GB

Stud Welding – Practical Knowledge

Quick Start Guide –
BMK-12W Stud Welder

soyer

Keep this quick start guide in a safe place and ensure that all users are familiar with the contents.

Introduction

This quick start guide is designed to provide you with all the information you need to start up and operate your stud welder fast and efficiently.

The operating personnel must be able to consult this guide when necessary. Store this guide in a place accessible to every operator.

FOR YOUR SAFETY

This quick user guide should not be regarded as a substitute for the comprehensive operating instructions delivered with your stud welder.

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.

We hope you enjoy using the BMK-12W SOYER stud welder as much as we enjoyed developing it.

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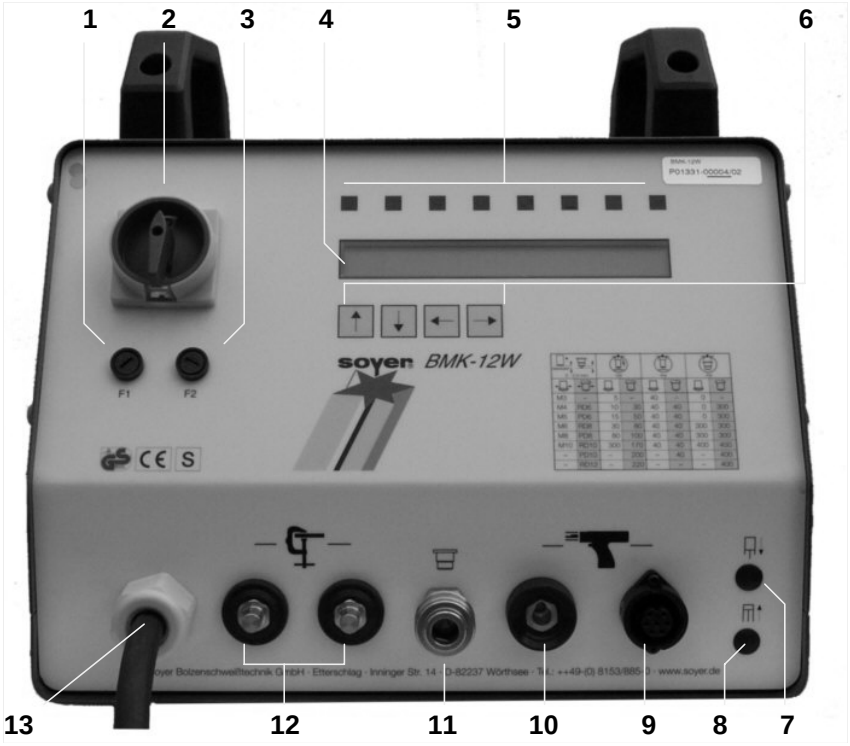
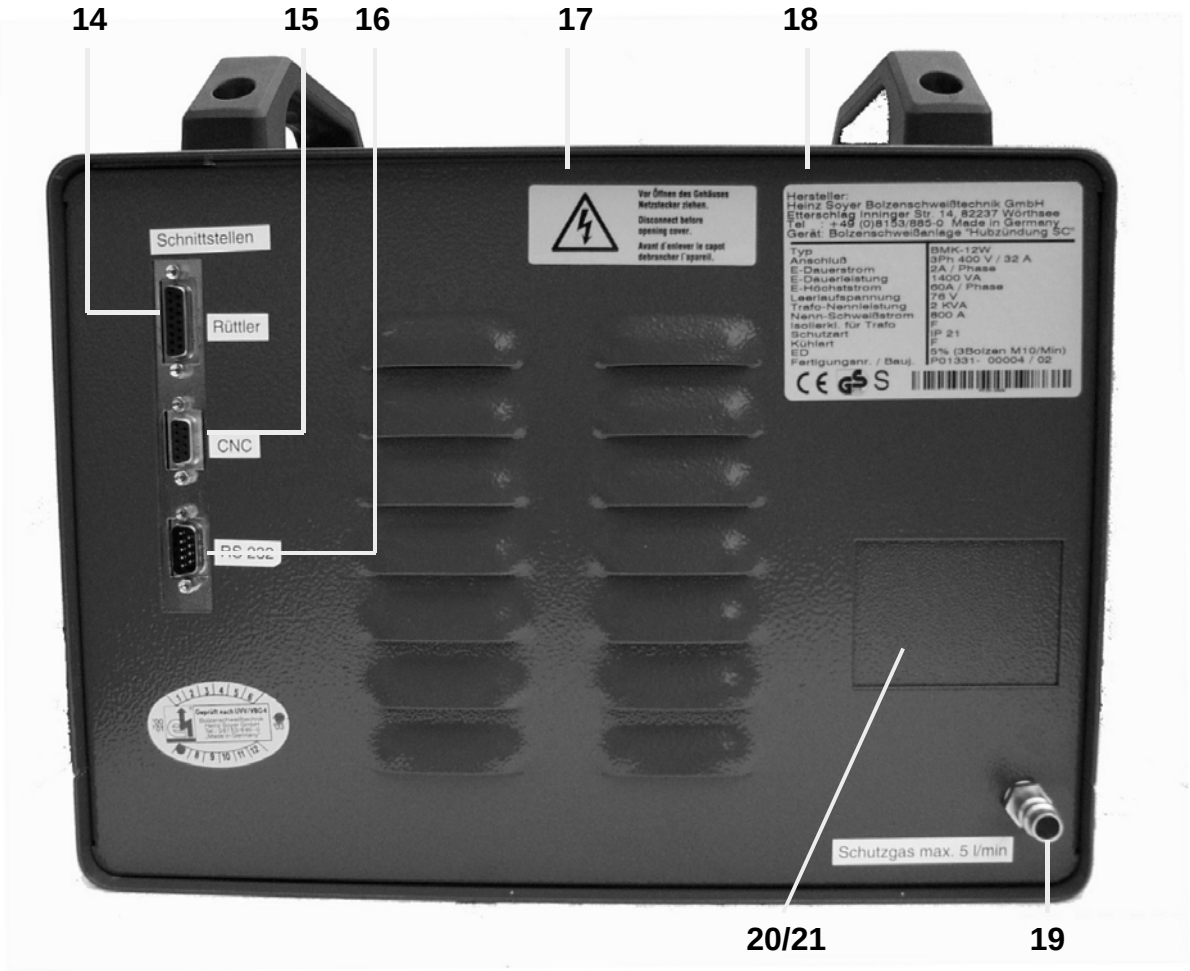
1. Front and rear view of stud welder



Front view of BMK-8U / BMK-12 W (above illustration of BMK-12W corresponds to BMK-8U)

1 • **Fuse element F1**
2 • **Main switch** **(to switch stud welder on)**
3 • **Fuse element F2**
4 • **LCD display**
5 • **Indicator lamps for function control**
6 • **Function keys for setting the welding parameters**
7 • **Air function "forward"** (option)
8 • **Air function "backward"** (option)
Connection for welding guns or heads with automatic stud feed
9 • **Control cable connection**
10 • **Welding cable socket**
The control cable connection and the welding cable socket serve to connect the stud welding guns or heads to the stud welder.
11 • **Gas connection socket**
Before welding with shielding gas, connect the gas hose of the welding gun or head to the gas connection socket.
12 • **Earth cable connectors**
The earth cable connectors serve to connect the earth clamps to the stud welder.
13 • **Mains cable**
The mains cable is a four-core (3P + PE), highly flexible connecting cable for connecting the stud welder to the mains supply.
13a **Welding parameter table**
Table indicating welding parameters for the welding operation (standard values)



Rear view of BMK-8U / BMK-12 W

14 15-pole connecting socket / feeder interface (OPTION)
The feeder interface serves to connect the feeder control to the stud welding device

15 9-pole connecting socket / CNC interface (OPTION)
The CNC interface serves to be connected with an external control system to control the stud welding process

16 9-pin connector, interface RS 232 (OPTION)
This interface serves to be connected with an external control system

17 Danger sign
18 Type plate

19 Shielding gas connector
This connection serves to supply the stud welder with gas by means of a pressure reducer. The admissible gas flow value ranges between 4 and 5 l/min

20/21 Compressed-air supply connection (OPTION)
This connection serves to supply the stud welder with compressed air and to connect the compressed air lines of the feeder control to the stud welder. The admissible supply pressure amounts to a maximum of 7bar

2. Quick start-up instructions for single components

2.1. *Start-up*

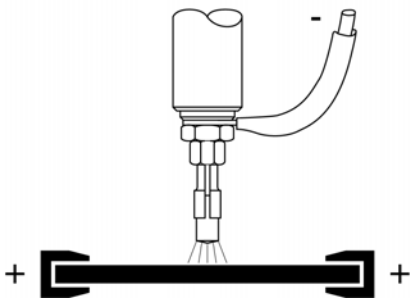
All operating and safety instructions must be read carefully and must be fully understood before using the BMK-12W stud welder!

DANGERS:

- Persons with pacemakers must neither operate the stud welding equipment nor stay near it while it is running.
- Never touch weld stud or stud chuck during the welding process. These components are current-carrying!

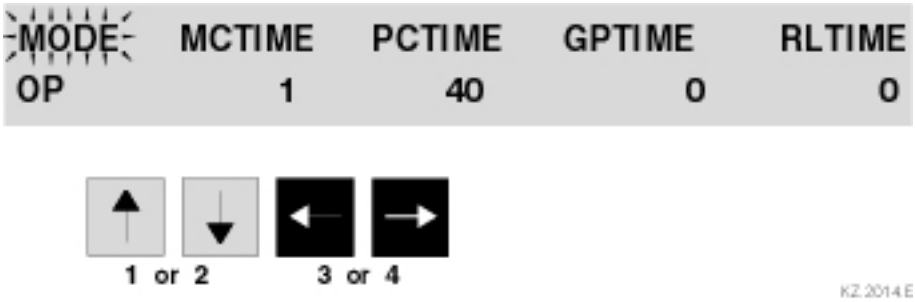
- The applicable accident prevention and safety regulations have to be complied with when operating the stud welder.
- Please also observe the safety instructions of the Employer's Liability Insurance Associations.

	How to install the stud welder: Connect both earth cables and lock them by turning to the right till stop. <u>Ensure a tight fit of connection cables!</u> Please note: The GW-1 or GW-2 SOYER tool and gear wagon is the optimum solution for the proper installation of the stud welder (accessories – must be ordered separately).
	**If required**, connect gas supply. When using stud diameters exceeding 6 mm, we recommend the application of shielding gas in order to prevent pore formation and to optimise bulging. Set gas flow rate to a value between 3 and 5 l/min. Gas mixture containing 80% of Argon and 20% of CO2 82% of Argon and 18% of CO2 85% of Argon and 15% of CO2
	Connect welding cable of welding gun to the welding cable socket and lock it by turning to the right until stop. Insert control cable into control cable connection and lock it by turning to the right until stop.

	**If required,** prepare ground connection (please use protective goggles). Earth connection points at the workpiece must be blank. If necessary, grind the surface of contact areas to clean bright metal. 
 Ideal condition: The stud is located in the centre of both earth connections.	Attach the earth clamps to the workpiece. Always attach both earth clamps (arc blow!). Only attach both earth cables to the workpiece being welded in order to prevent high transition resistances.
	**If required**, prepare welding points at the workpiece (pls. use protective goggles). If necessary, grind the area to be welded to clean bright metal. 
	Connect mains cable to power supply.  **Ensure correct connected loads for electrical connections (please refer to the stud welder's type plate)** **Standard connection** **CEE 32 A (3P + protective earth conductor)** **3 x 400 V 50/60 Hz** Special connection of 3 x 230, 3 x 440 or 3 x 500 V 50/60 Hz possible

	Switch stud welder on by means of the mains switch. The stud welder carries out a self test. Please observe the safety instructions.   
	Select parameters in accordance with your welding task.

2.2. *Operating modes / Parameters*



Press the function key "arrow right" or "arrow left" **(3 or 4)** to select the parameters. Only the parameter designation which is flashing on the display can be set by means of the function keys **(1 or 2)**.
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Overview – Operating modes / Parameters

MODE	MCTIME	PCTIME	GPTIME	RLTIME
OP	1	40	0	0
PRE	2	60	100	100
LIFT	UP TO	UP TO	UP TO	UP TO
GAS	1000	1000	9900	9900

Explanation of operating modes:

OP **Operating state**
The operating mode "OP" allows normal welding operation with the welding parameters set.

PRE **Preweld current test**
The adjustment "PRE" enables you to test performance using the set parameters without application of main current and serves to control the adjustment of the welding gun.

LIFT **Lift test**
This operating mode enables you to adjust or check the lift of the welding gun.

GAS **Gas test**
This operating mode checks whether shielding gas flows through the gas shroud of the welding gun. As long as the push button is pressed, shielding gas flows out of the gas shroud on the welding gun.

Explanations of parameters:

• MCTIME Main current time
MCTIME is the most important parameter for the welding operation.

• You can change the value for the main current time from 1 - 1000 ms in 1 ms-steps by pressing either function key "arrow up" or "arrow down".

Please note:
The parameters for the most important stud diameters are represented in tubular form on the stud welder's front panel.

• PCTIME Pre-current time
• It is possible to change the value for the pre-current time by pressing either function key "arrow up" or "arrow down". The period of time can be set between 40 and 1000 ms in 20 ms-steps.

Please note:
A period of time set between 40 and 80ms suffices in most cases (please refer to adjustment table).

• GPTIME Gas pre-flow time
The gas pre-flow time is the period of time, during which the shielding gas valve is open before starting the welding process and remains open after the welding process has been completed. Select the corresponding value for the gas pre-flow time from 100 - 9900 ms in 100 ms-steps by pressing function key "arrow up" or "arrow down" (please refer to adjustment table).

Please note:
Set "0" when welding without shielding gas.

• RLTIME Reload time **(OPTION)**
The reload time can only be used in conjunction with optional "automatic operation" (feeder connection).

Please note:
Set "0" when using the PH-3N, PK-3 and PK-0K welding guns.

2.3. *Standard stud chucks*

Please note: Standard drawn arc chucks are available in the following different sizes: M6, M8, M10 and M12. When using smaller studs, please use a special stud chuck with setscrew.

<table>
<tr><td>  </td><td>

- The stud chuck is screwed on an adapter piece and can be installed into the PH-3 and PK-3 stud welding guns.
- For different stud diameters, different stud chucks are required.
- Drawn arc stud chucks are especially suitable for operation with ceramic ferrules.

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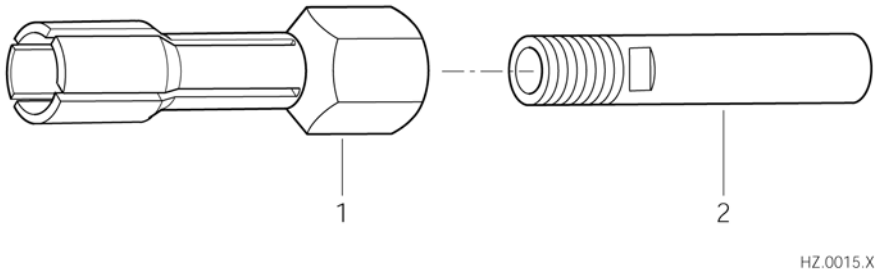
<tr><td colspan="2"> 
</td></tr>
<tr><td>  </td><td>Check to see if the stud chuck is tightly screwed after installing it, otherwise there is a risk of scorching during the welding process.</td></tr>
<tr><td>  </td><td>Insert weld stud into stud chuck.
Specific feature: Depending on the length of the weld stud being welded, stud protrusion may exceed 3 mm.</td></tr>
</table>

2.4. *Basic setting of the stud chuck with adjusting screw*

<table>
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The standard stud chuck is suitable for being installed in the PH-3N, PK-3 and PK-0K welding guns.
For different stud diameters, different stud chucks are required.
For the PH-3N and PK-3 welding guns, use a stud chuck with adjusting screw, having a length of 73 mm!
For PK-0K welding gun, use a stud chuck with adjusting screw, having a length of 45 mm!

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<tr>
<td>  </td>
<td>Insert weld stud into stud chuck.</td>
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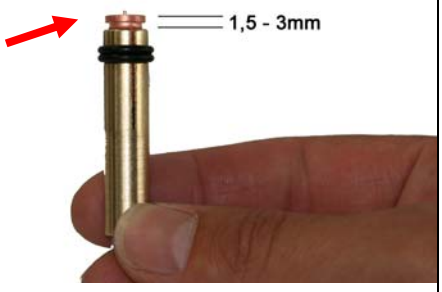
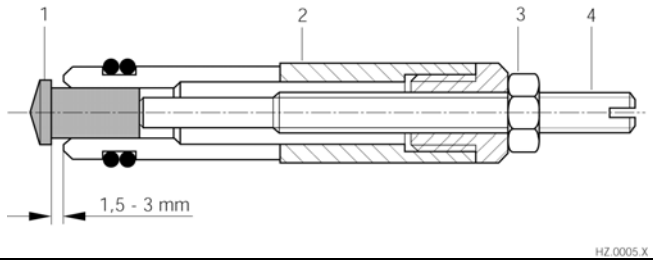
<td> 
</td>
<td>The weld stud must make contact with the stop screw. Adjust stop screw in the stud chuck by turning it until the distance between the top edge of the stud flange and the front edge of the stud chuck equals 1.5 mm – 3 mm.
Secure stop screw (4) by means of counternut (3).
 
</td>
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<tr>
<td>  </td>
<td>Ensure depth of immersion / stud protrusion is set between 1.5 mm and 3 mm.
After adjustment, check and correct if necessary. Hand-tighten by means of the fixing nut.</td>
</tr>
</table>

2.5. *Start-up of PH-3N welding gun*

Please note: The PH-3N welding gun is only suitable for stud sizes M3 - RD12!

Tip:
The PH-3N welding gun is provided with a standard gas shroud. We recommend the application of shielding gas to prevent pore formation and to optimise the formation of bulges.

Please note:
To facilitate the installation of the stud chuck, move the support tube.
For doing so, loosen the four Allen screws.

The stud welder must be switched off when installing the stud chuck.

Loosen sleeve nuts by means of SW 17 socket wrench or SW 17 open-end wrench.

Insert the chuck into the spring piston and push it firmly until it comes to a stop.

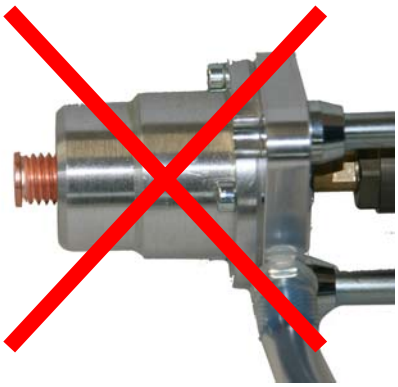
Hand-tighten sleeve nut by means of SW 17 socket wrench or SW 17 open-end wrench.

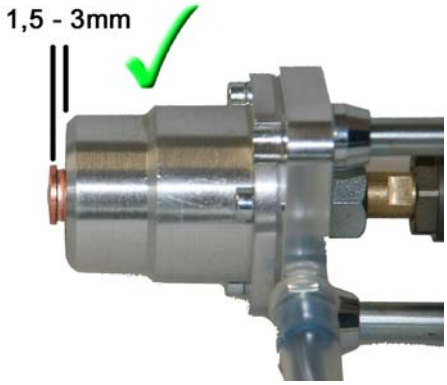
How to correct the stud protrusion

Insert the stud into the chuck and push it firmly until it comes to a stop.
Use Allen wrench (size 3) to loosen the four Allen screws.
Move support until the required stud protrusion of about 1,5 – 3mm mm is obtained.
Tighten Allen screws**.**

<u>Ensure stud protrusion is set between 1.5 mm – 3 mm</u>

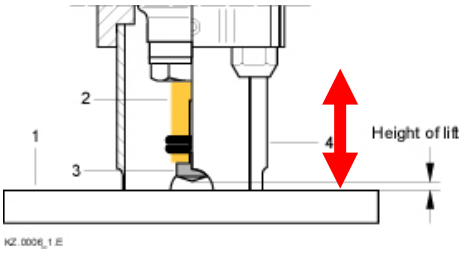
The stud must protrude for about 1.5 - 3 mm from the gas shroud!





Switch stud welder on by means of the mains switch.

Please observe the safety instructions.



<u>Adjusting and checking the height of lift</u>

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

To adjust and check the height of lift, please select the operating mode “Lift Test”.

• Position welding gun on the workpiece
• Press push button. The gun lifts the chuck with weld stud away from the workpiece.
Adjustment of the gun lift is achieved by turning the rear adjustment cap of the welding gun to the left or to the right.

Anti-clockwise rotation increases the gun lift and conversely clockwise rotation reduces the gun lift.

Please ensure that the welding parameters are set in accordance with the respective stud diameter.
If required, check and adjust welding parameters accordingly.

Position welding gun vertically on the workpiece (at a 90-degree angle to the workpiece).
Check once again the selected parameters. Release welding process by pressing the push button.

During the welding process, keep gun steady. After having completed the welding process, remove gun vertically from the welded stud to prevent widening and damaging of the stud chuck.

Please observe carefully all safety instructions!

Welding process

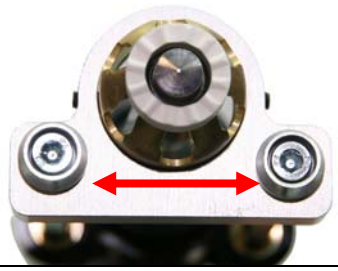
2.6. *Welding operation using ceramic ferrules*

The PH-3N welding gun can also be provided with a ceramic ferrule chuck.

The procedural method is same for both welding with shielding gas and ceramic ferrules. For ceramic ferrule welding, however, equip the welding gun with a ceramic ferrule before starting to weld.

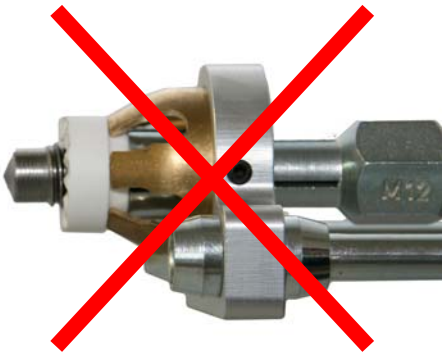
• Only use ceramic ferrules which are absolutely dry and do not show any flaws.

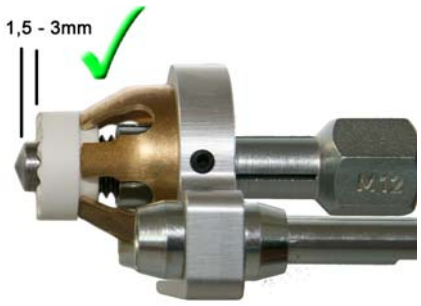
• Only use ceramic ferrules which match the type and size of the studs.

	quip the welding gun with the appropriate stud chuck and ceramic ferrule chuck.
	Make sure stud is centred in the ceramic ferrule chuck to prevent the stud getting jammed during the lifting process.
	**How to correct the stud protrusion** Insert the stud into the chuck and push it firmly until it comes to a stop. Place ceramic ferrule on ceramic ferrule chuck. Use Allen wrench (size 3) to loosen the four Allen screws. Move support until the relevant stud protrusion of about 2 mm is obtained. Tighten Allen screws again.

Ensure stud protrusion is set between 1.5 mm – 3 mm

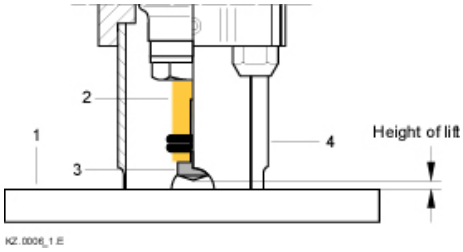
The stud must protrude for about 1.5 - 3 mm from the ceramic ferrule!





Switch stud welder on by means of the mains switch.

Please observe the safety instructions.



Adjusting and checking the height of lift

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

To adjust and check the height of lift, please select the operating mode “Lift Test”.

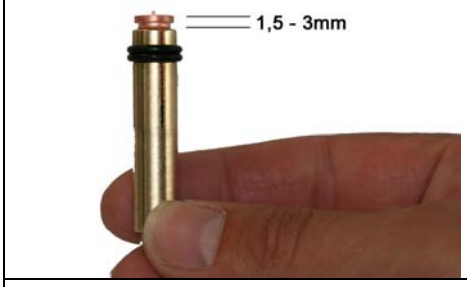
• Position welding gun on the workpiece
• Press push button. The gun lifts the chuck with weld stud away from the workpiece.
Adjustment of the gun lift is achieved by turning the rear adjustment cap of the welding gun to the left or to the right.

Anti-clockwise rotation increases the gun lift and conversely clockwise rotation reduces the gun lift.

	Please ensure that the welding parameters are set in accordance with the respective stud diameter. If required, check and adjust welding parameters accordingly.
	Position welding gun vertically on the workpiece (at a 90-degree angle to the workpiece). Check once again the selected parameters. Release welding process by pressing the push button. During the welding process, keep gun steady. After having completed the welding process, remove gun vertically from the welded stud to prevent widening and damaging of the stud chuck. Please observe carefully all safety instructions! 
	Welding process Tip: After completion of the welding process, the welding gun or welding head should be held in position for about 5 seconds to allow solidification of the molten metal.
	Knock off ceramic ferrule from the welded area.

2.7. *Start-up of PK-3 welding gun*

Please note: The PK-3 welding gun is suitable for stud sizes M3 - M10!
The illustrations below show how to install the stud chuck.

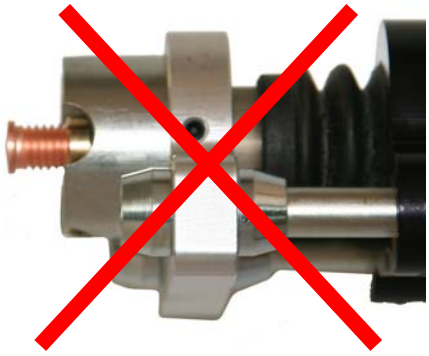
	Ensure depth of immersion / stud protrusion is set between 1.5 mm and 3 mm. After adjustment, check and correct if necessary. Hand-tighten by means of the fixing nut.
	Please note: To facilitate the installation of the stud chuck, move the support tube. For doing so, loosen the four Allen screws.
	The stud welder must be switched off when installing the stud chuck.  Loosen sleeve nuts by means of SW 17 socket wrench or SW 17 open-end wrench Insert the chuck into the spring piston and push it firmly until it comes to a stop.
	Hand-tighten sleeve nut by means of SW 17 socket wrench or SW 17 open-end wrench.

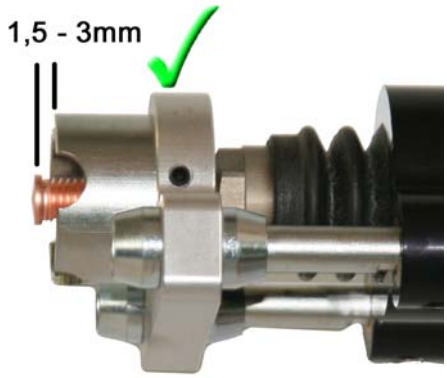
How to correct the stud protrusion

Insert the stud into the chuck and push it firmly until it comes to a stop. Use Allen wrench (size 3) to loosen the four Allen screws.
Move support until the required stud protrusion of about 2 mm is obtained.
Tighten Allen screws again.

Ensure stud protrusion is set between 1.5 mm – 3 mm

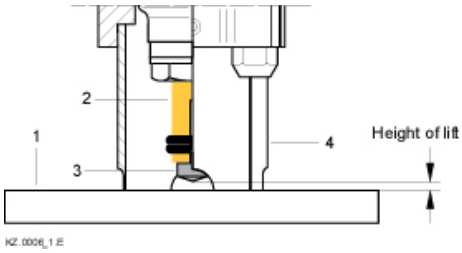
The stud must protrude for about 1.5 - 3 mm from the gas shroud!





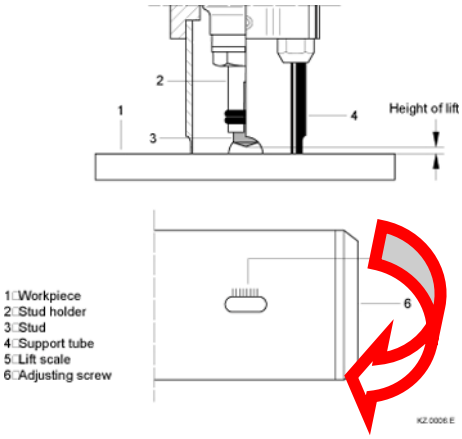
Switch stud welder on by means of the mains switch.

Please observe the safety instructions.



<u>Adjusting and checking the height of lift</u>

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



To adjust and check the height of lift, please select the operating mode “Lift Test”.

• Position welding gun on the workpiece
• Press push button. The gun lifts the chuck (2) with weld stud (3) away from the workpiece (1).
The lift is adjusted with the help of the adjusting screw (6) located at the rear side of the welding gun.
• Insert screwdriver into the groove of adjusting screw (6) located at the back of welding gun and adjust by turning the screwdriver to the left or to the right, until the required height of lift is obtained.
Anti-clockwise rotation increases the gun lift and conversely clockwise rotation reduces the gun lift.

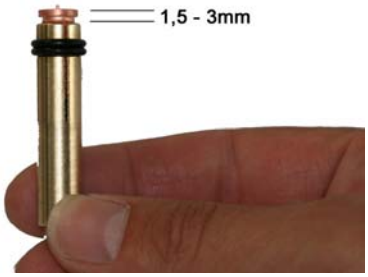
Please ensure that the welding parameters are set in accordance with the respective stud diameter.
If required, check and adjust welding parameters accordingly.

	Position welding gun vertically on the workpiece (at a 90-degree angle to the workpiece). Check once again the selected parameters. Release welding process by pressing the push button. During the welding process, keep gun steady. After having completed the welding process, remove gun vertically from the welded stud to prevent widening and damaging of the stud chuck. Please observe the safety instructions! 
	Welding process 

2.8. *Start-up of PK-0K welding gun*

Please note: The PK-0K welding gun is only suitable for stud sizes M3 - M8!
For this welding gun, use the standard chuck with adjusting screw, having a length of 45 mm.
When using large welding studs with the short type PK-0K welding gun, however, it is necessary to shorten the stud chuck's stop screw of the welding gun accordingly. Ensure that the maximum stud length does not exceed 35 mm!

Tip:
The PK-0K welding gun is provided with a standard gas shroud. We recommend the application of shielding gas to prevent pore formation and to optimise the formation of bulges.



Ensure depth of immersion / stud protrusion is set between 1.5 mm and 3 mm.
After adjustment, check and correct if necessary. Hand-tighten by means of the fixing nut

Make sure stud chuck is properly set.

Before installing the stud chuck, please shorten the stop screw at the fixing nut.

The stud welder must be switched off when installing the stud chuck.

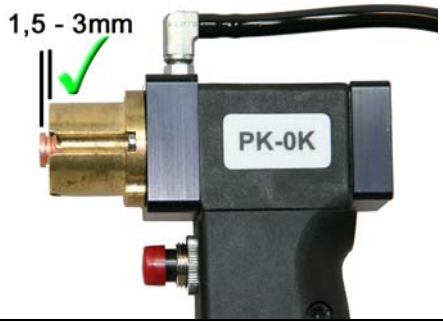
Loosen sleeve nuts by means of SW 14 socket wrench.

Insert the chuck into the spring piston and push it firmly until it comes to a stop.

Hand-tighten sleeve nut by means of SW 14 socket wrench.

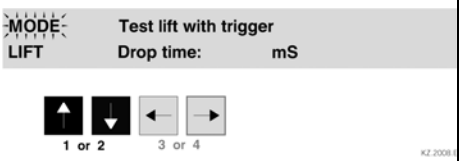
<u>Ensure stud protrusion is set between 1.5 mm – 3 mm</u>

The stud must protrude for about 1.5 - 3 mm from the support tube!



Switch stud welder on by means of the mains switch.

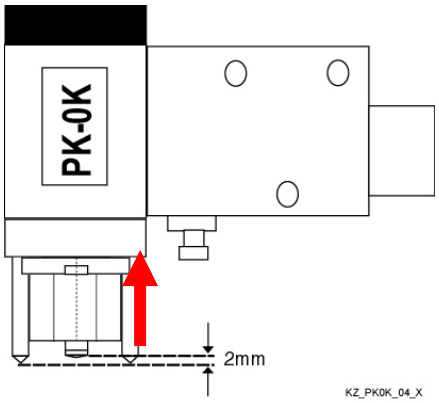
Please observe the safety instructions.



Adjusting and checking the height of lift

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

To adjust and check the height of lift, please select the operating mode “Lift Test”.



Please make sure you have set the "Lift Test" operating mode before adjusting the lift

- Insert a stud into the welding gun.
- Position welding gun on the workpiece
- Press push button of welding gun. The gun lifts the chuck with weld stud away from the workpiece.

If the gun does not lift the stud away from the workpiece for the specified amount of lift (~ 2 mm), please check the stud protrusion and make sure that the stud has been fully inserted into the chuck until stop.

Please observe carefully all safety instructions!

Position welding gun vertically on the workpiece (at a 90-degree angle to the workpiece)
Release welding process by pressing the push button of the gun.

During the welding process, keep gun steady. After having completed the welding process, remove gun vertically from the welded stud to prevent widening and damaging of the stud chuck.

Welding process

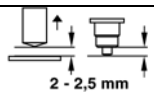
3. Welding parameters

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 only apply to studs **supplied by SOYER**. The parameters 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 temperature). The setting of the welding gun influences the welding parameters as well.

To optimize welding results, we recommend the application of shielding gas.
The most satisfactory welding results are achieved by using an Argon / CO2 gas mixture.

NOTE
For welding with shielding gas, use one of the following gas mixtures containing
80% of Argon and 20% of CO2
82% of Argon and 18% of CO2
85% of Argon and 15% of CO2

Table for BMK-12W

		 ms		 ms		 ms	
							
M3		5		40		0	
M4	RD 6	10	30	40	40	0	300
M5	PD 6	15	50	40	40	0	300
M6	RD 8	30	80	40	40	300	300
M8	PD 8	80	100	40	40	300	300
M10	RD 10	300	170	40	40	400	400
	PD 10		200		40		400
	RD 12		220				400

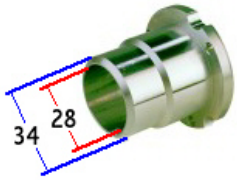
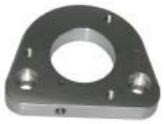
When using stud diameters exceeding 6 mm, we recommend the application of shielding gas or ceramic ferrules in order to prevent pore formation and to optimise bulging.

4. Important wear and spare parts

Please find below an overview of the most important gun wear parts.

4.1. Wear parts list for PH-3N welding gun

For a complete spare parts list, please refer to the corresponding documents.

Abbildung ***Illustration***	**Pos. Nr.** ***Ref. no.***	**Artikel Nr.** ***Order code***	**Menge** ***Quantity***	**Bezeichnung** ***Designation***	**Gewicht in kg** ***Weight in kg***	
	1	F01633	1	Schutzgasglocke SGL 2 Aluminium *SGL2 gas shroud, aluminium*	0,06	
	3	F01997	1	Stativgrundplatte *Support base plate* SGL-2 Ø28mm	0,054	
		M01443	1	Schutzgasventil *Shielding gas valve*		
				Dichtring Gasventil *Gas valve seal ring*		
	5	F03791/FA	1	Stativaufnahme komplett *Support retainer, complete*	0,95	
	33	F01375	1	Überwurfmutter *Sleeve nut*	0,006	
	34	F02857	1	Faltenbalg *Rubber bellows*	0,001	
	--	E01963	1	Massestecker *Earth connector SKM 25*	0,036	
	--	E01965	1	Massestecker *Earth connector SKM 50-70*	0,096	

 Standard-Bolzenhalter *Standard stud chuck*	F01190	1	M6	0,025	
	F01191	1	M8	0,028	
	F01192	1	M10	0,03	
	F01193	1	M12	0,045	
	F02123	1	Adapterstück M10 *Adapter piece M10*	0,025	
	F02477	1	Schutzgasglocke Messing *Gas shroud, brass* SGL-2	0,183	
 Bolzenhalter 70mm *Stud chuck 70mm*	F01160	1	M3	0,033	
	F01163	1	M4	0,033	
	F01167	1	M5	0,034	
	F01171	1	M6	0,034	
	F04995	1	Ø7,1mm	0,035	
	F01175	1	M8	0,036	
	F02660	1	Zentrierwerkzeug *Centring tool*	0,151	

Bolzenschweißen mit Gewindebolzen und Keramikring
Stud welding with threaded studs and ceramic ferrule

	F03768	KR6	Keramikringhalter *Ceramic ferrule holder*	0,013	
	F03769	KR8-10	Keramikringhalter *Ceramic ferrule holder*	0,013	
	F03770	KR12	Keramikringhalter *Ceramic ferrule holder*	0,018	
	F02115	1	Stativgrundplatte für Keramikring von KR6 bis KR10 *Support base plate for ceramic ferrules from KR6 to KR10*	0,04	
	F02114	1	Stativgrundplatte für KR12 *Support base plate for KR12*	0,033	
	F01252	2	Stativstangen-buchse, vorne verzinkt *Support leg bushing, zinc-coated at the front*	0,005	

 Stativstange *Support leg*	F03780	2	200 mm	0,07	
	F03166	2	250 mm	0,088	
	F03781	2	300 mm	0,106	
	F03782	2	400 mm	0,143	
	F03717/FA	1	Verlängerung Pistolenkabel 3 m *Extension gun cable 3 m*	2,180	
	F03748/FA	1	Verlängerung Pistolenkabel 5 m *Extension gun cable 5 m*	3,407	

4.2. Wear parts list for PK-3 welding gun

For a complete spare parts list, please refer to the corresponding documents.

Abbildung Illustration	Pos. Nr. Ref. no.	Artikel Nr. Order code	Menge Quantity	Bezeichnung Designation	Gewicht in kg Weight in kg
	2	F01943	1	Stützrohr *Support tube* Ø30mm	0,038
	6	F02114	1	Stativgrundplatte *Support base plate*	0,034
	9	F01375	1	Überwurfmutter *Sleeve nut*	0,006
	10	F01376	1	Faltenbalg *Rubber bellows*	0,002
	11	F03791/FA	1	Stativaufnahme *Support retainer*	0,95
	50	F03080/FA-E	1	Steuerkabel, komplett *Control cable, complete*	0,151

 Bolzenhalter 70mm *Stud chuck 70mm*	F01160	1	M3	0,033
	F01163	1	M4	0,033
	F01167	1	M5	0,034
	F01171	1	M6	0,034
	F04995	1	Ø7,1mm	0,035
	F01175	1	M8	0,036

4.3. Wear parts list for PK-0K welding gun

For a complete spare parts list, please refer to the corresponding documents.

Abbildung Illustration	Pos. Nr. Ref. no.	Artikel Nr. Order code	Menge Quantity	Bezeichnung Designation	Gewicht in kg Weight in kg
	2	F04933	1	Stützrohr *Support tube*	0,04
	5	F01469	1	Überwurfmutter *Sleeve nut*	0,005
	6	F02989	1	Faltenbalg *Rubber bellows*	0,002

Abbildung Illustration	Artikel Nr. Order code	Menge Quantity	Bezeichnung Designation	Gewicht kg Weight in kg
	M01444	1	Rohrsteck-schlüssel *Tubular hexagon box wrench*	0,133
 Bolzenhalter Stud chuck	F01151	1	M3	0,022
	F01152	1	M4	0,022
	F01153	1	M5	0,022
	F01154	1	M6	0,022
	F01156	1	M8	0,022

5. Helpful standards

Drawn arc stud welding
DVS 0902 information sheet

Capacitor discharge stud welding with tip ignition
DVS 0903 information sheet

Notes on practical application – Arc Stud Welding
DVS 0904 information sheet

Source: DVS-Verlag GmbH, Düsseldorf, Tel: 0211/15 91 - 0

DIN EN ISO 13918 Studs and ceramic ferrules for arc stud welding
This standard includes the most important dimensions for studs and ceramic ferrules. The selection of stud types listed in this standard corresponds to the common fields of application.

DIN EN ISO 14555 Arc stud welding of metallic materials
This standard specifies the special requirements for stud welding with regard to specialist welding knowledge, quality requirements, welding instructions, welding procedure test, qualification test for welding operators and manufacturing control.

Source of supply: Beuth Verlag GmbH, 10772 Berlin www.beuth.de

6. Helpful hints

To protect the BMK-12W stud welder from wear and tear and to efficiently use it, take a look at the following field-tested tips:

- Ensure all surfaces are free from scales, paint, rust and oil
- Make sure contact points are solidly connected to earth (always use both earth cables)
- Ensure that workpiece is firmly secured on support surface
- Scribe lines or use a template to protect the ignition tip / cone point from damage
- Use high-quality SOYER weld fasteners which are in accordance with DIN EN ISO 13918
- Ensure welding cables are kept as short as possible
- Use hearing protection and wear protective goggles
- Exhaust welding fumes
- After the weld is complete, remove welding gun vertically (at a 90-degree angle to the workpiece)
- Check the gripping power of the stud chuck. The welding stud must have a tight fit in the chuck. If the stud fits too loosely in the chuck, the intense current transition will cause scorching. If need be, replace the stud chuck.
- All components are ideally matched. Shorter gun legs or support tubes may result in poor or bad welds. For this reason, please ensure timely replacement of all worn parts.
- **Only use original SOYER spare parts**

If you have any questions, suggestions or if you require service, please contact your responsible service office or the address stated below.

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We are glad to give you any assistance needed!

Mit Sicherheit die bessere Verbindung!

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