cross-sections of welding power supply cables

Cross-sections of copper cables:

With lengths	up to 5m	up to 10m	up to 15m
up to 60A	16 mm <sup>2</sup>	25 mm <sup>2</sup>	25 mm <sup>2</sup>
up to 100A	25 mm <sup>2</sup>	25 mm <sup>2</sup>	35 mm <sup>2</sup>
up to 150A	35 mm <sup>2</sup>	35 mm <sup>2</sup>	50 mm <sup>2</sup>

## 5.10 Connection to jigs

With the optional mechanised interlock, all REHM plasma cutting equipment can be connected easily to a cutting machine or automatic fixture via the built-in remote control socket. For further information on this point, see Section 4.2.6. If you have any further questions, please contact your REHM dealer.



### Important!

Please use the cover provided to protect the remote control socket from dirt when not in use.

## 6 Operation

### 6.1 Safety instructions

Please read the operating instructions carefully, especially → **Chapter 2, Safety Instructions**, prior to commissioning of the equipment and before you begin working on this welding current source.



#### Warning!

**REHM plasma cutting equipment may only be operated by persons who have been trained and instructed in the use and maintenance of plasma cutting equipment and in the safety provisions that apply thereto.**

Working on and servicing electrical plasma cutting equipment is always potentially hazardous. Personnel not familiar with such equipment and machinery could hurt themselves or others. For this reason, operators must be told of the potential hazards outlined below and of the safety measures that are necessary to avoid possible injury. Irrespective of this, anyone operating plasma cutting equipment must familiarise himself with the safety regulations that apply in the relevant working area prior to starting work.

### 6.2 Electrical Hazards



Connection of and maintenance work on plasma cutting equipment and its accessories may only be carried out in compliance with current VDE (association of German electrical engineers) provisions and the regulations issued by the appropriate safety authority. Ignition of the arc and cutting require a very high voltage.

#### Warning!

**The no-load voltage with plasma cutting equipment is over 100V.**

- Never touch any live metal parts with the bare skin or with wet clothing.
- When cutting, always wear gloves and protective hoods fitted with approved protective filters.
- Take care to ensure that all parts which you have to touch during your work, such as your clothing, your working area, the welding torch, the electrode holder and the plasma cutting equipment, are always dry.
- Take care to ensure that there is good insulation by only wearing dry gloves and boots with rubber soles, and by standing on a dry, insulated base, especially if you have to stand on metal during your work or are working in areas with significant electrical hazards.
- Avoid using any power cables that are worn or damaged. Ensure that power cables are not overloaded. Use only equipment that has no faults.
- Switch off the plasma cutting equipment whenever work is interrupted for any length of time.
- Do not wind the cutting cable around any part of the housing and do not let it lie wound up in coils.
- Never leave the plasma cutting equipment switched on and unsupervised.
- Only ignite the pilot arc against the work piece.

- Take careful note of the performance data relating to the torch and cutting equipment. If the permitted values are exceeded, this could lead to irreparable damage.
- Do not touch any current-carrying parts. Do not hold the work piece tightly.
- Do not move the hose bundle into the splash zone of the material.
- Avoid damaging the hose bundle on sharp edges.
- Do not perform any cutting in wet or moist surroundings.
- Replace defective parts immediately.
- Do not repair damaged torches and hose bundles, but replace them instead.
- Always switch the equipment off before replacing torches, wear parts or damaged parts.
- Use only original REHM spare parts.
- Repair work may only be carried out by qualified technicians who have been trained by REHM. Before opening the housing of the plasma cutting equipment, it must have been disconnected from the power supply, e.g. by pulling out the plug. When the housing is open, the device must not be operated and must be disconnected from the power supply.

### 6.3 Information for your personal safety

Extremely high temperatures, infra-red and ultraviolet radiation can occur during plasma arc cutting. Radiation from the electrical arc and hot metal can cause serious burns to unprotected skin and eyes.

- To protect the eyes and body from sparks and radiation from the arc, please use only welders' protective hoods that are free of defects and are fitted with approved protective filters (protection level 11-13), leather gloves and a welding helmet (see VBG 15, §27). Wear the same protective clothing even when you are only supervising the cutting work.
- Inform anyone in the vicinity of the hazards of arc radiation and hot metal splashes, and protect them with non-flammable shielding.
- Never point the cutting jet at persons or objects.
- Compressed gas cylinders constitute a potential hazard. Therefore comply strictly with the safety regulations issued by the relevant safety authorities and suppliers. Safeguard shielding gas cylinders against falling over.
- Use appropriate protective clothing such as welding aprons, gloves, headgear and safety shoes. Make sure that your clothing cannot catch sparks or cinders. For example, wear trousers without turn-ups.
- Do not wear contact lenses during work, (there is a danger that the lens could burn onto the cornea).
- Take care to ensure that reflection and transmission of radiation are not possible in the cutting area. Use dark surfaces, for example, to reduce reflections, and use guard shields and safety partition panels.

### 6.4 Fire Protection

- Hot cinders or sparks can trigger fires if they come into contact with flammable materials, liquids or gases. Remove all inflammable and explosive materials from the cutting area and have a fire extinguisher to hand.
- Never perform cutting work on containers used to hold fuel, lubricants or other combustible materials, even if they are empty.

- Where the ambient air contains high concentrations of inflammable vapours, combustible gases or dust, cutting work may only be performed if the area is properly ventilated.
- If hydrogen is used or is present, it should be noted that it is an inflammable gas and that there is a potential danger of explosion.
- If aluminium is cut underwater or directly on water, the high temperature of the plasma can trigger decomposition of the water into oxygen and hydrogen. The combination of oxygen with hot aluminium can result in dangerously high concentrations of the remaining hydrogen. This concentration of hydrogen can be avoided by using suitably designed air agitation units on the table bottom.
- Only use pressure regulators that are in good condition and only for the gases for which they are intended. Never lubricate pressure regulators with grease or oil.

## 6.5 Ventilation

- During cutting work, poisonous gases can be given off as a result of melting of the material. Wear protective masks!
- Workstations must be designed taking into account the methods, materials and conditions of use, so that the air inhaled by the user can be kept free of substances harmful to health (see VBG 15, 4 and 29).
- Take care to ensure that the cutting area is ventilated either by natural ventilation or by appropriate technical devices.
- Do not perform any cutting work on workpieces that are painted or treated with degreasing agents, which can cause poisonous vapours to be given off. The material to be cut must be cleaned of any solvent or degreasing agent.
- Solvents containing chlorine or materials containing lead, graphite cadmium, zinc, mercury or beryllium or are coated with these can give off poisonous fumes that could be a health hazard.

## 6.6 Checks before switching on

It is assumed that:

- the unit was set up properly in accordance with → **Chapter 5, Commissioning;**
- all connections (shielding gas, torch connection) were established in the proper fashion in accordance with → **Chapter 5, Commissioning;**
- maintenance work has been carried out at the due intervals → **Chapter 8, Maintenance;**
- the safety devices and equipment components (especially the torch connection hoses) have been checked by the operator and are in proper working order;
- the operator and other persons involved have put on the appropriate protective clothing, and the working area has been shielded so that no bystanders are at risk.

## 6.7 Connection of the earthing cable



### Warning!

→ Section 6.2 Electrical Hazards. Take care to ensure that the welding current cannot flow through hoist chains, crane ropes or other components that conduct electricity.

→ Section 6.2, Electrical Hazards. Ensure that the earthing cable is connected to the work piece as close to the welding location as possible. If the earthing cable is not connected to the work piece near to the welding location, the effectiveness of earthing will be reduced and the risk of electric shock and stray currents will be increased.

## 7 Faults

### 7.1 Safety instructions



#### Warning!

In the event of a fault which constitutes a danger to persons, equipment and/or the surroundings, switch off the equipment immediately and ensure that it cannot be switched back on.

Do not resume operation of the equipment until the cause of the malfunction has been eliminated and there is no longer any hazard to persons, equipment and/or the environment.

Faults should be rectified only by qualified staff observing all safety instructions. → Chapter 2.

The equipment must be inspected and approved by qualified staff before it is used again → Troubleshooting Table.

If the equipment is properly set up and handled, plasma cutting using the *REHM BARRACUDA cutting equipment* will become a simple, reliable separation process. If nevertheless any faults should occur, we would like to give you the following practical advice and tips on how to eliminate them. If you are unable to solve the problem using this information, we would ask you to contact your supplier, who will be happy to help you further.

#### General information:



Different metals, especially non-ferrous metals, have quite different heat conduction properties, which have an effect on the appearance of the cut surface/cutting results. In such cases, you should check whether alteration of the current setting, the nozzle, the distance from the work piece or the speed at which the torch is moved could produce better results.

## 7.2 Troubleshooting Table

---

### **Control lamp MAINS ON (green) has gone out – not working**

---

<u>Cause</u>	<u>Remedy</u>
Mains or phase voltage missing	Check fuses and voltages
Fault in mains cable or plug	Check these

---

### **Equipment will not switch on – control lamp OPERATION (green) has gone out**

---

<u>Cause</u>	<u>Remedy</u>
Operation blocked by one of the yellow control lamps	See “Control lamps”
Faulty torch button or hose bundle	Service required!
Torch not properly assembled after replacement of wear parts	Check this

---

### **Control lamp OPERATION (green) is on steadily**

---

<u>Cause</u>	<u>Remedy</u>
Torch button faulty (short-circuit) Control defective	Check torch button Service required!

---

### **Control lamp TORCH (yellow) is lit**

---

<u>Cause</u>	<u>Remedy</u>
Torch parts are worn	Change wear parts

---

### **Control lamp TEMPERATURE (yellow) is lit**

---

<u>Cause</u>	<u>Remedy</u>
Maximum duty cycle exceeded	Allow equipment to cool down, and clean it if necessary
The air inlet or air outlet is clogged or blocked	Clean, make sure air can circulate freely, if necessary fit air filter attachment

---

### **Control lamp AIR PRESSURE (yellow) is lit**

---

<u>Cause</u>	<u>Remedy</u>
Air pressure too low	Provide the required air pressure

---

### **WATER control lamp (yellow) is lit (only with water cooling option)**

---

<u>Cause</u>	<u>Remedy</u>
Water pressure too low, not enough water	Replenish water
Water pump fuse has blown	Check fuse and replace if appropriate
Water pump defective	Service required!

---

**Fans do not operate**

---

<u>Cause</u>	<u>Remedy</u>
Fuse has blown	Change fuse
Fan defective	Service required!

---

**Pilot arc difficult to ignite or will not ignite**

---

<u>Cause</u>	<u>Remedy</u>
Plasma nozzle or electrode worn	Replace wear parts
Water in compressed air	Check and if necessary insert fine mesh micro filter
Failure of one phase of the power supply voltage	Check fuse

---

**No cutting current available**

---

<u>Cause</u>	<u>Remedy</u>
Workpiece too far from nozzle	Check out
Torch faulty	Replace torch
Failure of one phase of the power supply voltage	Check fuse
Workpiece not connected	Check earthing cable and earthing clamp

---

**Weak cutting performance**

---

<u>Cause</u>	<u>Remedy</u>
Wrong nozzle	Change nozzle
Wrong distance from workpiece	Correct
Wrong current setting	Correct
One phase of power supply voltage missing	Check fuse
Poor earth connection	Check out

---

**Cutting arc is extinguished**

---

<u>Cause</u>	<u>Remedy</u>
Cutting speed too high	Reduce speed
Torch too far away	Move closer

---

**Plasma jet is a green colour**

---

<u>Cause</u>	<u>Remedy</u>
Torch electrode or nozzle faulty	Check and if necessary replace

*Trouble-Shooting Table*

---



---

**High consumption of wear parts**

---

<u>Cause</u>	<u>Remedy</u>
Wrong nozzle being used	Check and if necessary correct
Air is moist or dirty	Check if necessary, fit fine mesh micro filter
Original REHM spare parts not in use	Check out
Cutting performance too high for workpiece contact	Check handling
Pilot arc ignites too often in the air	Check handling

---

**Insufficient penetration**

---

<u>Cause</u>	<u>Remedy</u>
Cutting speed too high	Reduce speed
Torch inclined at too great an angle	Correct torch angle
Material too thick	Check cutting current setting

## 8 Maintenance Work

### 8.1 Safety instructions



**Warning!**

Repair and maintenance may only be carried out by persons who have received appropriate training from REHM. Please contact your REHM dealer. When replacing parts, use only original REHM spare parts.

If maintenance or repairs are undertaken by persons who have not been trained by REHM and are not authorised for this work, then REHM will not accept any liability or warranty claims.

The plasma cutting equipment must be switched off and disconnected from the mains supply before cleaning commences!

Before maintenance is carried out, the welding unit must be switched off and disconnected from the mains supply and protected against being switched back on inadvertently.

Supply hoses must be blocked off and depressurised.

The warnings contained in → Chap.2 "Safety Instructions" must be observed.

The welding equipment and its components must be maintained in accordance with the specifications in the operating and maintenance instructions.

Inadequate or inappropriate maintenance or repair work can lead to technical faults during operation. Regular maintenance of the equipment is therefore essential. No structural modifications or additions to the equipment may be undertaken.

**Before maintenance is carried out, the welding unit must be switched off and disconnected from the mains supply and protected against being switched back on inadvertently.**

### 8.2 Maintenance table

The maintenance intervals are recommended by REHM for normal standard requirements (e.g. one-shift operation, use in clean, dry surroundings). The precise intervals will be determined by your safety officer.

Activity	Chap.	Interval
Cleaning of equipment interior	8.3	Depends on conditions of use
Function testing of safety devices by operating staff		Daily
Visual checking of the unit, especially the torch hoses		Daily

Activity	Chap.	Interval
Checking that fault-current circuit breaker is working.		Daily (with unsupported work)  Otherwise monthly
Have supply cables and torch hoses inspected by qualified staff; inspection noted in the appropriate test book.  <b>Inspection to be carried out more frequently if required by national legislation.</b>		Every 6 months
Have entire welding equipment inspected by qualified staff; inspection noted in the appropriate test book.  <b>Inspection to be carried out more frequently if required by national legislation.</b>		Once a year

### 8.3 Cleaning of equipment interior

If the *REHM plasma cutting equipment* is used in a dusty environment, the interior of the unit must be cleaned regularly by blowing-out or suction.

The frequency with which this cleaning has to be performed depends on the conditions of use. Use only clean, dry air for blowing-out or use a vacuum cleaner.

### 8.4 Proper waste disposal

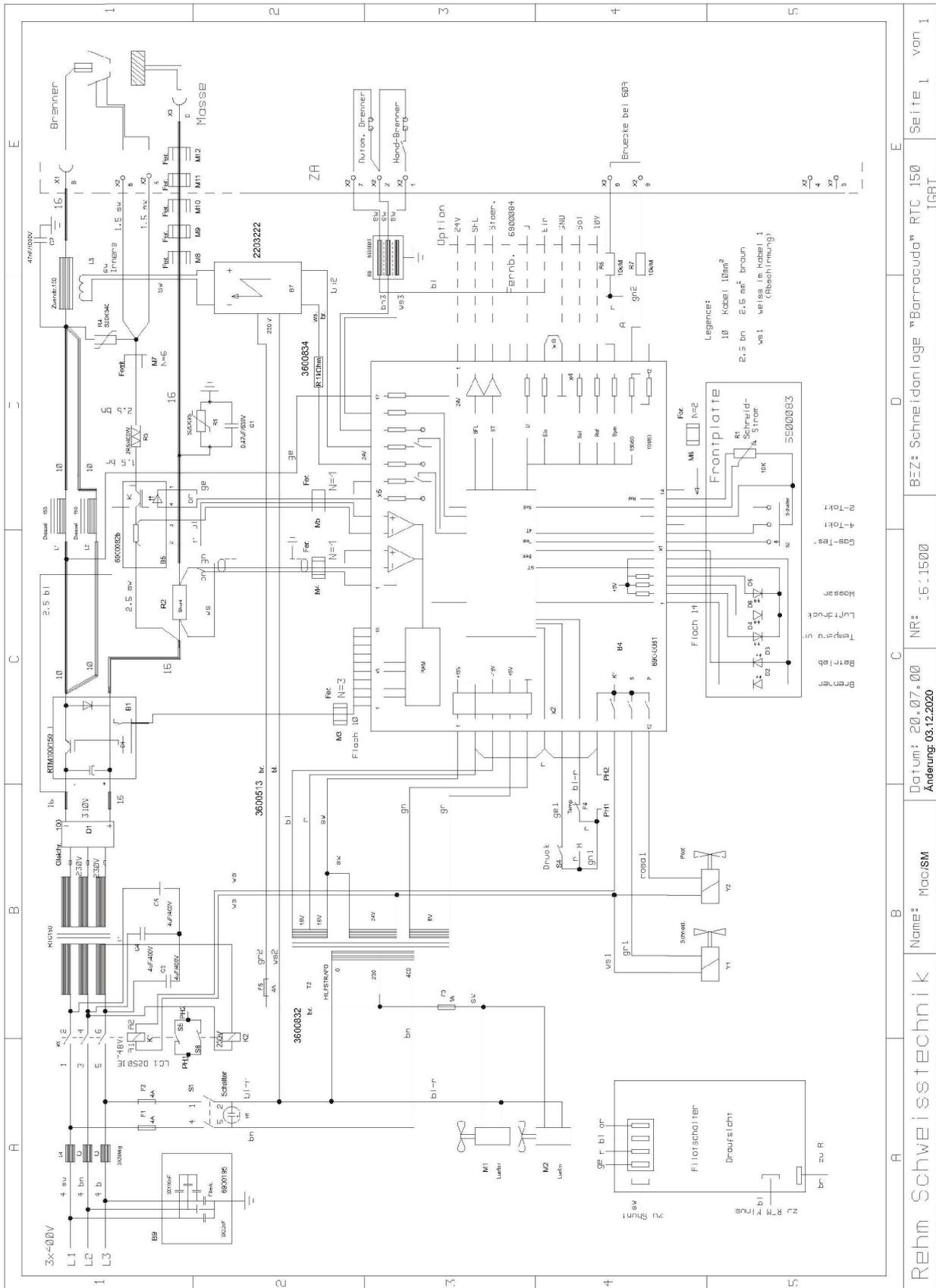


Only for EU countries!

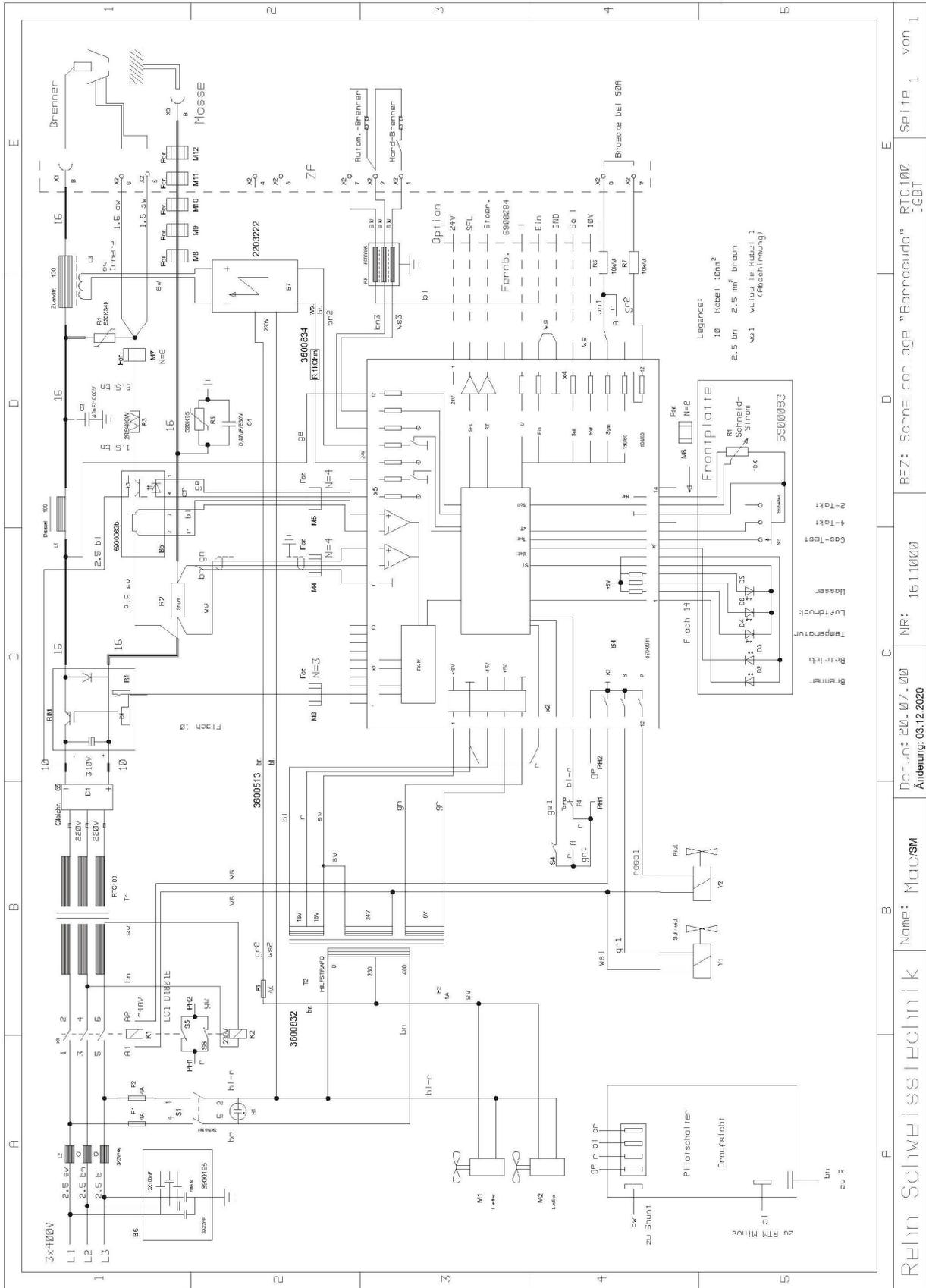
Do not dispose of electric tools together with household waste material!

In observance of European Directive 2002/96/EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life time must be collected separately and returned to an environmentally compatible recycling facility.

## 9 Circuit diagrams



Rehm Schweisstechnik Name: MaxSM Datum: 20.07.00 NR: 15:1500 B-Z: Schneidanlage "Barrocauda" RTC 150 IGBT Seite 1 von 1  
 Änderung: 03.12.2020



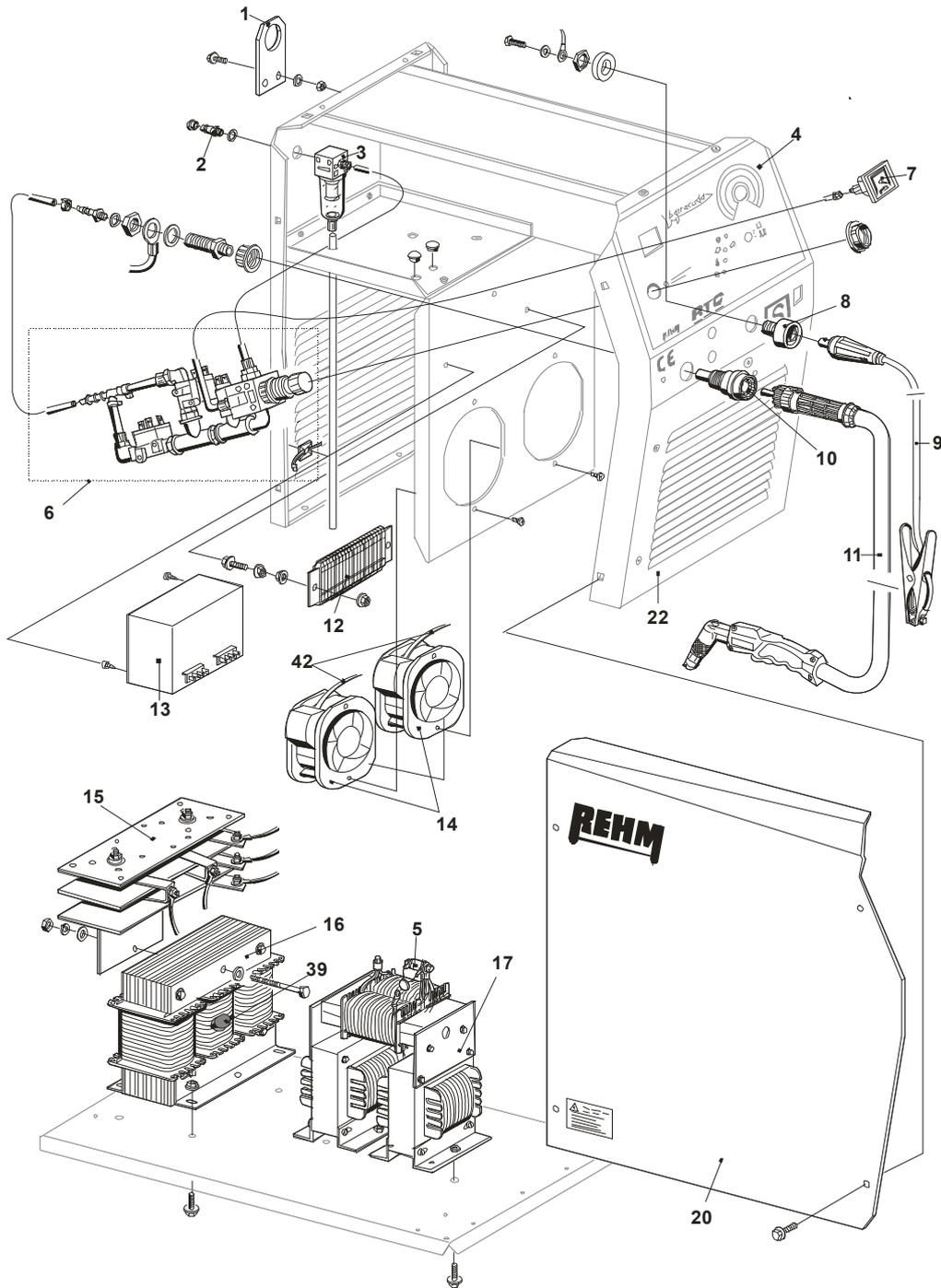


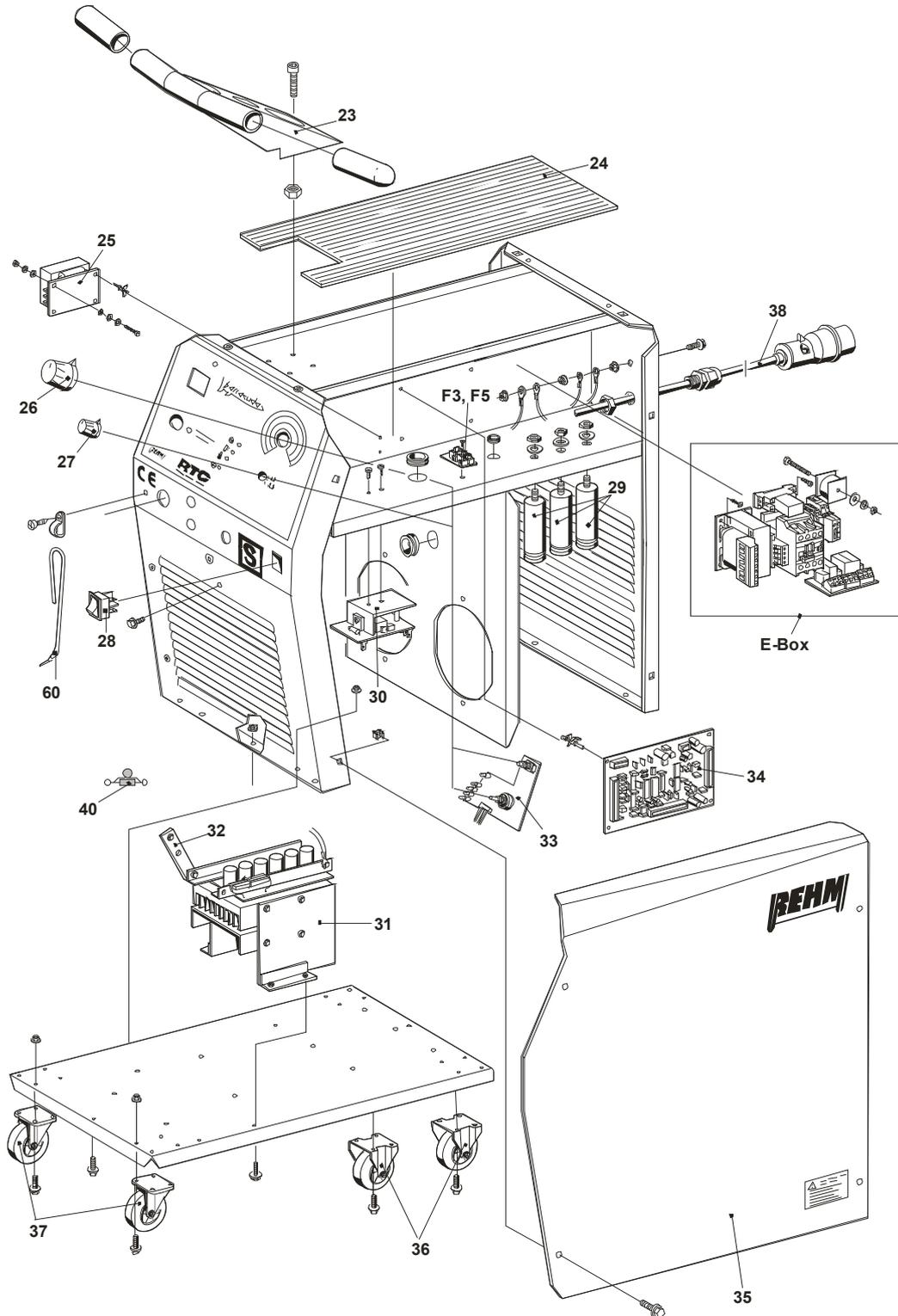
## 10 List of Components

### 10.1 Sparepart list REHM RTC

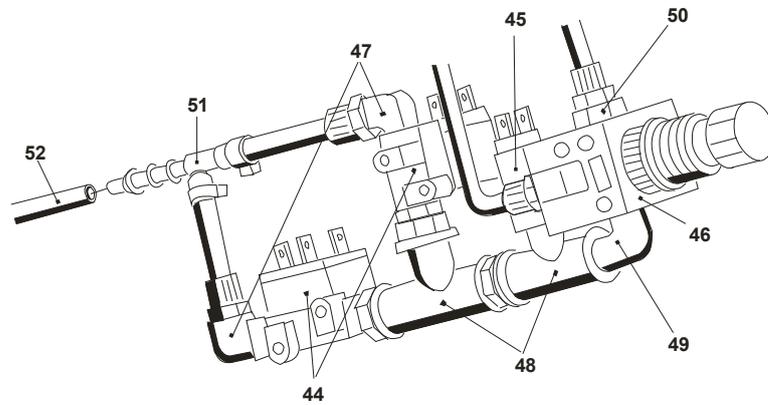
Drawing No.	Name	RTC 60	RTC 100	RTC 150
1	Suspension		2000757	2000757
2	Nipple	3100014	3100014	3100014
3	Compressed air filter	3100076	3100076	3100076
4	Control panel foil	7300176	7300177	7300178
5	Insulating bolt	3400108	3400108	3400108
6	Compressed air unit	2200286	2200287	2200287
7	Pressure gauge	3100049	3100049	3100049
8	Earth socket	4300023	4300023	4300023
9	ground cable	7810100	7810100	7810101
10	Torch suspension	7560102	7560102	7560102
11	Plasma torch	7660806	7661456	7661456
12	Pilot resistor	5100008	5100008	5100008
13	HF unit	6900020	6900020	6900020
14	Fan	4100008	4100008	4100008
15	Main rectifier	5300054	5300040	5300040
16	Main transformer	2200270	2200271	2200272
17	Choke unit		2200406	2200338
18	Welding chocke	2200273		
19	HF chocke	2200283		
20	Side panel left		2000734	2000734
21	Front panel	2000611		
22	Front panel		2000729	2000729
23	Handle	2100534	2500061	2500061
24	Cover		3300165	3300165
25	Surge filter	6900085	6900085	6900085
26	Rotary knob	2600055	2600055	2600055
27	Rotary knob	2600053	2600053	2600053
28	Power line switch	4200051	4200051	4200051
29	Capacitor			5200087
30	Pilot switch	6900082	6900082	6900082
31	Chopper	2200276	2200278	2200278
32	Shunt	6700019	6700020	6700021
33	Control panel	6900083	6900083	6900083
34	Main control panel	6900115	6900115	6900115
35	Side panel left		2000732	2000732
36	Block roller	2500011	2500006	2500006
37	Caster wheel		2500005	2500005
38	Mains cable	3600110	3600134	3600135
39	Thermostat	6600021	6600021	6600021
40	Interference suppressor	6900102	6900185	6900185
41	Instruction manual	7300275	7300275	7300275
42	Fan cable	3600069	3600069	3600069

Drawing No.	Name	RTC 60	RTC 100	RTC 150
	<b>Compressed air unit</b>	2200286	2200287	2200287
44	Solenoid Valve	4200113	4200113	4200113
45	Pressure switch	6600022	6600022	6600022
46	Pressure regulator	3100079	3100079	3100079
47	Threaded connector	3100085	3100085	3100085
48	Tee	3100016	3100016	3100016
49	Threaded connector	3100073	3100073	3100073
50	Quick-screw joint	3100007	3100007	3100007
51	Tee	3100034	3100034	3100034
52	Hose line f. compr. Air	3200003	3200003	3200003
	<b>E-box</b>			
53	Main contactor	4200108	4200063	4200063
54	Control transformer	4700052	4700052	4700052
55	Fuse socket	4300170	4300170	4300170
56	Power-line filter	6900195	6900195	6900195
57	Relays	4200153	4200153	4200153
58	Relays socket	4200154	4200154	4200154
59	Mounting support	4200158	4200158	4200158
60	Protection key	2101260	2101260	2101260
	Fuse F1 4A	6600043	6600043	6600043
	Fuse F2 4A	6600043	6600043	6600043
	Fuse F3 1A	6600043	6600043	6600043
	Fuse F5 4A	6600043	6600043	6600043

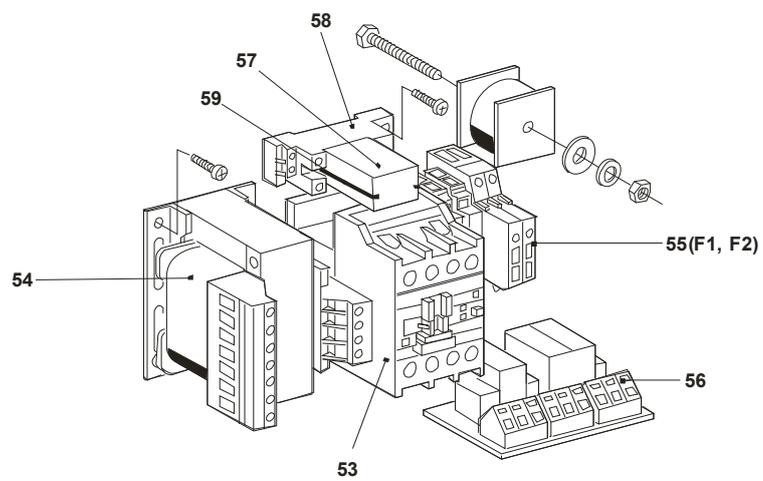




Compressed air unit



E-Box



## 11 Mechanised interlocks

Mechanised interlocks with metallic separation are only available factory fitted.

### 11.1 RTC units with 7-pin interface (only for RTC 100 and RTC 150)

Input: – “Cutting on/off” closing contact, always required.

Output:– “Current-flow” message contactless for “Cutting arc on” Can be used for external further processing, e.g. as precondition to starting control or similar.

Article number: 756 1152

Standard: 5m cable

### 11.2 RTC units with 17-pin interface (only for RTC 100 and RTC 150)

Inputs: – Current set point for the range  $I_{min}$  to  $I_{max}$  linear 0-10V or connection of potentiometer ( $\leq 10\text{ k}\Omega$ )

– “Cutting on/off” closing contact or “On” if  $U > 18\text{V}$

Outputs: – “Current-flow” message contactless for “Cutting arc on” Can be used for external further processing, e.g. as precondition to starting control or similar.

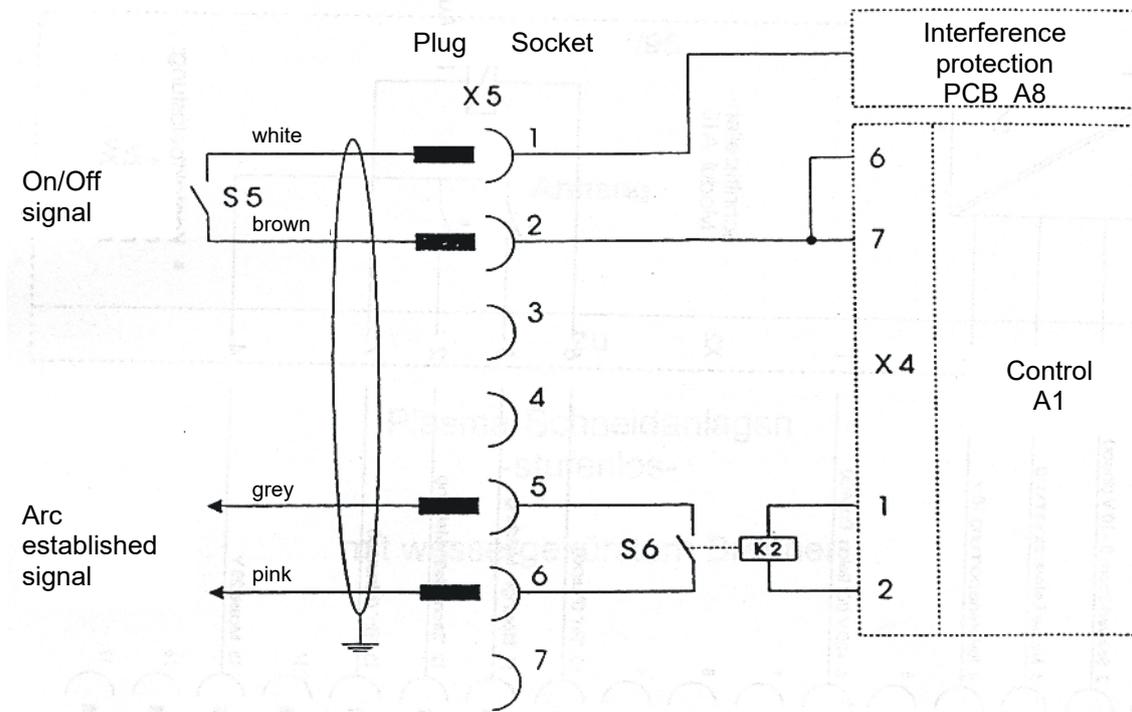
– Group alarm “RTC unit fault” by closing contact. Can be used for external further processing, e.g. as error message on control or similar.

- Actual value of cutting voltage 0-5V linear for 0-500V. Can be used for external further processing, e.g. for arc voltage height control or similar.

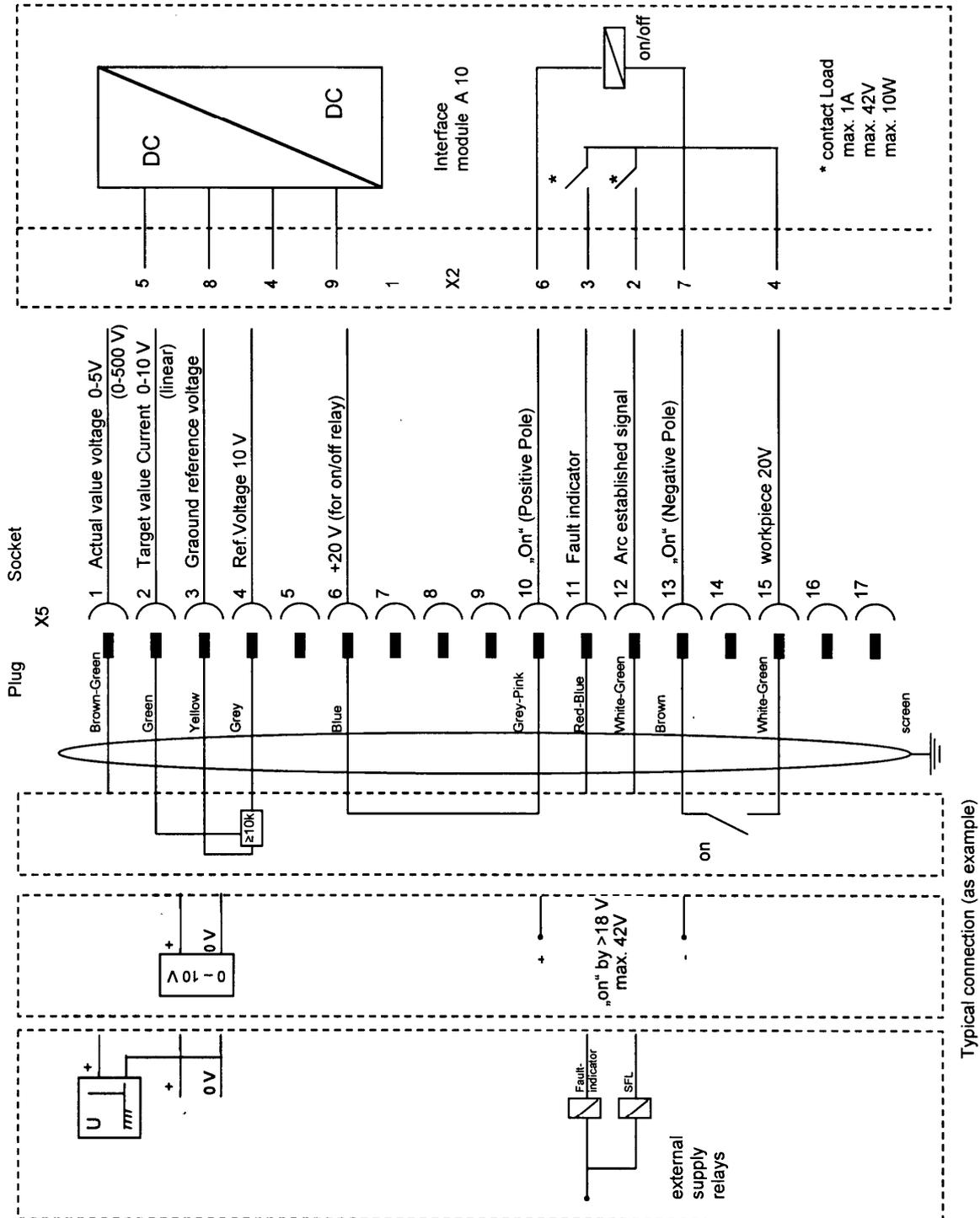
Article number: 756 1010

Standard: 5m cable

### 11.3 Connection schematic for 7-Pole mechanised cutting interface



### 11.4 Connection schematic for A-pole mechanised cutting interface



## 12 Technical Data

Model		RTC 60	RTC 100	RTC 150
Continuous range of adjustment	[A]	10 - 60	15 - 100	25 - 150
Duty cycle at $I_{max.}$ (10 min)	[%]	60	60	60
Current / voltage at 60% duty cycle	[A / V]	60 / 95	100 / 115	150 / 140
Current / voltage at 100 % duty cycle	[A / V]	50 / 90	80 / 105	130 / 130
Max. cutting performance	[kW]	5.7	11.5	21
No-load voltage	[V]	310	310	310
Power consumption at $I_{max.}$	[kVA]	7.5	13.5	24.5
Current consumption at $I_{max.}$	[A]	11	19	35
Power supply voltage	[V]	3 x 400	3 x 400	3 x 400
Power frequency	[Hz]	50	50	50
Mains voltage compensation		-10% +6%	-10% +6%	-10% +6%
Fuse protection	[A]	16	20	35
Power factor	cos $\varphi$	0.97	0.97	0.97
Protection class		IP 23	IP 23	IP 23
Insulation class		H	H	H
Type of cooling		Fan	Fan	Fan
Torch cooling		Mono-gas/air	Mono-gas/air	Mono-gas/air
Compressed air supply	[bar]	min 7 – max 10	min 7 – max 10	min 7 – max 10
Dimensions L/W/H	[mm]	345/460/885	655/375/885	655/375/885
Weight	[kg]	54	95	129

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## EC Declaration of Conformity

We hereby confirm that the following products

### Plasma Cutting Equipment

**BARRACUDA RTC 60**  
**BARRACUDA RTC 100**  
**BARRACUDA RTC 150**

meet all the major protection requirements laid down in the Council Directive **2004/108/EC** (EMC directive) on the approximation of the laws of the Member States relating to electromagnetic compatibility and stipulated in the Directive **2006/95/EC** relating to electrical equipment designed for use within certain voltage limits.

The aforementioned products comply with the provisions of this Directive and meet the safety requirements applicable to equipment for arc welding in accordance with the following product standards:

**EN 60 974-1: 2006-07**

Arc welding equipment – Part 1: Welding power sources

**EN 60 974-2: 2003-09**

Arc welding equipment – Part 2: Liquid cooling systems

**EN 60 974-3: 2004-04**

Arc welding equipment – Part 3: Arc striking and stabilizing devices

**EN 60 974-8: 2004-12**

Arc welding equipment – Part 8: Gas consoles for welding and plasma cutting systems

**EN 60974-10: 2004-01**

Arc welding equipment – Part 10: Electromagnetic compatibility (EMC) requirements

According to EC Directive **2006/42/EG** Article 1, para. 2, the above products come exclusively within the scope of Directive **2006/95/EEC** relating to electrical equipment designed for use within certain voltage limits.

This declaration is made on behalf of the manufacturer:

**REHM GmbH u. Co. KG Schweißtechnik**  
**Ottostr. 2**  
**73066 Uhingen Germany**

Uhingen, 24 April 2007  
Declaration made by

---

R. Stumpp

Managing Director



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