

InvertaSpot GT®



Original - Working Instructions Part 1 Safety Instructions



Service-Hotline (+49) 07720 / 83 17 0



Version 20121009



MV Marketing und Vertriebs-GmbH & Co.KG
Wieländer+Schill
Professionelle Karosserie-Spezialwerkzeuge

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Legal relationship

We draw your attention to the fact that the contents of these operating instructions are neither part of any former or existing arrangement, pledge or legal relationship nor are designed for modifying the latter. All obligations of Wieländer + Schill result from the respective contract of purchase which also comprises the complete and generally valid warranties. These contractual warranty terms are neither extended nor restricted by the implementation of these operating instructions.



Attention:
Before starting to use this welder, you have to read Working Instructions Part 2.

 CAUTION	
Supply voltage 220-240V~ 220-240VAC	
connect to properly grounded outlets only	
	Electrical hazard Turn off power before servicing

1 General information and safety precaution – Part 1

1.1 General

This manual describes and explains the correct handling of the spot welding machine
„InvertaSpot GT“

If you should need additional information please call our service department or send an e-mail to:

Telephone +49 (0) 7720 8317 0

info@wielanderschill.com



The user has to read the manual before starting the machine. The user should understand the information. The manual has to be stored at a place near to the machine, easily accessible for everybody so it can be consulted in case of any doubts.

1.2 Necessary previous knowledge

To understand this manual previous basic knowledge with spot welding machines is required. The user has to be sufficiently educated in working safely with a spot welding machine.

The spot welding machine described in this manual has been built for work commercial businesses and may not be used in low voltage used in private houses as this can lead to electromagnetic interference.



The operator must also be familiar with the occupational health and safety directives and accident prevention rules.

Installation, service and repair of the machine may only be carried out by qualified and trained specialised electricians who are familiar with the machine. Always consider service information of the manufacturer.

1.3 Intended use

The spot welder „InvertaSpot GT“ has been developed exclusively for spot welding of thin metal sheet. It is not intended for other applications. The manufacturer and supplier (dealer/representative/agent) do not carry any responsibility for consequential damage in case of unintended use.

The spot welder may not be used for other purposes for example to heat up parts, to clamp or press parts using the pneumatic pincer gun.



The machine must be placed on flat (even) ground. Take care with the laying of the cables and hoses: They cannot be squeezed or folded.

Changes on the machine – even in a small scale – are not permitted as this invalidates the CE-certification and the warranty.

Symbols used in this manual do have following meaning:

	General safety instruction or General warning of a danger spot!		Warning of dangerous electric voltage!
	Warning of electromagnetic fields!		Warning of hot surface!
	Warning of flammable materials!		Warning of injuries! Danger of violent pressure to hands and fingers
	Warning of tilting danger		General prohibition! Will be explained in detail in additional text
	Ban for persons with pacemakers or other active implants!		Do not touch - danger of electric shock!
	Prohibition for wearing watches and metallic items!		Prohibition to use and wear magnetic items!
	Prohibition for persons with metallic implants!		Do not touch – DANGER!
	Eye protection required		Protective gloves required
	Follow instructions in the manual		General rule! Will be explained in detail in additional text

The manufacturer reserved the right of technical amendments without previous notice.

2 Safety instructions



To operate the machine safely the machine must be installed and commissioned by trained personnel.



When maintaining and servicing the electrodes and electrode caps the machine must be switched off and the air supply must be disconnected.



The personnel working with the machine must be instructed and must be familiar with the possible risks. They must read and understand the manual



Only authorized personnel may select the parameters at the machine that have experience in setting up manually parameters. Improper selection of parameters can cause burns or destroy the work piece.



It is prohibited that more than one person at a time work with the machine.



Unauthorized persons shall not have access to the machine.



Pay attention to the safety instructions in the text. If necessary instruct your colleagues and co-workers to follow these instructions.



Besides the instructions and recommendations mentioned in this manual you also have to follow the applicable laws of your country.



WARNING

Only authorized personnel of the manufacturer are allowed to open the machine!

2.1 Dangers while welding



When working with this spot welder it is fundamental to wear protective glasses and protective gloves!



The greatest risk of the machine is the risk of squeezing hands or fingers with the movable electrodes and electrode arms. Work with care and follow all instructions in the manual referring to this issue.

Here is some special advice:

- ① Do not put your hands near the movable parts.
- ① Use pliers or other gripping mechanism to hold and position work pieces so you can get your hands away from the danger area of the electrodes.



The activation of the pneumatic pincer gun is carried out by a magnetic valve. If this valve should be defective it could be possible that the pincer gun closes uncontrollably. In such a case stop the machine immediately using the emergency stop button at the front.



Another risk is the heating of the work piece and the electrodes. They can get very hot. Do not touch them without protective gloves to avoid the risk of burning.



During welding sparks can cause fire and injuries. These sparks are very hot. Especially the eyes have to be protected.

Generally it is necessary to wear protective glasses, welding gloves and not flammable clothes.



2.2 Risk of electric shock



Beware of the risk of electric shock, to touch the current-carrying parts can be perilous.



All housings of the welding machine must be closed. Only authorized personnel of the manufacturer may open them.

Pull the plug from the socket before opening the welding machine.

It is not sufficient to disconnect the machine.



ATTENTION! After pulling the plug from the socket parts of the machine still carry electricity (due to the capacitor). Wait 5 minutes before you start any service works.



Connect the machine only to sockets according to directions! Use only connections with protective earth conductor and power plug! Check regularly connecting cables, sockets and plugs for damage. If you detect defective parts or isolations stop the machine immediately. Before starting to work with the machine make sure that all protective devices have been installed according to directions and are working correctly. Cables and hoses shall be kept dry and free of oil and grease.



Never touch conducting parts with bare hands. Weld with the appropriate safety clothes and work with dry gloves. Remember that also a weak electric shock (which is not perilous) can cause a startle response which can create a dangerous situation.



Always put the welding gun down on insulated ground!

Malfunction of the machine - stop immediately. Failures shall be corrected only by specialised personnel.



The machine is not for use in the open!

2.3 Warning of electromagnetic fields

The machine will produce electromagnetic fields while working. The machine has been built to work in industrial areas – if used in residential areas interference with radio and TV or malfunction of other electronic devices can be caused.



In the immediate vicinity of the welder (pincer gun) the magnetic field intensity is especially high. For this reason people wearing active implants, pacemakers, defibrillators, insulin pumps, or similar – are not allowed to work with spot welding machines.



Please remember that this type of machine create strong magnetic fields which generates a strong attraction to ferromagnetic metals which can damage watches, cellular phones, magnetic cards and magnetic data carrier. Take care that the mentioned items are in a safe distance from the welding machine. The operator shall not carry rings, watches or clothing with metallic accessories.



Persons with metallic implants are not allowed to work with the machine, due to the magnetic field.

2.4 Danger by fire and explosion



Flames can be created by many ways: flying sparks, melted/ fused metal, hot slag, glowing work pieces, heat conduction or heat radiation, overloaded electric circuits etc. In the vicinity of explosive liquids, dust, vapour or gas deflagration and explosion can result.



These risks must be eliminated from the beginning. Use the appropriate safety measures to avoid the creation of flames and explosions.



Do not weld in areas where sparks can cause fire or explosions!



If a welding job has to be completed in an area with flammable or explosive material (for example gas, dust, flammable liquids) remove them from the workplace. If this should not be possible, cover the flammable material with appropriate blankets, shields, or similar means.



Do not close or cover air vents. Insufficient ventilation can result in overheating – danger of fire!



Do not carry flammable articles (like matches and lighters) in your pockets.



While welding look for fire sources in your surrounding!



Let the work piece cool down after welding! Do not get the work piece in contact with flammable material!



Adequate fire extinguishers must be in reach of the welding machine. They must be easily accessible.

2.5 Warning of hot surface



The risk of burning with the hot work piece or sparks is obvious. It is essential to wear protective clothing according to direction – especially protective glasses and gloves.

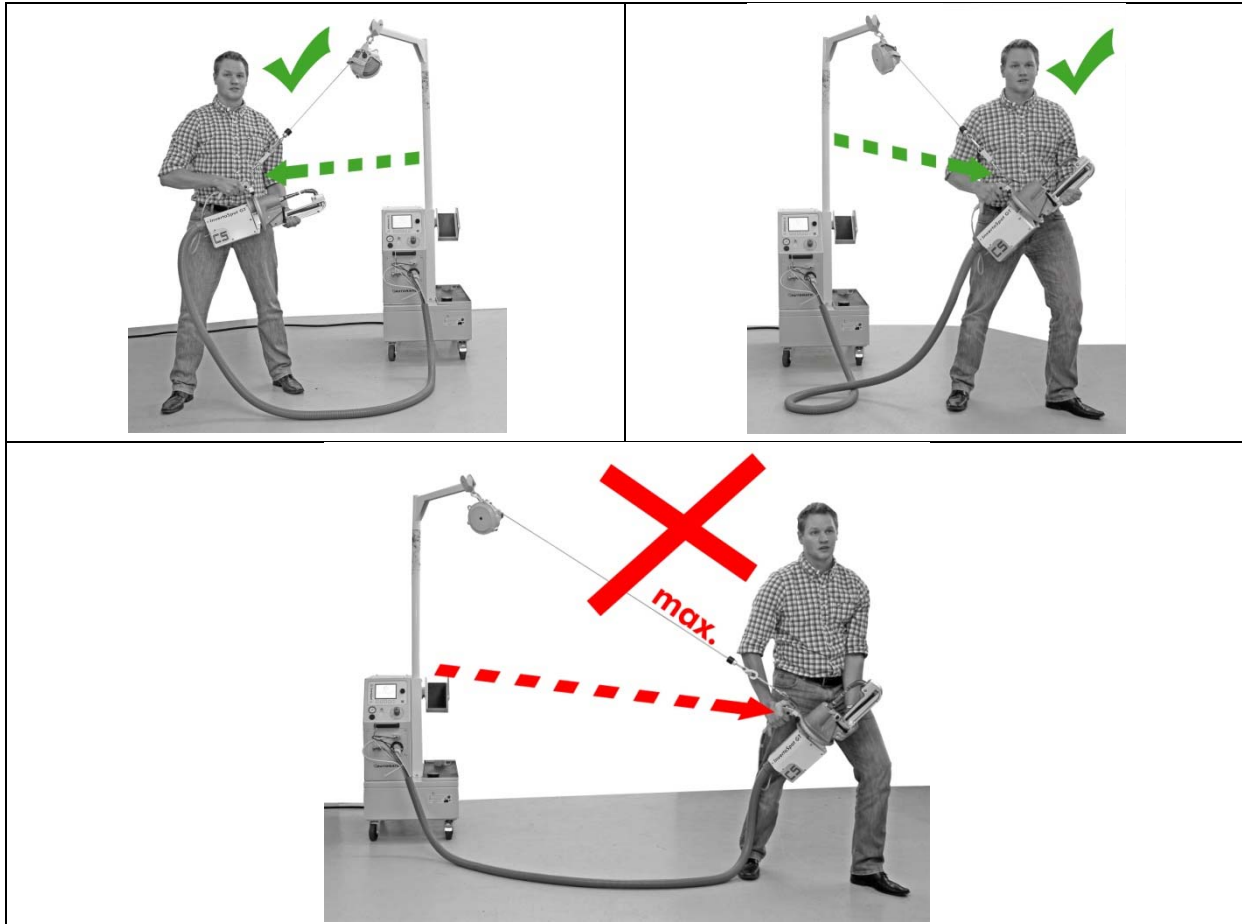


2.6 Warning of tilting danger



Please be advised that you act with extreme caution when the holding brake on the wheel is locked and the cable of the spring balancer is completely unrolled. When the distance between operator and machine becomes too great, there is a possibility that the machine will tilt over. The operator must take care not to work in this described situation. Please observe the photos below:

Please keep the front of the machine always facing the job.



2.7 Important safety instructions and warnings for Lithium batteries



The InvertaSpot GT spot welder is provided with a lithium battery (control system)
This battery type has been rated as dangerous for transport. PLEASE ALWAYS RESPECT THE REGULATIONS THAT ARE APPLICABLE AT ANY TIME!

On request we can supply you with the corresponding verification documents.

Handling of lithium batteries

- Keep in dry place
- Do not apply heat above 100°C and do not throw onto the fire
- Do not create a short circuit
- Do not open or damage the battery
- Do not re-charge
- Keep away from children

3 Emergency advise



In emergency cases disconnect the machine at the master switch at the rear of the machine.



If water should penetrate the machine, unplug the machine immediately.



In case of fire do not use water for fire-fighting, use appropriate fire extinguisher for electric fires.



The re-initialization for machines which have passed an emergency situation may only be carried out by trained experts who are aware of the necessary test run. Read the manual.

4 Installation and setting up



Familiarize yourself with the functions and with the display of the machine before installation. Read the manual thoroughly.



4.1 Checking the received consignment

Remove the original package. Open the wrapping carefully and check if all items are on the delivery note and without any damage.

If the machine is damaged you are not allowed to start working. You have to contact and inform immediately the supplier.



Dispose of the packaging according to local regulations.

4.2 Requirements at the place of installation



The machine must be installed and positioned according to the following conditions:

- ① Ambient temperature between 0 and 40°C. (32 °F and 104 °F)
- ① No flammable material shall be in the vicinity of the machine as sparks can cause fire.
- ① The workplace shall be illuminated properly.
- ① The machine is not for use in the open.
- ① The machine must be placed on flat ground with no unevenness.
- ① The access to the machine has to be safe and has to be ensured.
- ① Kids and public people are not allowed next to the machine.

4.3 Instructions of installation

4.3.1 Wheels of the machine



The installation of the wheels it has to be minded to install the wheel with the break in front of the machine on the right side. Exactly under the filler of the cooling water tank.



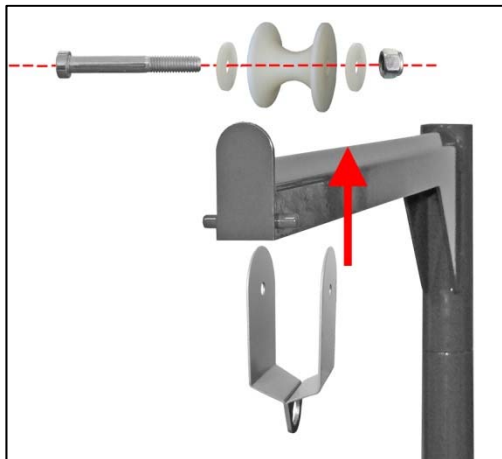
4.3.2 Notice for the balancer



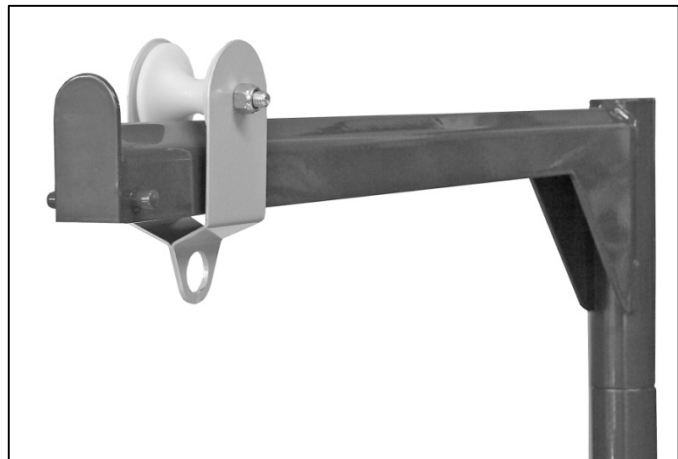
Changes in the construction of the balancer are not allowed!

4.3.3 Notice for the balancer roller

The balancer roller has to be installed correctly at the balancer. Consider the following instruction details:



1. Assembling



2. Balancer roller ready prepared to work

Furthermore the balancer roller has to be checked continuously as it is demonstrated here:



It is necessary to control continuously the screw of the balancer roller for the spring balancer with a ring and allen wrench. The balancer roller has to operate perfect and the mobility of the balancer roller has to be guaranteed. (see picture)



ATTENTION: If the screw and the nut does not ensure a perfect and safety function of the balancer roller they have to be replaced adequately.



4.3.4 Electrical connection



The spot welder may not be connected directly to the public power supply without the authorization of the local electricity supplier. This is not necessary if you have your own power supply.

The installation may only be carried out by specialized personnel who are familiar with the safety regulations. The spot welder can be supplied optionally with different supply voltage. Before installation compare the supply voltage mentioned on the type plate of the welding machine is in accordance with the supply voltage of the work place.



Welding machines may only be connected to correctly installed and suitable sockets. All connections must be undamaged. The power supply must have protective earth conductor and power plug! To use the machine in case of defect or no function of the safety and protective is not allowed.

The necessary diameter of the connector cables and the necessary fuse are described in the chapter „Technical Data“.

Revise if sockets, plugs, cables and connectors are undamaged and have not scorch marks.

4.3.5 Safety instruction against electric strike – to be provided by the user



The unit is allowed to use only if all protection covers are in place. Service only by experienced and professional members.

The use of the welder only is allowed by having in place the appropriate safety and security devices. Especially residual current circuit breaker device (RCD) alternatively fault voltage circuit breaker device. It is to ensure that the residual current faulted circuit impedance device comes with sufficiently low level, to make sure that the safety breaker device gets in operation in the correct time in case of any fault happens. More engineering standards please read at DIN EN 62135-1 / IEC 62135-1

The power supply grounding system is a so-called TN-S system: L1+L2+L3+N+PE. To use the unit is necessary to have a 5 pin CEE 32 A.

Power supply Technical data

Mains supply:	Europe: 3 x 400 V 50/60 Hz USA: 3 x 208 V 50/60 Hz
Max. power with 5 % duty ratio:	156 kVA
Continuous power ratio (100% ED)	35 kVA (Europe) 45 kVA (USA)
Fuse (slow blow) type gG:	32 A (Europe) 63 A (USA)
Power cable (copper):	5 metre long 5 x 6 mm ² (Europe) 197 incl. long 4 x 10 mm ² (USA)
Power supply system	L1+L2+L3 + PE

4.3.6 Safeguard equipment

The safeguard equipment and protective devices are for to protect the user. With no means they have to be removed.

During daily and normal use the user has to provide the working area with the appropriate exclusion zone, blinds and anti-spark curtains. Without having these safety devices in place it is not allowed to use the device.

4.3.7 Water cooling

Some components are cooled by water. When nearing overheat, the machine switches off automatically.



The water pump switches on and off automatically according to the working conditions.

Always make sure that there is enough water in the tank. To control the water level you have to remove the cap. If the water level is too low please fill the tank with mains water (no distilled water).

It is necessary to add to the cooling water enough anti-freeze and anti-corrosion. The anti-freeze liquid avoids the freezing of the cooling system. The anti-corrosion liquid prohibits the oxidation of metal materials.

In the event of cooling water freezing in the cooling system, it is very likely that parts of the welding machine could be badly damaged. For any such damage the manufacturer assumes no liability whatsoever.

Wieländer + Schill recommend the following product:

Cooling water preparation Article No. 478090

Open the drain screw below and the filler screw above to empty the tank.

It is important to refresh and replace the cooling water regularly. To prevent the water tank from sludge accumulation, from impureness, as well as having so-called algae in the water. As all this may block the cooling system and create damages.

4.3.8 Compressed air



The compressed air must be clean, dry and cool. The recommend air pressure is between 6 to 8 bar, like indicated in the technical data in the Original Working Instruction Part 2. In case of frequent pressure fluctuation we recommend a back pressure valve (min. 25 litre / 6,6 gal.) with cistern manometer.

5 Storage and Transport

5.1 Storage of the machine

During storage of packed and unpacked spot welding machines and it's accessories following conditions have to be followed:

- ① Storage only in closed rooms
- ① Humidity maximum 80%
- ① Temperature range between -15°C and +45°C (equivalent to +5°F and +113°F)

The minimum value from -15°C (+5°F) is applicable if sufficient antifreeze is in the tank. Read also the chapter 4.6.



In any case appropriate measures have to be taken to protect the machine against humidity, dirt and corrosion. For damage caused by improper storage the manufacturer assume no liability.



Separate the machine form the power and air supply when you bring it to another working place. Take care for obstacles and unevenness of the ground (for example for cables and hoses on the floor).

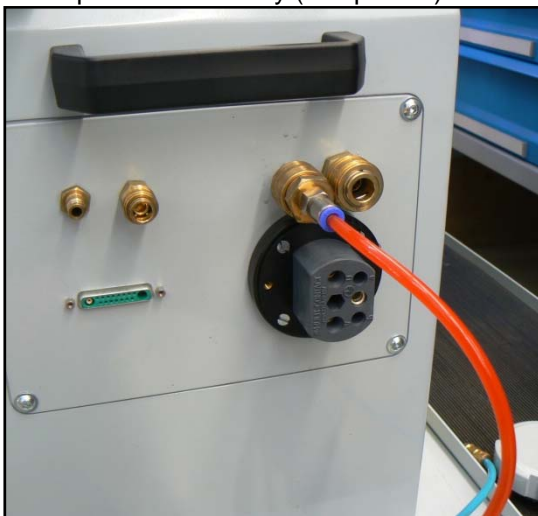
5.2 Service information for storage and transport of C- and X-Transformer guns

If the InvertaSpot GT will be switched off for a long time or if you want to transport it you have to consider the following steps:

Remove the cooling water from all parts to avoid corrosion as well as biological accumulations in the machine system. If you do not consider these important steps it is a great contempt of handling the machine. Therefore the manufacturer cannot afford any claim of guarantee.

Complete removal of cooling water in the guns

- 1.) Switch off the InvertaSpot GT and disconnect the machine from the main power supply.
- 2.) Unscrew the lid of the cooling water tank
- 3.) Remove all electric connections, air hoses and the blue water hose from the front of the machine. Do not remove the red water hose (cooling water return hose).
- 4.) Take the end of the blue water hose (water supply hose) and apply max. 8bar/116psi air pressure carefully (see picture)



- 5.) Apply air pressure several times until all cooling water has been removed from the water circuit of the transformer gun. Now remove the connector of the red water hose and connect with the blue water hose. Now the transformer guns are ready for transport or storing.
- 6.) If you have any further questions please contact the manufacturer or the responsible Service partner

6 Service and maintenance

6.1 Maintenance of the machine



Separate the machine from the power supply and air supply whenever service or repair has to be carried out.

Read the manual!



To make sure that the machine works properly during its lifetime the following maintenance work is necessary:

- ① All screws; at the power supply, pincer gun, electrode arms, as well as on the fixed and flexible connecting elements must always be tightened.
- ① Remove corrosion marks on all conductive parts. Electrode arms and the shaft of the electrodes can be lubricated slightly with highly conductive grease.
- ① Clean the machine of dust and specially from metal particles.
- ① Cables with damaged isolation must be changed immediately.
- ① Never wash the machine with a jet of water. Do not use aggressive cleaning agents, solvents or gasoline as this can damage the paint of the housing and destroy plastic parts.
- ① Replace the cooling liquid at least all three months.
- ① If the machine is stored during winter in a room without heating, remove the cooling liquid completely, if it does not contain sufficient antifreeze.

6.2 Maintenance of the electrodes



To service the electrodes unplug the power supply and disconnect the air supply previously!



To get a stable and constant quality of welding nuggets the electrode caps must always be clean. Also the geometry of the area of contact should not be changed (for example by mechanical deformation, by wear, by weld residue, by scorch marks).



Well used electrode caps have to be replaced.

6.3 Maintenance of the pneumatic system



Maintenance of the pneumatic system may only be carried out by specialized personnel who are familiar with the safety regulations and know about the risks associated with the equipment.

During maintenance and repair the machine must be unplugged from power supply and disconnected from the air supply. Exhaust the system of the remaining air.



Following measures are necessary:

- ① Stop the welding job if you detect any kind of air leakage.
- ① Regularly empty the water from the water separator and the reducing valve.
- ① Check the indication of the pressure gauge for accuracy.

6.4 Maintenance of the water cooling system

See also stanza 4.3.7 on page 13!

6.5 Yearly Maintenance / Warranty Claims

A yearly maintenance is necessary to guarantee any warranty claims. The maintenance can only be done by authorized persons.

7 Information

In case you require more information on engineering standards and rules and regulations for the subject of security instruction for resistance spot welding, we recommend you sources such as:

VDE Verlag GmbH, 10625 Berlin DIN EN 62135-1
Carl-Heymanns-Verlag, Köln BGV-01 ff

Government safety organisations safety and security regulations

8 Terms of warranty

For our spot welding machine Wieländer+Schill grants 12 month warranty for material defect or defects resulting from manufacturing fault.

Excluded are consumables and wear parts of the machine and of the accessories.

The warranty period starts with the date of delivery mentioned on the invoice and corresponding delivery note.

The warranty is valid for user/buyer, if the equipment has been purchased by an authorized supplier and has been used conventionally.

The warranty is invalid if the machine has been used inappropriately. The warranty is also invalid if the directions of use and safety given in the manual are not followed.

In case of defect or fault Wieländer+Schill can chose to replace or repair the defective parts on it's own discretion.



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InvertaSpot GT®



Original - Working Instructions Part 2
Setup of the welder, use and handling
C-twin sided welding gun
V3 - 3000

Service-Hotline (+49) 07720 / 83 17 0



Stand 09-2011



MV Marketing und Vertriebs-GmbH & Co.KG
Wieländer+Schill
Professionelle Karosserie-Spezialwerkzeuge

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Attention:

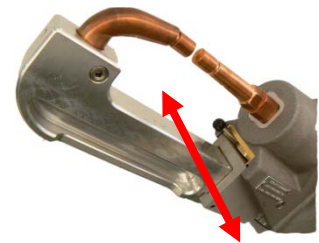
Before starting to use this welder, always read the safety instructions first: Please see the Working Instructions Part 1

 CAUTION	
Supply voltage 220-240V~ 220-240VAC	
connect to properly grounded outlets only	
	Electrical hazard Turn off power before servicing

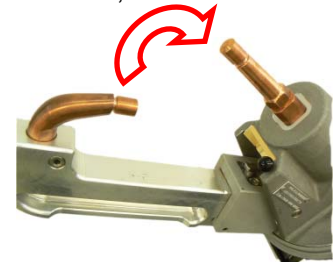
1 Resistance spot welder InvertaSpot GT

1.1 Details of the machine

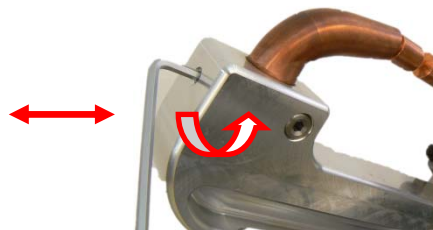
Main items of the machine: control unit + twin sided welding gun type C + balancer



Opening of the electrode arms, slide black lever



Secure and lock the electrode arms



For perfect welding results clean the electrode caps regularly. If case caps are over-used and out of original shape please replace the electrode caps.



InvertaSpot GT with C-gun balancer assembled

1.2 Technical data

Welding power

	Spot-welding
Setting range:	0 – 13 kA
Welding current:	DC current (AC USA)
Max. welding power:	13 kA
Continuous duty 100% ED duty ratio	2,8 kA
Open circuit voltage VOC:	12 V DC

Main parts of the spot welder: power and control unit, twin-sided gun type C and spring balancer.

Technical data

Mains supply:	Europe: 3 x 400V 50-60 Hz USA: 220-240V 3~50-60 Hz
Max. power with 5 % duty ratio:	156 kVA
Continuous power ratio (100% ED)	35 kVA (Europe) 45 kVA (USA)
Fuse (slow blow): type gG	32 A (Europe) 63 A (USA)
Power cable (copper):	5 metre long 5 x 6 mm ² (Europe) 197 incl. long 4 x 10 mm ² (USA)
Power supply system	L1+L2+L3 + PE

System of protection:	IP 20
Temperature class:	A

Air pressure	6 to 8 bar /90-120 psi
--------------	------------------------

Others

Length welding cable	3 m
Refrigerant	Tap water with antifreeze (do not use distilled water)
Tank volume	80 l - 22.45 gal.
Flow rate	5 l/min - 1,3 gal/min
Dimension (height x broad x width)	810 x 560 x 750 mm Approx. 32 x 22 x 30 inch.
Weight without refrigerant	119 kg - 262 lbs.
Noise emission	≤ 70 dB (A)

2 Important notice before using the InvertaSpot GT in Automatic Mode (optional)

Before starting to use the InvertaSpot GT in Automatic Mode please note:

For quality control we recommend that you first make sample welds of the material which is going to be spot welded and then check the nugget size by opening the welded sample.



Note: This resistance spot welder should only be used by professional and experienced staff.



Calibration: Working in automatic mode, re-calibration of the welder has to be carried out after each re-start, after each change of the caps, after each change of the electrode arms. Please read also chapter 7.2

Only perfectly dressed and clean surfaces of the electrode caps guarantee perfect welding results.

If spot welding in Automatic Mode is not recommended or allowed, then please use the machine in manual mode – read configuration in chapter 11.1.4



Automatic-Mode



Manual-Mode



3 The program structure of the InvertaSpot GT



Automatic	Automatic-Mode (optional)	Manual	Manual-Mode																																				
	The InvertaSpot GT automatically checks and measures the total metal thickness. Gun Pressure + Amps + Time are controlled and regulated continuously.		Parameters can be selected manually by turning the knob. Air pressure and current are automatically controlled at all times during the whole welding process.																																				
	Calibration of the welder: It is important to do this when starting to use the welder, changing of the electrode caps or changing the arms		Weld parameters according to total metal thickness, irrespective of metal quality or coatings																																				
	To set the O – point: Press button no 1 Weld copper to copper. Electrode caps must always be clean.		Measure of total metal thickness 																																				
	Single: Each weld will be measured and each one will receive its optimized weld parameters		Set parameter via the black knob. Air pressure sets automatically <table border="1"> <thead> <tr> <th>Progr</th> <th>mm</th> <th>mm</th> </tr> </thead> <tbody> <tr><td>1</td><td></td><td>≤ 1,50</td></tr> <tr><td>2</td><td>1,60</td><td>2,00</td></tr> <tr><td>3</td><td>2,10</td><td>2,50</td></tr> <tr><td>4</td><td>2,60</td><td>3,00</td></tr> <tr><td>5</td><td>3,10</td><td>3,50</td></tr> <tr><td>6</td><td>3,60</td><td>4,00</td></tr> <tr><td>7</td><td>4,10</td><td>4,50</td></tr> <tr><td>8</td><td>4,60</td><td>5,00</td></tr> <tr><td>9</td><td>5,10</td><td>5,50</td></tr> <tr><td>10</td><td>5,60</td><td>6,00</td></tr> <tr><td>11</td><td>≥ 6,50</td><td></td></tr> </tbody> </table>	Progr	mm	mm	1		≤ 1,50	2	1,60	2,00	3	2,10	2,50	4	2,60	3,00	5	3,10	3,50	6	3,60	4,00	7	4,10	4,50	8	4,60	5,00	9	5,10	5,50	10	5,60	6,00	11	≥ 6,50	
Progr	mm	mm																																					
1		≤ 1,50																																					
2	1,60	2,00																																					
3	2,10	2,50																																					
4	2,60	3,00																																					
5	3,10	3,50																																					
6	3,60	4,00																																					
7	4,10	4,50																																					
8	4,60	5,00																																					
9	5,10	5,50																																					
10	5,60	6,00																																					
11	≥ 6,50																																						
	Lock: Press No 5 so all the following welds will be spot welded using the same parameters		Expert-mode: The user chooses all parameters himself. Air and current control operates at all times. Memorising of the parameters is available.																																				

4 Electrode arms for C gun in use with Automatic Mode (optional)

Empfohlener Einsatz der C-Arme in Abhängigkeit der Gesamtblechstärke
 Recommend area of operations for C-Arms according to the overall thickness of metal sheet

Automatic - Modus
 Manueller Modus



Programm			1	2	3	4	5	6	7	8	9	10	11
Art.-Nr.	Modus	Bild	<= 1,5 mm	1,6 - 2,0 mm	2,1 - 2,5 mm	2,6 - 3,0 mm	3,1 - 3,5 mm	3,6 - 4,0 mm	4,1 - 4,5 mm	4,6 - 5,0 mm	5,1 - 5,5 mm	5,6 - 6,0 mm	>=6,1 mm
- PARAMETER -			8,00 kA 0,20 s 2,50 kN	8,20 kA 0,40 s 2,60 kN	8,60 kA 0,50 s 2,80 kN	8,80 kA 0,50 s 3,00 kN	9,00 kA 0,60 s 3,20 kN	9,20 kA 0,62 s 3,50 kN	9,40 kA 0,68 s 3,50 kN	9,50 kA 0,72 s 3,60 kN	9,60 kA 0,75 s 3,80 kN	9,80 kA 0,80 s 3,90 kN	10,00 kA 0,90 s 4,00 kN
495620			←										→
495606			←										→
495607			←							→			
495645			←			→							
495602			←				→						
495604			←		→								
495613			←							→			
495611			←							→			
495650			←							→			
495625			←								→		
495615			←									→	



Survey: Use of electrode arms in relation to weld parameters and/or programs, together with the total material thickness. Most of the arms can be used together with the Automatic Mode. .

Please note: Based on physical terms, all electrode arms have their individual charge and force limit see **red** in above diagram. In case you are forced to use the electrodes over their limit please select parameters individually. Make sure you have test welds with appropriate quality control.

The maker reserves the right to alter or to extend the selection of the electrode arms.

The maker reserves the right to alter or to extend welding programs and parameters.

All welding electrodes can also be used in manual mode. Please always respect the physical limits of each electrode arm.

5 Standard front display



After re-starting of the welder, the front screen will show the standard front display. ATTENTION: Do not start to work until this front display is fully set-up.



CS ZANGEV4 400

Information serial number about the twin sided gun in use



Select Automatic-Mode (optional) by pushing button no



Select Manual Mode by pushing button no



Service

Service button:

SETUP + caps test by pushing of button no



6 Cap test + electrode caps service

Only perfectly dressed caps guarantee perfect spot weld results!

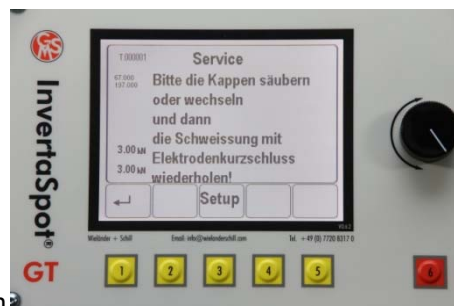
After re-starting the machine, you will first get the message to check the electrode caps. If you do not want to have caps test showing up in the front page each time please read chapter on configurations.



First make a spot weld copper to copper (no metal between). The electrodes will close. After that follow the instructions shown on front display.



Schleifschlamm



Electrode caps shape A-32:

This is the **standard cap** shape for **Automatic (optional) and Manual Mode**.

When using Automatic Mode please only use electrode cap shape A-32..



For spot weld jobs using Manual Mode there are more caps of different shapes, lengths and sizes available. In such case please set and use welder only in expert mode.

All electrode caps have to be cleaned up with an abrasive sponge to guarantee perfect spot weld results.

7 Spotwelding in Automatic Mode (optional)



7.1 Calibration before starting to use and weld in Automatic Mode.

Each time you are going to use the Automatic Mode the calibration must be carried out



Attention: Calibration is necessary

- Each time you start the spot welder
- Each time you changed the electrode caps
- Each time after cleaning the electrode caps
- Each time you changed electrode arms

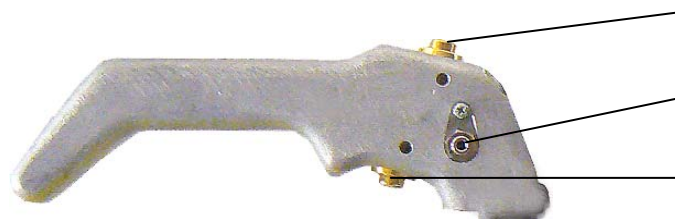


Step 1: press button 1

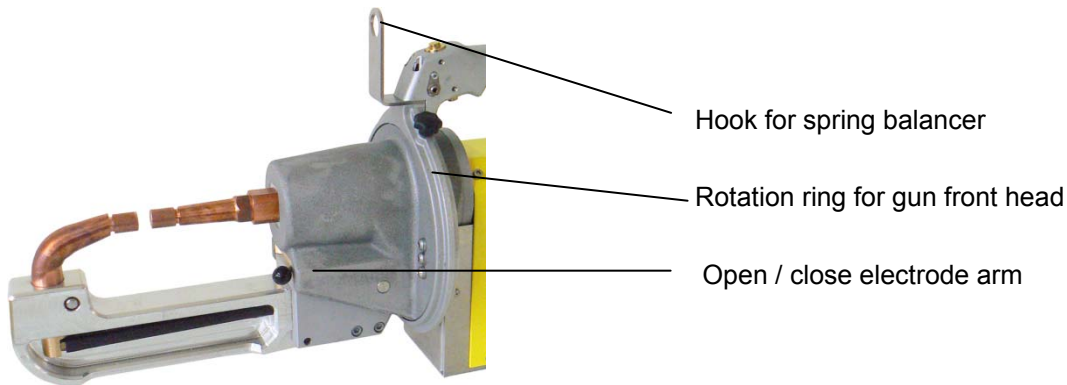


Push button at the bottom of the handle. The weld power is released. Keep button closed until the electrodes automatically open again.

After this, the spot welder is ready for use in Automatic Mode.



- To open electrode arms
- Connector for lead cable single sided gun
- To close electrode arm and release spot welding current



7.2 Spot welding in Automatic Mode – weld process



- Press lower button on grip handle, gun will close electrodes
- Air pressure is automatically adjusted, regulated and continuously controlled. First there is a pre-weld to prepare the material for spot welding; important in case of spot weld gluing, dirty panels, zinc coatings or multi layers of sheet metal with different sizes and thicknesses
- The second pulse (main power) makes the weld. The current is controlled continuously through the whole weld process.
- Weld process control of current (amps), time and gun pressure throughout the complete weld process.
- Registration of each weld in data software. Later you will be able to print the data. Each weld process can be shown in graphs on computer for single analysis
- **Single mode**
- **Lock mode**



Single-Mode: Check-up of material thickness before each weld. Comes into use in case of changing materials, changing material thicknesses and/or changing quality.

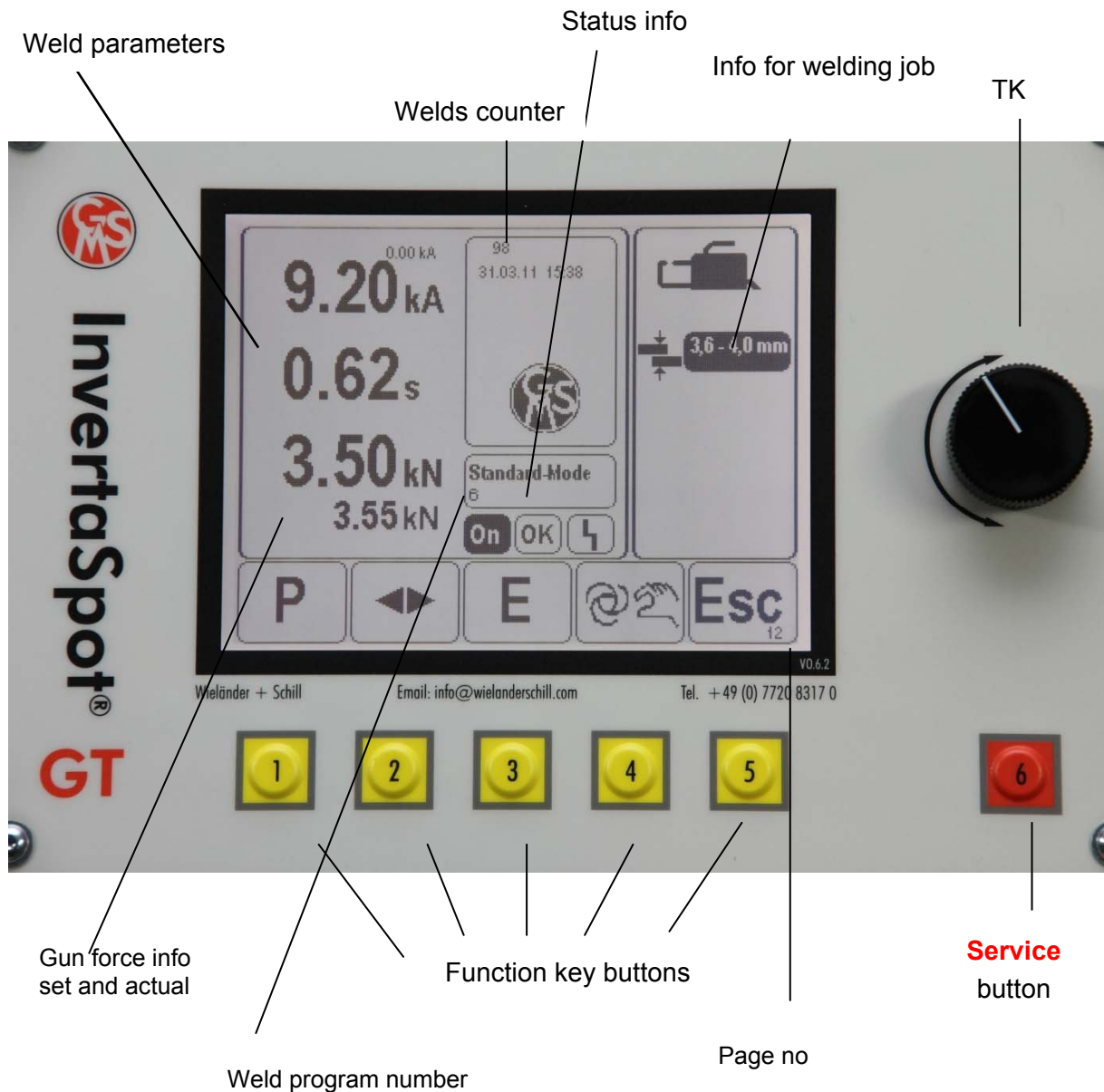


Lock-Mode: All the following welds will be spot welded with the same parameters. Comes into use if many welds have to be done in the same configuration, same material thickness and same quality.

8 Spotwelding in Manual Mode 1



When you select the Manual Mode you'll find the following details on the front display



8.1 Functions shown on front display

Weld parameters indicate the selected parameters of weld current [kA], the weld time [s] and the gun force in [kN].

The gun force is shown in two figures.

- **Required force:** shows the force which is programmed for the selected weld parameter.
- **Real force:** shows the actual force which is controlled by the system.



You have the choice of how you want the time and gun force shown in the display. The time such as [ms] or [s] and the force as [daN] or [kN]. You may choose or alter these settings – move to the chapter about changing options and select time or force. (see chapter 11 Setup)

Weld program number This shows the programmed number of selected weld program

Page no: This is important information for the service engineer. This will help him to assist you in the case of service and backup.

Status info **ON:** Main power unit ready

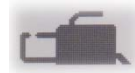


OK: Weld job done according to the selected parameters

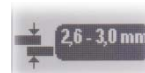
⚡: Mistake during weld process

Info for welding job:

Selected tool



Material thickness



8.2 Pre-set parameters and programs in Manual Mode

Program in relation to total material thickness and the job to weld

Weld program not shown in front display.



It is possible and may sometimes be necessary to adjust the weld programs via software updates. This is done by means of new SD card. Attention: software updates should only be carried out by experienced service engineers.



SD card:
 Weld program
 Updates
 Data memory

Progr	mm	mm
1		≤ 1,50
2	1,60	2,00
3	2,10	2,50
4	2,60	3,00
5	3,10	3,50
6	3,60	4,00
7	4,10	4,50
8	4,60	5,00
9	5,10	5,50
10	5,60	6,00
11	≥ 6,50	

8.3 Weld data to store and to print out

All weld data and all welding results are stored on the SD card. For print outs please use InvertaSpot GT print software (optional)

8.4 Function key buttons

You select jobs and actions by means of the 5 function keys. The functions are always shown directly above the buttons. Sometimes there is more than one function behind the function keys.

The turn-push knob button **TK** comes in use by turning or pushing to set the parameters.

General function keys

The general function keys will show up in several different menus but still having the same functions.

Home: Return to basic setting in Manual Mode

ESC: Back to previous screen

C: Cancel or delete the last letter/figure

Enter: Enter, confirms settings



Navigation or manual selection. Also to switch between parameters



Manual storing of weld parameters



Switch between Automatic and Manual mode

9 Gun force control via automatic air control valve

In order to achieve the correct weld results, the correct gun force plays a major role, together with the correct weld power and time. The InvertaSpot GT is fitted with an automatic air valve control system.

Each pre-programmed weld program of the InvertaSpot GT also has its own individual gun force. After release of weld power by pressing the button at the bottom of the handle (chapter 7.1) the gun closes automatically. The air valve is building up the pressure for the gun force. Throughout the complete weld process the gun force will be controlled and regulated continuously.



The gun force control is working all the time. If the air pressure is missing or if there is any air pressure fluctuation of +/- 50 N the weld process will be stopped immediately. You will see in front display the warning message F 34 or F 35 (see chapter 15)



The user has the possibility to alter the tolerance of the air pressure control individually upon his personal needs.

Alterations, see "change options", force control (see chapter 11.1.3)

In case of any alterations to the gun force control level, test welds will be required with following qualified quality control checks for nugget size etc.

10 Functions of Manual Mode 2 = Expert mode



10.1 Expert mode general basic info



Push the function key no **3** and you will be in the Expert mode.



When using the Expert mode the user is fully responsible for the weld program, the weld parameters, the quality of the welds, the quality control and the quality safety control of the welding results.



Attention: It is recommended to secure each new weld job with the approved quality control systems for spot welding.

Wrong weld parameters may result in metal sparks which may create personal injuries and also cause damage to the equipment.



Choose the required setting via the **TK knob**



Change between the parameters
kA – s – daN
 via the flash key

10.2 The Expert mode in detail

10.2.1 The front display in the Expert mode



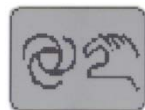
level 1



Return to front page of Expert mode



Info-Mode



Switch back to Automatic



Activate TK to create individual parameter



level 2



Choose stored program



Switch between parameters



Storing of parameters



Menu weld programming



Back to level 1 Expert mode

10.2.2 Individual setting of weld programs

See also **chapter 7.1**.

Tip: it is strongly recommended to go one step at a time to achieve the final settings. You may start with the amps and then choose time and gun force accordingly.

10.2.3 Selecting and saving of weld parameters



1. Activate key no 3



2. Do you wish to save weld parameter?



3. Edit name of weld program
max 5 letters



4. Store and save program in file

10.2.4 To spot weld with saved programs



1. Select key no 1



2. Choose either key 2 or key 4



3. OEM: make your choice and confirm with TK



4. Individual Programme choose and confirm with TK

10.2.5 Edit spot weld programs



Select and choose parameter with TK.

Edit each parameter manually.

Confirm each parameter with a little push onto the TK button.

During editing, the field stays grey. The parameter is only confirmed when the grey field changes back to white again.

At the end secure and save the data - see chapter 10.2.3



Attention: It is recommended to secure each new weld job with the approved quality control systems for spot welding.

You are responsible for your own weld parameter and for testing results.



Wrong weld parameters may result in metal sparks which may create personal injuries and also cause damage to the equipment.

11 Setup



When starting the machine you'll find the following information on the front display.

Then first push button no 6 to set up or edit the basic settings



Function key no 3: opens the menu for the different configurations in Setup



Function key no1 key returns you to the start menu

11.1 Configuration 1:



Push TK

Note: Configuration 2 = not in use

11.1.1 Configuration: Date / Time



Select and confirm at the end with push on TK

11.1.2 Configuration language



11.1.3 Configuration change options: machine basic settings



Decide whether you want work data to appear automatically each time you start the welder
 Booster: please do not activate.
 Special tuning of gun force control. Only by experienced staff.

11.1.4 Configuration change options: spot weld gun options



Configuration of the basic functions
 At this point you may activate or de-activate different functions. Any alterations should only be made by experienced staff.

Set up of the caps test. This should be only be carried out by experienced and/or fully trained service engineering personnel.

11.1.5 Configuration special options



Spot welding in automatic mode please have the water pump running at all times

11.1.6 Configuration system monitor

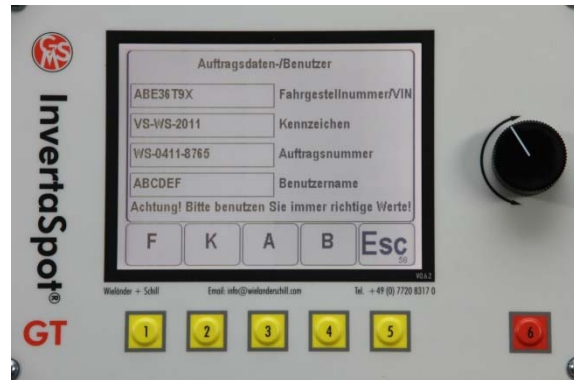


Important information for service personnel. Only to use by trained and experienced staff.

11.1.7 Configuration job data information



Push button no 4 – menu opens



Edit job data, confirm with push on TK

Should you prefer to have this data for every welding job, program the InvertaSpot GT so that each time you start the machine the display will automatically ask you for job data – see chapter 11.1.3.

It is also possible to change this data info during a job, e.g. should a second colleague continue doing an existing job, you can enter the 2nd person's name into the data as well.

11.2 Configuration 2: Registration



The set up for the registration software will be carried out ex-factory or via service engineer.

12 Info: data memory



A sub-menu of the expert mode

The InvertaSpot GT comes with a very big data base. For each weld you will be able to get all the information:

- Date, time
- Data as VIN code, car number plate, user and work order no
- The weld job
- Parameters which have been used
- Each weld in numeric row and graph shown in screen
- Resistance curve
- Printout via data software, including data export (optional)



Button no 2 opens the data base

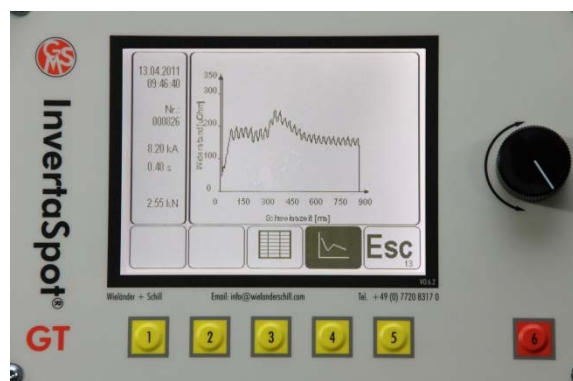
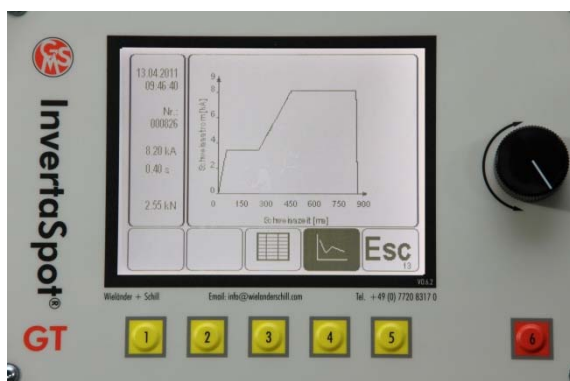


The screen is self explaining

Level 1 shows all basic information

Button 3 will open the graphic display

Push TK and you'll have the resistance curve



13 Single sided spot welding – light gauge sheet metal up to 1,0 mm



Attention: It is recommended to secure each new weld job with the approved quality control systems for spot welding.

Wrong weld parameters may result in metal sparks which may create personal injuries and also cause damage to the equipment.



Single sided spot welding with InvertaSpot GT is only for light gauge sheet metal up to max. 1mm. Please always respect welding instructions and spot weld specifications.

Working instructions for single sided spot welding comes with the single sided spot welding gun, on a separate instruction sheet.

14 X- gun spot welding

There is the opportunity to use also an X-type spot welding gun with the InvertaSpot GT.



ATTENTION: Only the standard X-gun 120mm electrode arms should be used if working with the Semi-Automatic mode. All other X-gun electrode arms should only be used when working with the expert mode.

Wrong weld parameters may result in metal sparks which may create personal injuries and also cause damage to the equipment. Each time please control the parameters before each job. Please always do test welds together with quality control.

Working instructions for the X-gun twin sided spot welding gun comes with X-gun on a separate instruction sheet.

15 Error codes

All error codes will be shown in the front display. It is also possible to activate an audible whistle tone which will sound when some error codes occur. The whistle is synchronised to be heard when mistake happen. To activate the whistle, do so via “change options” – see chapter 11.1.3




Examples:



Depending on the type of error code the confirmation will show up in two ways:

- You will be able to continue to spot weld. The error had been sounded from the previous weld.
- The error still exists and spot welding no longer possible until the error has been rectified.

15.1 Weld process controls of the InvertaSpot GT: indication of error codes and their meaning

Code	Text	description	Art
F21	Power unit not ready	The internal power circuit is below the specification.	b)
F22	Power unit damaged	 Service necessary. Mistake on IGBT – main inverter.	b)
F23	Missing phase – spot weld not possible	 At least 1 phase missing. Please check main fuses first!	b)
F24	Trafo overheated	Trafo or even rectifier twin sided gun overheated	b)
F25	Inverter overheated	Inverter overheated	b)
F26	Tool not connected	No tool connected to main power unit	
F31	No current	 In most cases the weld area is not 100% clean of paint or dirt or others - isolated.	a)
F33	Gun force too little	The controlled gun force is lower than what the minimum nominated gun force should be.	a)
F35	Gun force too high	The controlled gun force is higher than what the minimum nominated gun force should be.	a)

16 Save, read and print out of the weld data from SD card

The InvertaSpot GT comes with a SD memory card, which will store all the data of each weld job automatically. A special software program will be required to read and to print the data. This needs to be ordered separately



Please ensure you place and push in the SD card correctly Please be aware the SD card could fall inside the machine, if you do not fit it carefully.



Before moving or replacing the SD card the GT must be turned off from main power.



Front slot for SD card



17 InvertaSpot GT Documentation, print software and data storing

Whilst spot welding with the InvertaSpot GT all relevant data will be stored on the SD card.

Should the spot weld documentation be required, every detail of all the data can be saved and shown on your computer,

Note: A special InvertaSpot GT print software program is required.

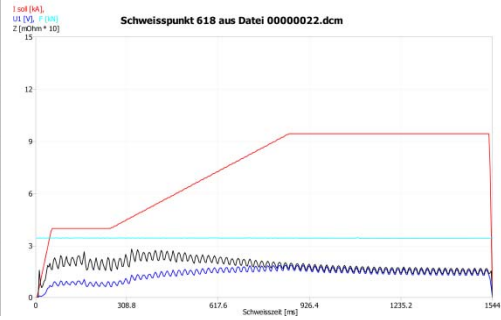
InvertaSpot GT - Dokumentation

Auftrag	Hotline	Fußnote	Code¹	Code²
Benutzername	Tel.: (+49)7720 8317-0	0 - Standard	Blechart 0: ---	
WV-Code	Fax: (+49)7720 8317-1255	1 - Experte	Blechart 1: 3 Bleche	
Kfz-Kennzeichen	e-mail: info@wielanderschill.com	2 - Programm	Blechart 2: HSS	
Auftragsnr.		3 - Spezial	Blechart 3: verzinkt	
GT-Ident-Nr 3582.9			Blechart 4: HSS + 3 Bleche	
			Blechart 5: verzinkt + HSS	
			Blechart 6: 3 Bleche + verzinkt	
			Blechart 7: verzinkt + HSS + 3 Bleche	



Schweißparameter

Lfd. Nr.	Datum	Zeit	Programm	Soll-Schweißstrom [A]	Soll-Schweißzeit [ms]	Anpresskraft [kN]	Blech [mm]	Code für Blechart ²	Bewertung [0..9]
11	08.04.2011	07:56:35	1	7000	620	3.2	0.0	0	9
12	08.04.2011	07:57:26	2	7000	300	2.0	0.0	0	9
13	08.04.2011	07:57:30	2	7000	300	2.0	0.0	0	9
14	08.04.2011	07:57:33	2	7000	300	2.0	0.0	0	9
15	08.04.2011	07:57:40	1	8000	300	2.0	0.0	0	9
16	08.04.2011	07:57:42	1	8000	300	2.0	0.0	0	9
17	08.04.2011	07:57:45	1	8000	300	2.0	0.0	0	9
18	08.04.2011	07:57:51	1	9000	300	2.0	0.0	0	9
19	08.04.2011	07:57:54	1	9000	300	2.0	0.0	0	9
20	08.04.2011	07:57:57	1	9000	300	2.0	0.0	0	9
21	08.04.2011	07:58:02	1	10000	300	2.0	0.0	0	9
22	08.04.2011	07:58:05	1	10000	300	2.0	0.0	0	9
23	08.04.2011	07:58:07	1	10000	300	2.0	0.0	0	9
24	08.04.2011	07:58:49	1	7000	300	2.4	0.0	0	9
25	08.04.2011	07:58:59	1	7000	300	3.1	0.0	0	9
26	08.04.2011	07:59:06	1	7000	300	3.8	0.0	0	9
27	08.04.2011	07:59:16	1	7000	300	4.5	0.0	0	9
28	08.04.2011	08:01:02	1	3000	200	2.4	0.0	0	9
29	08.04.2011	08:01:19	2	8900	620	3.3	0.0	0	9
30	08.04.2011	08:01:43	2	8900	620	3.3	0.0	0	9
31	08.04.2011	08:02:09	0	8000	200	2.4	1.5	0	9
32	08.04.2011	08:38:14	1	4000	200	Werkzeugcode unbekannt!	0.0	0	9
33	08.04.2011	08:38:35	1	4000	200	Werkzeugcode unbekannt!	0.0	0	9
34	08.04.2011	08:39:11	1	3500	200	Werkzeugcode unbekannt!	0.0	0	9
35	08.04.2011	08:40:00	0	8200	400	2.6	2.0	0	9
36	08.04.2011	08:40:23	0	8200	400	2.6	2.0	0	9
37	08.04.2011	08:40:43	1	3500	200	Werkzeugcode	0.0	0	9



Service address

Land	Address	Land	Address
AE	Al-Futtaim Workshop Equipment P.O. Box 11052 Dubai Contact Person: Rishi Savio Tel. : 04-2-859881 Fax : 04-2-857568 Email: rishi.savio@alfuttaim.ae	AR	Astro Equipos Y Servicios S.R.L. Oliden 454 1408 Buenos Aires Contact Person: Estefano Pasik Tel. : 011-4641-7892 Fax : 011-4644-5736 Email : Epasik@ciudad.com.ar
AT	W+S Gebietsvertretung Ansprechpartner: Alexander Bittner Traxleckerweg 3/5 AT-4820 Bad Ischl Tel. 0 664 135 90 45 Fax 0 6132 21 368 Email alexander.bittner@wielanderschill.com	AU	Sydney Automotive Paints & Equipment Pte 366 Edgar Street Cornwell Park, N.S.W. 2200 Contact Person: Terry Feehan 02 9772 9000 02 9772 9001 Email: terry@sape.com.au
BE	TAE Techno Automotive Equipment N.V. – S.A. Z.1 – Research Park, 250 B 1731 Zellik Contact Person: Daniel Polin Tel. 02 481 7900 Fax: 02 481 7949 Email: daniel.polin@tae.be	BG	IRIDIA Ltd. h.d. Darvenitca bl.48, entr. A ap.5 1756 Sofia Contact Person: Gavril Stilov Tel.: 02 875 1018 Fax: 02 481 7949 Email : iridia@bgb.bg
BR	Toolsystem Comercial Ltda. Rua Simao Alvares, 358 05417-020 Sao Paulo Contact Person: Miroslaw Marek Ciszak Tel. : 011 3060 9300 Fax : 011 3060 9544 Email : marek@toolsystem.com.br	CA	RS Finishing Systems Inc. 49 Navesink Avenue 145 Industrial Parkway South, Unit No. 2 Aurora, Ontario, L4G 3V5 Contact Person: Matthew Bannister Tel.: 0905 881 9768 Fax: 0905 727 7555 Email: matthew@rsfinishing.com
CH	CARBESA AG Route des Carronnets 5 1525 Seigneux Contact Person: Mathias Dufaux Tel.: 021 905 8111 Fax: 021 905 8110 Email: m.dufaux@celette.ch	CN	SUNSMART TRADING CO LTD Unit 16, 18 Floor, Metropole Square, No. 2 On Yiu Street, Shatin, N.T. Hong Kong Contact Person: Stephen Yeung Tel.: 02417 1228 Fax: 02498 1366 Email: stephen@sunsmart.hk
CN	Shanghai HoYe Auto Equipment Co.,Ltd No. 539 Huaxu Rd., Qingpu District 201702 Shanghai, People's Republic of China Contact Person: Patty Hu Tel. : 021 59766506 Fax : 021 59884498 Email : patty@sineyshoye.com	CN	Beijing Huacheng Lichang Auto Equipment Co.,Ltd No. 16. 3rd Ring West Road South Fengtai District Beijing 100068 Contact Person: Michael K F Li Tel. : 010 87576687 Fax : 010 87576683 Email: michaelkflitsm@gmail.com

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DE	Wieländer+Schill GmbH & Co.KG Siederstrasse 50 D-78054 Villingen-Schwenningen Tel. +49 (0) 7720 8317 0 Fax +49 (0) 7720 12 55 Email info@wielanderschill.com	DK	MJF Værktøj Vallensbækvej 31 2605 Brøndby Contact Person: Morten Bo Sørensen Tel.: 0045 70 25 01 40 Email: ms@mjf.as
EE	Autopaint OÜ Mustjõe 45 10617 Tallinn Contact Person: Andrei Malitski Tel.: 06 518 925 Fax: 06 518 920 Email: andrei@autopaint.ee	EG	SGM Engineering Automotive Co. 89 Tereat El-Zomor St., Ard El-Lewa, Mohandeseen 12411 Giza Contact Person: Hany Sanad Tel.: 02 37094900 Fax: 02 37094800 Email hay.sanad@smg.com.eg
ES	Instalaciones FMG S.L. Avda. San Pablo 26 B, Nave 4 28823 Coslada (Madrid) Contact: Juan Antonio Montes Tel. : 091 672 7055 Fax : 091 669 4238 Email : comercial@instalacionesfmg.es	ES	Exfasa c/ Isabel Colbrand no. 10 Nave 30 28050 Madrd Contact Person: Carlos Herrera Tel. : 091 358 8883 Fax : 091 358 8982 Email : herrera@exfasa.es
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GB	Body Shop SOLUTIONS Ltd. Unit 9 Stephenson Close Daventry, Northants NN11 8RF Contact Person: Steve Knowles Tel. : 0 1327 300700 Fax : 0 1327 300586 Email: s.knowles@btinternet.com	GR	Ninos Paraskevas L.T.D. 67 Thermopylon & Axilleos Str. 10436 Athens Contact Person: Ninos Paraskevas Tel. : 0210-522 2556 Fax : 210-522 8668 Email : ninosltd@hol.gr
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KR	SMB Autowide Co., Ltd. 164-7 Moonbongdong-Dong Ilsandong-Gu Goyang-Si 410-560 Gyeonggi-Do Contact Person: Lee Hyun Woo Tel.: 031 976 4457 Fax: 031 976 4460 Email: smbautowide@nate.com	KW	Gulf Resources General Trading Al Rai Street 22 22020 Salmiya Contact Person: Jamal R. Al-Bader Tel. : 02471-9961 Fax : 02471-9964 Email : tec@qualitynet.net
LT	UAB TECALEMIT Dariaus ir Girėno, 107 02189 Vilnius Contact Person: Raimondas Valatkevicius Tel. : 0210 62010 Fax : 0210 6211 Email : raimondas@tecalem.it	LU	SPK s.a. 6A, rue du commerce 3895 Foetz Contact Person: Alex Schumacher Tel. : 026 55 11 22 Fax : 026 55 13 22 Email: mike.schumacher@spk.lu
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RU	Интерколор Московская обл., г. Одинцово ул. Говорова, дом 165А Контактное лицо: Ирина Трофимова Tel. : 007 495 988 9377 Fax : 007 495 988 0978 Email: service@intercolor.ru	RU	Эксперт 620102, Екатеринбург, ул. Посадская, дом 40/1 Контакт: Григорий Лаптев Тел. : 007 343 383 54 04 Факс : 007 343 383 54 04 Email : grigory.laptev@gmail.com



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Contact Person: Andrew Mackie
Tel. : +27 83 628 6639
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Email : andrew@hurricaneauto.co.za

EU Declaration of conformity

Manufacturer MV Marketing + Vertriebs-GmbH & Co. KG –
Wieländer & Schill

Address Siederstr. 50
D-78054 Villingen-Schwenningen

Product Code InvertaSpot GT
Inverter Spot Welding Machine with transformer C-twin sided gun

As manufacturer we declare that: The products marked accordingly comply with the requirements of the referenced guidelines and standards.

EMV-Richtlinie 2004/108/EG 15.12.2004
Product Norm DIN EN 62 135-2 (EMV Verträglichkeit)*

and Niederspannungsrichtlinie 2006/95/EG 12.12.2006

and Maschinenrichtlinie (2006/46/EG) 17.05.2006
Maschinenrichtlinie (2006/42/EG) 17.05.2006

Developed and manufactured in accordance with the standards and guidelines listed below by:

DIN EN 50 178
DIN EN 60 146
DIN EN 61000-6-2
DIN EN 61000-6-4.

Issuer Martin Strasser – Managing Director

Location, Date Villingen-Schwenningen, April 2011



* with confinement



CERTIFICATE



This is to certify that

Wieländer + Schill

Siederstraße 50
 78054 Villingen-Schwenningen

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:
 Production, development and distribution of special tools

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2008

Certificate registration no. 003568 QM08
 Date of certification 2012-07-20
 Valid until 2015-07-19

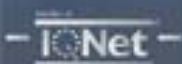


DQS GmbH

Michael Drechsel
 Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main

1 / 2





NOTICE:



CERTIFICAT DE CONFORMITE

CERTIFICATE OF CONFORMITY

Suite aux essais effectués dans ses laboratoires, EMITECH certifie que l'équipement référencé ci-dessous est conforme à la (aux) norme(s) :

Further to the tests performed in its laboratories, EMITECH declares that the equipment specified below complies with the standard(s):

EN 50505 édition 2008

Au titre de la directive / In application to the directive : 2004/40/CE

Comme l'atteste le rapport d'essai R053-12-EMF-100988-A
As related in the test report: R053-12-EMF-100988-A

Produit / Product :	Resistance spot welder
Marque de fabrique / Trade mark :	WIELÄNDER+SCHILL
Type / Type:	InvertaSpot GT
Nom du demandeur / Applicant's name:	WIELÄNDER+SCHILL
Adresse / Address:	MV Marketing + Vertriebs GmbH & CO KG SiedderstrBe 50 D 78054 VILLENGEN-SCHWENNINGEN

Modification(s) de l'équipement durant les essais EMF : SANS

Modification(s) of the equipment during the EMF tests: Without

Ce certificat résulte d'essais effectués sur un exemplaire du produit, il n'implique pas une appréciation de l'ensemble de la fabrication des produits de série.

This certificate ensues from the tests performed on one sample; it does not implicate a valuation of all the manufactured products.

Date : 22 mars 2012

Signature :



O. COZETTE

