

STATE OF THE ARC PLASMA CUTTING TECHNOLOGY

INSTRUCTIONS FOR USE

SPARCIN 9 SPARCIN 9C

TO THE OPERATOR: PLEASE READ AND UNDERSTAND THIS MANUAL BEFORE USING THE SPARCIN 9/9C. IT IS *ABSOLUTELY VITAL* TO KNOW THE INFORMATION PRESENTED IN THIS MANUAL IN ORDER TO USE THE SPARCIN 9/9C IN THE BEST WAY.

WITH THIS KNOWLEDGE AND A PROFESSIONAL APPROACH, YOU WILL BE ABLE TO SOLVE MANY COMPLICATED CUTTING APPLICATIONS WITH THE SPARCIN 9/9C.

Rev. 3.2. 2017-07-19

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1. TECHNICAL DATA

Weight:

3~50Hz, 400V (standard) Power supply: 3~50Hz, 415V on request Main fuse: 16A slow blow 120V, 20-80A Process power: Duty cycle: 60% Maximum power: 12 kVA Power factor: 0,95 200V Open circuit voltage: Gas pre-flow: 1 sec Gas post-flow: 5 sec Dimensions: SPARCIN 9 SPARCIN 9C Length 550mm 550mm Width 300mm 300mm 460mm Height 310mm

22kg

28kg

2. INSTALLATION

SPARCIN 9 is ready for use after connection to electric power and compressed air or some technical gas for plasma cutting.

SPARCIN 9C (with built-in compressor) is ready for use after connection to electric power.

Power supply:

3~50Hz, 400V

Fuse: 16A slow blow

Important!

If the machine is to be connected to a power generator it is absolutely vital that the machine be fitted with generator filter. If the machine is not fitted with generator filter, serious damage to the machine and costly repair can be the result. Such damage is NOT covered by the warranty. The generator must supply minimum 15 kVA exclusively for the SPARCIN 9/9C.

Gas supply (SPARCIN 9 only)

Air plasma cutting:

Connect the compressed air to the filter regulator and adjust to 3,5-4 bar.

Gas plasma cutting;

Connect the constant flow regulator of the gas cylinder to the filter regulator and adjust to 3,5-4 bar.

The gas flow should be approx. 18 l/min.

IMPORTANT! The quantity of plasma generating air/gas flowing is decided by a gas injector situated in the connection between the gas hose and the torch body, and this is unique for SPARCIN 9. PLEASE NOTE, the torch for SPARCIN 9C has a unique gas injector.

The use of incorrect hose assembly may result in damage to the torch body as well as the power source.

3. OPERATING INSTRUCTIONS

Check that the machine has been properly connected to the power supply and gas, see chapter 2, installation.

NOTE! The machine may only be used with 400V power supply!

Connect the earth-lead to the front of the machine. Connect the earth clamp directly to the work piece. If necessary, clean the surface from paint, rust, dirt, etc.

Cutting

Place the POWER switch in position ON.

The power lamp READY will light.

The pump, fan (and built-in compressor) will start.

Choose process power (cutting current 20-80A)

Place the torch in position for contact cutting or distance cutting and press the START button on the torch handle.

Contact cutting

Slide the nozzle against the work piece.

As an accessory, there are special contact cutting nozzles, part no. 199 108, made for profile cutting.

Contact cutting is suitable for cutting up to 4 mm plate thickness.

Distance cutting

Keep a distance of a few millimetres between the nozzle and the work piece. The accessories for distance cutting are the distance cutting guide, part no. 199107/199124, the distance roller, part no. 299028/299030 and the circle cutting bar, part no. 299079/299082.

After activating cutting start the air/gas will flow for a short while before the plasma arc (pilot arc) strikes. If the cutting process does not start, the pilot arc will go out. Then make another try.

To stop the cutting process, release the START button on the torch handle. The plasma arc will go out instantaneously. Gas/air will flow for a few more seconds.

PLEASE NOTE! When the machine is not in use or is only used at long intervals, please switch off the machine. It contains mechanical components like fan, pump, (and built-in compressor), which should not be exposed to unnecessary wear.

Air plasma cutting

Use the electrode for air as plasma generating gas.

Gas plasma cutting

Use the electrode for technical gas; nitrogen (N_2) , argon/hydrogen mix (Ar/H_2) or nitrogen/hydrogen mix (N_2/H_2)

Use the nozzle marked 0,9, part no. 199060 for cutting plate thickness up to 6 mm, for thicker plates, use the nozzle marked 1,1, part no. 199001.

PLEASE NOTE! The plasma cutting torch is a component designed for high power outputs. Please handle the torch body and hose assembly with care.

With the proper handling, by an operator with the proper knowledge, the lifetime of the cutting torch will be very long, and the low wear on nozzles and electrodes will give good cutting economy. A damaged hose assembly, e.g. with air or water leakage, will infallibly damage the torch body.

NEVER USE A DAMAGED PLASMA CUTTING TORCH!

4. GENERAL INFORMATION ON PLASMA CUTTING

With exception of the systems that have built-in compressors (SPARCIN 9C), all SPT Plasmateknik AB manufactured plasma cutting systems with water cooled torch have full multi-gas capability.

When using technical gases, a pressure regulator as opposed to a flow regulator must be fitted to the gas cylinder. The use of flow regulators may lead to ignition problems and torch malfunction.

This chapter also describes in general how to optimise cutting quality and consumable lifetime.

When to use technical gas

Mild steel

Mild steel is cut with good quality using air as plasma generating gas. In some applications however, when better cut quality is desired, pure oxygen can be used as plasma generating gas.

When cutting with oxygen the consumable lifetime is shorter than with air.

Stainless steel

Most types of stainless steel are cut with good result with air as plasma generating gas. The weldability of the kerf however may be improved by using a technical gas.

Using pure nitrogen as plasma generating gas you can reduce the amount of chrome-oxide in the kerf. When cutting with nitrogen, the gas electrode as well as the air electrode may be used

To further improve the kerf quality, a mixture of 10% hydrogen in nitrogen (NH10) may be used. Since this mixture contains hydrogen a tendency to develop dross may occur. This can be minimised if not eliminated by very precisely adjusting cutting parameters as speed, distance, gas flow, nozzle size, process power etc. When cutting with NH10 the gas electrode as well as the air electrode may be used.

Aluminium

There are a great number of different aluminium alloys available. Most of them are cut without dross and with high speed using air as plasma generating gas. The aluminium-oxide in the kerf may reduce the weldability of the cut.

To reduce the aluminium-oxide a gas mixture of 10% hydrogen in nitrogen (NH10) may be used. When cutting with NH10 the gas electrode as well as the air electrode may be used. To further reduce the aluminium oxide a mixture of 35% hydrogen in argon (AH35) may be used. When cutting with AH35 the gas electrode must be used.

Note that when cutting with AH35 it may be necessary to use a nozzle with a bigger orifice to prevent double arcing.

Copper/brass

Copper and brass can depending on alloy be cut with air, nitrogen or a mixture of 10% hydrogen in nitrogen (NH10). When cutting with air, air electrode must be used. When cutting with nitrogen or NH10 air electrode as well as gas electrode may be used.

Titanium

Titanium is best cut with a mix of 70% helium in argon. When using this mixture, gas electrode must be used. Some titanium alloys are better cut with air or oxygen.

Piercing

Piercing is not recommended above 15 mm material thickness at >80A and 12 mm at <80A. When firing the pilot arc the nozzle must be protected from molten metal spattering back by keeping an adequate distance to the work piece. The piercing standoff distance must be at least double the cutting distance.

The piercing capacity is highly material dependant.

How to improve cutting quality

To reach the best possible results the first step is to assure that the plasma cutting system is properly installed an adjusted.

The cut quality is primarily determined from angle deviation, dross formation and the surface of the kerf.

Angle deviation

The angle deviation is either positive or negative. A positive angle deviation (V-shaped) occurs as a result of more material being removed in the upper part than the lower part of the cut. A negative angle deviation occurs as a result of the reversed conditions.

Problems with angle deviation consists either of the cut having too much angle deviation or inconsistent angle deviation, i.e. positive on one side, negative on the other.

Too much angle deviation

- Incorrect distance between nozzle and work piece. Adjust the distance.
 Too much distance > positive angle deviation
 To little distance > negative angle deviation
- Worn or damaged consumables. Check the parts and change if necessary.
- Wrong cutting direction. The left side of the cut seen from the cutting direction of the torch has less angle deviation than the opposite side. Check the direction and change if necessary.

 Too high cutting speed. By slowing the cutting speed the angle deviation can be minimised.

Inconsistent angle deviation

- Worn or damaged consumables. Check the consumables and change if necessary.
- The torch is not fitted straight in relation to the work piece. Check the torch position and adjust if necessary.
- Magnetic remanence in the work piece. Parts that are handled with electro-magnetic lift tools may become magnetic. Make sure that the material is handled without using magnetic lift tools.

Dross formation

Dross free cutting requires that all parameters for each job are optimised.

Dross formation as a result of too low cutting speed

• This type of dross formation occurs when the cutting speed is too low. The dross is extensive and porous. It is easy to remove. Reduce the dross formation by increasing cutting speed.

Dross formation as a result of too high cutting speed

This type of dross formation occurs when the cutting speed is too high. The dross looks like drops of molten metal and is hard to remove.
 By lowering the cutting speed the dross formation can be reduced. If reducing the speed does not solve the problem it may help to lower the distance between nozzle and work piece.

Sporadic dross formation

- Worn or damaged consumables. Check and change if necessary.
- This type of dross formation may be material dependant. Some materials cause more dross than others.
- Work piece temperature. When cutting the first parts from a work piece the dross formation can be lass than when the material has become heated.

The surface of the kerf

The kerf may be convex or concave. An accurate adjustment of the cutting speed and distance can help in obtaining a straight cut.

Concave kerf

• Too little distance between nozzle and work piece. Increase the distance in order to straighten the kerf.

Convex kerf

• Too much distance between nozzle and work piece, or too high cutting current. By first lowering the torch and then if necessary lowering the current the kerf can be straightened.

Some combinations of plasma generating gas and material can more than others cause convex kerfs.

Optimising consumable lifetime

The consumable parts of the water cooled torch guarantee the best possible consumable lifetime and optimum cutting economy. To optimise the consumable lifetime the following instructions must be followed.

Optimising electrode lifetime

- When piercing the torch must not be too close to the work piece
- Program the sequence so that the plasma arc goes out before the torch goes over the edge of the work piece. If the pilot arc re-ignites the electrode lifetime is reduced.
- The electrode lifetime can be increased by programming the sequence so that several parts are cut in one sequence, thereby reducing the number of starts.
- When changing plasma generating gas the gas system must be flushed.

Optimising nozzle lifetime

- When piercing, the torch must not be too close to the work piece. The piercing distance should be at least double the cutting distance.
- The distance between nozzle and work piece must be kept constant so that the nozzle does not touch the work piece.

5. ACCESSORIES FOR MANUAL PLASMA CUTTING

There are a number of accessories available for SPARCIN and SPARCON cutting systems equipped with hand torch.

Plasma gouging

All SPARCIN and SPARCON systems, except SPARCIN 5/, have gouging capability. By fitting the torch with nozzle extension, gouging nozzle (2,2 mm for <80 A, 3,0 mm for >80A), and protective cup for gouging (see torch parts lists) a powerful tool for gouging is obtained.

20 mm nozzle extension set

As an accessory there is a set of 20 mm nozzle extension, extended electrode and extended protective cup. This is useful for cutting in narrow places, corners, etc.

Contact cutting nozzle

By dragging the nozzle directly against the work piece a good cut quality can be obtained in material thickness up to 4 mm. Note that contact cutting is only allowed with cutting current up to $40~\rm{A}$.

Cutting wagon

For both SPARCUT XL (art. No. 299028) and DURACUT (art. No. 299030) there is a four-wheel cutting wagon available.

Circle cutting attachment

A circle attachment for DURACUT (art. No. 299079) and SPARCUT XL (art. No. 299082) for cutting radius between ca. 100 and 450 mm.

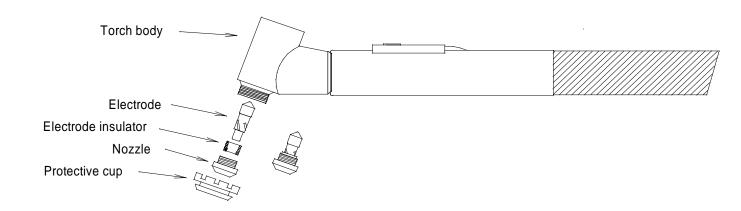
Distance cutting guide

For all hand torches there are two different types of distance cutting guides, art. No. 199107 and 199124. See the torch parts lists for more information.

6. CHANGING CONSUMABLES

WARNING! THE MACHINE MUST ALWAYS BE SWITCHED OFF WHEN CHANGING CONSUMABLES!

- 1. After removing the protective cup, loosen the nozzle with the nozzle tool. All the consumables can now be removed.
- 2. Please observe carefully the correct assembly of the consumables.
- 3. Tighten the nozzle with the nozzle tool.
- 4. Tighten the protective cup.



7. MAINTENANCE

Daily

Inspect and, if necessary, change nozzle, electrode and electrode insulator.

Empty and, if necessary, clean the moisture trap situated on the rear of the machine. This is easily done by pressing the bottom sealing of the glass cover while compressed air is connected, or completely unscrewing the cover and cleaning it from dirt. Disconnect compressed air or gas before unscrewing the glass cover.

Carefully inspect the torch body and the hose assembly with regard to any damage or leakage of air, gas or water, mechanical damage or other.

NEVER USE A TORCH WITH A DAMAGED TORCH BODY OR HOSE ASSEMBLY!

Every six months

Remove the plates from the machine. Inspect cable connections. Blow away dust and dirt with compressed air.

Check coolant level, if necessary, fill up with distilled or de-ionised water.

Coolant conductivity: <5µS/cm.

Fill up with anti freezing agent when necessary. When the machines leaves the factory the coolant consists of 70% de-ionised water and 30% pure mono-ethylene-glycol.

NOTE! The anti freezing agent must be pure glycol!

8. TROUBLE SHOOTING

Thermal overload

If the pump, fan (and compressor) are working but the green READY lamp is not lit, the thermal overload protection is active.

Let the machine cool down while switched on until the lamp lights. Now the machine is in working order.

Malfunction

If the pilot arc does not strike:

- check and, if necessary, change nozzle, electrode and electrode insulator.
- check and, if necessary, adjust inlet air/gas pressure to 3,5-4 bar.
- If possible, check air/gas flow, approx. 18 l/min. Too high air/gas flow will prevent the pilot arc from striking.

If the pilot arc is not stable:

- too high air/gas flow, adjust inlet pressure to 3,5-4 bar.
- the machine is working two-phase, check mains fuses.

Inferior performance or cutting quality:

- check inlet air/gas pressure, 3,5-4 bar.
- inspect torch body and hose assembly for damage and leaks.
- check nozzle, electrode and electrode insulator.
- check earth lead connection. If necessary, clean it from dirt, paint and oxide.

9. PERSONAL PROTECTION

Plasma cutting is, if correctly used, a safe, efficient and economically attractive method for cutting metals. However, like most industrial processes, it involves some risk factors. But they can be reduced - provided you are aware of them.

Plasma cutting produces noise, ultra violet radiation and fumes. For the safety of the workers some special measures should be taken.

To prevent burns:

The ultra violet (UV) radiation from the plasma arc may damage the eyes and the skin. The intensity of the radiation increases considerably near the arc. The operator and other persons near the work place should use some appropriate protection. The naked skin must be protected by wearing working clothes and protective gloves. The eyes and face must be covered by an appropriate shield with glasses to protect from UV radiation.

Noise:

Plasma cutting may produce some heavy noise. Always use good ear protection.

Fumes:

The operator and people near the work place should avoid as much as possible being exposed to the gases and smoke that might arise from the plasma cutting.

Provide for good ventilation combined with a suitable respiration protection and a correctly applied local exhaust system.

Remember that metals that are covered with or contain large quantities of lead, cadmium, zinc, chrome, nickel, mercury and beryllium may produce hazardous quantities of poisonous substances.



10. SPT Plasmateknik AB grants a 24 month warranty for its products.

Validity

The warranty applies to power sources manufactured by SPT Plasmateknik AB (SPT). The warranty period is 24 months from date of delivery to end user, but not more than 30 months from delivery from factory. If the product is used more than normal 1-shift work, the warranty period is shortened accordingly. Any warranty claim should be accompanied by proof of purchase.

Coverage

SPT will take responsibility to repair a machine to the state it was in before the fault occurred.

The warranty covers spare parts and reimbursement for work carried out by an authorised service point. Labor costs are limited to a fixed rate for each action carried out.

Upon replacement of parts, SPT reserves the right to invoice parts. The invoices will be credited upon the return of faulty parts to SPT.

When a warranty claim occurs, the customer should immediately turn to an authorised service point, or SPT directly. SPT requires detailed information about the conditions under which the machine was in use when the fault occurred, such as location (indoor/outdoor), ambient temperature, power supply (generator/normal power supply – if generator, information is needed about the rating and type of generator).

When a machine is taken in for warranty repair it is required that the torch also is brought in with the consumables mounted that were there when the fault occurred. The serial number must be clearly visible.

The user is responsible for limiting the damage by immediately stopping using the machine if a problem is suspected.

Warranty repair may only be carried out by authorised service points. SPT reserves the right to deny warranty claims where work has been carried out by non-authorised service personnel.

Should SPT find that the product has been used inappropriately and it is likely that such inappropriate use may continue, SPT reserves the right to refuse warranty repair and refund the customer, with a deduction for the use the customer has had of the product. SPT also reserves the right to restore the product to working order on the customer's expense.

Limitations

The following is not covered by warranty:

Defects caused by natural wear.

Defects caused by non-compliance of use and maintenance recommendations.

Improper gas pressure settings.

Improper electrical power supply.

Overload.

Damage caused by transport, handling and improper storage.

Fire

Damage caused by natural causes such as lightning, flooding etc.

Further, the warranty does not cover:

Fault finding, direct or indirect travel costs, transport costs, travel costs, allowances, accommodation and such.

NOTE! The warranty does not cover the torch and its consumable parts.

SPT bears no responsibility whatsoever for consequential damages caused by fault in its products, such as, but not limited to, loss of revenue, damages to 3rd party, production delays, penalties etc.

Warranty is not valid if modifications of any kind has been made to the product, without the written approval from SPT. Repairs made by non-authorised service personnel renders the warranty void.

A modified product will be restored to the original state at the expense of the customer prior to any repair, as SPT can not be responsible for the function of its products otherwise.

The remaining warranty period / spare parts guarantee

Following the guarantee repair, the warranty period for the repaired or replacement product will be valid until the end of the original warranty period. Exception: Replaced parts have a warranty period of 6 months, even if the remaining warranty period would be shorter. The warranty period of six 6 months also applies to repair outside guarantee.

Parts warranty covers only replacement parts.

Disputes

Disputes will be handled according to the general terms in Orgalime S 2012.

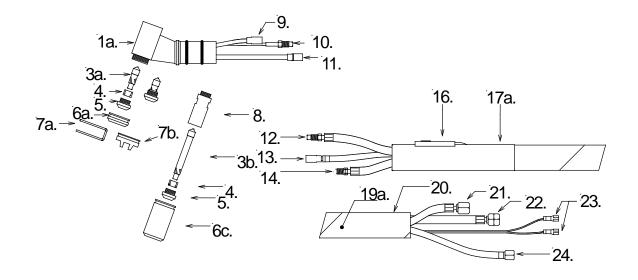
11. SPARE PARTS LIST

| 341012 | SPARCIN 9 power source |
|--------|--|
| 341013 | SPARCIN 9C power source with built in compressor |
| 399009 | SPARCUT 6m, plasma cutting torch/Sparcin 9 |
| 399045 | SPARCUT 6m, plasma cutting torch/Sparcin 9C |
| 221012 | Switching PCB 80A |
| 221013 | PWM PCB 80A |
| 221007 | Ignition PCB |
| 221011 | Rectifying PCB 80A |
| 100015 | Rectifier bridge DB35-12 |
| 110001 | Capacitor 0,1µF |
| 127002 | Potentiometer CURRENT |
| 141008 | Main power switch |
| 150001 | READY lamp |
| 154017 | Fan |
| 154012 | Coolant fan |
| 262020 | Water pump |
| 191021 | Manometer |
| 235005 | Control trafo SPARCIN |
| 236006 | Pulse transformer |
| | |

12. TORCH/TORCH PARTS LISTS

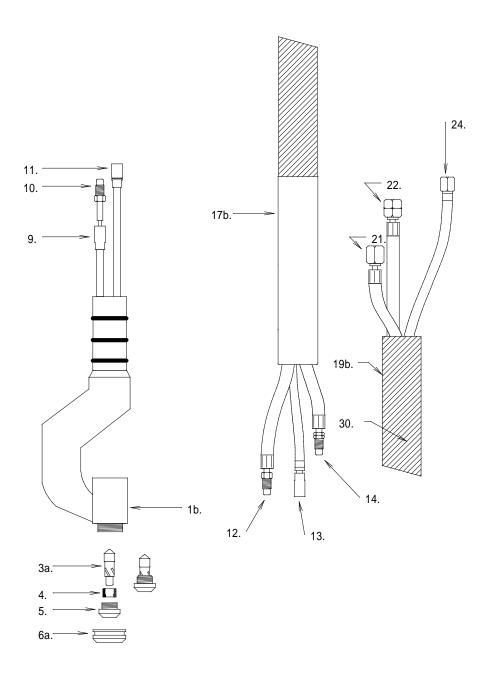
SPARCUT XL

LIQUID COOLED MANUAL TORCH

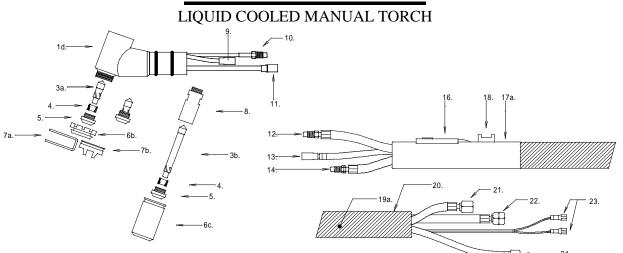


SPARCUT XL/M

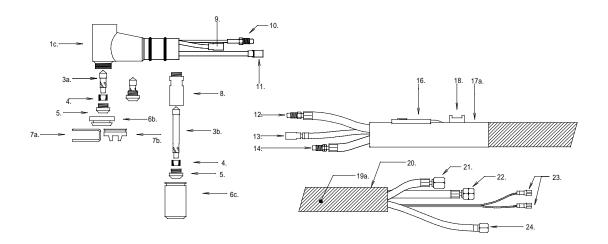
LIQUID COOLED MACHINE TORCH



DURACUT

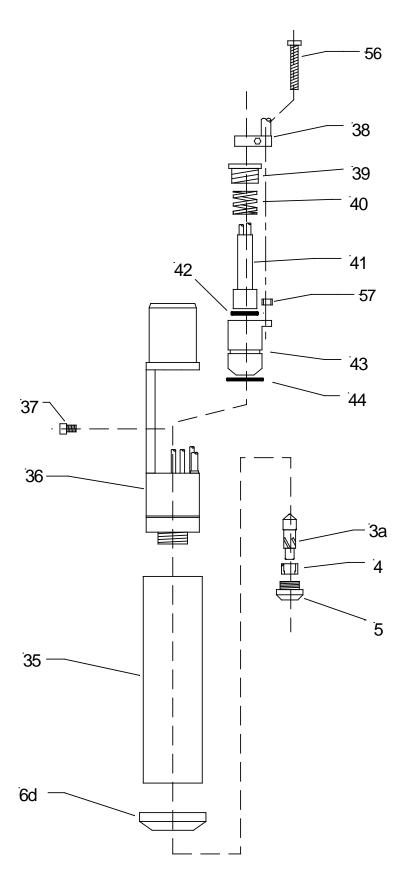


DURACUT 90 LIQUID COOLED MANUAL TORCH



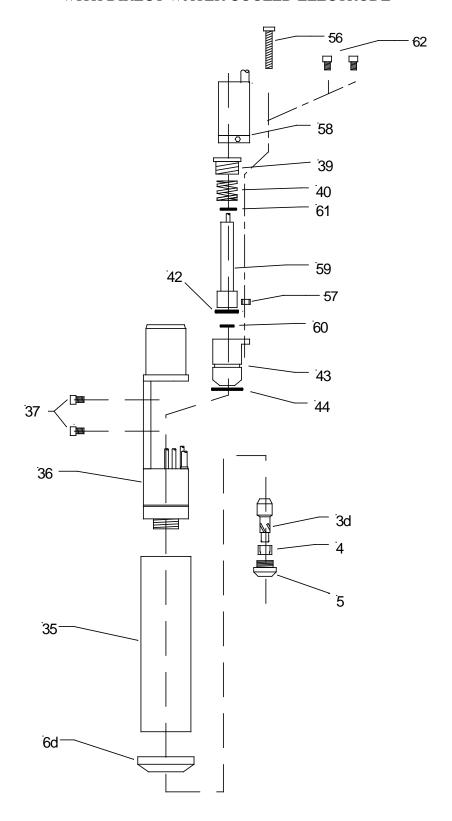
BAZOOCUTTM

SERVICEABLE HEAVY DUTY PLASMA CUTTING TORCH



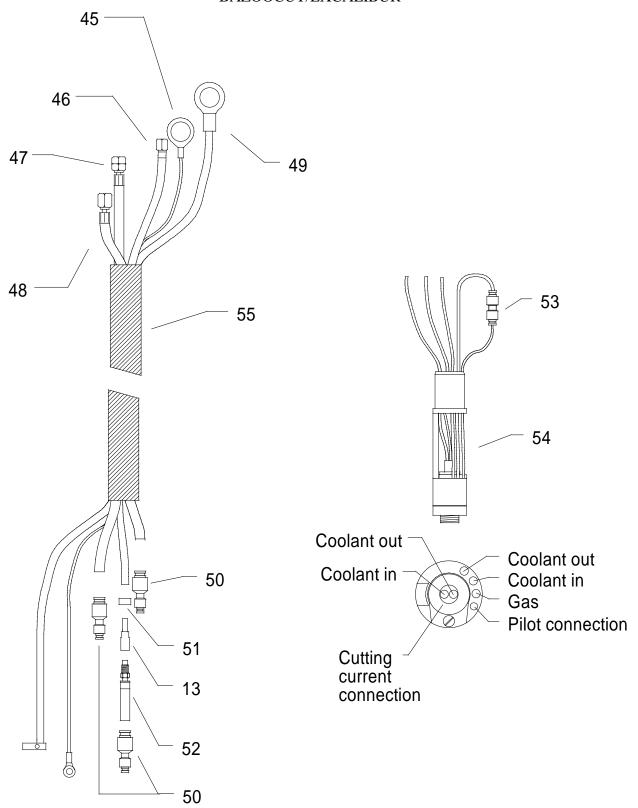
EXCALIBUR

SERVICEABLE HEAVY DUTY PLASMA CUTTING TORCH WITH DIRECT WATER COOLED ELECTRODE



HOSE ASSEMBLY

BAZOOCUT/EXCALIBUR



PARTS LIST

| Ref. No. | Det. No. | Denomination |
|----------|----------|---|
| 1a. | 299081 | Torch body SPARCUT XL |
| 1b. | 299103 | Torch body SPARCUT/M |
| 1c. | 299108 | Torch body DURACUT 90 |
| 1d. | 299072 | Torch body DURACUT |
| 14. | _,,,,, | 1010110000 2 0101001 |
| 3a. | 199002 | Electrode, air |
| | 199003 | Electrode, gas |
| | | |
| 21- | 100114 | Electro de fon consina |
| 3b. | 199114 | Electrode for gouging |
| 3c. | 199202 | Electrode, air long |
| 3d. | 199192 | Electrode, air, Excalibur |
| 4. | 199006 | Electrode insulator |
| 5. | 199060 | Nozzle 0,9 |
| | 199001 | Nozzle 1,1 |
| | 199101 | Nozzle 1,4 |
| | 199113 | |
| | 199123 | Nozzle 2,2 for gouging |
| | 199123 | Nozzle 3,0 for gouging |
| | 199146 | Nozzle 1,1S |
| | 199147 | Nozzle 1,4S |
| | 199064 | Protective cup, PTFE |
| 6a. | 199125 | Protective cup, PTFE for DURACUT/DURACUT 90 |
| 6b. | 199364 | Protective cup for gouging Duracut |
| 6c. | 199158 | Protective cup, PTFE for BAZOOCUT |
| 6d. | 199126 | Spatter shield for DURACUT/DURACUT 90 |
| | | (Not shown in picture) |
| 7a | 199107 | Distance cutting guide |
| 7b. | 199124 | Distance cutting guide, brass |
| 8. | 199112 | Nozzle extension 40mm for gouging |
| | 199203 | Nozzle extension 20mm for use with electrode 199202 |
| 9. | | Connection to current/water |
| 10. | | Connection to gas/air |
| 11. | | Connection to pilot/water |
| 12./22. | | Current water hose |
| | 299004 | 6m |
| | 299039 | 12m |
| | 299042 | 20m |
| 13. | 299020 | Throttle pin for Type I hose assembly |
| | 299051 | Throttle pin for Type II hose assembly |
| | 199018 | Throttle pin for Type III hose assembly |
| 14./21. | | Pilot water hose |
| | | |

| | 299005 | 6m |
|--------------|---------|--|
| | 299038 | 12m |
| | 299041 | 20m |
| 15. | 277011 | Connection to current lead |
| 16. | 199015 | Torch switch START |
| 17a. | 199016 | Torch handle for manual torches |
| 17a. 17b. | 199067 | Torch handle for SPARCUT XL/M TM torch |
| 170. | 299074 | Safety switch |
| 10. 19a. | 277014 | Hose assembly for manual torch, liquid cooled, Type I |
| 174. | 299003 | 6m |
| | 299032 | 12m |
| | 299033 | 20m |
| | 277033 | Hose assembly for manual torch, liquid cooled, Type II/III |
| | 299045 | 6m |
| | 299046 | 12m |
| | 299047 | 20m |
| 19b. | 277047 | Hose assembly for machine torch, Type I |
| 170. | 299034 | 6m |
| | 299035 | 12m |
| | 299036 | 20m |
| | 277030 | Hose assembly for machine torch, Type II/III |
| | 299048 | 6m |
| | 299049 | 12m |
| | 299050 | 20m |
| 20. | 199110 | Protective hose, Type I |
| 20. | 199111 | Protective hose, Type II/III |
| 23. | 183202 | Control cable |
| 24. | 103202 | Gas hose (without throttle pin) |
| 21. | 299006 | 6m |
| | 299040 | 12m |
| | 299043 | 20m |
| 35. | 199157 | Cover |
| 36. | 299101 | Front piece with holder |
| 37. | 199161 | Nylon screw |
| 38. | 199155 | Electrical connector |
| 39. | 199154 | Tightening screw |
| 40. | 199153 | Spring |
| 41. | 199156 | Contact piece |
| 42. | 199159 | Inner O-ring |
| 43. | 199152 | Insulator |
| 44. | 199160 | Outer O-ring |
| 45. | 1,,,100 | Pilot lead |
| 10. | 299089 | 6m |
| | 299090 | 12m |
| | 299091 | 20m |
| 46. | 2,,0,1 | Gas hose |
| | 299006 | 6m |
| | 299040 | 12m |
| | 299043 | 20m |
| | =>>0.10 | |

| 47. | | Coolant return hose |
|-----|--------|--|
| | 299098 | 6m |
| | 299099 | 12m |
| | 299100 | 20m |
| 48. | | Coolant hose |
| | 299095 | 6m |
| | 299096 | 12m |
| | 299097 | 20m |
| 49. | | Current lead |
| | 299092 | 6m |
| | 299093 | 12m |
| | 299094 | 20m |
| 50. | 199164 | Reduction nipple 8-4 |
| 51. | 199036 | Hose clamp |
| 52. | 299102 | Gas hose l=55 mm |
| 53. | 199165 | Reduction nipple 4-4 |
| 54. | 299080 | BAZOOCUT torch head complete |
| | 299107 | EXCALIBUR torch head complete |
| 55. | | Hose assembly BAZOOCUT/EXCALIBUR Type I |
| | 299083 | 6m |
| | 299084 | 12m |
| | 299085 | 20m |
| | | Hose assembly BAZOOCUT/EXCALIBUR Type II |
| | 299086 | 6m |
| | 299087 | 12m |
| | 299088 | 20m |
| 56. | 199186 | Nylon nut |
| 57. | 199187 | Nylon screw |
| 58. | 199189 | Electrical connector, EXCALIBUR |
| 59. | 199188 | Contact piece, EXCALIBUR |
| 60. | 199190 | O-ring, inner, contact piece, EXCALIBUR |
| 61. | 199191 | O-ring, inner, electrical connector, EXCALIBUR |

ACCESSORIES

| 299082 | Circle cutting bar, SPARCUT XL |
|--------|--------------------------------|
| 299208 | Circle cutting bar, SPARCSPLIT |
| 299079 | Circle cutting bar, DURACUT |

COMPLETE TORCHES

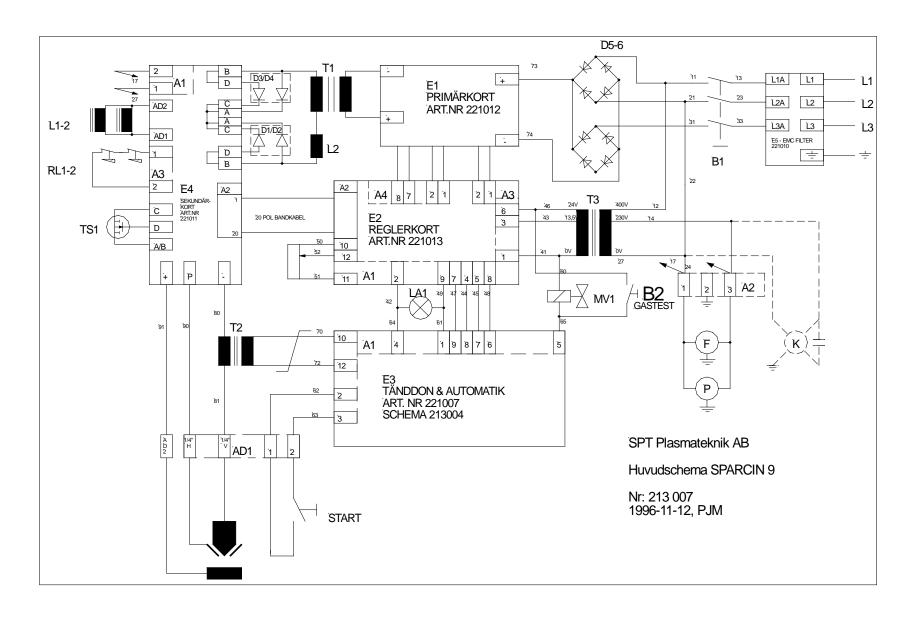
IMPORTANT!

For SPARCON 9 and SPARCON 900 use only Type I torches. For SPARCIN 5/5C, SPARCIN 9, SPARCON 1200 and SPARCIN 1800 use only Type II torches. For SPARCIN 9C use only Type III torches. On Type III torches, the throttle nozzle has been removed. The use of incorrect torches may result in damage to torch and power source.

| 200001 | |
|--------|--------------------------|
| 399001 | SPARCUT XL 6m Type I |
| 399005 | SPARCUT XL 12m Type I |
| 399006 | SPARCUT XL 20m Type I |
| 399009 | SPARCUT XL 6m Type II |
| 399010 | SPARCUT XL 12m Type II |
| 399011 | SPARCUT XL 20m Type II |
| 399047 | SPARCUT XL 6m Type III |
| 399004 | SPARCUT XL/M 6m Type I |
| 399007 | SPARCUT XL/M 12m Type I |
| 399008 | SPARCUT XL/M 20m Type I |
| 399012 | SPARCUT XL/M 6m Type II |
| 399013 | SPARCUT XL/M 12m Type II |
| 399014 | SPARCUT XL/M 20m Type II |
| 399046 | SPARCUT XL/M 6m Type III |
| 399020 | SPARCSPLIT 6m Type I |
| 399021 | SPARCSPLIT 12m Type I |
| 399022 | SPARCSPLIT 20m Type I |
| 399030 | SPARCSPLIT 6m Type II |
| 399031 | SPARCSPLIT 12m Type II |
| 399032 | SPARCSPLIT 20m Type II |
| 399048 | SPARCSPLIT 6m Type III |
| 399033 | DURACUT 6m Type I |
| 399034 | DURACUT 12m Type I |
| 399035 | DURACUT 20m Type I |
| 399036 | DURACUT 6m Type II |
| 399037 | DURACUT 12m Type II |
| 399038 | DURACUT 20m Type II |
| 399045 | DURACUT 6m Type III |
| 399042 | DURASPLIT 6m |
| 399049 | BAZOOCUT 6m Type I |
| 399050 | BAZOOCUT 12m Type I |
| 399051 | BAZOOCUT 20m Type I |
| 399052 | BAZOOCUT 6m Type II |
| 399053 | BAZOOCUT 12m Type II |
| 399054 | BAZOOCUT 20m Type II |
| 399055 | EXCALIBUR 6m Type I |
| 399056 | EXCALIBUR 12m Type I |
| 399057 | EXCALIBUR 20m Type I |
| | |

| 399058 | EXCALIBUR 6m Type II |
|--------|-----------------------|
| 399059 | EXCALIBUR 12m Type II |
| 399060 | EXCALIBUR 20m Type II |

13. WIRING DIAGRAM





DECLARATION OF CONFORMITY

according to EMC Directive 2014/30/EU Low Voltage Directive 2014/35/EU RoHS2 Directive 2011/65/EU

Type of equipment

Plasma cutting equipment

Brand name or trade mark

SPARCIN 5/8/9, SPARCIN 5C/8C/9C

Type designations

Manufacturer's name, address, telephone & fax no

SPT Plasmateknik AB

Box 4137

SE-227 22 Lund

Sweden

Telephone +46 46 18 48 00

Telefax +46 46 18 48 09

Conformity with the Directives stated above relates to the following reference documents:

Standards or other normative documents

EN 60974

As manufacturer we declare under our sole responsibility that the equipment follows the provisions of the Directives stated above

Lund 2017/05/19

Anders Somers

Director