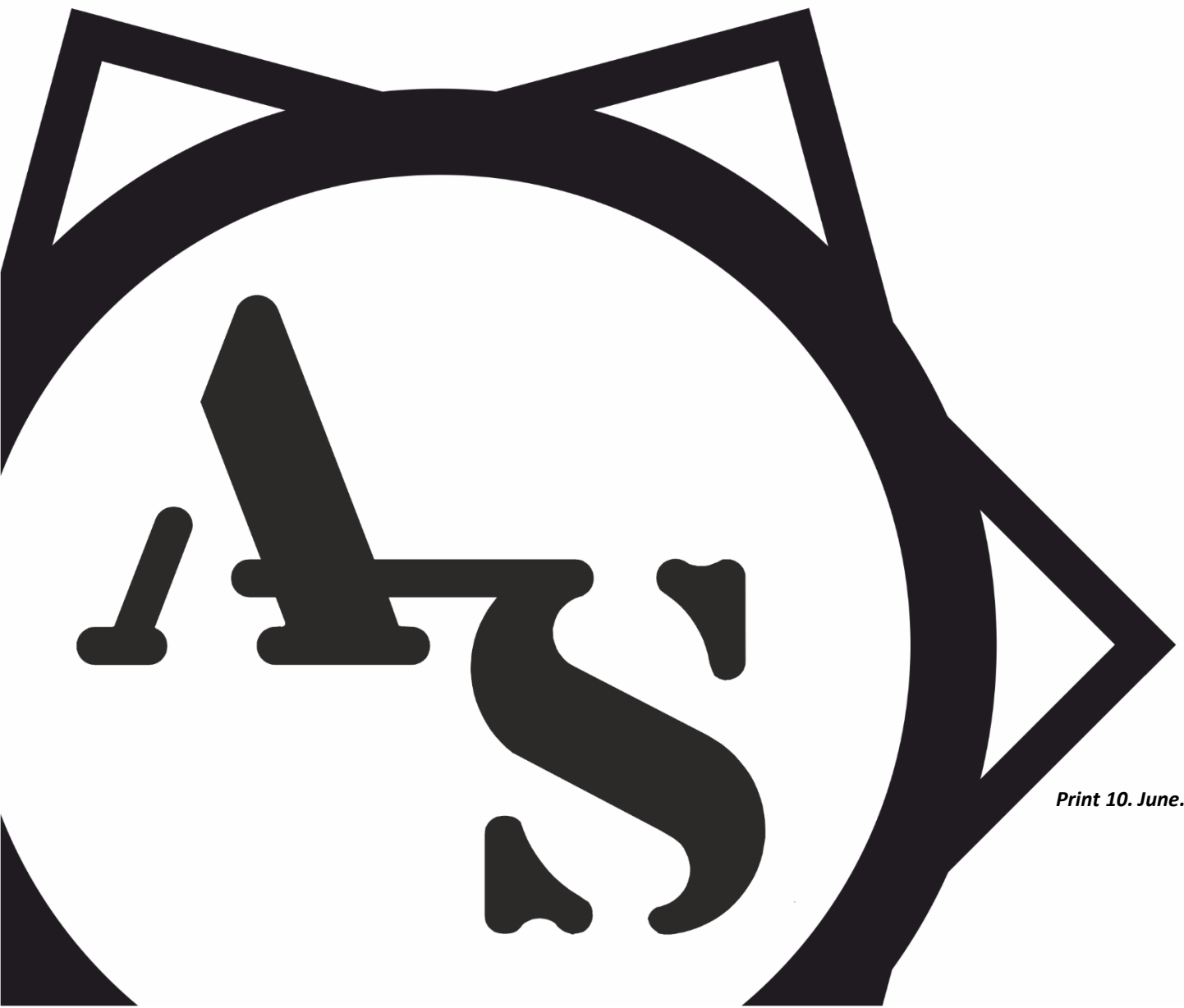


automation - prospect

CNC - Robot - components



Made in Germany



Print 10. June. 2023

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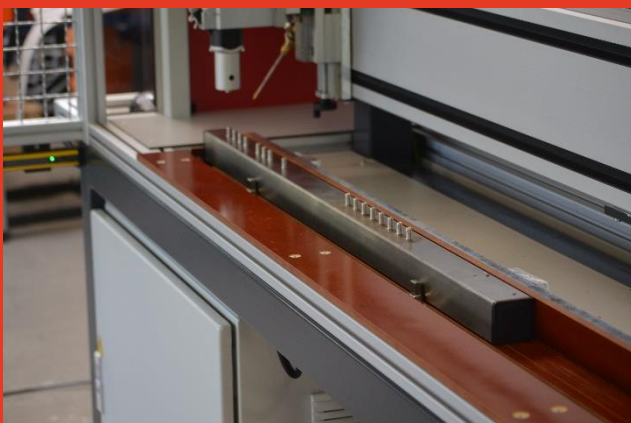
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1 CNC stud welding



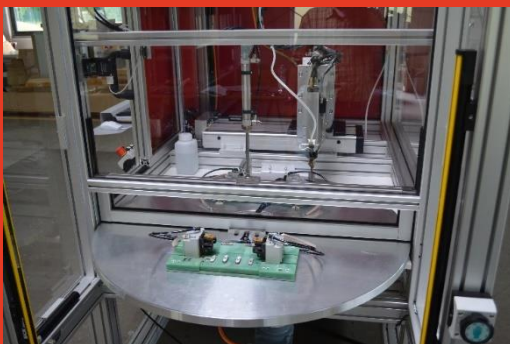
Years of experience

Highest safety standards

Competent expert advice

In addition to stud welding technology, one of our company's core competencies, which has been developing for years, is CNC plant engineering. Our company has a large number of automation parts specially designed for stud welding.

2 CNC special construction



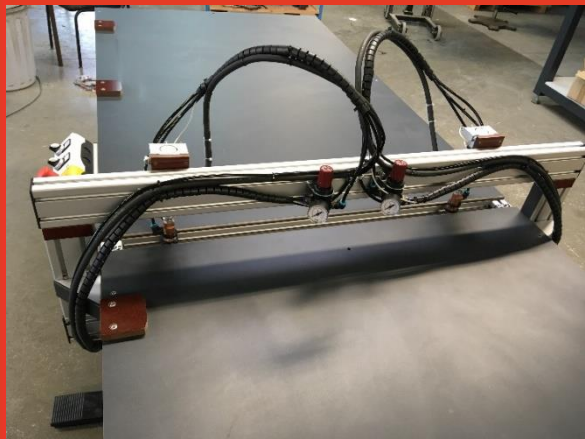
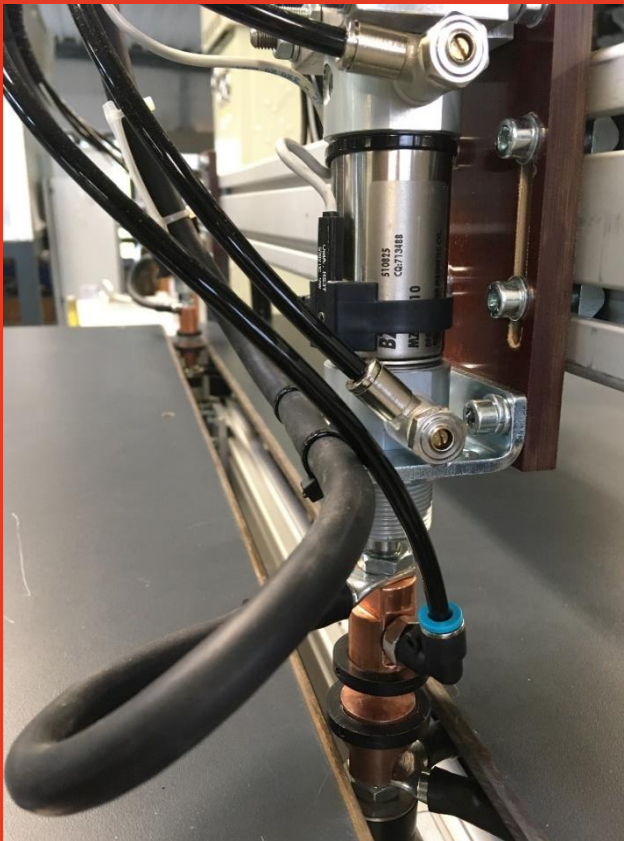
Completely digitized

Years of fast service

Special constructions

Our company has always attached high importance to the individual wishes of our customers. We have a large portfolio of automations which are special engineered according to customers request. Our competent engineers are ready for your individual automation project.

3 Micro resistance welding



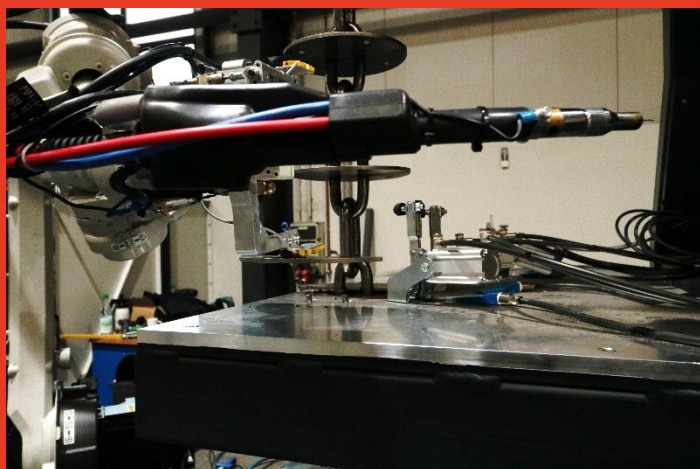
Special fabrications

Open for new technology

Resistance welding

In addition to stud welding, our welding equipment has already been tested for resistance welding of foils and metallic fabrics. This has already found application in a special project. We are always ready for your special projects.

4 Robot automation



Expert process consulting

Complete robot automation

**Handling and welding robot in
one**

For years, robots have become indispensable in modern industry. That is why we are equipping more and more robotic automations with our suitable stud welding technology. We also offer the development of complete robot systems.

5 CNC standard equipment

Pictures/Articles

5.1 Table welding machine



Description

Welding tables for workbenches, or complete with frame. The workpiece can be positioned under the welding table with a fixture or stops.

Triggered with a double manual control, the welding head moves pneumatically onto the workpiece, clamps it, welds the stud and feeds a new stud depending on the equipment.

This table system can be equipped with a cross stroke for a 2nd position or other special attachments such as a turning device.

Art. Number

190 00 010

5.2 CNC sizing machines



Fig 800x600mm

CNC welding machines in standard sizes

800x600mm (front panel format)

199 00 000

1000x2000mm (small size)

199 00 004

1250x2500mm (medium format)

199 00 002

2000x4000mm (large size)

199 00 003

These units can be equipped with up to 5 welding heads

As standard, all heads have a pneumatic Z-axis. Numerical Z-axes, or greater traversing heights are possible.

Since our plants are as diverse as our customers, please inquire with your boundary conditions.

5.3 CNC Maxi plants



Maxi Format CNC stud welding machines

199 00 006

So far, we have supplied stud welding equipment up to

6m x 2.5m was created. With this system, two welding/milling/countersinking units can be positioned independently of each other on the bridge and create stud lines for the assembly and stiffening of **facade sheets in the** longitudinal direction with double the cycle time.

If you are interested in an Arnhold stud welding system, the first question is which welding process to use. We can offer you the following automated processes.

Procedure

6.1 CD splitting method



6.2 Short time procedure ARC

Description

The gap process is a method of tip ignition. In the welding process, the stud is lifted by magnet and clamped against a spring. The magnet is then switched off and the stud falls back onto the workpiece and ignites at the ignition tip. Compared to drawn arc and contact methods, the gap method has much shorter welding times and joining force, which means that the back of **the workpiece** is **hardly affected** visually, depending on the sheet thickness and welding parameter.

With this method, bolts from M3-M8 can be automated as standard (aluminum M3-M6)

The short-time process, is a process of drawn arc welding. The drawn arc welding process requires up to 1800A and takes up to 100 milli- seconds. In this process, a pilot arc is first generated with low current. After completion of the stroke movement to draw the arc to its working length, the main arc, which really melts the materials, is then ignited. During the duration of the main arc, the stud is held for the set welding time and later immersed again in the molten material of the workpiece, where the stud bonds with the workpiece. Compared to the tip ignition process, the short-time process is characterized by **high process reliability** and is often used for **poorer surfaces**. This is the case, for example, with automated welding on **pipes and pipe-like workpieces**. Furthermore, it is **ideal for thin workpieces (min.:1/8xD)** due to a flat penetration.

The disadvantage of this variant is a stronger and visible burn-in on the back. Furthermore, the weld seam builds up much higher, which can make later assembly more difficult.

With this method, bolts between M3 and M12 can be welded. (> M8 = special accessories)

Procedure

6.3 Reciprocating ignition with Inert gas



6.4 Reciprocating ignition with ceramic (difficult for automation)



Description

The use of shielding gas leads to much higher quality welds in the drawn arc area. It visually shapes the melt more beautifully and avoids the formation of pores. Furthermore, the shielding gas focuses the arc, which means that the energy is clearly focused on the spot to be welded. It is also possible in combination with the short-time process.

For studs with diameters $> 5\text{mm}$, an increasingly large and unstable weld pool occurs during the drawn arc ignition process without inert gas.

In this case, a ceramic ring must be used to secure the weld pool.

Furthermore, it supports the welding process by stabilizing the arc, shaping the melt, shielding the atmosphere and slowing down the cooling, which has a beneficial effect on the weld structure.

In the welding process in manual operation, the ceramic is pinned in advance for this purpose and smashed after welding. **This process can only be automated to a limited extent**, since the ceramic can only be fed poorly in automation. Nevertheless, partial automation with a welding head and automatic stud feed is possible.

7 Standard automation components

Pictures/Articles

7.1 AS-AK1 Automatic welding head



Description

The welding head can be used in the **tip ignition and short-time process**.

In the standard version, flange studs from M3-M8 in lengths 6-30 can be used.

Larger or longer studs are possible by special adaptations.

Accessories such as spraying devices, support devices, mass rams, support tube and bolt sensor extend the functionality

In most cases, several welding heads are combined in order to weld different studs simultaneously with one system and to save long changeover times.

With its extremely narrow design of only 44mm, the head allows several welding studs to be set simultaneously, making it **the narrowest** welding head on the market.

Art. Number

199 10 504

7.2 Hand gun with automatic feeding AS5200



Can be used in **peak ignition and short-time process** with and without inert gas. As standard, flange bolts from M3-M8 in lengths 6-30 can be used.

Larger or longer bolts are possible by special adaptations.

Together with a VBZ 5000 stud feeder and a stud welding power source with feed control, this stud welding gun enables fast work progress. With various guide attachments and a position template, welds are possible in the shortest possible time.

As a rule, this pistol is guided with a balancer at the workplace

199 10 600

7.3 Spraying device



7.4 Workpiece support



Description

The spray device is used to wet the workpiece with release agent before welding.

The explosive expansion produces a cleaning effect. **This minimizes traces of soot and powder,** so that only minimal cleaning is required afterwards.

Art. Number

090 60 046

Application:

Top ignition with focus on stainless steel, aluminum, galvanic surfaces

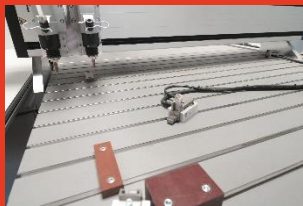
This support makes it possible to pull the head down from the workpiece after welding without the stud getting stuck and dents forming in the sheet. This is mostly used for thinner sheets. Furthermore, it is possible to make the ground connection via these supports. This offers the advantage that the ground to each stud is at the same position and thus blowing effect can be reduced.

8 Table size and axes

One of the first and most important questions that arises when interested in an Arnhold stud welding machine is the size and number of different axes. This is highly dependent on its intended use. It depends on the size of your workpiece, the shape and how often you want to change the workpiece. Below is an overview of all our standard sizes.

Images

8.1 Possible table sizes



8.2 Worktops

Description

Standard sizes:

- 800x600mm (front panel size)
- 1000x2000mm (small size)
- 1250x2500mm (medium format)
- 2000x4000mm (large size)

Special sizes:

By adapting the standard sizes to your wishes, custom-made plant can be realized exactly for your application without much extra charge.

Smooth plate

- As a standard we offer a smooth plate. In this case, stops, dimensional clamps, etc. are fixed at a position agreed upon when the order is placed. This offers only limited variability.

T-slot plate aluminum

- Has grooves in which the attachment of clamps and stops is possible. The advantage is the high position variability of the objects used.

Insulating support Pertinax

- To avoid faulty current transitions, we also offer an insulated support. This is available both as a variant of the smooth plate, as well as with T-slot plate. Pertinax is a waterproof and weld spatter resistant material.

8.3 Frame



Aluminum system frame:

- The aluminum system frame system is a long proven system for the base frame of our CNC machines. It offers a high flexibility in mounting possibilities, which is an advantage for later extensions.

Welding frame:

- Robust and stable. This is what distinguishes the welded frame, which has been established for several years. This is made of thick steel beams and thus offers even greater stability than the aluminum system frame. Furthermore it inspires by its optics.

All racks are movable with a lift truck

Images

8.4 Axes quantity

8.5 Axes sizes

8.6 Axes types

8.7 Drive types

Description

We offer you the possibility to customize the number of traversing axes. From a fixed head, through the normal 2-axis CNC to 8-axis systems, for more complex workpieces in 3D space, we offer you free options. For additional applications further axes selected. Alternatively, an industrial robot is used.

The axis size depends on your application. It usually depends on the size of the table plate and the number of welding heads and is selected by us during concept development to suit your automation. There are axes sizes in the range from 100 to possible over 6 000.

Ball screw

Toothed belt drive

Rack

Stepper motor

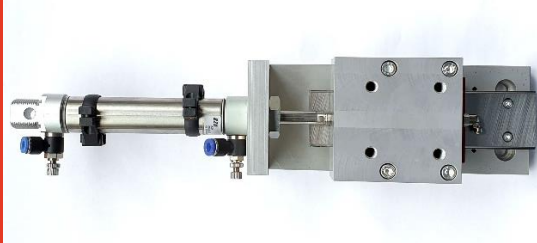
- This motor is often used in simple CNC systems. It does not have high performance values in speed and precision, but still leads to the desired welding result.
- Directional power values: 150-200mm sec.

Servo controlled

- These motors offer a much higher speed and precision. In a company of the industry 4.0 not to think away.
- Directional power values: up to 2m/sec.

Images

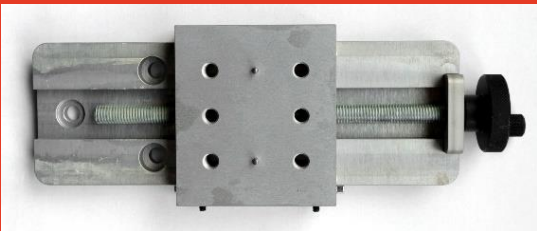
8.8 Pneumatic feed PV1



8.9 Pneumatic feed PV2



8.10 Height adjustment 130mm



Description

Art. Number

Pneumatic working stroke (Z-axis)
stroke 80mm with heavy duty ball bearing guide

090 60 018

In 90% of all stud welding automations, the weld studs are on one level. These heavy-duty feeds are extremely rigid, providing a cost-effective replacement for a motorized Z-axis.

In addition, these feeds are used to pre-select various tools such as weld heads, cutters, or countersinks that are commonly mounted on a motorized Z-axis for the work cycle. The selected tool is then positioned at a sufficient distance in front of the other tools.

This pneumatic feed combines the pneumatic stroke of 80mm with a manual height adjustment.

090 60 100

This offers the advantage of being able to compensate for different workpiece heights by manual adjustment.

This very robust height adjustment unit is used, for example, for workpiece height adjustment on pneumatic Z axes.

190 60 012

The robust dovetail guide enables stepless adjustment. Due to the possibility of pre-clamping, there is almost no play during adjustment.

A lateral pressure plate with clamping screw ensures the necessary fixation in the set position.

Maximum safety at the workplace is essential for good and reliable operation and primarily protects employees from injury. Therefore, we offer you the right safety system for your stud welding automation and application. In the following you will find different safety systems and options from our standard product range in detail.

Images

9.1 Two-hand release



Description

The two-hand release is mostly used for smaller machines such as our table welding machines. Here, the operator must press two safety switches so that he has no possibility of intervening in the running process and injuring himself. This variant has the disadvantage that no work can be carried out parallel to the welding process and the worker is possibly exposed to noise and flying sparks depending on the design of the automation.

9.2 Light barrier system



Most of our automations are equipped with light barrier systems. The advantage of such a system is that the installation can be equipped easily and quickly, in some cases from several sides, as well as no large door elements consume a lot of space. The disadvantage is clearly that the system is not fully encapsulated and thus a worker is not protected from sparks. This system is also one of the most affordable options.

9.3 Sliding/swinging doors



Another option is the system of manual sliding, or swing door. It offers the possibility of full encapsulation. The system is completely shielded during the process and thus the worker is permanently protected from flying sparks and other existing hazards during operation. Disadvantages of the system are additional time needed to open the doors, as well as faster fatigue of the worker in the long run. Furthermore, this system takes up more space than a light barrier system. In terms of price, this variant is in the middle range.

Images

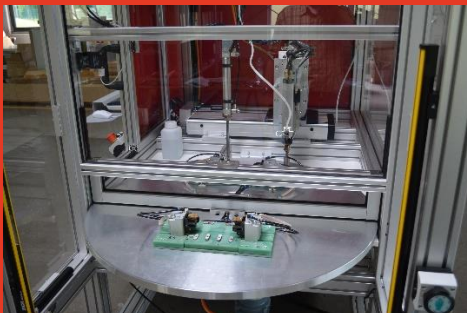
9.4 Fully automatic pneumatic door



Description

This system also offers the possibility of full encapsulation. It also has the great advantage that there is no loss of time and fatigue when opening a door. During the welding process and the automatic door opening, the new workpiece can already be prepared and thus a quick exchange can take place. The only disadvantages of the system are the space requirements and the high price.

9.5 Rotary tables



For the highest efficiency and safety, we offer stud welding systems with turntable. The space of the welding process is permanently fully encapsulated and a new part can be added directly during the welding process.

The only disadvantage here is that this system is only possible up to a limited workpiece size.

The control system is the heart of our automation. It connects the welding device, welding head, feeder and controls the traverse paths to the exact welding position. Our newer CNC automations are based on the Beckhoff system as standard. For systems without drive axes, Siemens controllers CP1200 or Logo are usually used. In the following you will find more information about our frequently used control and operating components.

Images

10.1 Beckhoff control

Description

For some years now, the Beckhoff company has established itself in our control concept for our new automations. The Beckhoff controllers offer a high variability with high industrial quality, which is a core requirement for the versatile wishes of our customers. Due to the high product variety of drive systems and automation systems, Beckhoff offers the ideal partner to implement your individual wishes in an uncomplicated and simple way. Due to the concept with an industrial PC, these controllers can be excellently integrated into your data and existing ERP infrastructure. Interfaces can be used to implement **Industry 4.0** applications with additional software.

10.2 Siemens CP1200 Siemens Logo

The Siemens Logo is characterized by its compact design and simple operation and programmability. It is often used by us for simple stud welding systems where space-saving design is important. Due to the wide range of products in the Logo range and the modular design, subsequent extensions can be realized easily and quickly. The Siemens Logo has been tested for many years with our AS automation systems.

Larger control tasks are handled by the widely used CP series from Siemens. HMI devices for recipe management can be easily integrated here.

We will be happy to provide you with expert advice, based on years of experience in the field of automation, on the choice of control system for your individual automation project and will be happy to respond to your wishes.

10.3 Display systems

10.3.1 Standard



The normally installed standard screen encompasses approximately 17 inches in size. Mouse and keyboard make it easy to set up the CNC and quickly access pre-programmed programs. In most cases, pushbuttons for applications in modulating duty are supplied in combination with this work screen.

10.3.2 Touch, additional ERP



Mostly our large industrial customers want larger screens for their automation. Here, for example, drawings can be displayed large and legible, or interfaces for automatic CNC program generation can be realized. Larger screens are possible depending on the application.

11 Operating systems

11.1.1 Smart

Description

Our smart operator system is mostly equipped with intuitive illuminated buttons. Thus, the person working on the machine knows which step to take next. This enables a higher efficiency, because the operator can do his work intuitively. In addition, errors and faults are displayed directly on the operator screen.

11.1.2 Fast

This system is mostly used in highly automated areas. Here, the most common functions such as starting the plant are solved by inductive switches. Here, only a swipe over the switch is required and the process is executed. Mostly this is used when a part is to be removed and inserted at the same time and thus only a few hands are free.

12 DXF postprocessor/ easy programming softwear

A **novelty of** our product range is the **automatic readout of stud parameters from a DXF file** and an automatic creation of the suitable CNC program. Thus, there is **no need for long programming times**, but only the appropriate conversion of the welding components to the welding task. The position of the stud is defined in the DXF as a circle with a suitable diameter, so that the system can directly derive which stud has to be welded where.

13 Automatic product selection by scanner



We offer the option of automatic program selection by scanner. This is ideal for customers who have many different workpieces. Here the operator can scan barcodes on the workpiece with a barcode scanner and the CNC automatically calls the appropriate program for the workpiece and can start working directly after approval.

14 Stops and clamping devices

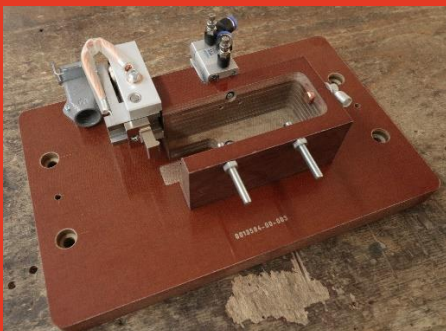
Images

14.1 Standard stops



14.2 Foundations

14.3 Nests



Description

For a standard CNC automation from our company, we generally recommend our standard workpiece stops. In combination with the normally installed T-slot plate, the stops can be flexibly adjusted depending on the workpiece and precisely fixed to the table plate, so that dimensions for a zero point shift can be easily determined. Our standard workpiece stops are made of an insulating material and are insensitive to welding spatter.

For our customers who already own CNC automations and are used to these pens, we also offer these. These are usually very robust and take up little space, which is advantageous for placement by a robot, for example. The disadvantage of these attachment points is that they are much less flexible than others.

We offer individual nests for workpieces which deviate strongly in shape from normal sheet metal. This is often the case with parts that are strongly shaped in the 3rd dimension. The advantage of nests is that they shorten changeover times for complex workpieces. Furthermore, we usually manufacture them in such a way that their error-free insertion is possible without any problems. We manufacture the nests individually to your workpiece, mostly in our own house.

Images

14.4 Hand clamp



14.5 Toggle lever clamp



14.6 Pneumatic clamp PS1



14.7 Pneumatic clamp PS3



Description

The manual clamps represent the most cost-effective variant of a clamping system. They are operated manually by the worker. The disadvantage of this is a loss of time due to an additional work step. Furthermore, they take up considerably more space, which can limit the travel distance in the unfolded state, especially in the height of some CNC automations.

Due to its large lever, the toggle clamp has a lot of power. It offers the advantage of being set up far away from the workpiece so that it is not in the way during the insertion process. Nevertheless, this clamp has the disadvantage that it has a greater height than other clamps due to the large lever. This can lead to problems with the travel of the CNC.

Its extreme force creates sufficient contact pressure to safely transfer the extreme welding current of up to 15,000A to the workpiece. The height of the clamping claw can be adjusted by 30 mm and thus easily adapts to changing workpieces. For special applications, the clamping claw can be extended to 63mm with a corresponding reduction of the contact force on the lever side.

This 2-way clamp provides an excellent compromise between best accessibility during insertion and a strong clamping force due to its sophisticated mechanics. Workpieces can thus be easily removed or automatically fed.

Item number

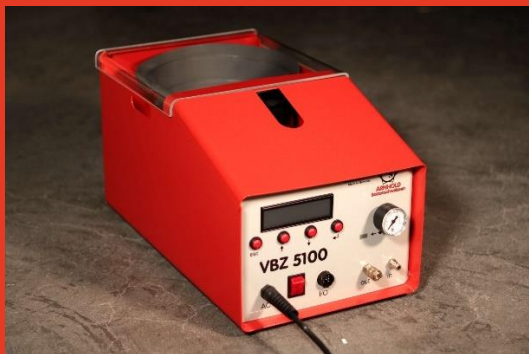
090 60 011

090 60 013

15 Feeding system

Pictures/Articles

15.1 AS stud feeder VBZ 5100



Description

With the VBZ 5100 feeding device, the feeding of studs is now also completely digitalized and offers the option of even better monitoring of the automation process. The feeding system can be equipped with conversion kits for studs from M3-M8 (larger sizes possible with special adaptations). The storage pot has a diameter of 200 mm for a sufficient quantity of welding studs.

VBZ 5100 Ø3- Ø8mm, stud length 6-30mm

VBZ 5100 Ø3- Ø8mm, stud length 6-50mm

Power connection: 230V /AC

Special bolts are possible on request. We already have a large portfolio of experience in this area

Art. Number

193 10 510

193 10 511

15.2 Semi-automatic stud feeding



Depending on the size, you can manually load approx. 20 welding studs.

The studs are then automatically fed by the CNC in the sequence.

080 40 264

15.3 Manual insertion station



Here, the studs are inserted into the slide in the correct position, the slide is actuated so that the stud falls into the feed hose, which is then closed again by the slide.

The system now picks up the stud independently after welding.

The manual insertion station is used for special studs and single studs, which reduces set-up times to a minimum.

199 10 511

15.4 Bolt switch



On the one hand, the stud diverter can be used to operate two welding heads from one feeder, which is used, for example, in multi-position systems. Alternatively, one welding head can be loaded from two feeders. In this way, two different lengths of a weld stud with the same diameter can be processed with only one weld head.

A positioning Z-axis is required to compensate for the length, and the bolts should have a length difference of less than 10mm.

199 10 510

16 Extra automation components

In addition to an automation with our welding heads, we offer you the possibility to integrate further components into the CNC process. On our overview page you will find various examples where we have integrated further components.

Images

16.1 Milling cutter/drill/sinker



Description

We offer the option of integrating an additional milling cutter, drill or countersink. This can either prepare the weld or prepare further milling.

16.2 Suction



The suction unit is usually installed in combination with a milling cutter, countersink or drill. It ensures that no chips or foreign bodies remain on the work surface or the workpiece.

16.3 Customer request

Depending on the customer's requirements, other special units can be integrated into the CNC process. Examples would be other welding systems, gluing heads or similar.

17 Spare and wear parts head

Pictures/Articles

17.1 Plunger KK



17.2 Plunger KL



17.3 Plunger ZK



17.4 Plunger ZL



17.5 Plunger ZKS



Art. No.

Description

084 40 531

The conical short plunger is used for common bolts with lengths between 8-30mm.

084 40 532

The tapered long ram is used for studs with lengths of 6mm together with the length stop 10mm. Special and intermediate lengths can be realized by suitable pairing

084 40 561

The cylindrically short plunger is used for internally threaded bushings, large bolts or bolts that require a larger contact surface on the plunger during feeding. It is used for stud lengths of 8-30mm.

084 40 562

The cylindrically long plunger is also used for internally threaded bushings, large bolts or bolts that require a large contact surface on the plunger during feeding. Special and intermediate lengths can be realized by suitable pairing

084405040

The cylindrically short special tappet with flange is used for internally threaded bushings larger than M5. It is characterized by an even larger contact surface.

Pictures/Articles

17.6 Length stops



Art. No.

180 40 4XX
(XX is the length of the length stop)

Description

The length stop is the height-limiting factor in the feed system. Depending on the stud length, a different length stop must be selected to ensure the correct distance ratio of stud holder and stud. The following length stops are available as standard, depending on the bolt size:

- 8mm
- 10mm
- 12mm
- 15mm
- 20mm
- 25mm
- 30mm

Intermediate sizes are covered by selecting the smaller length stop in each case.

17.7 Guide sleeve standard



084 41 131
084 41 132
084 41 133
084 41 134
084 41 135

The guide sleeve is the transition part between the feed hose and the feed through the ram. The choice of the guide sleeve depends on the size of the pin. The following sizes are available:

- M3
- M4
- M5
- M6
- M8

17.8 Guide sleeve fully hardened



084 41 402
084 41 403
084 41 404
284 41 305

This guide sleeve fulfills the same application purpose as the standard. However, because it is fully hardened, it has a **significantly longer service life.**

- M4
- M5
- M6
- M8

Images

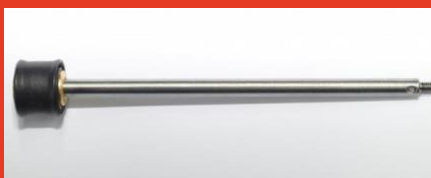
17.9 Bolt holder AT1



17.10 Bolt holder AT2



17.11 Piston rod with double groove ring



Art. No.

Description

The stud holder holds the stud in position before welding. The welding current also flows through it later. The choice of stud holder depends on the size of the stud. There are the following

Sizes:

- 084 50 003 - M3
- 084 50 004 - M4
- 084 50 005 - M5
- 084 50 006 - M6
- 084 50 008 - M8

- 084 50 071 - D 7,1

This stud chuck differs from the AT1 in that it is particularly well suited for aluminum studs. This stud chuck has a softer clamping force. It is also suitable for other materials. The following sizes are available:

- 084 50 013 - M3
- 084 50 014 - M4
- 084 50 015 - M5
- 084 50 016 - M6

180 40 014

The piston rod moves the plunger in the piston and ensures that the stud is pressed into the stud holder. It is therefore part of the feed system.

Pictures/Articles

17.12 Bellows



Art. No.

Description

080 20 010

Seat on the union nut and prevents contamination of the mechanics

17.13 Union nut



080 40 010

The union nut fastens the stud holder to the welding head. It is used to establish contact between the piston and stud holder for the welding current.

17.14 Insertion tube manual head AS AK1



The manual feed tube is used when working without automatic feeding, e.g. for special studs where feeding is difficult. The feed tube must be selected depending on the size of the stud. The following sizes are available:

085 01 033

- M3

085 01 034

- M4

085 01 035

- M5

085 01 036

- M6

085 01 038

- M8

17.15 Insertion tube VBZ head AS AK1



This feed tube is used for automatic feeding by a VBZ. A suitable feed hose can be connected to it via a thread. The following sizes are available:

085 01 023

- M3

085 01 024

- M4

085 01 025

- M5

085 01 026

- M6

085 01 028

- M8

Pictures/Articles

17.16 Support tube



17.17 Support tube with gas connection



Art. No.

085 01 014

Description

The support tube has a supporting function. This makes it easier for inexperienced stud welders to set up a system properly without creating errors in the lift. Furthermore, it prevents flying sparks.

085 01 015

The support tube with gas connection initially fulfills the same functions as the normal support tube. It also enables studs to be welded with shielding gas in the short-time drawn arc welding process. If you want to weld with shielding gas, this component is absolutely necessary.

18 Spare parts feeder (VBZ 5100)

pictures/artikels

18.1 Attachment rail



Art. Nr.

Beschreibung

180 10 341

The outfeed sorter is part of the automatic feeding system VBZ 5100. The new improved version of the VBZ 5001 simplifies the conversion to other stud sizes. Thanks to its design, the studs are fed into the VBZ feeder the right way round. The basic components of the feeder are the attachment rail and the base rail. The feeding rail, the feeding spacer, as well as the slider and corresponding feed hoses are conversion parts

18.2 Base rail



180 10 340

18.3 Feeding rail



180 10 333

- M3

180 10 334

- M4

180 10 335

- M5

180 10 336

- M6

180 10 337

- D 7,1

180 10 338

- M8

18.4 Feeding spacer



180 10 323

- M3

180 10 324

- M4

180 10 325

- M5

180 10 326

- M6

180 10 327

- D 7,1

180 10 328

- M8

Pictures/Articles

18.5 Slider 30mm



18.6 Slider 50mm



18.7 Feed hose coupling VBZ



Art. No.

Description

The slide is part of the pneumatic feeding system. It ensures that the studs pass from the feed chute into the air stream of the pneumatic feeder. The 30mm slide can be used for stud lengths up to 30mm. The type of slide depends on the stud size. The following sizes are available:

080 40 165	- M 2,5
080 40 159	- M3
080 40 160	- M4
080 40 161	- M5
080 40 162	- M6
080 40 163	- D 7,1
080 40 164	- M8

Only for special lamination 50mm

The following sizes are available:

180 40 159	- M3
180 40 160	- M4
180 40 161	- M5
180 40 162	- M6
180 40 163	- D 7,1
180 40 164	- M8

The VBZ feed hose coupling is the connecting piece between the feed hose and pneumatic feed. It is usually supplied ready-made in combination with the feed hose. The choice of the coupling depends on the pin size. The following sizes are available:

080 40 281	- M3
080 40 282	- M4
080 40 283	- M5
080 40 284	- M6
080 40 285	- M8

Pictures/Articles

18.8 Feed hose coupling gun/head



18.9 Feed hose



Art. No.

Description

The feed hose coupling of the gun or unit, is the connection piece between the feed hose and the feed system on the head or on the gun. It is usually supplied ready in combination with the feed hose. The choice of coupling depends on the pin size.

There are the following sizes:

080 40 291	- M3
080 40 292	- M4
080 40 293	- M5
080 40 294	- M6
080 40 295	- M8

The feed hose is part of the pneumatic feed and is the intermediate piece between the VBZ and the head or gun. It is usually supplied ready-made in combination with the feed hose couplings. The feed hose is supplied by the meter. The choice of the hose depends on the stud size. There are the following sizes:

080 10 303	- M3
080 10 304	- M4
080 10 305	- M5
080 10 306	- M6
080 10 308	- M8

19 Other spare parts

Pictures/Articles

19.1 Clamping claw PS1 63mm



19.2 Clamping claw PS1 Standard



19.3 Clamping claw PS3 standard



Art. No.	Description
080 40 079	Clamping claw as a spare part for PS1 tensioner. This is longer than the standard.

Important: When using this clamp, remember that the PS1 clamp has less force due to the law of leverage.

080 40 078	Clamping claw as a spare part for PS1 tensioner. This is the standard length of 30mm.
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090 60 019	Clamping claw as a spare part for PS2 tensioner. This is the standard length of 30mm.
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Pictures/Articles

19.4 Slot nut A



Art. No

000 00 280

Description

This slot nut is used when using aluminum system frames. It is easy to insert into the rail and thus suitable for mounting components usable. This slot nut has an M6 thread.

19.5 T-Slot Nut S



080 08 989

This slot nut is usually installed as standard on automations with a T-slot plate for fastening. This variant is made of steel. The T-slot stone has a high fitting accuracy. This slot stone has an M6 thread.

19.6 T-slot nut M



080 08 988

This slot nut can be installed in automations with T-slot plate for fastening. This variant is made of brass and is mostly used for mass transfer applications. The T-slot stone has a high fitting accuracy. This slot stone has an M6 thread.