GB USA

Operating Instructions

BSP 03 (A)
Stud Welding System

Operating Instructions

BSP 03 (A)*
Stud Welding System

Your BSP 03 (A) stud welding system with serial number

** _____

works with the following supply voltage:

☐ 200 V

☐ 400 V

☐ 440 V

☐ 480 V

*Please enter the serial number and mark the set supply voltage with a cross, so that these data are immediately available if you need service support.
* BSP 03 with shielding gas equipment, index “A”.

Type table for BSP 03 (A) stud welding system

Order No.	Code Designation	Note
932350	BSP 03 (A) Control Device	Welding power source
932359	BSP 03 (A) Gun	Welding gun with 3m welding cable

MV Marketing und Vertriebs-GmbH & Co. KG
Wieländer+Schill
Professionelle Karosserie-Spezialwerkzeuge
Siederstrasse 50
D-78054 Villingen-Schwenningen

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E-mail: info@wielanderschill.com

Congratulations on purchasing the BSP 03 (A) stud welding device. You have made an excellent choice. Your new BSP 03 (A) stud welding unit was specially developed for the high-speed welding of draw pins to body-bound rivets. Only this allows you to extract rivets from aluminium parts in an economic way.

FOR YOUR SAFETY



Read all of these operating instructions prior to start-up. Please follow all safety precautions as well as all chapters of these operating instructions before starting to weld. Non-compliance with the safety precautions can result in serious personal injuries or death.

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We have verified that the contents of this pamphlet correspond to the hard- and software described. Deviations, however, cannot be excluded so that we cannot warrant for absolute compliance.

The illustrations contained in this instruction manual can vary in some details from your product. This, however, has no influence on the handling of the machine.

The data in this documentation, however, have been verified regularly and necessary corrections will be incorporated in future impressions. We appreciate any suggestions for improvement.

Date of issue:August 12, 2003

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1 SAFETY PRECAUTIONS

These safety precautions are for your protection.



General safety instructions
Become trained and read and follow all safety precautions listed below as well as all chapters of this manual before starting to weld.
Non-compliance with the safety precautions can result in personal injuries or death.



Only qualified persons are allowed to install, operate and maintain the equipment.

Keep away children and juveniles under the age of 16 years from the equipment.



WARNING
It is prohibited to open the control device.
The service personnel are required to meet special qualifications.
Our after-sales service has adequately trained personnel, suitable service equipment and the means to carry out all necessary works.



Warning of electromagnetic fields

Keep sufficient distance from electronic devices. When stud welding, highly intensive electromagnetic fields are created which may permanently damage these devices (e.g. television sets).



Ensure that the stud welding equipment is not operated near electronically sensitive life-supporting equipment, such as in intensive care units in hospitals.

Persons with pacemakers must neither operate the stud welding equipment nor stay near it while it is running.



Electric shock can cause death
Prevent electric shock by insulating your body from work and ground. Stand on dry insulating material such as rubber mats and wear rubber soled shoes.

Be sure power source is properly connected to the ground system of the power supply. Inspect all cables including power cord for damage or bare wiring. Immediately replace damaged or worn cables.



Always ensure the correct supply voltage in accordance with the data plate. Never connect the control device to a power supply network with incorrect supply voltage.

Always disconnect the mains cable from the mains supply before starting any cleaning works. Only trained and appropriately qualified personnel are allowed to carry out works at the electric mains supply and welding system.

Do not touch live electrical parts with bare hand. Wear dry, hole-free insulating gloves.

Do not wear rings, watches or electrically conductive jewellery.

Keep the work area, studs, stud holders, guns, cables, power source as well as your clothes dry.

Fumes and gases can cause damage to your health



Fumes and suspended matters may be generated during welding. Beware of fumes detrimental to health, particularly when using surface treated materials. If possible, only weld in rooms which are higher than 3 m. Please also observe the safety regulations applicable for your country.

Do not breathe fumes and gases. Use adequate ventilation in the work area to remove fumes and gases (e.g. ventilating fan). Exhaust welding fumes, if necessary.

Welding can cause fire and explosions



Welding sparks and heat from flames and arcs can cause fires. Have a portable fire extinguisher handy for immediate use. Be sure you are trained for properly using it.

When welding, do not wear clothes soiled with easily combustible substances such as oil, grease and paraffin oil etc.



Comply with the fire regulations and do not weld, for instance, in hazardous locations.



Pay attention to flammable objects at the welding place. All flammable materials and liquids, such as oil, fuel, etc. must be removed prior to the start of work.

Electronic equipment (e.g. airbags) and the use of explosive substances for fuel supply require further safety precautions when carrying out welding operations on cars. Appropriate information can be obtained from the trade associations or the car manufacturers.
For instance, disconnect the car battery(ies) and remove the fuel tank.

Skin and eye protection



Arc rays and welding spatters can injure eyes and skin.

Wear safety glasses with side shields and protective goggles with correct shade of filter to protect your eyes from welding spatters and flashes of light that are generated during the welding process.



Wear gauntlet gloves made of leather and non-combustible closed working clothes such as heavy long-sleeve shirt, cuffless pants and high boots.



Wear a leather apron to protect your clothes from welding spatters.

Keep sleeves and collars buttoned and remove open pockets from the front side of your clothing.



We recommend using ear protection. Some welding and working processes may generate loud noises.

Moving parts can cause injury



Beware of moving parts such as fans. Keep hair, hands, loose clothing, and any tools away from the air apertures.

1.1 Description of reference signs in the operating instructions

The non-observance of safety instructions such as pictographs and warning words can cause damage to persons. The safety instructions of this manual describe the following:

Safety instructions



Danger!	Immediate hazards which could result in serious personal injuries or loss of life.
Warning!	Potential hazards which could result in serious personal injuries or loss of life.



Caution!	Potential hazards which could result in minor personal injuries.
Caution!	Warning of damage



Note!	Potential detrimental situation which may cause damage to the product or to an object surrounding it.
Important!	Instructions for application and other useful information facilitating the proper use of the product.

Safety symbols

The following pictographs for warnings, bans and decrees are used in this manual:

 Ban for persons with pacemakers	 Ban (only in combination with an additional safety symbol)	 Do not touch Housing is current-carrying	 Fire extinguisher
 Warning of a danger spot	 Warning of dangerous electric voltage	 Warning of electromagnetic field	 Warning of moving parts
 General ban (only in combination with an additional safety symbol)	 Warning of inflammable substances	 Warning of explosive substances	
 Eye protection required	 Protective clothing required	 Ear protection required	 Protective gloves required



General instructions are marked with the hand symbol.

1.2 Description of safety precautions on the control device

The following safety instructions in English are indicated on the housing of the BSP 03 (A) control device.

DANGER – No user serviceable parts inside. Please contact Wieländer + Schill's service department.
WARNING – To reduce the risks to yourself and others, read and understand this marking.
FUMES AND GASES can injure your health. ARC RAYS can injure eyes and burn. ELECTRIC SHOCK can KILL.
Read and understand the manufacturer’s instructions and your employer’s safety practices.
Keep your head out of the fumes.
Use enough ventilation, exhaust at the arc, or both, to keep fumes and gases from your breathing zone and the general area.
Wear correct eye, ear, and body protection.
Do not touch live electrical parts.
Consult instruction manual before operating.
DO NOT REMOVE THIS MARKING
WARNING – To reduce the risk of fire and electric shock, replace with same type and rating of fuse.

Shielding gas supply / max.5 l/min. 80-85% Argon + 20-15% CO2. WARNING – Do not use flammable gases or flammable mixed gases.

1.3 EC Conformity Declaration

Heinz Soyer Bolzenschweißtechnik GmbH
Inninger Straße 14
82237 Wörthsee

EC Conformity Declaration
in compliance with EC Directive on Machinery 89/392/EEC, appendix II A

We herewith declare that the machine described in the following and the version available on the market correspond in design and construction to the fundamental safety and health requirements stipulated by EC Directive on Machinery. Any modification of this machine without confirmation shall automatically annul this declaration.

Designation of machine	:	**Stud Welder**
Machine type	:	**BSP 03 (A)**
Machine no.	:	_____
Applicable EC directives	:	EC Directive on Machinery (89/392/EEC) in the version 91/368/EEC EC Directive on Low Voltage (73/23/EEC) EC Directive on Electromagnetic Compatibility (89/336/EEC)
Applied harmonised standards, in particular	:	EN 292 - 1 and EN 292 - 2, EN 60 204 - 1 EN 60 974 - 1
Applied national standards and technical specifications, in particular	:	VBG 1, VBG 4, VBG 5, VDE 0544
Date	:	June 01, 2002
Producer's signature	:	_____
Signer's function	:	Technical Management

1.4 UL Certificate

UL International Germany GmbH
Frankfurter Strasse 229 · D-63263 Neu-Isenburg
Telefon +49 (0) 61 02 369-0 · Fax +49 (0) 61 02 369-280

A Subsidiary of Underwriters Laboratories Inc.®

CERTIFICATE OF COMPLIANCE

CERTIFICATE NUMBER: 20030530E234548
ISSUE DATE: 5-23-2003 **Page 1 of 1**

Issued to: HEINZ SOYER BOLZENSCHWEISSTECHNIK GMBH
INNINGER STR 14
82237 WOERTHSEE-ETTERSCHLAG GERMANY

Report Reference: E234548-20030523

This is to Certify that representative samples of: Transformer-Type Stud Welder
Three Phase Welding System, Models BSP 03 and BMK-8

Have been investigated by Underwriters Laboratories Inc.® in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: Standard for Transformer-Type Arc-Welding Machines:
UL551, 7th Edition, dated January 10, 1994, revised through and including September 14, 1999

Canadian Standard for Arc Welding Equipment:
CSA C22.2 No. 60-M1990

Additional Information: ./.

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers: c UL us the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

LOOK FOR THE UL LISTING MARK ON THE PRODUCT

Engineer: Frank Lehmann
UL International Germany GmbH

Review Engineer: Brian Young
UL International Germany GmbH

Pursuant to the Corporate Services Agreement between UL International Germany GmbH and Underwriters Laboratories Inc. ("UL"), UL hereby accepts and issues this Certificate of Compliance. For questions in Germany, you may call +49-89-622703-0.

Geschäftsführer: G. T. Castino, S.J. Bhatia, L.W. Newman
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Candidplatz 13, D-81543 München
Tel. +49 (0) 89 622 703-0, Fax +49 (0) 89 622 703-31

2 General

2.1 The following should be principally observed...

With this stud welding system you have purchased a product which

• is state-of-the-art technology
• fully complies with the current safety requirements and
• enables successful working.

Before installing the stud welding system, please observe the following:

• The BSP 03 (A) stud welding system was developed for the professional repair of car bodies. Its use is only admissible in appropriate specialist garages which have trained personnel, suitable means and equipment at their disposal.

• Store the operating instructions in a place accessible to every operator.

• Ensure that the respective operator has read and understood the operating instructions prior to start-up. Each operator should confirm this per signature.

• Prevent the stud welding system being operated by unauthorized personnel.

• Call a doctor in case of an accident.

2.2 Intended purpose

The BSP 03 (A) stud welding system is intended for welding draw pins onto body-bound rivets. This allows you to extract the rivets from the sheet metal, using special tools.

2.3 Information on the product

Manufacturer	Heinz Soyer Bolzenschweißtechnik GmbH Etterschlag Inninger Straße 14 D-82237 Wörthsee Tel.: +49 (0) 8153-885-0 Fax: +49 (0) 8153-8030 www.soyer.de
Product designation	BSP 03 (A) stud welding system
Country of origin	Germany

2.4 Marketing

If you have any questions regarding the operation of the stud welding system, retrofits or if you require service, please contact your responsible service office or the following address:

MV Marketing und Vertriebs-GmbH & Co. KG
Wieländer+Schill
Professionelle Karosserie-Spezialwerkzeuge
Siederstrasse 50
D-78054 Villingen-Schwenningen

Tel.: +49 (0) 7720 – 83 17 - 0
Fax: +49 (0) 7720 – 12 55
E-Mail: info@wielanderschill.com

2.5 Scope of delivery

The scope of delivery includes

BSP 03 (A) control device
BSP 03 (A) stud welding gun
2 ground cables
1 stud holder for draw pins dia 6 x 40mm
Box spanner 14/17mm
Gas supply hose
Operating instructions (Technical information in several languages)
CD-ROM as supplementation to the operating instructions

2.6 Type plate

The type plate is located on the rear side of the control device. It contains the following information:

- Manufacturer's name
- Address of manufacturer or agency
- Country of origin
- Product designation
- Mains connection values
- Performance data
- Production number / year of construction

2.7 Information on the documentation

The following operating instructions are supplied with the BSP 03 (A) stud welding system:

- Operating instructions for BSP 03 (A) **Order no.: P00130**

2.7.1 Information on operating instructions

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.



CAUTION
Do not carry out any actions on the stud welding system without specifically knowing the operating instructions or the respective part. Ensure that only qualified personnel familiar with the operating instructions and the necessary technical activities (training!) operate the system.

2.7.2 Conduct in the case of malfunctions

If malfunctions occur, first try to detect and eliminate the causes according to the list in chapter 11 "Troubleshooting" of the operating instructions. In all other cases, please contact our service department.

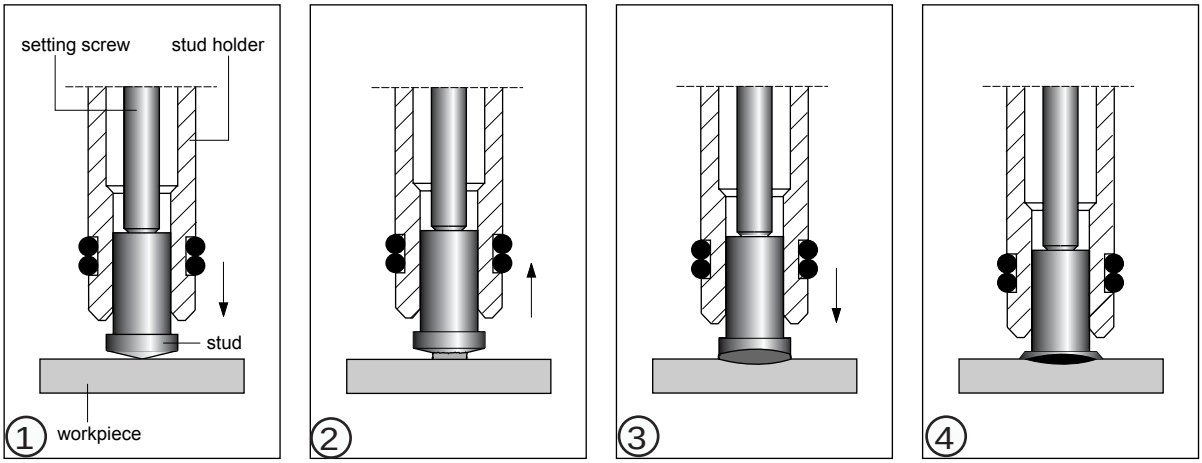
If you require our service, please make sure that you supply us with the following information:

- Customer number
- Product designation
- Serial number
- Year of construction
- Options
- Material of stud and workpiece / Stud dimensions

This information will help us both to save time and unnecessary costs, e.g. caused by delivering the wrong spare parts.

3 Description of BSP 03 (A) control device

3.1 Short-cycle drawn arc technology



HZ.0001_1.E

Illustration 1: Short-cycle drawn arc technology

The BSP 03 (A) control device runs according to the principle of short-cycle drawn arc stud welding. A D.C. power supply provides the welding current. The adjustment of the weld duration depends on the pins to be welded.
For detailed information, please refer to the following regulations:
• DIN EN ISO 14555, "Arc welding of metallic materials“
• DVS Information Sheet 0902, "Drawn arc welding“

1. When welding, the stud is positioned on the workpiece.
2. The preweld current is ignited and the stud is lifted off the workpiece.
3. The subsequent ignition of the main current creates a molten pool between stud and workpiece.
4. The stud immerses in the liquid molten pool and the material solidifies.

The standard BSP 03 (A) control device is only suitable for welding draw pins.

IMPORTANT INFORMATION
Ensure that the surface is electroconductive.
Abrase hot galvanized or enamelled parts.

3.2 Set-up of BSP 03 (A) control device

The modular construction (modular principle) in useful and easy-to-service compact housing, the modern design and progressive technique provide the BSP 03 (A) control device with its unique appearance. The carrying handle on top of the housing allows easy transport for mobile application at different working places.

The BSP 03 (A) stud welding gun is the standard gun to be connected to the BSP 03 (A) control device.

3.3 Technical data

Designation	BSP 03 (A) stud welding system
Welding process	Drawn arc stud welding (DS)
Welding range	Draw pins dia 5 / 6 x max. 40mm
Material	Steel and heat-resistant steel
Source of current	Transformer / Rectifier
Welding current	800 A DC
Welding voltage	34 V DC
Open-circuit power	70 V DC
Power output	13.6 KW
Welding time	1 up to 199 ms (adjustable)
Duty cycle / Welding sequence	1% (up to 3 studs/min Ø 6mm)
Standard gun	BSP 03 (A) stud welding gun

Mains supply	**Europe:** 400, 440, 480 V, CEE 16 A (3 phases + safety earth conductor) **UL USA:** 200 V, 30 A (3 phases + safety earth conductor) **3 x 400 V 50/60 Hz (standard type)**			
Possible supply voltages	3 x 200, 3 x 400, 3 x 440 or 3 x 480 V (+/-10%) 50/60 Hz			
Current consumption depending on supply voltage	200 VAC	400 VAC	440 VAC	480 VAC
	69 A	35 A	32 A	28 A
Power input (mains supply)	24.2 KVA / 13.6 KW (welding circuit)			

System of protection	IP21
Fuse element at front panel	F1 = 0.4 A slow blow 250 V (Ø 6.3 x 32mm / ¼" x 1¼") F2 = 3.15 A slow blow 480 – 500 V (Ø 6.3 x 32mm / ¼" x 1¼")
Shielding gas supply	max. 3 – 5 l/min (mixed gas containing 80 - 85% of Argon and 20 - 15% of CO2)
Dimensions	230 x 410 x 320 (w x h x d)
Weight*	32 kg
Colour	RAL 3020 red
Subject to technical changes	

**Slight deviations are possible depending on accessories.*



WARNING
The "S" symbol is the symbol for welding current sources permitted for operation with increased electric danger. The "S" symbol on the BSP 03 (A) stud welding system refers exclusively to the welding current circuit and not to the complete stud welding equipment.

4 Safety instructions

These operating instructions contain basic instructions which have to be complied with during installation and/or operation. It is therefore absolutely necessary that these operating instructions are read by the operator and responsible specialist staff prior to assembly and start-up. The operating instructions must always be available at the installation site.

Not only the general safety instructions listed under the main item “Safety precautions”, but also the special safety instructions e.g. for high temperatures, voltage etc. listed under the other main items have to be complied with.

4.1 Staff qualification and training

The staff responsible for operation, maintenance, inspection and assembly must have the respective qualification for carrying out these works. Field of responsibility, competence and the supervision of staff have to be exactly regulated by the user. If your personnel do not have the necessary knowledge, they have to be trained and instructed. If necessary, this can be done by the supplier on behalf of the user. Furthermore, the user must ensure that the contents of the operating instructions are fully understood by the staff.
The society of welding institutes (GSI: Gesellschaft der Schweißtechnischen Institute mbH) offers the appropriate training courses for your personnel.
For information on branches, please refer to website http://www.dvs-ev.de.

4.2 Dangers in the case of non-compliance with safety instructions

The safety instructions listed in this manual, existing national accident prevention regulations and possible international working, operating and safety regulations of the user must be complied with.

The non-compliance with safety instructions may not only endanger persons, but also the welding equipment and its environment. Any non-compliance with safety instructions may result in a complete loss of damage claims.
Non-compliance with safety instructions may have the following consequences:
• Failure of important system functions
• Failure of prescribed methods for maintenance
• Danger of persons through electric, mechanic, thermal and acoustic influences

4.3 The following should be observed before starting the system…

Before starting up the system, pay attention to the following information:

• Only qualified personnel are allowed to operate the system.
• Wear non-combustible closed working clothes.
• Wear a leather apron to protect your clothes from welding spatters that are generated during the welding process.
• Wear a head protection when carrying out welding works above your head.
• Wear gauntlet gloves made of leather.
• Wear neither rings, watches nor electrically conductive jewellery.
• Wear protective goggles with eye-protecting lens number 2 (DIN 58211, part 6) to protect your eyes from welding spatters and flashes of light that are generated during the welding process.
• Wear side-shielded glasses.
• Wear ear protection. Capacitor discharge generates a loud bang.

4.4 Safety instructions for the operator/user

When stud welding, danger may result from

- electric current
- harmful substances (smoke)
- optical radiation
- spraying sparks (fire hazard)

You are therefore obliged to restrict dangers to an inevitable degree and to point these dangers out to the operator and other persons involved.

4.5 Before starting to weld...

- Check the state of all cables and cable connections before starting to weld.
- Immediately replace defective cables and cable connections.
- Ensure that the air apertures of the housing are not covered. Heat accumulation may damage the stud welding device.

4.6 Working with the stud welding equipment

- Comply with all accident prevention regulations which apply to the operation of your stud welding device. If an accident happens,

- switch off the welding device and disconnect it from the mains supply
- call a doctor.

4.7 Unauthorized retrofit and spare parts production

Retrofit and modification of the system are not admissible. Original spare parts and accessories authorized by the manufacturer guarantee safety. The use of other parts may result in the cancellation of warranty for any consequences thus caused.

4.8 Inadmissible operating methods

Limit values

Working safety of the stud welding system supplied can only be guaranteed when the system is used in accordance with its purpose. The limit values indicated in the chapter “Technical data” must never be exceeded.

4.9 Stopping the stud welding system

- Switch off the main switch (item 2, chapter 6.1) of the control device.
- Disconnect the mains plug from the socket.
- Disconnect the control cable (item 7, chapter 6.1), the welding cable (item 8, chapter 6.1) and the ground cables (item 10, chapter 6.1) from the control device.
- Roll up the cables without buckling them.
- Turn the hand wheel (item 2, chapter 6.2.3) of the gas cylinder to the right to close the gas cylinder.
- Disconnect gas supply (items 9 + 13, chapter 6.1).

☞ Our tool and gear wagon (optional equipment) is the optimum solution for installing the stud welding system as well as properly storing welding guns, cables, studs, draw pins etc.

- Check welding cable and connections of the control device for damage such as burn-off, mechanical wear etc. and have damaged parts replaced by the Wieländer+Schill customer service.

- Prevent unauthorized use of the welding system by children and unqualified personnel.

5 Installation of stud welding system

The top of the BSP 03 (A) control device is equipped with a plastic handle.

CAUTION
The carrying handle is intended for transport by hand only. Never pull ropes through this handle to lift the system by means of a crane to the installation site. The welding unit would become instable and might tilt from its original position. As a result the handle could rip and the system would fall on the ground.

• Only install the BSP 03 (A) control device on an even surface. The anti-vibration pads located on the bottom of the welding system guarantee its anti-skid position and serve as vibration dampers.

• Although the BSP 03 (A) control device is resistant to environmental influences, it should be protected against dampness and dust.

• When placing the control device on tables or similar workshop furniture, ensure that the system stands firmly and that the table can bear its weight.

Our tool and gear wagon (optional equipment) is the optimum solution for installing the stud welding system as well as properly storing welding guns, cables, studs, draw pins etc.

• Make sure there is sufficient free space around the air apertures, otherwise the excess temperature safety mechanism will respond and interrupt the welding process. This state is shown on the display.

• Install the control device close to the welding location.

• **Ensure correct connected loads for electrical connections (see type plate).**

The BSP 03 (A) control device has a four-core connecting cable: 3 phases + protective conductor. Please also refer to chapter 3.3 (Technical Data).
Make sure mains socket and stud welding system are properly grounded.

• Please observe that additional extension cables cause a voltage drop, possibly leading to system disturbances.

• Ensure sufficient ventilation of the working room when operating the welding system.

NOTE
The housing of the BSP 03 (A) control device corresponds to safety class IP 21. Please observe that this system of protection is not suitable for being operated or transported in the rain.

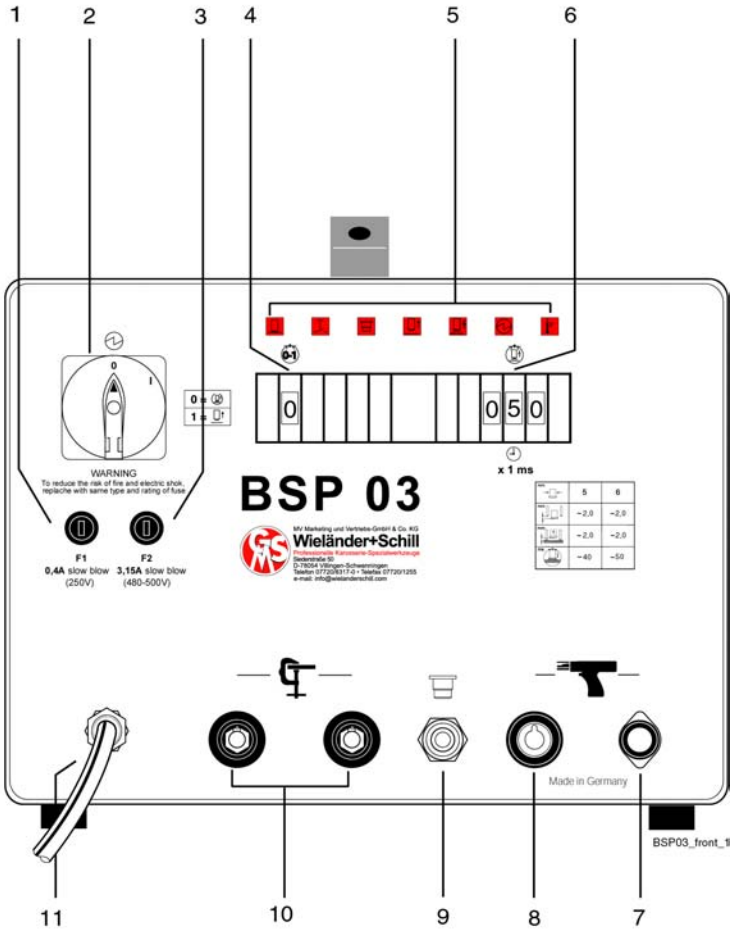
CAUTION
When welding with shielding gas, make sure that the gas cylinder is installed safely and vertically in its admissible, accident-proof installation device. It must not be installed in a horizontal position since the gas cylinder connection and/or manometer could be easily damaged.

6 Start-up

6.1 Front and rear view

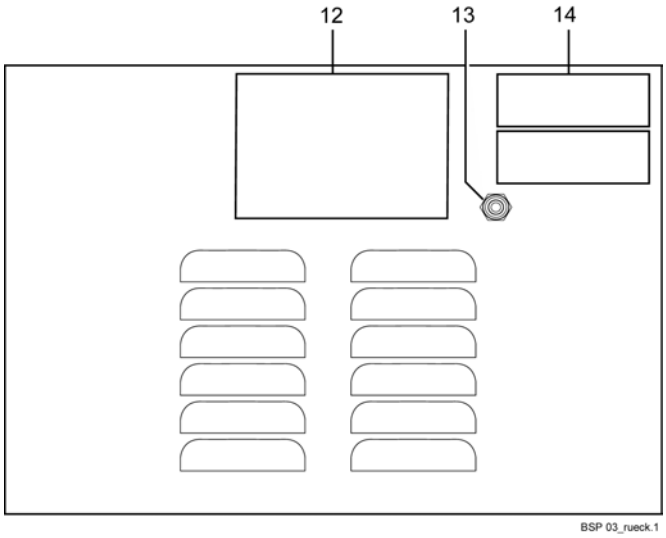
Front view of BSP 03 (A)

1 Fuse element F1
2 Main switch
3 Fuse element F2
4 Selector for operating modes
5 Light-emitting diodes for function control
6 Selector for setting the main current duration
7 Control cable connection
8 Welding cable socket
9 Gas connection socket
10 Ground cable connectors
11 Mains cable



Rear view of BSP 03 (A)

12 Type plate
13 Shielding gas connector
14 Danger signs



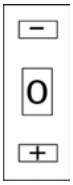
6.1.1 Operating elements

• Main switch (item 2, chapter 6.1)
The main switch is used to switch the control device on and off. The main switch does not remain in position "I", when the following faults arise:

- Fuse F2 (item 3, chapter 6.1) is defective
- Phase of rotary current supply is missing

• Operating mode switch (item 4, chapter 6.1) 

Use the operating mode switch to set the following two operating modes:



0 Operation

For standard welding operation, set this switch to "0". In the case of an excessive welding sequence, the operation is temporarily interrupted to avoid overheating of the control device. The LED "Excess temperature" (item 5.7, chapter 6.1.2) lights up.

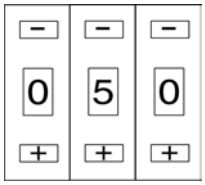


1 Lift test / Gas test

The lift test makes it possible to switch on the lifting magnet of the welding gun by means of the release switch to check the setting.
At the same time, the function “shielding gas” is activated in the control device. As long as the release switch is pressed, shielding gas flows out of the shielding gas nozzle on the welding gun. This enables you to check the shielding gas setting and to rinse the gas lines with shielding gas before starting to weld.

If the release switch is pressed for more than 5 seconds, the control device interrupts the test for one minute to avoid overheating of the magnet.

Selector switch for setting the main current time (item 6, chapter 6.1) 



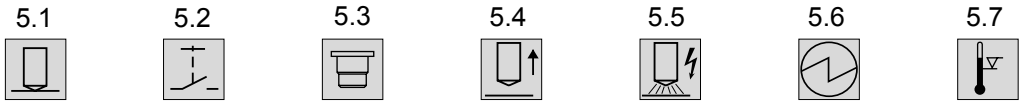
Three switches are available to set the main current time from 000 msec to 199 msec. The right switch serves to set the units digits, the middle one is for the tens digits and the left one for the hundreds digits. For example adjustment "050" represents a main current time of 050 msec.

Instructions for setting the switches:

Two switches are located above and below the numerical display.
• Press the top switch marked by a minus sign **(-)** to decrease the displayed value by one unit.
• Press the bottom switch marked by a plus sign **(+)** to increase the displayed value by one unit.

6.1.2 Display elements

• LED displays (item 5, chapter 6.1)
The LEDs show the respective operating states.



KZ.2041.1.X

When switching the equipment on, all 8 LEDs light up for a short period to check proper operation.



If not all LEDs light up when starting the system, please contact your service partner.

The LED displays have the following meaning:

• LED 5.1 “Stud on workpiece”
This LED lights up when the welding gun is positioned on the workpiece and the stud touches the workpiece. Precondition is, however, that the workpiece is connected with the ground connection of the control device.

• LED 5.2 “Gun switch activated”
LED lights up when pressing the release switch of the welding gun.

• LED 5.3 “Gas valve open”
LED lights up with shielding gas valve being open.

• LED 5.4 “Lift”
LED lights up with lifting magnet of welding gun being activated.

• LED 5.5 “Main current”
This LED lights up when main current is supplied.

• LED 5.6 “Electrical energy”
LED lights up when stud welding equipment is switched on.

• LED 5.7 “Excess temperature in control device”
This LED lights up in case of excess temperature in the control device or when lift test takes too long to protect the magnet coil of the welding gun.

6.1.3 Connecting elements

• Mains cable (item 11, chapter 6.1)
The mains cable is a four-core (3 phases + protective conductor), highly flexible connecting cable for connecting the control device to the mains supply. Please also refer to chapter 3.3 (Technical Data).

• Ground cable connectors (item 10, chapter 6.1)
The ground cable connectors serve to connect the ground clamps to the control device.

• Welding cable socket (item 8, chapter 6.1) and **control cable connection (item 7, chapter 6.1**)
The control cable connection and the welding cable socket serve to connect the stud welding gun to the control device.

• Gas connection socket (item 9, chapter 6.1) and **gas connector (item 13, chapter 6.1)**
The gas connector and gas connection socket serve to connect the shielding gas supply to the control device and the stud welding gun.

6.1.4 Symbols

Symbols	Designation	Function
	Electrical energy	Main switch for switching control device on and off.
	LED "Stud on Workpiece"	LED lights up when ground connection is made and stud touches the workpiece.
	LED “Release"	LED lights up when pressing release switch of welding gun.
	LED "Gas valve open"	LED lights up with shielding gas valve being open.
	LED "Lift"	LED lights up with lifting magnet of welding gun being activated.
	LED "Main current"	LED lights up when main current is supplied.
	LED "Electrical energy”	LED lights up when stud welding equipment is switched on.
	LED "Excess temperature”	This LED lights up in case of excess temperature in the control device or when lift test takes too long to protect magnet coil of the welding gun.
	Ground	Marks ground cable connector to be connected with ground cable.
	Gun	Marks control and welding cable sockets to be connected with welding gun.

6.1.5 Fuses (items 1 and 3, chapter 6.1)

The BSP 03 (A) control device is protected by the following fuses:

- Fuse element F1 0.4 A slow blow 250 V (Ø 6.3 x 32mm / ¼” x 1¼”)
- Fuse element F2 3.15 A slow blow 480 – 500 V (Ø 6.3 x 32mm / ¼” x 1¼”)



CAUTION
Should it become necessary to replace fuses, only use fuses with the prescribed electrical values. Oversized fuses could either cause defects on the electrical system or a fire.



WARNING
Disconnect the mains plug from the mains supply when replacing fuses!

6.2 Preparation for start-up

Connect the stud welding gun and the ground cables to the BSP 03 (A) control device prior to start-up.

6.2.1 Ground connection

• Attach both ground cables to ground cable connectors (item 10, chapter 6.1) and lock by turning to the right until stop.

• Attach both ground pliers to the workpiece.



Please ensure that the contact areas of the ground pliers are always kept clean and do not oxidize, otherwise high transition resistances could occur that may result in a considerable reduction of the rated welding current.

☞	Ensure optimum contact with workpiece. Owing to the high welding current, an unbalanced current distribution may cause a magnet blow effect on the arc, i.e. the arc for welding the stud is asymmetrical. This is shown by an irregular course of the weld upset on the side of the stud. The welding results are unsatisfactory and not reproducible.

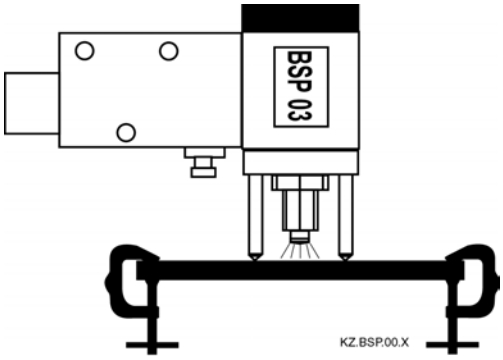
For this reason, you should attach the ground pliers to the workpiece in such a manner that the welding gun is positioned as close as possible to the centre of the connecting route of both ground clamps. This guarantees a current distribution around the stud that is balanced to the largest possible extent and satisfactory welding results.

In addition, make sure that the ground pliers are clamped securely to the workpiece and the ground cables as well as the gun cable are securely connected to the control device. This prevents high transition resistances and arc losses on the clamps or plug-in connections which in turn would result in poor welding results.

Example for ground connection

Balanced ground connection

Ideal condition: The stud is located in the centre of both ground connections.



(Illustration without shielding gas shroud)

• Attach both ground cables only to the present part to be welded in order to avoid transition resistances.

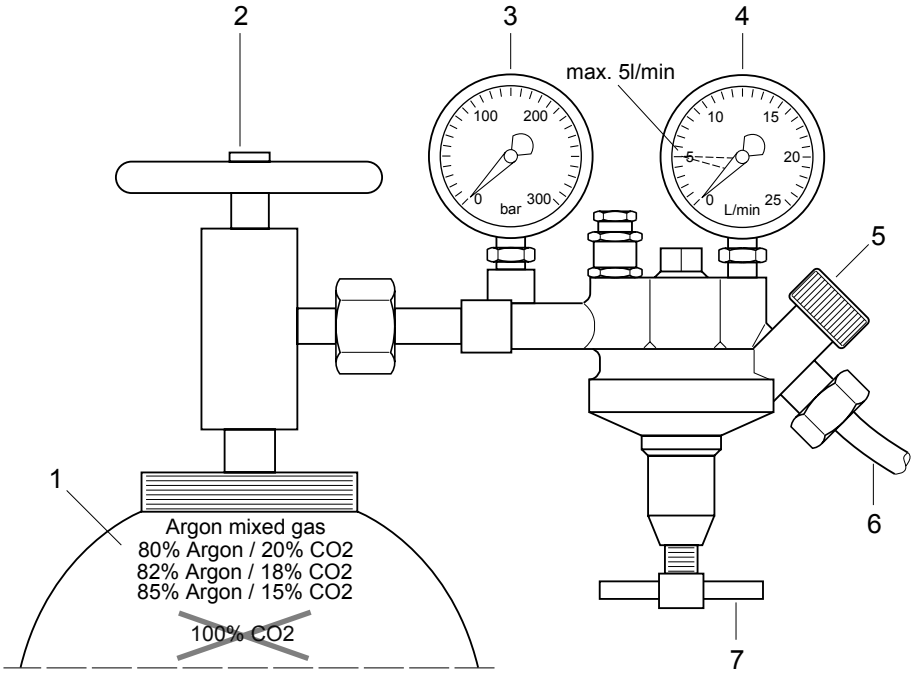
6.2.2 Connection of stud welding gun

• Connect welding cable of welding gun to the relevant socket (item 8, chapter 6.1) and lock it by turning to the right until stop.

• Insert control cable into control cable connection (item 7, chapter 6.1) and tighten with sleeve nut.

6.2.3 Gas supply

Example for gas supply



Pressure reducing valve not included in delivery. Deviations are possible depending on the manufacturer

1 Gas cylinder	5 Shut-off valve
2 Hand wheel (left = open, right = closed)	6 Gas supply hose connection to control device
3 Manometer for indicating the gas cylinder's pressure	7 Control cock for gas flow rate Screwing in increases the flow Screwing out decreases the flow
4 Flow meter	

When using shielding gas, provide the following connections:

• Connect gas supply hose (6) of pressure reducing valve to the shielding gas connector (item 13, chapter 6.1) at the rear side of the control unit.
• Insert coupler plug of gun's gas supply hose into gas supply socket (item 9, chapter 6.1) at the front side of the control device.
• Open hand wheel (item 2) of gas cylinder.
• Open shut-off valve (item 5).
• Use control cock (item 7) to set shielding gas flow rate to a maximum of 3 - 5 l/min.

NOTE
The following gas mixtures may be used as shielding gas:
80% Argon and 20% CO2
82% Argon and 18% CO2
85% Argon and 15% CO2

WARNING
Do not use flammable gases or flammable mixed gases. Avoid using pure oxygen as an increase in the oxygen content of the air may accelerate combustion processes.

6.2.4 Power supply

• Compare the power data (supply voltage / current consumption) on the type plate (item 12, chapter 6.1) with the data (supply voltage / fuse protection) of your power supply network.

☞	Always comply with the correct line voltage as indicated on the type plate. Never connect the control device to a power supply with the wrong line voltage.

• Connect mains cable (item 11, chapter 6.1) to power supply.

	**CAUTION** Only connect control device to authorized CEE sockets (Europe). Standard connection = 3 x 400 V + safety earth conductor, 32A-CEE. If need be, have an electrician check if the socket is grounded. Please also refer to chapter 3.3 (Technical Data).

6.3 Adjustment of operating modes

6.3.1 Starting the stud welding system

• Turn the main switch (item 2, chapter 6.1) at the front panel to position “I”.

After switching the control device on, the 7 LED lamps (item 5, chapter 6.1) light up for a short period. The control device carries out a self test (self check).

6.3.2 Operating modes / parameters

Press the plus key **(+**) or the minus key **(–)** on the operating mode switch (item 4, chapter 6.1) to select the parameters. There are two operating modes.

6.3.2.1 Operating mode "0" (operational state)

The operating mode "0" allows normal welding operation with the welding parameters set. In the case of an excessive welding sequence, the welding operation is temporarily interrupted to avoid overheating of the control device.

6.3.2.2 Operating mode "1" (lift test / gas test)

This operating mode enables you to adjust and check the gun lift.

At the same time, the function “shielding gas” is activated in the control device. As long as the release switch is pressed, shielding gas flows out of the shielding gas nozzle on the welding gun. This enables you to check the shielding gas setting and to rinse the gas lines with shielding gas before starting to weld.

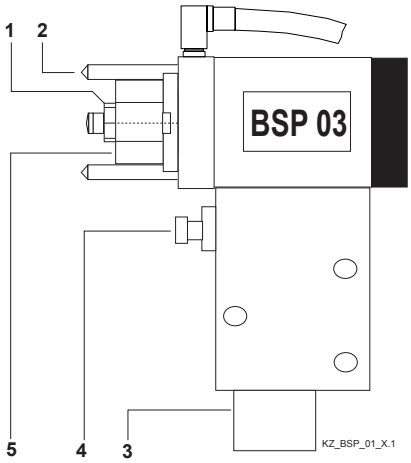
7 Operation

7.1 Adjustment of BSP 03 (A) stud welding gun

7.1.1 Total view

The illustration below shows the BSP 03 (A) stud welding gun for short-cycle drawn arc operation.

1 Stud holder
2 Gun leg
3 Cable conduit
4 Trigger switch
5 Shielding gas shroud



7.1.2 Stud holder for 6 x 40mm draw pin

The adjustment for the stud holder of draw pins (6 x 40mm) is fixed and cannot be changed.

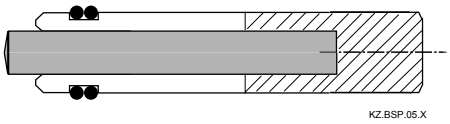


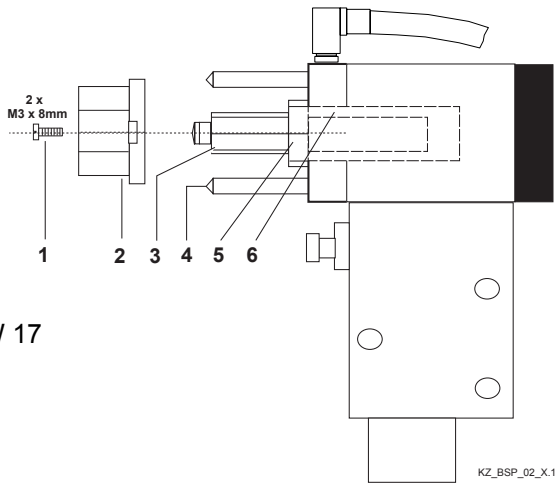
Illustration Stud holder with draw pin

7.1.3 Installation of stud holder into stud welding gun

DANGER
Switch off the welding system before starting any installation works.

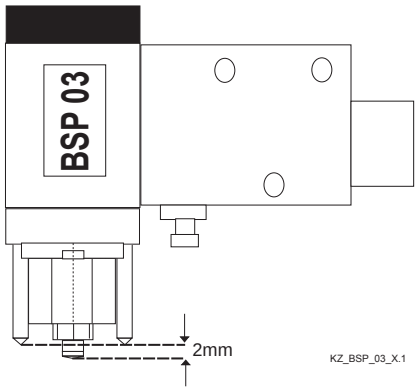
The BSP 03 (A) stud welding gun is provided with a special stud holder for draw pins. The illustration below shows how to install the special stud holder into the BSP 03 (A) stud welding gun.

1 Fillister head screw M3 x 8
2 Shielding gas shroud
3 Stud holder with draw stud
4 Gun leg
5 Sleeve nut
6 Spring piston



How to install the stud holder:
• Loosen fillister head screws (1)
• Detach shielding gas shroud (2)
• Loosen sleeve nut (5) by means of socket wrench SW 17
• Insert stud holder (3) into spring piston (6) until stop
• Tighten stud holder (3) with sleeve nut (5)
• Attach shielding gas shroud (2) again
• Hand-tighten fillister head screws (1)

• Check the stud projection according to illustration

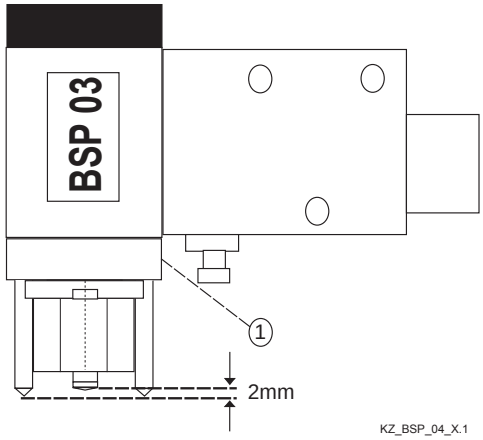


☞	The stud must project for about 2mm over the tips of the gun legs. If need be, dismantle the stud holder again and check its fitting position.

7.1.4 Lift check

The height of lift is the distance the stud is lifted off the workpiece during the welding process. This distance is required for igniting the arc. The height of lift should amount to approx. 2mm.

How to check the height of lift:



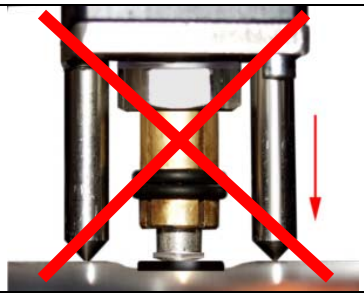
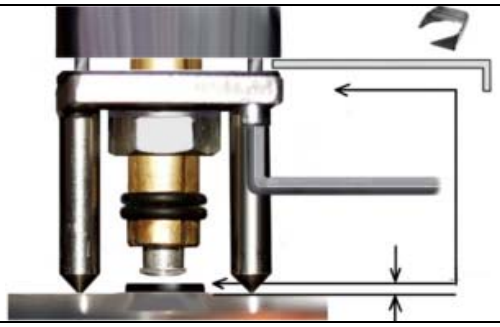
• Set the operating mode switch (item 4, chapter 6.1) to position "1" (lift test). This operating mode allows you to check the proper lift of the stud in the stud welding gun.

• Insert a stud into the gun.
• Adjust function "lift test" at the control device.
• Place welding gun on the workpiece.
• Press gun switch. Stud holder with stud is lifted off the workpiece.

If the height of lift does not correspond to the specifications, check the stud projection and make sure that the stud holder has been fully inserted into the welding gun until stop.

☞	In addition, the height of lift can be changed by using a distance plate. When required, insert the distance plate between the foot plate (item 1) and the gun shell.

Correcting the height of lift

The height of lift corresponds to the specifications and needn't be changed.	
Height of lift is too small. Re-adjust height of lift.	
How to correct the height of lift by means of a distance plate: • Loosen the foot plate only to such an extent that the distance plate can be inserted from the side. • Retighten the screws for the foot plate. (illustrations without shielding gas shroud)	

CAUTION
Make sure that the operating mode switch is set to "1" and follow the safety instructions.

NOTE
Do not press the gun switch too long, as this would cause the thermo safety mechanism protecting the lifting magnet to react after approx. 5 seconds and the current supply for the magnet to be interrupted. This condition is indicated by the LED "Excess temperature in control device" (item 5.7, chapter 6.1.2).

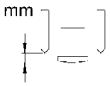
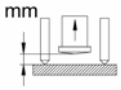
7.2 Welding parameters for welding operation

NOTE
The set welding parameters influence the reproducibility and quality of the welding results to a large extent. The parameters depend on the size of the studs and the material properties. The values indicated in the tables are standard values which are exclusively valid for studs supplied by **Wieländer+Schill**. They may vary depending on the type of workpiece, the workpiece thickness, the surface condition of the workpiece and on environmental conditions (e.g. low outdoor temperatures). The settings of the welding gun also influence the welding parameters.

We recommend the application of shielding gas to optimise welding results.
The best joints made by welding can be achieved by using mixed gas containing Argon and CO2.

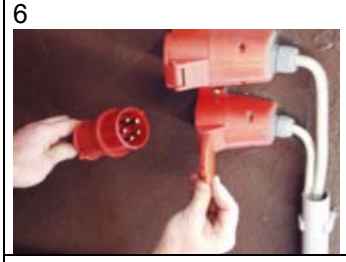
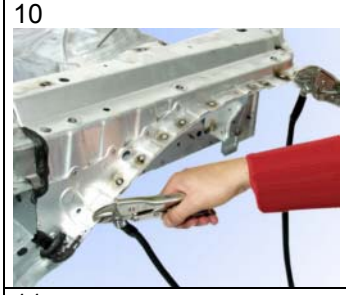
NOTE
The following gas mixtures may be used as shielding gas:
80% Argon and 20% CO2
82% Argon and 18% CO2
85% Argon and 15% CO2

The welding parameters were determined with the BSP 03 (A) control device and the BSP 03 (A) stud welding gun.

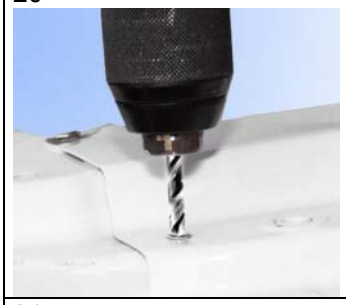
 Stud diameter in mm	 Stud projection in mm	 Lift in mm	 Main current duration in ms
Ø 5	~ 2.0	~ 2.0	~ 40
Ø 6	~ 2.0	~ 2.0	~ 50

7.3 Execution of welding operation (welding of draw pins)

1 	Read the instruction manual. Comply with the safety instructions.  **DANGER** Persons with pacemakers must not operate the stud welding equipment and must not stay near it while it is running. Never touch stud or stud holder during the welding process. These components are current-carrying! The applicable accident prevention and safety regulations have to be complied with when operating the stud welding system. Also adhere to the safety instructions given by the trade associations or car manufacturers. Disconnect, for instance, the car battery(ies) and remove the fuel tank.
2 	Install the unit.
3 	Connect the gun.
4 	Connect the ground cables.
5 	Prepare gas supply. Set gas flow rate to 3 – 5 l/min Argon Mixed Gas 80% Argon / 20% CO2 82% Argon / 18% CO2 85% Argon / 15% CO2

6 	**Ensure correct connected loads for electrical connections (see type plate).** Connect the mains cable. Start up control device as described in chapter 6. 
7 	Use the main switch (item 2, chapter 6.1) to switch the control device on. The control device carries out a self test. Follow the safety instructions. 
8 	Set the parameters.
9 	Prepare ground connection (protective goggles). The contact areas for the ground connection must be blank. Grind the surface. 
10 	Attach ground pliers.
11 	Prepare the welding spot (protective goggles). The welding points must be blank. Grind the rivet surface. 

12 	Insert draw pin into stud holder until stop. Check the gun setting.
13 	Do not position the gun this way. Make sure that the gun does not tilt.
14 	Position the gun correctly on the rivet (90° angle). Start welding process. The welding process will be released with the parameters selected. The LED "Final contact" (item 5.6, chapter 6.1.2) lights up after completion. During the welding process keep the gun steady. After having completed the welding process, remove the gun vertically from the welded draw pin to prevent widening and damaging of the stud holder. 
15 	Welded stud.
16 	Position the extraction device on the workpiece. 

17 	Break off the rivet. 
18 	If the stud does not hold after welding or breaks off when pulling it with the rivet gun, abrase the rivet head again and weld a new stud. If it is not possible to weld a stud from a technical point of view or if the stud does not hold on the rivet, the rivet has to be bored open.
19 	Please mark the rivet with the special center punch to ensure that the rivet is centrically bored open.
20 	Use a special drill (Ø 6.4 mm) to open the rivet by boring. Now it is possible to immediately and easily insert the original repair rivet.
21 	If the stud projection is too large so that the gun does not achieve the correct height of lift (1 mm), insert the distance plate between the foot plate and the centering plate. Please also refer to chapter 7.1.4.

8 Maintenance

8.1 Important information for the user

The stud welding system is constructed in such a way that only a minimum of maintenance is required. The control device should, however, be cleaned by a specialist at regular intervals depending on the environmental conditions at the location of use.



WARNING
It is prohibited to open the control device.
The service personnel are required to meet special qualifications.
Our after-sales service has adequately trained personnel, suitable service equipment and the means to carry out all necessary works.

8.2 Important information for the Wieländer+Schill service staff



DANGER

Always disconnect the control device's mains cable from the mains supply before starting any repair, maintenance or cleaning works.

Always disconnect the connecting plug from the mains supply socket before opening the housing of the stud welding system. Only trained and appropriately qualified personnel are allowed to carry out works at the electric mains supply and welding system.



Note
Only use original spare parts.

The user must ensure that all maintenance, inspection and assembly works are only carried out by authorized and qualified specialist staff.

Generally, only work at the system when it has been switched off and after having disconnected it from the mains supply. The safety instructions described in the operating instructions have to be complied with.

Immediately after having completed your work, re-install and activate all safety and protective devices.

8.2.1 Cleaning

Cleaning should be carried out once a week depending on how soiled the control device is.
Please pay particular attention to foreign substances in and around the air apertures in the housing.

Blow through the interior of the control device with clean, dry and filtered compressed air with a pressure of about 2 bar. If no compressed air is available, a vacuum cleaner may be used instead. Ensure, however, that no components are damaged by the nozzle.

8.2.2 Detergents

Almost every detergent without corrosive or acidic substances is suitable for cleaning purposes. However, please observe the manufacturer's specifications on the detergent you intend to use.

8.2.3 Replacement of components

Defective components may only be replaced by trained **Wieländer+Schill** servicemen. Perfect function of your stud welding system can only be guaranteed when original spare parts are used.

DANGER
Disconnect the mains cable from the mains supply before replacing components. Electric and electronic components may only be replaced by the **Wieländer+Schill** service department.

CAUTION
Should it become necessary to replace fuses, only use fuses with the prescribed electrical values. Oversized fuses could either cause defects on the electrical system or a fire.

DANGER
Disconnect the mains plug from the mains supply when replacing fuses.

8.3 Circuit diagram of BSP 03 (A)

8.3.1 Wiring diagram, primary (power circuit, 400 volts standard)

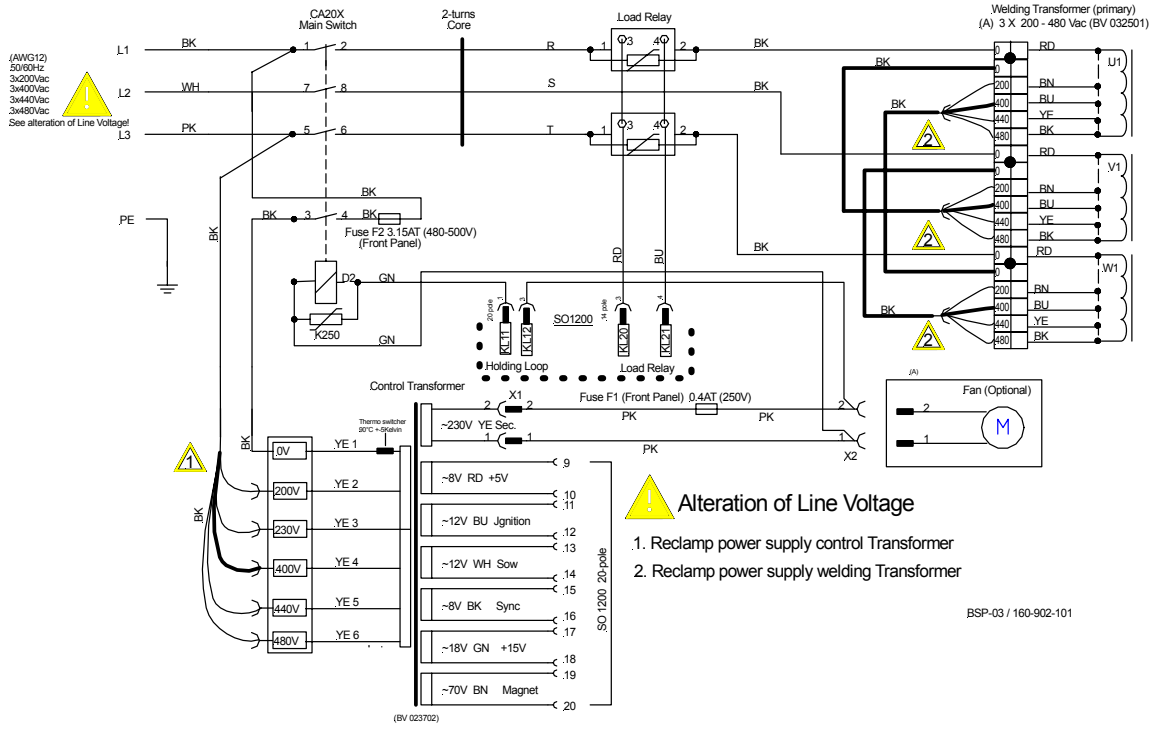


Illustration Primary wiring diagram, drawing no.: 160-902-001 *Subject to technical changes*

8.3.2 Wiring diagram, secondary (welding circuit)

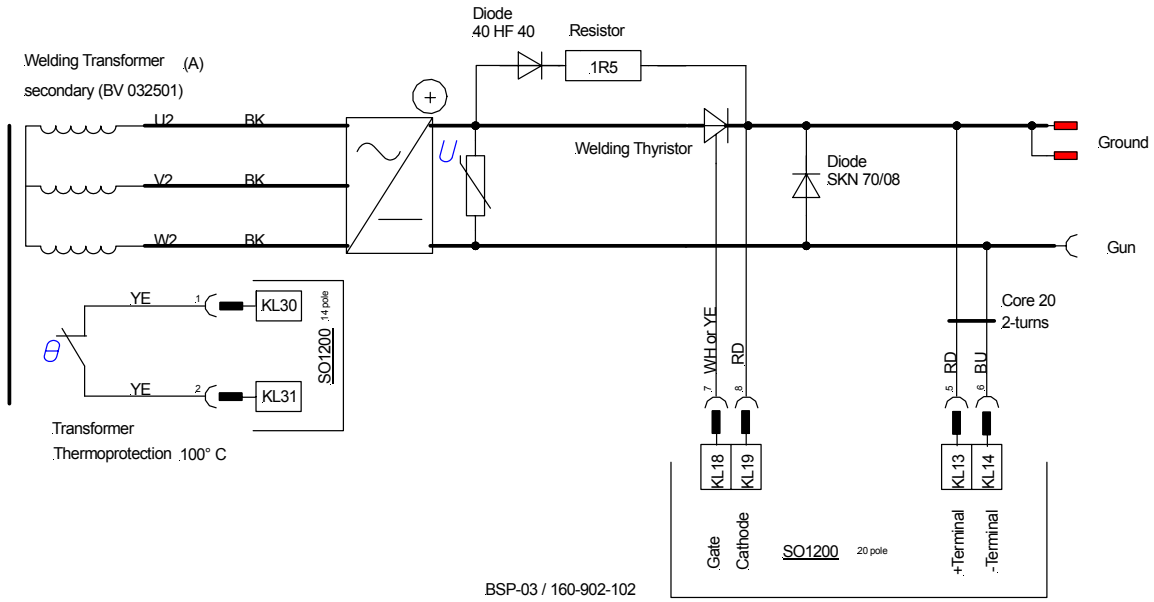


Illustration Secondary wiring diagram, drawing no.: 160-902-002 *Subject to technical changes*

8.3.3 Wiring diagram of modules

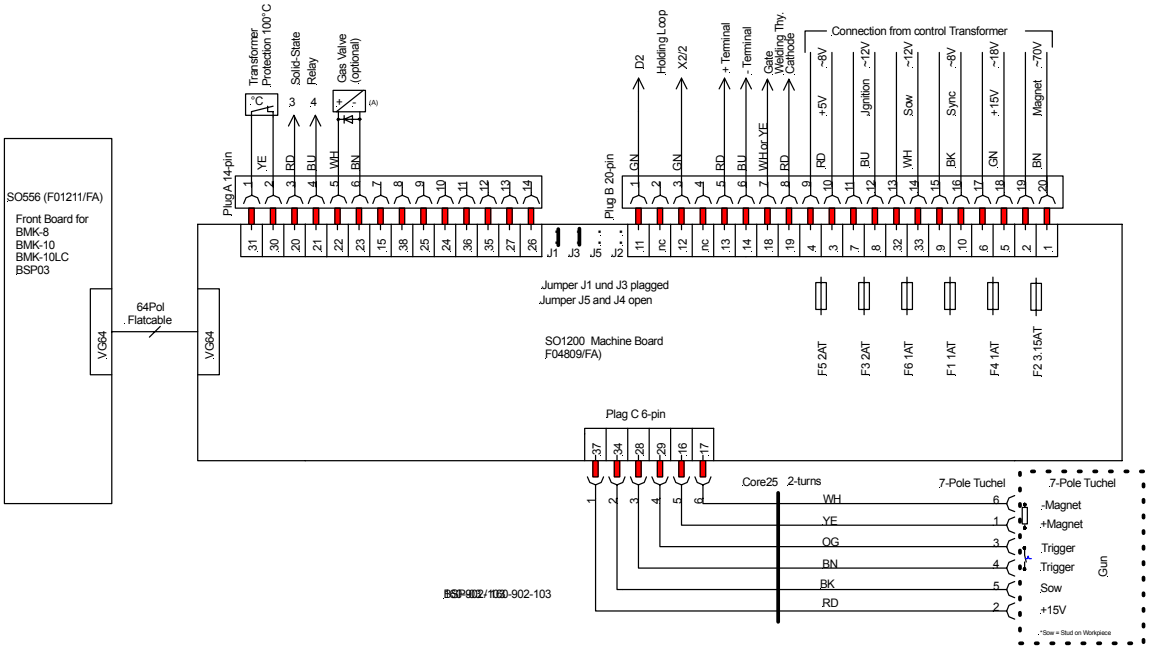


Illustration Wiring diagram of modules, drawing no.: 160-902-003 *Subject to technical changes*

9 Troubleshooting

The following list of errors, their causes and remedies is designed to help you eliminate any trouble immediately on the spot. If it is difficult or impossible to eliminate the trouble, please contact the WIELÄNDER+SCHILL customer service responsible for your area.
For address and telecommunication data, please refer to chapter 13 (contacts and service address).



DANGER
Always disconnect the connecting plug from the socket before opening the housing of the control device. Only trained and appropriately qualified personnel are allowed to carry out works at the electric power supply and welding system.



CAUTION
Only trained and appropriately qualified personnel are allowed to replace components of the welding equipment.



NOTE
If the temperature in the control device exceeds the admissible operating value, the LED “Excess temperature” will light up. The welding operation will be interrupted. The welding operation can be continued as soon as the transformer has cooled down.



NOTE
The emergency cutoff is activated if the welding gun is removed from the workpiece during the welding process or the selected stud lift is too big.
In this case, the system will need to be reset by turning the master switch in the “1" or on position.

9.1 Malfunctions

Error	Cause → Elimination
Main switch does not remain in position “1”.	One or several phases have failed. → Check mains supply fuses.
	Fuse F1 or F2 is defective. → Replace defective fuse.
System is switched on, but does not function.	Mains supply is defective. → Check mains supply fuses.
	Fuse of control device is defective (front panel). → Replace defective fuse.
There is no arc even though system is ready for operation.	Control of control device or welding gun is defective. → Call Wieländer+Schill customer service.
	Stud is too loose in stud holder. → Press stud holder together or tighten it.
System does not weld, no or only poor sparking.	System is not switched on or not connected to mains supply. → Connect system to mains supply and switch on. When working with drawn arc and short-cycle drawn arc operation, the main switch must remain in position "1". When switching on the system, the LEDs light up shortly.
	Operating mode is set to LIFT [1]. → Set operating mode to "OP" [0].
	Welding cable or control cable is not connected properly or damaged. → Connect cable properly or check for damage. Replace if necessary.
	Connecting plug or socket of control device is burnt down. → Have plug or socket replaced by Wieländer+Schill customer service.
	Both ground cables are not properly connected or not connected at all, or ground clamps are not attached to the workpiece. → Connect ground cables; attach ground clamps to the workpiece.
	Welding points and/or ground connection points at the workpiece are not blank. → Prepare workpiece and studs accordingly.
	Height of lift and/or depth of immersion are not adjusted correctly. →Refer to the operating instructions of the welding gun to set the height of lift and depth of immersion correctly.
Stud thread scorched.	Stud holder worn. → Replace stud holder.
Stud does not lift, neither preweld current nor main current arc is generated, even though LED "Stud on workpiece” lights up.	Height of lift is not correctly set. → Set height of lift in accordance with the operating instructions of your stud welding gun.
	Control device or welding gun is defective. (Stud does not lift, even though height of lift is correctly set). → Contact Wieländer+Schill customer service.
Stud lifts, preweld current is initiated, but main current is not ignited.	Preweld current arc breaks. → Clean or abrase workpiece surfaces.
	Lift is too high. → Set lift in accordance with the operating instructions for your welding gun and/or welding head.

Error	Cause → Elimination
Varying welding results	Welding energy not correctly adjusted. → Adjust welding energy.
	Cable connections too loose. Transition resistances are generated. → Check all cable connections and ground clamps for tight fit.
	Stud too loose or not fully inserted into stud holder until stop. → Insert stud into stud holder until stop. Replace stud holder, if necessary.
	Magnetic blowing action. Arc is forced into a certain direction. → Alter fixture of ground clamps, place iron parts on the edges and/or rotate welding gun.
	Height of lift and/or depth of immersion are incorrectly set. → Refer to the operating instructions of your welding gun to set the height of lift or depth of immersion correctly.
	You have used low-quality studs with inaccurate dimensions or poor surface finish. Only use WIELÄNDER+SCHILL ® welding studs as per DIN EN ISO 13 918.
	Welding time incorrectly set. → Set welding time in compliance with chapter 7.2.
	Parent metal not suitable for welding. → Use suitable material combinations.
Single-fillet bulging at equal points.	Bulging is caused by magnetic blow effect. The arc is forced into a certain direction. → Alter fixture of ground clamps, place iron parts on the edges and/or rotate welding gun.
Intensive sparking, stud flange almost melted away	Time too long. → Readjust time for main current duration according to the table.
Stud not welded with total flange surface, deficient weld joint strength	Time too short. → Readjust time for main current duration according to the table.
	Poor ground connection. → Check ground cables and ground clamps for tight fit, tighten if necessary.
	Workpiece surface too soiled. → Clean workpiece surface.
	Welding gun in tilted position. → Ensure that both gun legs are simultaneously and evenly positioned on the workpiece.
	Lift not correctly set. → Set lift correctly.

Error	Cause → Elimination
Main switch returns to position "0". Main switch returns to position "0".	Stud lift not correctly set. → Set stud lift in accordance with the operating instructions for the welding gun. Switch control device on.
	You have pulled off the welding gun from the workpiece while main current has been flowing. → Switch control device on again.
	Insufficient mains supply, i.e. supply voltage below value required for welding operation. → Connect control device without extension cable to mains supply. If you need to use an extension cable, use one having a higher cable core cross-section.
	Workpiece surface is poorly electroconductive - arc breaks. → Abrase surface.
	Arc breaks as gas pressure is too high. → Set gas pressure to the prescribed value.
LED "Transformer overheated, pls. wait" lights up.	There is not enough free space around the control device. → Make space available to eliminate heat accumulation.
	Excessive welding sequence. → Please observe the admissible welding sequence.
LED "Lift test carried out too long" lights up.	You have activated the lifting magnet too long or too often when testing the lift. →Wait until the coil in the welding gun has cooled down.
No shielding gas flow during welding process.	Gas cylinder is not or not properly connected to the system and/or valve or shut-off valve are not open. → Connect gas cylinder according to chapter 6.2.3 and/or open valve or shut-off valve.
	Gas flow rate is set too low. → Set gas flow rate to 3-5 l/min by means of the control cock.
	Solenoid valve in control device is soiled or defective. → Deaerate solenoid valve, clean it and/or have it replaced by WIELÄNDER+SCHILL service.

10 Transport and storage

The control device is robustly designed and has a two-piece metal housing with front and rear panel. Owing to electronic components it should be ensured, however, that transport is free from vibrations.

The BSP 03 (A) control device has a carrying handle on its top for easy transport and mobile use within short distances.



CAUTION
The handle is intended for transport by hand only. Never pull ropes through this handle to lift the system by means of a crane to the installation site. The welding system would become instable and might tilt from its original position. As a result the handle could rip and the system would fall on the ground.

Our tool and gear wagon (optional equipment) is the optimum solution for installing the stud welding system as well as properly storing welding guns, cables, studs and conversion kits.



NOTE
Prevent unauthorized use of the stud welding system by children and unqualified personnel.
After long system standstill, we recommend having the stud welding system checked by WIELÄNDER+SCHILL customer servicemen prior to start-up.



The housing of the BSP 03 (A) control device corresponds to safety class IP 21. Please observe that this system of protection is not suitable for being operated or transported in the rain.

11 Terms of warranty

We warrant for the control device for a period of 12 months in the case of commercial, professional or equivalent use. When repairs are necessary, we guarantee to undertake them in our factory in Etterschlag. Parts subject to wear and tear are excluded.

Any claim to a warranty will be forfeited if damage is caused by improper operation, or if repairs or interferences have been made by unauthorized personnel, or whenever accessories and spare parts have been used which do not match our equipment.

We cannot guarantee the perfect function of the stud welding system and the quality of welded joints if welding studs acquired from another company are used.

12 List of standards and guidelines

• 91/368/EWG (formerly 89/392 EEC)	EC Directive on Machinery
• 73/23/EEC	EC Directive on Low-Voltage
• 89/336/EEC	EC Directive on Electromagnetic Compatibility
• DIN EN 292 – 1	Safety of machinery; basic terms, general principles of construction; part 1: Basic terminology, systems engineering
•DIN EN 292 – 2	Safety of machinery; basic terms, general principles of construction; part 2: technical principles, specifications
• EN 60204 –1 (formerly VDE 0113)	Electric equipment of machinery, general requirements
• EN 60974 – 1 (DIN VDE 0544-1)	Safety requirements for arc welding equipment, part 1 welding current sources
• VBG 1	General instructions (instructions for accident prevention)
• VBG 5	Power-operated substances (instructions for accident prevention)
• DIN 4100	Welded steel structures with predominantly dead load
• DIN 267, Part 5	Screws, nuts and the like, technical terms of delivery, testing and acceptance
• DIN EN ISO 14555	Arc welding of metallic materials
• DIN EN ISO 13918	Studs and ceramic ferrules for arc welding
• DIN 50049	Certificate on material tests
• DIN 50125	Testing of metallic materials, tensile tests, guidelines for production
• DVS Information Sheet 0902	Drawn arc stud welding
• DVS Information Sheet 0903	Capacitor discharge stud welding with tip ignition
• DVS Information Sheet 0904	Practical information – Arc stud welding
• UL 551	UL Standard for Safety for Transformer-Type Arc-Welding Machines,
• CSA C22.2 NO. 60-M1990	Arc Welding Equipment

13 Contacts and service address



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BSP 03 (A)

GESIPA Riveting gun

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fax: 02-681 3328
e-mail: kscorpltd@hotmail.com

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80670 Maslak / Istanbul
TR Contact Person: Cengiz Bakirci
tel.: 0212-285 01 67
fax: 0212-285 01 54
e-mail: bakirci@prizma.net.tr

Al-Futtaim Motors
P.O. Box 11052
Dubai
UAE Contact Person: Mike Waterhouse
tel.: 04-2 859 881
fax: 04-2 857 568
e-mail: mikew@alfuttaim.co.ae

Southern Studwelds
3545 Conflans
USA - Irving, Texas 75061
USA Contact Person: Lynn Haynes
tel.: 972-790 3339 altern.: 877-929 6707
fax: 972-313 0864
e-mail: lhaynes@studweld.com

INTERNATIONAL WELDING TECHNOLGIES Inc.
276 Pinedge Drive
USA – West Berlin, NJ 08091
USA Contact Person: Neil Wilkinson
tel.: 856- 753 8126
fax: 856- 753 8439
e-mail: mailbox@internationalwelding.com

SOCINTEC C.A.
Av. Principal de la Urbina Edificio O.
piso 13 Ofc. 13-D apartado 70270
Caracas 1071
VEN Contact Person: Edmundo Rubilar Dussuel
tel.: 0212-241 6748
fax: 0212-242 7277
e-mail: edmurubi382@cantv.net

Celette SA (Pty) Ltd.
P.O. Box 260513, Excom
2023 Johannesburg
ZA Contact Person: George Gajik
tel.: 011-334 1875
fax: 011-334 0954
e-mail: Celettesa@acenet.com.za

GESIPA Riveting gun

KEYSTONE SIAM Corp. Ltd.
100/48 Soi Nak Suwan, Nonsi Road
10120 Bangkok Yannawa
TH Contact Person: Kittisak Chartprakam
tel.: 02-681 3323
fax: 02-681 3328
e-mail: kscorpltd@hotmail.com

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GESIPA Fasterners USA, Inc.
126 Quality Drive
USA - Mocksville, NC 27028
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tel.: 336-751-1555 114
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14 Wear and consumption materials for BSP 03 (A)



BSP 03 (A) Gun,
complete
with welding cable
Article No.932359



Stud holder Ø 6 x 40
Article No. 932358



Gun leg
Article No.932355



Gas shroud BSP 03
Article No. 932343



Distance plate
Article No.932357



Rivet head drill 6.4 x 70
Article No. 932353



Center punch for rivet head drill
Article No. 628005



Gripping mechanism W+S riveting tongs
Article No. 578100



Clamping jaws
W+S riveting tongs
Article No. 578100



Mouth piece Ø 12 +14mm
Article No. 932340



Power accumulator
W+S riveting tongs
Article No. 578100



Fine-wire fuse 0.4 A
Article No. 932345



Fine-wire fuse 3.15 A
Article No. 932346



Draw pins Ø 6 x 40mm
Article No. 932356



FAX No. 0049 7720 12 55

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Datum•date



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Unterschrift•signature

Art.-No	Menge / Qty	Bezeichnung / Article
932359		BSP 03 (A) gun complete with welding cable
932358		Stud holder BSP 03 (A) VE 3 pieces
932355		Gun leg BSP 03 (A) VE 4 pieces
932357		Distance plate for BSP 03 (A) gun VE 2 pieces
932353		Rivet head drill Ø 6.4 x 70 VE 5 pieces
628005		Center punch for rivet head drill
932364		Gripping mechanism complete W+S riveting tongs
932363		Clamping jaws for gripping mechanism VE 6 pieces
578100		Power accumulator W+S riveting tongs
932343		Gas shroud BSP 03
932345		Fine-wire fuse F1 0.4 A slow blow (250 V)
932346		Fine-wire fuse F2 3.15 A slow blow (480-500 V)
932340		Mouth piece, inside diameter 12 +14mm VE 3 pieces each
932356		Draw pins Ø 6 x 40mm VE 500 pieces

Zuzüglich MwSt. und Versandkosten / plus VAT and transport costs / plus TVA et frais d'expédition



☐

No.: _____



☐

Name: _____

Expiry/gültig: _____

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05/2003

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