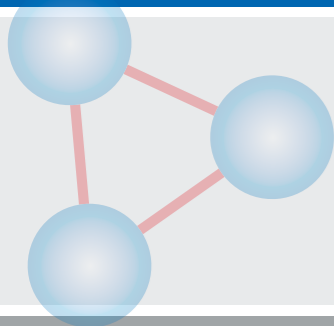


**Product Catalogue
Resistance Spot Welding
Industry / Automotive**



Your ELMA-Tech contact

From Monday to Friday you can reach our sales department from 08.00 to 17.00 hrs.:

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Technical specifications

We deliver exclusively in accordance with our General Terms and Conditions. The technical specifications listed in this catalogue are subject to change without notice. We reserve the right to make changes due to technical innovations and errors. This also applies to the images of the products in this catalogue.

Spare parts & service

We offer spare parts and repair services for all ELMA-Tech systems in this catalogue. Please send your spare part enquiries to:

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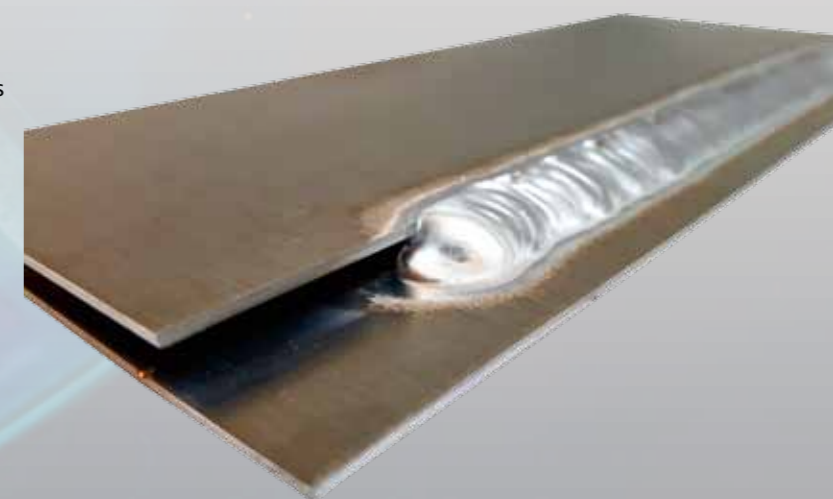
ELMA-Tech - The Welding Process-Versteher

In the area of plasma, arc and resistance technology, we use our self developed microprocessor-controlled control system „Virtual Machine“ (Puschner, P) for our premium welding machines produced in Germany.

With this welding process control we achieve unrivaled results at the customer regarding welding quality, process safety and energy efficiency.

Since the founding of ELMA-Tech on the basis of the acquisition of the DALEX arc division in 2002, we developed from a plant constructor in the field of welding technologies to a solution provider for complex processes in the arc and spot welding.

Our claim:
Welding today the materials of tomorrow!



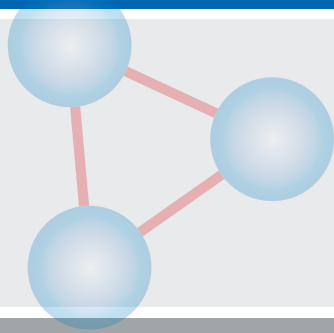


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Special fittings		
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Special fittings (custom-made)		
	C- gun	50

Countable benefits

- Best reproducible and fast welding quality
- Highest process reliability
- Maximum energy saving
- Comfortable handling



New development 2018

Process-safe spotwelding of aluminium in the industrial sector

Components of spot welding systems

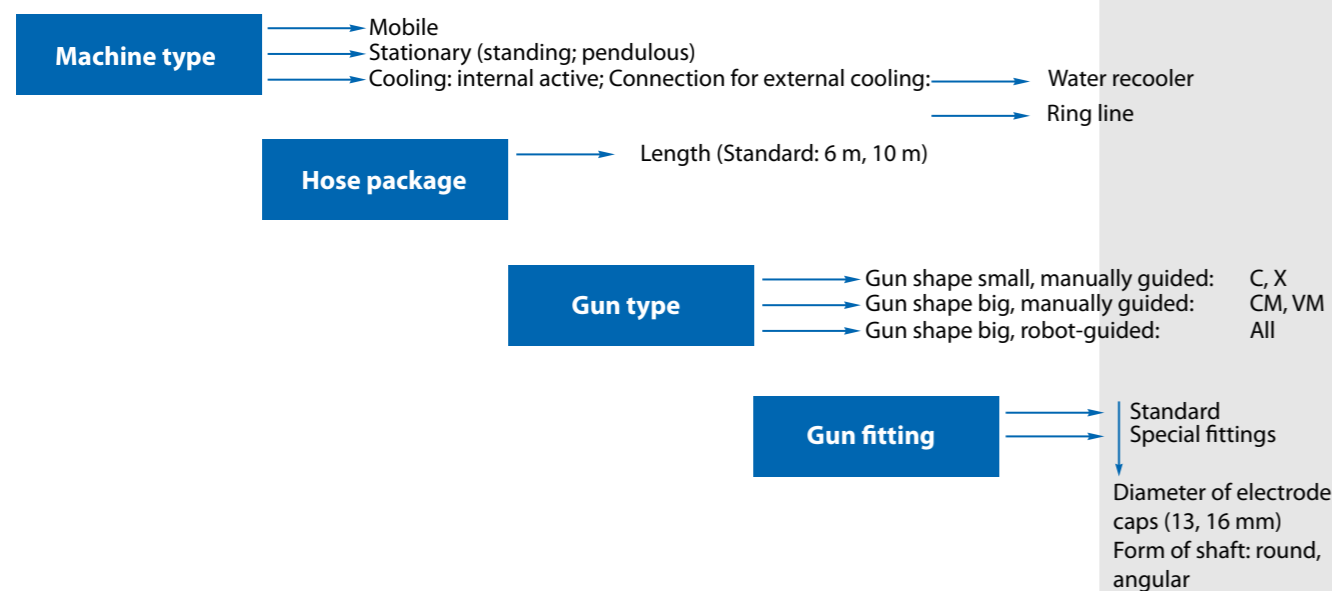
Structure of this product catalogue

The mobile and stationary spot welding systems from ELMA-Tech for the industrial sector are largely designed according to a modular principle, whereby various system components can be combined with each other.

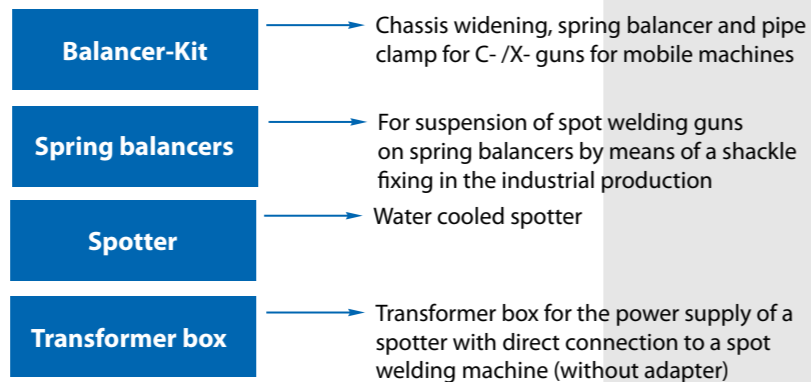
In order to make it easier for you to get an overview, but also to calculate, we have refrained from displaying these various combination possibilities in a kind of matrix. Rather, you will be shown all possible equipment variants for each machine type.

In this catalogue we also present a large number of special guns, i.e. spot welding guns, which differ in their shapes from our standard guns. All these special guns were designed and manufactured for individual customer projects. This gives you a quick overview and the information, whether for your special project a suitable special form already exists, which can be realized quickly.

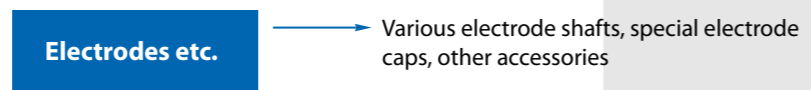
System components



System supplements



Accessories



Process control for spot welding: Virtual Machine (VM3 - 3rd generation)

The revolution in the control of spot welding processes

In 2008, after several years of development cooperation with Opel, ELMA-Tech presents the first spot welding system with a fully automatic control of the spot welding process. The series of these machines or spot welding guns will be given the suffix „VISION“ from this date.

Two significant developments lead to this control type, which is unique on the world market to this day:

- The development of process control *Virtual Machine* (VM)
- The development of a measuring system that allows physical parameters to be measured virtually directly at the electrode cap tips of spot welding guns.

The process model processed by the virtual machine pursues four different tasks for carrying out a high-quality spot weld:

- Test of the initial condition through targeted energy input. Differentiation between total insulation, partial insulation and ideal initial conditions. Detection of sheet thicknesses and steel grades.
- Causing the formation of first welding nuggets by introducing a targeted energy input. In the most common case of partial insulation, the introduction of a specific amount of energy results in an approximation of the sheets to be welded in the joining area.
- Execution of the actual welding process (current-time program). The amount of energy applied is continuously added up in order to terminate the welding process when a target energy is reached.
- Determination of design-conditioned or self-resulting shunts from the joining process and re-setting of the energy converted therein and lost to the actual spot.

The virtual machine program therefore recognizes the state of the the parts to be joined, in particular, whether partial contacting is possible through structural adhesives, paint residues, oxidation or contamination and adjusts itself via the program logic in such a way, that a welding with a high quality standard results.

Plug & Weld

Switch on ...
Performing an electrode check ...
Select automatic mode ...
Welding!

Advantages

- No more parameter determination necessary:
 - Automatic control of energy input
 - Automatic sheet thickness recognition
 - Automatic material recognition
 - Automatic shunt detection
 - Automatic energy tracking
- No welding sample preparation necessary any more in advance
- Detecting and welding high-strength steels
- Welding of different materials without parameter setting in one welding process
- Easy welding of up to 10 mm total sheet thickness
- Aluminium welding of thin sheets up to 3 mm (currently only for body repair!)
- Effective use of energy (as much energy as necessary for an optimal result)
- Backup of welding parameter and quality assurance in spot welding
- The SpotQS Viewer software records and evaluates welding parameters of specific spot welds. The parameters as well as the welding result can be written to an USB stick after completion of a welding task.

MIDIsport VISION AV (Fully automatic mobile spot welding machine)

Item no.

Description

Fully automatic, process-controlled multi-function spot welding system in 10 kHz medium frequency inverter technology, 400 V, for operation of one (1) spot welding gun in C-, X- or VM / CM design.

Technical features

- Digital process control Virtual Machine
- Static / dynamic control with quality monitoring system „ELMA-QS“
- Integrated inverter
- Integrated active high-performance cooling unit
- Flow switch, electrical precision pressure regulator
- Quick couplings to accommodate the pluggable 6 m cable hose package (10 m optional)
- 10 m mains lead, 32 Amp. CEE plug

Technical data

Connection data	
Mains voltage	3 x 400 V 50 Hz
Mains voltage optional on request	200 - 500 V / 50 - 60 Hz
Max. power	130 kVA
Fuse (delayed action)	32 A
Protection class	IP 21
Insulation class	F
Compressed air supply	Minimum 6 bar
Power unit for transformer gun	
Output current	0 - 230 A
Output voltage	560 V
Cooling	
Cooling power (internal)	1200 W
Tank capacity	10 l
Flow rate	6 l / min
Construction	
Dimensions (H x W x D)	1220 x 680 x 800 mm
Weight	95 kg



With
process control
Virtual Machine VM3

Equipment options (MIDIsport VISION AV, C- gun)

Item no.

MIDIsport VISION AV

Spot welding machine with integrated active cooling	2_1031.1
Spot welding machine without cooling (e.g. for connection to ring line)	2_1031.1_1

Balancer-Kit

Kit consisting of: Balancer (spring balancer) with accessories, tube clamp with snap hook, clamp holder with accessories, wheelbase extension with accessories. For stability (see foto left page)	
Balancer-Kit for C- gun	16_0041.3
Balancer-Kit for X- gun	16_0041.3_1

C- spot welding gun (standard version)

ELMA VISION C, 10 kHz, 400 V		
6 m cable hose package		
13 mm Ø electrode caps		
Standard C- electrode arm 80 mm, linear potentiometer for automatic sheet thickness detection, Control panel in handle, 5 kN electrode force for all arms with centred outreach up to 500 mm		



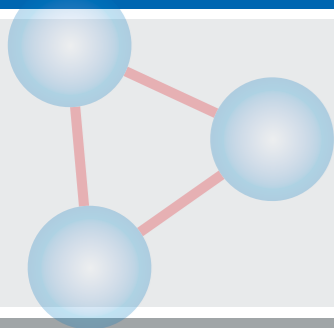
C- spot welding gun as above, but optional with:

10 m cable hose package	13 mm Ø electrode caps	2_2011.1_10
6 m cable hose package	16 mm Ø electrode caps	2_2011.1_6_16
10 m cable hose package	16 mm Ø electrode caps	2_2011.1.10_16

C- electrode arms (separate arms, with external cooling)

C- electrode arm C 80 (80 mm outreach) incl. electrode shaft (Item no. 90.1319.4) incl. cooling pipe and electrode cap		C80_00121
C- electrode arm C 350 (350 mm outreach) incl. electrode shaft (Item no. 90.1327.4) incl. cooling pipe and electrode cap		90_1343.4_AV
C- electrode arm C 500 (500 mm outreach) incl. electrode shaft (Item no. 90.1317.4) incl. cooling pipe and electrode cap		90_1344.4_AV
Accessories case (with 4 electrode shafts for C 350 / C 500, 13 mm Ø electrode cap)		16_0994.3
Accessories case (with 4 electrode shafts for C 350 / C 500, 16 mm Ø electrode cap)		16_0994.3_16





Ausstattungs Optionen (MIDIspot VISION AV, X- guns)

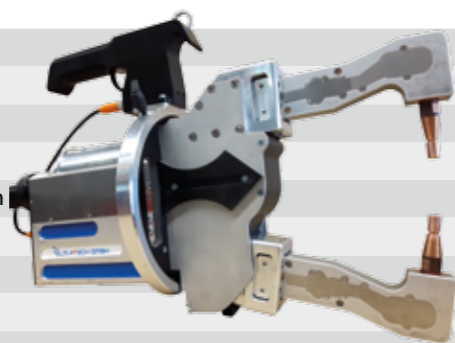
Art.-Nr.

X- spot welding gun (standard version, round electrode shafts)

ELMA VISION X, 10 kHz, 400 V	2_2025.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard X- electrode arm with 250 mm outreach	
Linear potentiometer for automatic sheet thickness detection	
Rotatable handle with control panel	
Approx. 4,5 kN electrode force	
X- spot welding gun as above, but optional with:	
10 m cable hose package 13 mm Ø electrode caps	2_2025.1_10
6 m cable hose package 16 mm Ø electrode caps	2_2025.1_6_16
10 m cable hose package 16 mm Ø electrode caps	2_2025.1_10_16

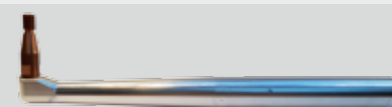
X- spot weldin gun (standard version, angular electrode shafts)

ELMA VISION X, 10 kHz, 400 V	2_2018.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard X- electrode arm with 250 mm outreach	
Linear potentiometer for automatic sheet thickness detection	
Rotatable handle with control panel	
Approx. 4,5 kN electrode force	
X- spot welding gun as above, but optional with:	
10 m cable hose package 13 mm Ø electrode caps	2_2018.1_10
6 m cable hose package 16 mm Ø electrode caps	2_2018.1_6_16
10 m cable hose package 16 mm Ø electrode caps	2_2018.1.10_16



X- electrode arms (arms separate, price per 2 pieces, 13 mm Ø electrode caps)

X- electrode arm, 250 mm outreach, angular electrode shafts	90_1832.4
13 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, angular electrode shafts	90_1846.4
13 mm Ø electrode caps	
Internal cooling, cap holder	
X-Elektrodenarm, 250 mm outreach, angular electrode shafts	90_1601.4_P
13 mm Ø electrode caps	
Internal cooling, cap holder	



Equipment options (MIDIspot VISION AV, X- guns)

Art.-Nr.

X- electrode arm, 450 mm outreach, round electrode shafts	90_1602.4_P
13 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arms (arms separate, price per 2 pieces, 16 mm Ø electrode caps)	
X- electrode arm, 250 mm outreach, round electrode shafts	90_1832.4_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, angular electrode shafts	90_1846.4_16
16 mm Ø electrode arms	
Internal cooling, cap holder	
X- electrode arm, 250 mm outreach, angular electrode shafts	90_1601.4_P_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, round electrode shafts	90_1602.4_P_16
16 mm Ø electrode caps	
Internal cooling, cap holder	



BG-suspension

Bracket for suspension of C- and X- guns on spring balancers in industrial applications	
BG-suspension for C- guns with compensation rail	16_0039.3
BG-suspension for X- guns with compensation rail	16_0039.3_A



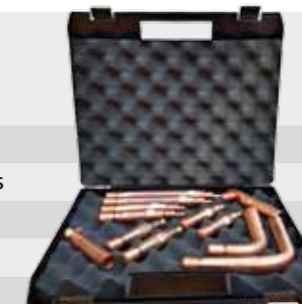
Spring balancer for cable hose packages and C- / X- guns

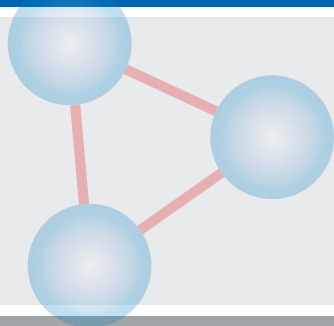
Spring balancer for cable hose packages 6, 10 m; load capacity 6 - 10 kg	90_1206.4_1
Spring balancer for C- gun; load capacity 13 - 19 kg	90_1206.4_3
Spring balancer for X- gun; load capacity 18 - 22 kg	90_1206.4_5



Electrode shafts (delivered in case with combination diagram)

Various electrode shafts each in the accessory case with diagram for all permissible combinations incl. cooling pipe and electrode caps:	
Each in 1 case with combination diagram:	
12 pcs. electrode shafts, angular, C- und X- gun, 16 mm Ø electrode caps	16_1051.3
12 pcs. electrode shafts, round, C- und X- gun, 16 mm Ø electrode caps	16_0073.3_A
8 pcs. electrode shafts, C- gun, 13 mm Ø electrode caps	90_1375.4_AV
8 pcs. electrode shafts, C- gun, 16 mm Ø electrode caps	90_1375.4_1





Equipment options (MIDIspot VISION AV, C- / X- gun)

Item no.

Cable hose package

Pluggable on sides of control and gun (quick couplings), consisting of: water flow and water return hoses, power cable, air hose und control line, robust designed with reinforced hose



- Cable hose package for C- guns, 6 m length
- Cable hose package for X- guns, 6 m length
- Cable hose package for C- guns, 10 m length
- Cable hose package for X- guns, 10 m length

- 16_0071.2_6
- 16_0072.2_6
- 16.0071.2_10
- 16.0072.2_10

Spotter (air-cooled)

Spotter, 10 kHz, 400 V, air-cooled incl. accessories case and storage plate for spotter, pulling hammer, 2,5 m welding cable, workpiece line with connection piece, with adapter for connection to existent C- spot welding gun



1_9001.1_AV

Spotter (water-cooled)

Spotter, 10 kHz, 400 V, water-cooled, 2,5 m welding cable, workpiece line with connection piece, with adapter for connection to existent C- spot welding gun



1_9087.1

Single-handed spotter (water-cooled)

Single-handed spotter, 10 kHz, 400 V, water-cooled, 2,5 m welding cable, workpiece line with connection piece, with adapter for connection to existent C- spot welding gun



1_9013.1

Transformer box with water-cooled spotter

Transformer box, 10 kHz, 400 V, with water-cooled spotter control panel, 2,5 m welding cable, with quick-change system at the spotter, ground connection with insulated clamping lever, with 6 m cable hose package, pluggable

1_9005.1_AV

Equipment options (MIDIspot VISION AV, C- / X- guns)

Item no.

Software SPOT QS Viewer

Software for quality management of spot welding data. Welding data recording and evaluation as well as archiving and DIN A4 printouts via USB stick for data transmission. Optional for all ELMA-Tech spot welding machines. System requirements: As of Microsoft.NET Framework 2.0 Service Pack 2; as of Windows 2000, XP, Vista, 7, 10



1_7618.3_AV

Construction of special fittings

New construction of the gun fitting in CATIA V5 incl. documentation, consisting of: Operating instructions incl. CE- and conformity declaration, E plans and drawings, delivery on CD

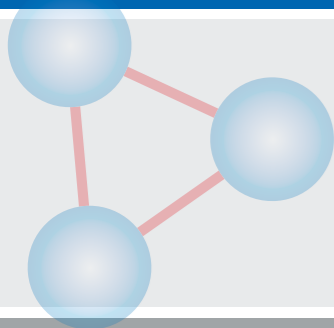
2_7000.9

Welding Machines • Welding Guns • Process Control

- Audi
- BMW
- EDAG
- Fiat
- Ford
- Gestamp
- IVECO
- Magna Steyr
- MAN
- Mercedes Benz
- Opel
- Porsche
- Renault Trucks
- Skoda
- VW

All over the world the automotive industry trusts in ELMA-Tech's spot welding technology.

The Welding Process - Verstehen



Equipment options (MIDIspot VISION AV, CM- guns)

Item no.

CM spot welding gun

ELMA VISION CM for line production
Approx. 5,5 kN at 6 bar compressed air net
Electronic precision pressure regulator
Linear potentiometer for automatic sheet thickness detection
With slewing ring and gripping ring
ELMA VISION CM (as above)
With large slewing ring R 225



Figure with optional fitting

2_2029.1

2_2029.1_1

Technical data

Connection data

Primary voltage (transformer / frequency) 569 V / 10 kHz
Primary power (50% ED) 30 kVA

Welding circuit

Maximum welding current approx. 15 kA
Open-circuit voltage approx. 12,5 V DC

Water cooling

Flow rate (min.) at temperature flow rate 6 l / min
22° C

Mechanical data

Size of outreach Customized
Electrode force maximum 5,5 kN at 6 bar

Weight

Without arms, without cable hose package 34 kg

BG-suspension

Bracket for suspending an ELMA VISION CM on spring balancers in industrial applications
Gun suspension for slewing ring R 225



16_0059.2

16_2423.2

Cable hose package

Cable hose package 10 m (for CM- / VM- guns) reinforced hose, pluggable on sides of control and gun (quick couplings), consisting of:
water flow and water return hoses, power cable, air hose and control line



16_0104.2

Equipment options (MIDIspot VISION AV, CM- gun)

Item no.

CM- fitting

CM- fitting suitable for CM- spot welding gun, outreach 230 mm (standard)
Incl. electrode shafts (counter electrode) and electrode caps

C230_00007

Spring balancer for cable hose package and CM- gun

Spring balancer for cable hose package 10 m; load capacity 6 - 10 kg
Spring balancer for CM- gun; load capacity 35 - 45 kg

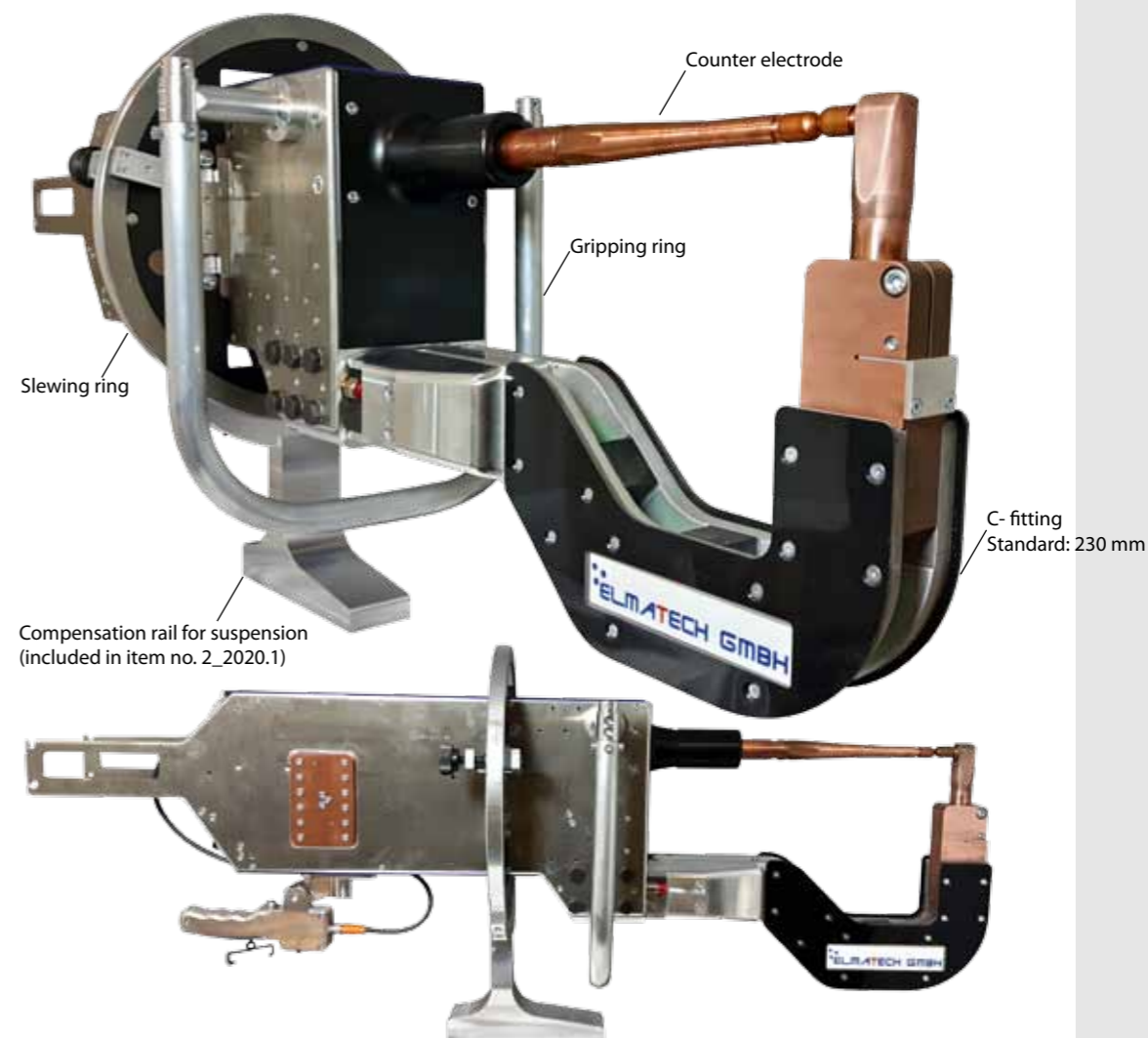
90_1206.4.1

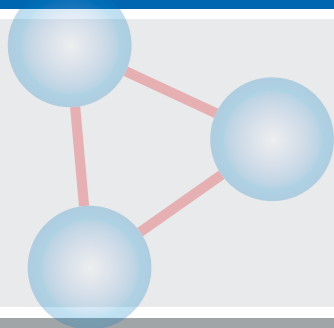
90_1206.4.6

Construction of special fittings

New construction of the gun fitting in CATIA V5 incl. documentation, consisting of:
Operating instructions incl. CE- and conformity declaration, E plans and drawings, delivery on CD

2_7000.9

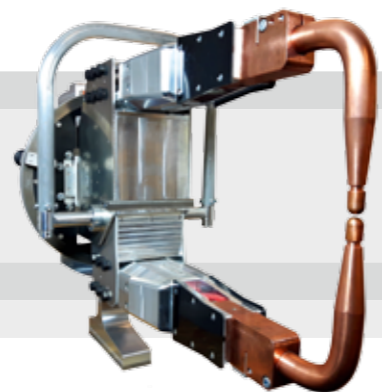




Equipment options (MIDIspot VISION AV, VM- gun)

Item no.

VM spot welding gun



ELMA VISION VM for line production
Approx. 5,5 kN at 6 bar compressed air net
Electronic precision pressure regulator
Linear potentiometer for automatic sheet thickness detection
With slewing ring and gripping ring
ELMA VISION VM (as above)
With large slewing ring R 225

2_2028.1
2_2028.1_1

Technical data

Connection data	
Primary voltage (transformer / frequency)	569 V / 10 kHz
Primary power (50% ED)	30 kVA
Welding circuit	
Maximum welding current	approx. 15 kA
Open-circuit voltage	approx. 12,5 V DC
Water cooling	
Flow rate (min.) at temperature flow rate	6 l / min
22° C	
Mechanical data	
Size of outreach	Customized
Electrode force maximum	5,5 kN at 6 bar
Weight	
Without arms, without cable hose package	35 kg

BG-suspension

Bracket for suspending an ELMA VISION VM on spring balancers in industrial applications
Gun suspension for slewing ring R 225



16_0059.2
16_2423.2

Cable hose package

Cable hose package 10 m (for CM- / VM- guns) reinforced hose, pluggable on sides of control and gun (quick couplings), consisting of:
water flow and water return hoses, power cable, air hose and control line



16_0104.2

Equipment options (MIDIspot VISION AV, VM- gun)

Item no.

VM- fitting

VM- fitting suitable for VM- spot welding gun, outreach 460 mm (standard), set with 2 arms, Incl. electrode shafts and electrode caps

16_1098.3

Spring balancer for cable hose package and VM- gun

Spring balancer for cable hose package 10 m; load capacity 6 - 10 kg
Spring balancer for VM- gun; load capacity 35 - 45 kg

90_1206.4.1
90_1206.4.6

Construction of special fittings

New construction of the gun fitting in CATIA V5 incl. documentation, consisting of:
Operating instructions incl. CE- and conformity declaration, E plans and drawings, delivery on CD

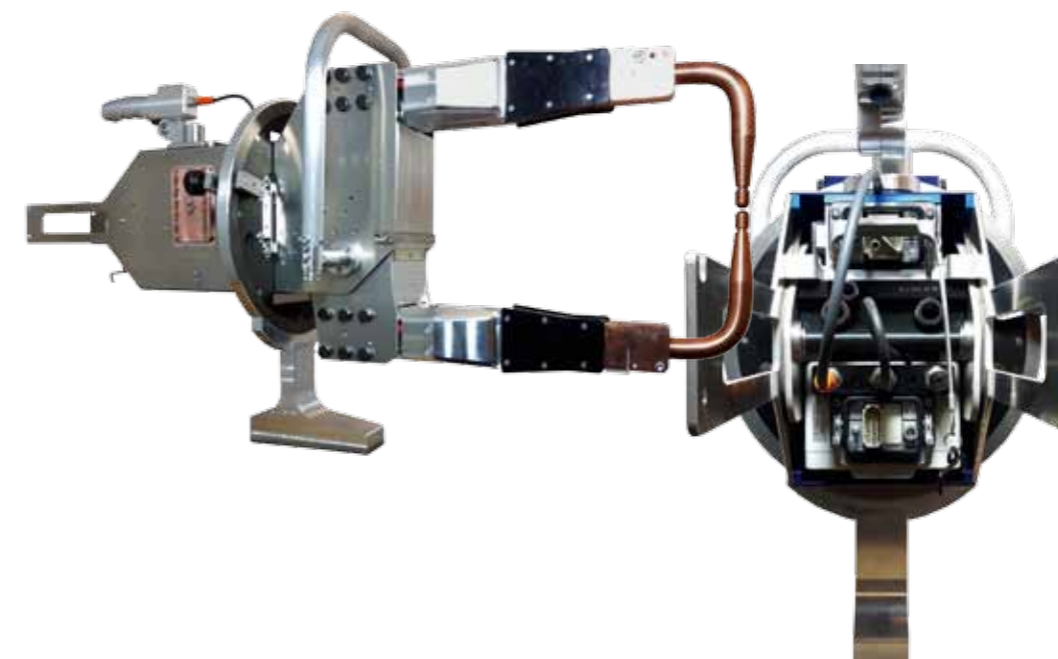
2_7000.9

Software SPOT QS Viewer

Software for quality management of spot welding data.
Welding data recording and evaluation as well as archiving and DIN A4 printouts via USB stick for data transmission.
Optional for all ELMA-Tech spot welding machines.
System requirements: As of Microsoft.NET Framework 2.0 Service Pack 2; as of Windows 2000, XP, Vista, 7, 10



1_7618.3_AV



ELMAspot VISION (Fully automatic mobile spot welding machine)

Description

Fully automatic, process-controlled multi-function spot welding system in 10 kHz medium frequency inverter technology, 400 V, including one (1) spot welding gun in C or X design, each equipped with standard fitting.

Technical data

- Digital process control *Virtual Machine* (VM3)
- Static / dynamic control with „ELMA-QS“ quality monitoring system
- Integrated inverter
- Integrated active high-performance cooling unit
- Flow switch, electrical precision pressure regulator
- Quick couplings to accommodate the pluggable cable hose package (6 m)
- 10 m mains line, 32 Amp. CEE plug

Technical data

Connection data	
Mains voltage	3 x 400 V 50 Hz
Mains voltage optional on request	200 - 500 V / 50 - 60 Hz
Maximum power	130 kVA
Fuse (delayed-action)	32 A
Protection class	IP 21
Insulation class	F
Compressed air supply	Minimum 6 bar
Power unit for transformer spot gun	
Output current	0 - 230 A
Output voltage	560 V
Cooling	
Cooling power	1200 W
Tank capacity	10 l
Flow rate	6 l / min
Configuration	
Dimensions (H x W x D) in mm	1285 x 600 x 600 mm
Weight	95 kg



Figure: with integrated active cooling unit for more cooling power



Figure: with spring balancer

With process control Virtual Machine VM3

Item no.

Equipment options (ELMAspot VISION, C- gun)

Item no.

ELMAspot VISION

Spot welding machine with integrated active cooling unit, C- gun (standard fittings), 6 m hose package	2_1106.1
Spot welding machine with integrated active cooling unit, X- gun (standard fittings), 6 m hose package	2_1108.1

Balancer Kit

Kit consisting of: Spring balancer with accessories, tube clamp with snap hook, bracket with accessories (see figure bottom, left page).	12.0134.2
Balancer Kit for C- gun	
Balancer Kit für X-gun	

C- spot welding gun (standard version)

ELMA VISION C, 10 kHz, 400 V		
6 m cable hose package		2_2011.1_6
13 mm Ø electrode caps		
Standard C- electrode arm 80 mm, Linear potentiometer for automatic sheet thickness detection, Control panel in the handle, 5 kN electrode force for all arms with centred outreach up to 500 mm		

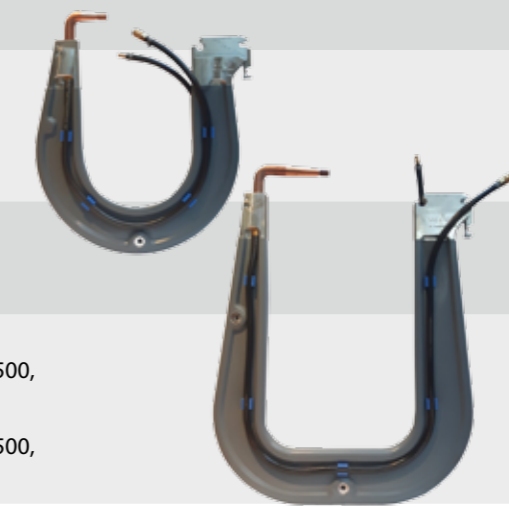


C- spotm welding gun as above, but optionally with:

10 m cable hose package	13 mm Ø electrode caps	2_2011.1_10
6 m cable hose package	16 mm Ø electrode caps	2_2011.1_6_16
10 m cable hose package	16 mm Ø electrode caps	2_2011.1.10_16

C- electrode arms (arms separate, with external cooling)

C- electrode arm C 80 (80 mm outreach) including electrode shaft (Item no. 90.1319.4) including cooling pipe and electrode cap	C80_00121
C- electrode arm C 350 (350 mm outreach) including electrode shaft (Item no. 90.1327.4) including cooling pipe and electrode cap	90_1343.4_AV
C- electrode arm C 500 (500 mm outreach) including electrode shaft (Item no. 90.1317.4) including cooling pipe and electrode cap	90_1344.4_AV
Accessories case (with 4 electrode shafts for C 350 / C 500, 13 mm Ø electrode cap)	16_0994.3
Accessories case (with 4 electrode shafts for C 350 / C 500, 16 mm Ø electrode cap)	16_0994.3_16



Equipment options (ELMAspot VISION, X- guns)

Item no.

X- spot welding gun (standard version, round electrode shafts)

ELMA VISION X, 10 kHz, 400 V	2_2025.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard X- electrode arms with 250 mm outreach	
Linear potentiometer for automatic sheet thickness detection	
Rotatable handle with control panel	
Approx. 4,5 kN electrode force	
X- spot welding gun as above, but optionally with:	
10 m cable hose package 13 mm Ø electrode caps	2_2025.1_10
6 m cable hose package 16 mm Ø electrode caps	2_2025.1_6_16
10 m cable hose package 16 mm Ø electrode caps	2_2025.1_10_16

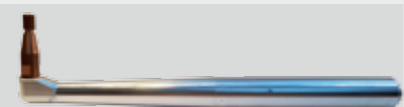
X- spot welding gun (standard version, angular electrode shafts)

ELMA VISION X, 10 kHz, 400 V	2_2018.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard X- electrode arm with 250 mm outreach	
Linear potentiometer for automatic sheet thickness detection	
Rotatable handle with control panel	
Approx. 4,5 kN electrode force	
X- spot welding gun as above, but optionally with:	
10 m cable hose package 13 mm Ø electrode caps	2_2018.1_10
6 m cable hose package 16 mm Ø electrode caps	2_2018.1_6_16
10 m cable hose package 16 mm Ø electrode caps	2_2018.1.10_16



X- electrode arms (arms separate, price per 2 pieces, 13 mm Ø electrode caps)

X- electrode arm, 250 mm outreach, angular electrode shafts	90_1832.4
13 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, angular electrode shafts	90_1846.4
13 mm Ø electrode caps	
Internal colling, cap holder	
X- electrode arm, 250 mm outreach, round electrode shafts	90_1601.4_P
13 mm Ø electrode caps	
Internal colling, cap holder	



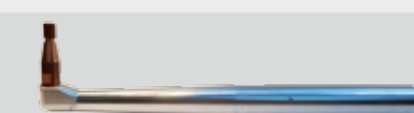
Equipment options (ELMAspot VISION, X- guns)

Item no.

X- electrode arm, 450 mm outreach, round electrode shafts	90_1602.4_P
13 mm Ø electrode caps	
Internal cooling, cap holder	

X- electrode arm (arms separate, price per 2 pieces, 16 mm Ø electrode caps)

X- electrode arm, 250 mm outreach, angular electrode shafts	90_1832.4_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, angular electrode shafts	90_1846.4_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 250 mm outreach, round electrode shafts	90_1601.4_P_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, round electrode shafts	90_1602.4_P_16
16 mm Ø electrode caps	
Internal cooling, cap holder	



BG suspension

Bracket for suspension of C- and X- guns on spring balancers in industrial applications	
BG suspension for C- gun with compensation rail	16_0039.3
BG suspension for X- gun with compensation rail	16_0039.3_A



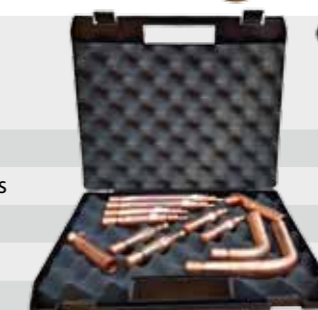
Spring balancer for cable hose packages and C- / X- guns

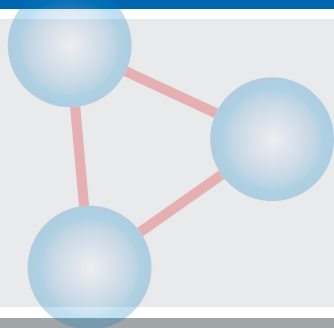
Spring balancer for cable hose packages 6, 10 m; load capacity 6 - 10 kg	90_1206.4_1
Spring balancer for C- gun; load capacity 13 - 19 kg	90_1206.4.3
Spring balancer for X- gun; load capacity 18 - 22 kg	90_1206.4.5



Electrode shafts (delivered in case with combination diagram)

Various electrode shafts each in the accessory case with diagram for all permissible combinations incl. cooling tube and electrode caps	
Each in 1 case with combination diagram:	
12 pcs. electrode shafts, angular, C- und X- gun, 16 mm Ø electrode caps	16_1051.3
12 pcs. electrode shafts, round, C- und X- gun, 16 mm Ø electrode caps	16_0073.3_A
8 pcs. electrode shafts, C- gun, 13 mm Ø electrode caps	90_1375.4_AV
8 pcs. electrode shafts, C- gun, 16 mm Ø electrode caps	90_1375.4.1





Equipment options (ELMASpot VISION, C- / X- gun)

Item no.

Cable hose package

Pluggable on sides of control and gun (quick couplings), consisting of: water flow and water return hoses, power cable, air hose und control line, robust designed with reinforced hose



- Cable hose package for C- guns, 6 m length
- Cable hose package for X- guns, 6 m length
- Cable hose package for C- guns, 10 m length
- Cable hose package for X- guns, 10 m length

- 16_0071.2_6
- 16_0072.2_6
- 16.0071.2_10
- 16.0072.2_10

Spotter (air-cooled)

Spotter, 10 kHz, 400 V, air-cooled including accessory case and storage plate, pulling hammer, 2,5 m welding cable, workpiece lead with connection piece, with adapter for connection to existing C- spot welding gun



1_9001.1_AV

Spotter (water-cooled)

Spotter, 10 kHz, 400 V, water-cooled, 2,5 m welding cable, Werkstückleitung mit Anschlussstück, workpiece lead with connection piece, with adapter for connection to existing C- spot welding gun



1_9087.1

Single-handed spotter (water-cooled)

Single-handed spotter, 10 kHz, 400 V, water-cooled, 2,5 m welding cable, workpiece lead with connection piece, with adapter for connection to existing C- spot welding gun

1_9013.1

Transformer box with water-cooled spotter

Transformer box, 10 kHz, 400 V, with water-cooled spotter, control panel, 2,5 m welding cable, with quick-change system at the spotter, ground connection with insulated clamping lever, with 6 m cable hose package, pluggable



1_9088.1

Equipment options (ELMASpot VISION, C- / X- guns)

Item no.

Software SPOT QS Viewer

Software for quality management of spot welding data. Welding data recording and evaluation as well as archiving and DIN A4 printouts via USB stick for data transmission. Optional for all ELMA-Tech spot welding machines. System requirements: As of Microsoft.NET Framework 2.0 Service Pack 2; as of Windows 2000, XP, Vista, 7, 10

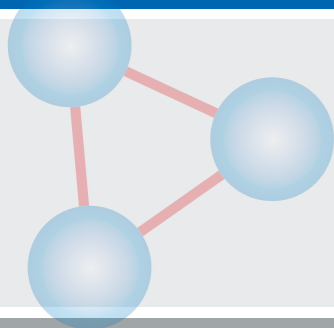


1_7618.3_AV

Construction of special fittings

New construction of the gun fitting in CATIA V5 incl. documentation, consisting of: Operating instructions incl. CE- and conformity declaration, E plans and drawings, delivery on CD

2_7000.9



ELMA VMC VISION (Control cabinet for fully automatic spot welding)

Item no.

Description

The ELMA VMC VISION (400 V) is a control cabinet for fully automatic spot welding in line production with alternatively

one (1) controller for connection of:
one (1) C- spot welding gun ELMA VISION C
or
one (1) X- spot welding gun ELMA VISION X

two (2) controls to connect:
one (1) C- spot welding gun ELMA VISION C
and
one (1) X- spot welding gun ELMA VISION X

one (1) controller for connection of:
one (1) CM spot welding gun ELMA VISION CM
or
one (1) VM spot welding gun ELMA VISION VM

two (2) controls to connect:
one (1) CM spot welding gun ELMA VISION CM
and
one (1) VM spot welding gun ELMA VISION VM

Optional design: upright, suspended, mobile
As robot cabinet ELMA VMC VISION rob for automated line production

Technical features

- Digital process control *Virtual Machine* (VM3)
- Static / dynamic control with quality monitoring system „ELMA-QS“
- Integrated inverter
- Flow monitor, electrical precision pressure regulator
- Quick couplings to accommodate the pluggable cable hose package
- 10 m mains lead, 32 Amp. CEE plug
- Distribution board HIP (Hall Installation Plate) with connections for air and water
 - Connection for external cooling, e.g. ring line
 - alternatively: connection for external water recooling unit
- For the operation of ELMA-Tech spot welding guns in 10 kHz medium frequency inverter technology (1 control for 1 gun!)



With welding process control Virtual Machine VM2



Figure top: ELMA VMC VISION in hanging version for line production.
Figure left: External control panel (COM) for configuration of the welding process control *Virtual Machine*.

ELMA VMC VISION (Control cabinet for fully automatic spot welding)

Item no.

Technical data

Connection data	
Mains voltage	3 x 400 V 50 Hz
Maximum power	130 kVA
Fuse (delayed-action)	32 A
Continuous output (100 % ED)	10 kVA
Connection lead	4 x 10 mm ² / 16 mm ²
Protection	IP 53
Welding power	
Maximum power	13 kA / 15 kA
Welding current	Gleichstrom
Open-circuit voltage (gun transformer)	12,5 V DC
Cooling	
Flow rate	Minimum 6 l / min.
Pressure	Minimum 2 bar
Construction	
Dimensions H x W x T (mm)	900 x 700 x 600 (including HIP)
Weight	95 kg



Figure top right: Hall installation plate HIP with all required media distributors: air and water connections, flow monitors, pressure reducers and - depending on the type of guns connected - proportional valve. The HIP is installed on the back of the cabinet.

Figure left: ELMA VMC VISION opened with 2 controls.

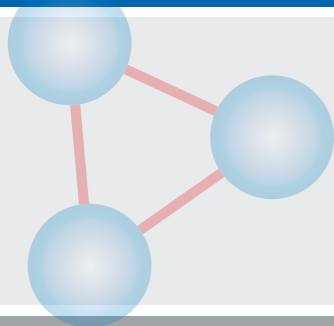
Figure bottom right: ELMA VMC VISION ROB standing with HIP mounted on rear wall.

Current carrying are located on the top of the standing control cabinet and on the underside of the system when the control cabinet is suspended.

Plug & Weld

Versions: Hanging, standing, mobile ...





Equipment options (ELMA VMC VISION)

ELMA VMC VISION - version for spot welding guns ELMA VISION C, X

		Item no.
ELMA VMC VISION standing	1 control, for 1 gun ELMA VISION C or X, includingHIP	2_1012.1_2
ELMA VMC VISION hanging	2 controls, for 2 guns ELMA VISION C and X, includingHIP	2_1012.1
ELMA VMV VISION mobile	2 controls, for 2 guns ELMA VISION C and X, HIP, driving carriage	2_1012.1_1

ELMA VMC VISION - version for spot welding guns ELMA VISION CM, VM

		Item no.
ELMA VMC VISION hanging	1 control, for 1 gun ELMA VISION CM or VM, including HIP	2_1013.1
ELMA VMC VISION mobile	1 control, for 1 gun ELMA VISION CM or VM, including HIP	2_1021.1
ELMA VMV VISION standing	2 controls, for 2 guns ELMA VISION CM and VM, including HIP	2_1016.1
ELMA VMV VISION hanging	2 controls, for 2 guns ELMA VISION CM and VM, including HIP	2_1010.1
ELMA VMV VISION mobile	2 controls, for 2 guns ELMA VISION CM and VM, HIP, driving carriage	2_1011.1
ELMA VMV VISION mobile	2 controls, for 2 guns ELMA VISION CM and VM, HIP and driving carriage, Cooler connection for external water recooling unit	2_1011.1_1

External control panel (ELMA-COM)

External operating panel for process control configuration
Virtual machine. Version VM3
With 2.5 m connection cable



1_5487.3



Production of MIDspots in Morsbach, Germany

Equipment options (ELMA VMC VISION, C- guns)

C- spot welding gun (standard version)

	Item no.
ELMA VISION C, 10 kHz, 400 V	2_2011.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard C- electrode arm 80 mm, Linear potentiometer for automatic sheet thickness detection, Control panel in handle, 5 kN electrode force for all arms with centred outreach up to 500 mm	



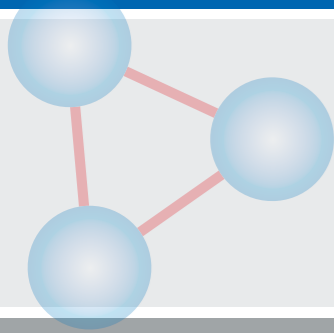
C- spot welding gun as above, but optionally with:

		Item no.
10 m cable hose package	13 mm Ø electrode caps	2_2011.1_10
6 m cable hose package	16 mm Ø electrode caps	2_2011.1_6_16
10 m cable hose package	16 mm Ø electrode caps	2_2011.1.10_16

C- electrode arms (arms separate, with external cooling)

	Item no.
C- electrode arm C 80 (80 mm outreach) including electrode shaft (Item no. 90.1319.4) including cooling pipe and electrode cap	C80_00121
C- electrode arm C 350 (350 mm outreach) including electrode shaft (Item no. 90.1327.4) including cooling pipe and electrode cap	90_1343.4_AV
C- electrode arm C 500 (500 mm outreach) including electrode shaft (Item no. 90.1317.4) including cooling pipe and electrode cap	90_1344.4_AV
Accessory case (with 4 electrode shafts for C 350 / C 500, 13 mm Ø electrode cap)	16_0994.3
Accessory case (with 4 electrode shafts for C 350 / C 500, 16 mm Ø electrode cap)	16_0994.3_16





Equipment options (ELMA VMC VISION, X- guns)

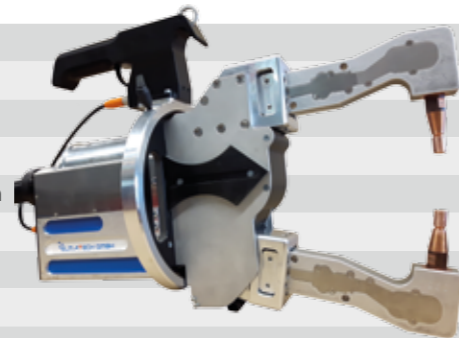
Item no.

X- spot welding gun (standar version, round electrode shafts)

ELMA VISION X, 10 kHz, 400 V	2_2025.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard X- electrode arm with 250 mm outreach	
Linear potentiometer for automatic sheet thickness detection	
Rotatable handle with control panel	
Approx. 4,5 kN electrode force	
X- spot welding gun as above, but optionally with:	
10 m cable hose package 13 mm Ø electrode caps	2_2025.1_10
6 m cable hose package 16 mm Ø electrode caps	2_2025.1_6_16
10 m cable hose package 16 mm Ø electrode caps	2_2025.1_10_16

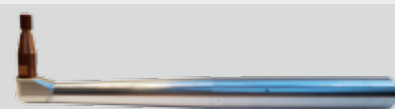
X- spot welding gun (standard version, angular electrode shafts)

ELMA VISION X, 10 kHz, 400 V	2_2018.1_6
6 m cable hose package	
13 mm Ø electrode caps	
Standard X- electrode arm with 250 mm outreach	
Linear potentiometer for automatic sheet thickness detection	
Rotatable handle with control panel	
Approx. 4,5 kN electrode force	
X- spot welding gun as above, but optionally with:	
10 m cable hose package 13 mm Ø electrode caps	2_2018.1_10
6 m cable hose package 16 mm Ø electrode caps	2_2018.1_6_16
10 m cable hose package 16 mm Ø electrode caps	2_2018.1.10_16



X- electrode arms (arms separate, price per 2 pieces, 13 mm Ø electrode caps)

X- electrode arm, 250 mm outreach, angular electrode shafts	90_1832.4
13 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, angular electrode shafts	90_1846.4
13 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 250 mm outreach, round electrode shafts	90_1601.4_P
13 mm Ø electrode caps	
Internal cooling, cap holder	



Equipment options (ELMA VMC VISION, X- guns)

Item no.

X- electrode arm, 450 mm outreach, round electrode shafts	90_1602.4_P
13 mm Ø electrode caps	
Internal cooling, cap holder	

X- electrode arms (arms separate, price per 2 pieces, 16 mm Ø electrode caps)

X- electrode arm, 250 mm outreach, angular electrode shafts	90_1832.4_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, angular electrode shafts	90_1846.4_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 250 mm outreach, round electrode shafts	90_1601.4_P_16
16 mm Ø electrode caps	
Internal cooling, cap holder	
X- electrode arm, 450 mm outreach, round electrode shafts	90_1602.4_P_16
16 mm Ø electrode caps	
Internal cooling, cap holder	



BG - suspension

Bracket for suspension of C- and X- guns on spring balancers in industrial applications	
BG - suspension for C- guns with compensation rail	16_0039.3
BG - suspension for X- guns with compensation rail	16_0039.3_A



Spring balancer for cable hose packages and C- / X- guns

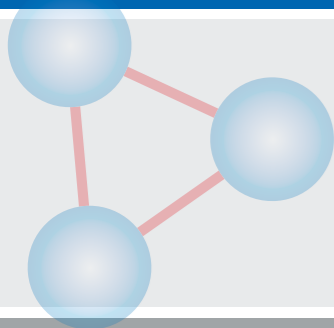
Spring balancer for cable hose packages 6, 10 m; load capacity 6 - 10 kg	90_1206.4_1
Spring balancer for C- gun; load capacity 13 - 19 kg	90_1206.4_3
Spring balancer for X- gun; load capacity 18 - 22 kg	90_1206.4_5



Electrode shafts (delivered in case with combination diagram)

Various electrode shafts each in the accessory case with diagram for all permissible combinations incl. cooling tube and electrode caps:	
Each in 1 case with combination diagram:	
12 pcs. electrode shafts, angular, C- und X- gun, 16 mm Ø electrode caps	16_1051.3
12 pcs. electrode shafts, round, C- und X- gun, 16 mm Ø electrode caps	16_0073.3_A
8 pcs. electrode shafts, C- gun, 13 mm Ø electrode caps	90_1375.4_AV
8 pcs. electrode shafts, C- gun, 16 mm Ø electrode caps	90_1375.4_1





Equipment options (ELMA VMC VISION, CM- guns)

Item no.

CM spot welding gun

ELMA VISION CM for line production
Approx. 5,5 kN at 6 bar compressed air net
Electronic precision pressure regulator
Linear potentiometer for automatic sheet thickness detection
With slewing ring and gripping ring
ELMA VISION CM (as above)
With large slewing ring R 225



Figure with optional fittings

2_2029.1
2_2029.1_1

Technical data

Connection data

Primary voltage (transformer / frequency) 569 V / 10 kHz
Primary power (50% ED) 30 kVA

Welding circuit

Maximum welding current approx. 15 kA
Open-circuit voltage approx. 12,5 V DC

Water cooling

Flow rate (min.) at temperature flow rate 6 l / min
22° C

Mechanical data

Outreach Customized
Electrode force maximum 5,5 kN bei 6 bar

Weight

Without arms, without cable hose package 34 kg

BG - suspension

Bracket for suspending an ELMA VISION CM
on spring balancers in industrial applications
Gun suspension for slewing ring R 225



16_0059.2
16_2423.2

Cable hose package

Cable hose package 10 m (for CM- / VM- guns) with reinforced hose,
pluggable on sides of control and gun (quick couplings), consisting of:
water flow and water return hoses, power cable, air hose, control line



16_0102.2

Equipment options (ELMA VMC VISION, CM- guns)

Item no.

C- fittings

C- fitting for CM- spotwelding gun, outreach 230 mm (Standard)
Including electrode shafts (Counter electrode) and electrode caps

C230_00007

Spring balancer for cable hose package and CM- gun

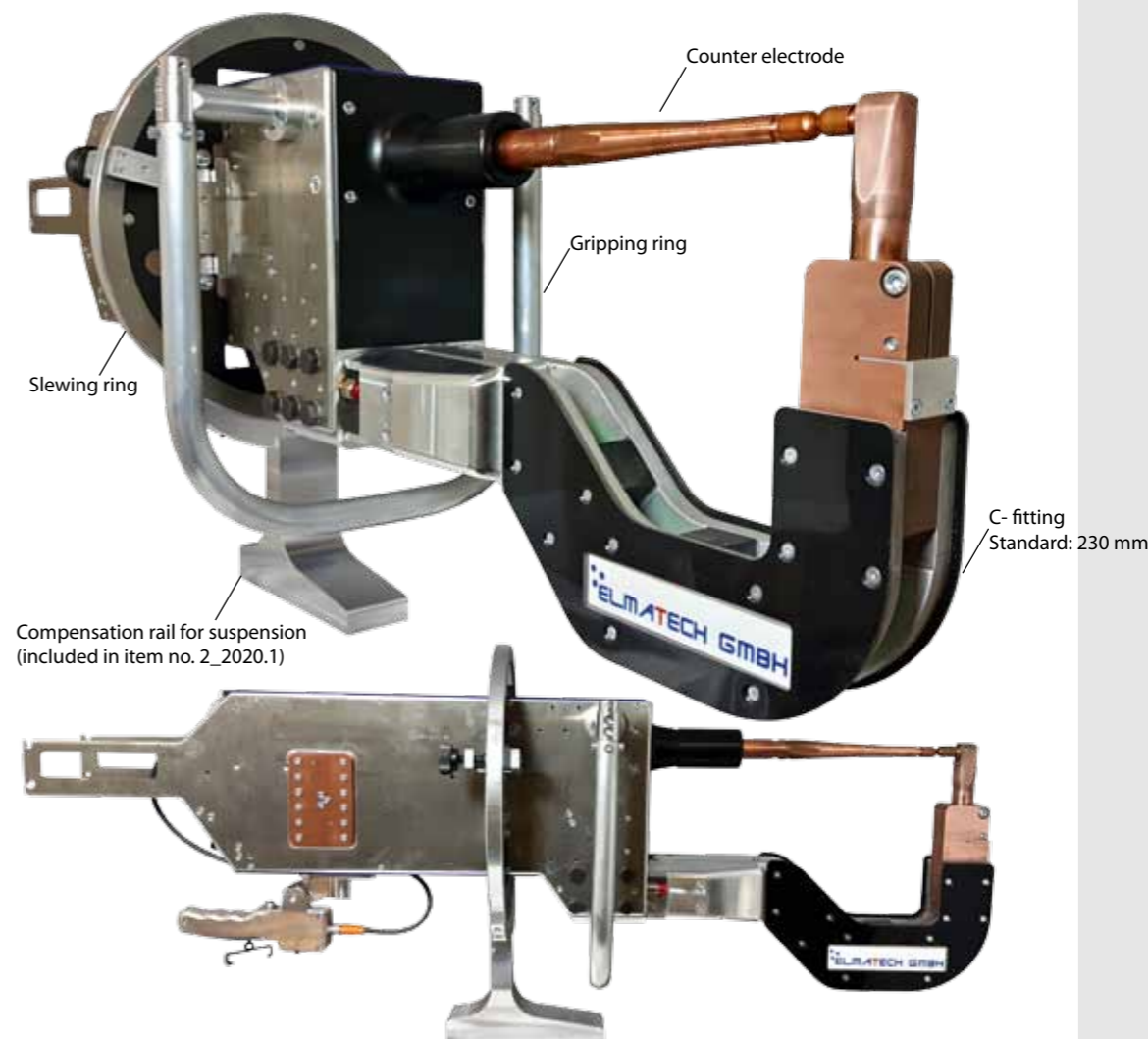
Spring balancer for cable hose package 10 m; load capacity 6 - 10 kg
Spring balancer for CM- gun; load capacity 35 - 45 kg

90_1206.4.1
90_1206.4.6

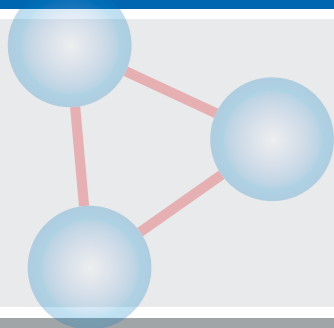
Construction of special fittings

New construction of the gun fitting in CATIA V5 incl. documentation, consisting of:
Operating instructions incl. CE- and conformity declaration, E plans and drawings, delivery on CD

2_7000.9



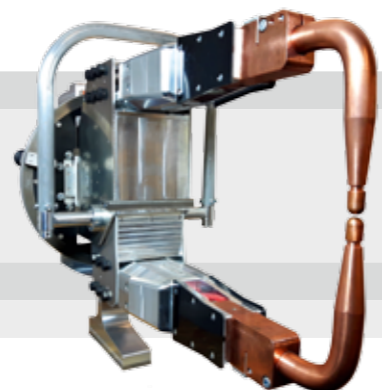
Compensation rail for suspension
(included in item no. 2_2020.1)



Equipment options (ELMA VMC VISION, VM- guns)

Item no.

VM Punktschweißzange



ELMA VISION VM for line production
Approx. 5,5 kN at 6 bar compressed air net
Electronic precision pressure regulator
Linear potentiometer for automatic sheet thickness detection
With slewing ring and gripping ring
ELMA VISION VM (as above)
With large slewing ring R 225

2_2028.1
2_2028.1_1

Technical data

Connection data	
Primary voltage (transformer / frequency)	569 V / 10 kHz
Primary power (50% ED)	30 kVA
Welding circuit	
Maximum welding current	approx. 15 kA
Open-circuit voltage	approx. 12,5 V DC
Water cooling	
Flow rate (min.) at temperature flow rate	6 l / min
22° C	
Mechanical data	
Outreach	Customized
Electrode force maximum	5,5 kN at 6 bar
Weight	
Without arms, without cable hose package	35 kg

BG- suspension

Bracket for suspending an ELMA VISION VM on spring balancers in industrial applications
Gun suspension for slewing ring R 225



16_0059.2
16_2423.2

Cable hose package

Cable hose package 10 m (for CM- / VM- guns) with reinforced hose, pluggable on sides of control and gun (quick couplings), consisting of: water flow and water return hoses, power cable, air hose, control line



16_0102.2

Equipment options (ELMA VMC VISION, VM- guns)

Item no.

VM- fitting

VM- fitting for VM- spot welding gun, outreach 460 mm (standard), set with 2 arms, Including electrode shafts and electrode caps

16_1098.3

Spring balancer for cable hose package and VM- gun

Spring balancer for cable hose package 10 m; load capacity 6 - 10 kg
Spring balancer for VM- gun; load capacity 35 - 45 kg

90_1206.4.1
90_1206.4.6

Construction of special fittings

New construction of the gun fitting in CATIA V5 incl. documentation, consisting of: Operating instructions incl. CE- and conformity declaration, E plans and drawings, delivery on CD

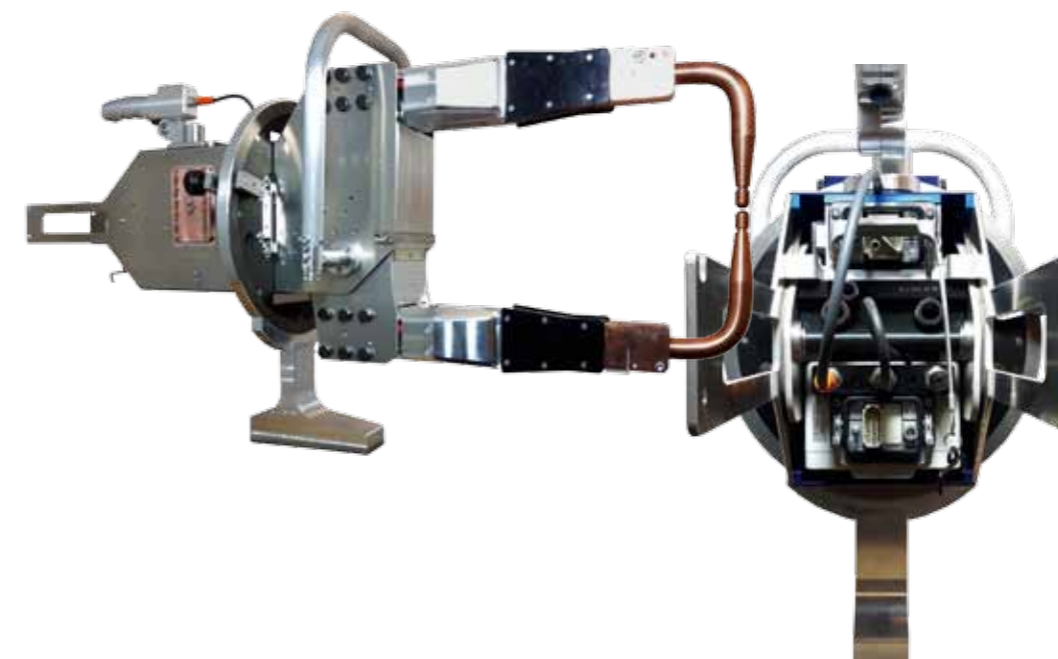
2_7000.9

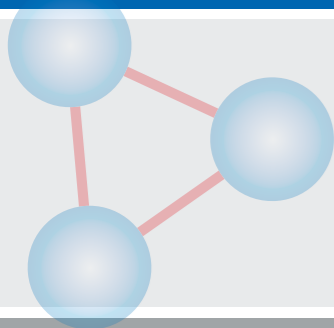
Software SPOT QS Viewer

Software for quality management of spot welding data. Welding data recording and evaluation as well as archiving and DIN A4 printouts via USB stick for data transmission. Optional for all ELMA-Tech spot welding machines. System requirements: As of Microsoft.NET Framework 2.0 Service Pack 2; as of Windows 2000, XP, Vista, 7, 10



1_7618.3_AV





ELMA VMC VISION ROB (Control cabinet for fully automatic robot spot welding)

Item no.

Description

The ELMA VMC VISION ROB (400 V) is a control cabinet for fully automatic spot welding in the line production with robot welding guns of all manufacturers. Every robot-cabinet is equipped with one (1) control unit and allows optional operation of one (1) robot gun C or V/X type - also in alternating operation!

Control cabinet ELMA VMC VISION ROB with (1) control for connecting:
of one (1) C- spot welding gun

or

of one (1) X- spot welding gun

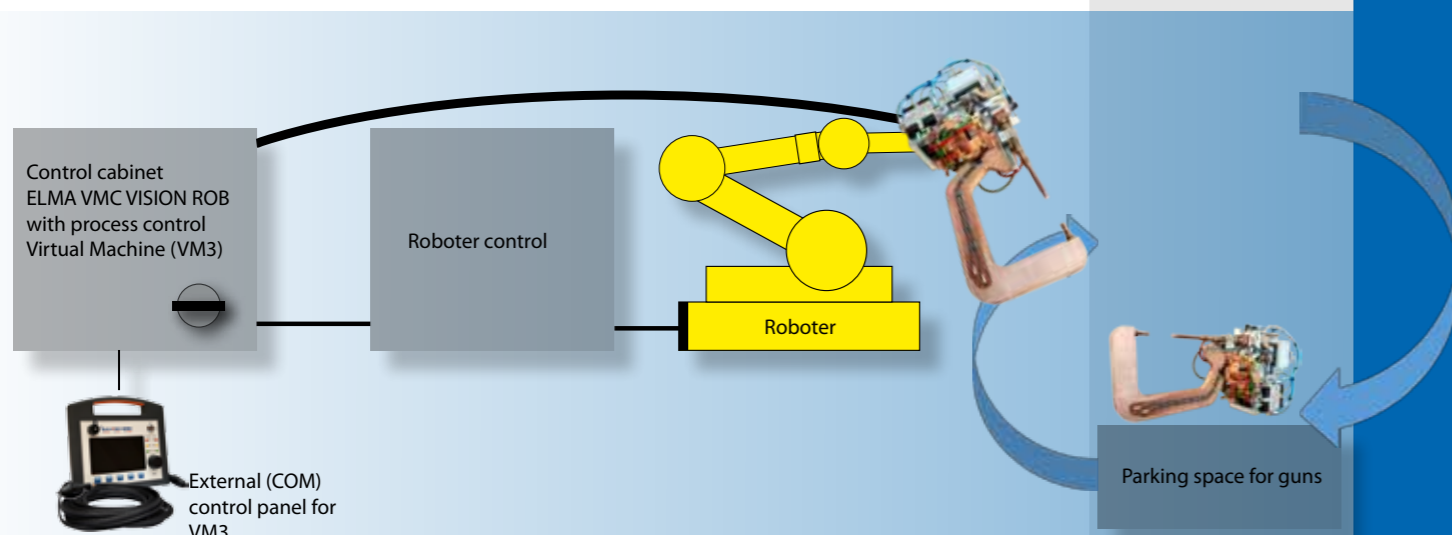


With
process control
Virtual Machine VM3

Technical features

- Digital process control *Virtual Machine* (VM3)
- Interface for Interbus, Profibus or Profinet (Configuration according to customer specification)
- Standard software
- Static / dynamic control with „ELMA-QS“ quality monitoring system
- Integrated inverter
- Flow monitor, electrical precision pressure regulator
- Quick couplings to accommodate the pluggable cable hose package
- 10 m mains lead, 32 Amp. CEE plug
- Distribution board HIP (Hall installation plate) with connections for air and water
 - Connection for external cooling, e.g. ring line
- 1 control for 1 gun!

Structure of a welding system



ELMA VMC VISION ROB (Control cabinet for fully automatic robot spot welding)

Item no.

Technical data

Connection data	
Mains voltage	3 x 400 V 50 Hz
Maximum power	130 kVA
Fuse (delayed-action)	32 A
Permanent power (100 % ED)	10 kVA
Connection line	4 x 10 mm ² / 16 mm ²
Protection	IP 53
Welding power	
Maximum current	13 kA / 15 kA
Welding current	DC
Open-circuit voltage (transformer of gun)	12,5 V DC
Cooling	
Flowrate	Minimum 6 l / min.
Pressure	Minimum 2 bar
Construction	
Dimensions H x W x D (mm)	900 x 700 x 600 (including HIP)
Weight	95 kg

ELMA VMC VISION ROB

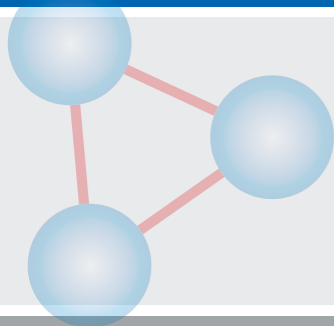
Control cabinet ELMA VMC VISION ROB	2_1035.1
Version: standing	
including HIP (Hall installation plater with all needed connections: Air and water supply, Flow controllers, compressed air maintenance unit)	
Including 1 interface for either Profibus, Profinet, Interbus etc.	

External control panel (ELMA-COM)

Operating panel for configuration of process control Virtual Machine (VM3) in the control cabinet, e.g. setting fully automatic spot welding, update of programs, error selection etc., with 2,5 m connection line.



1_5498.3

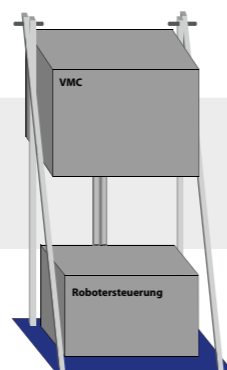


Equipment options (ELMA VMC VISION ROB)

Item no.

Rack for control cabinet

4-part frame with solid base plate for suspension of the VMC ROB control cabinet and for standing accommodation of the associated robot controller



12_0102.2

Driving carriage

Driving carriage for the control cabinet (optional)



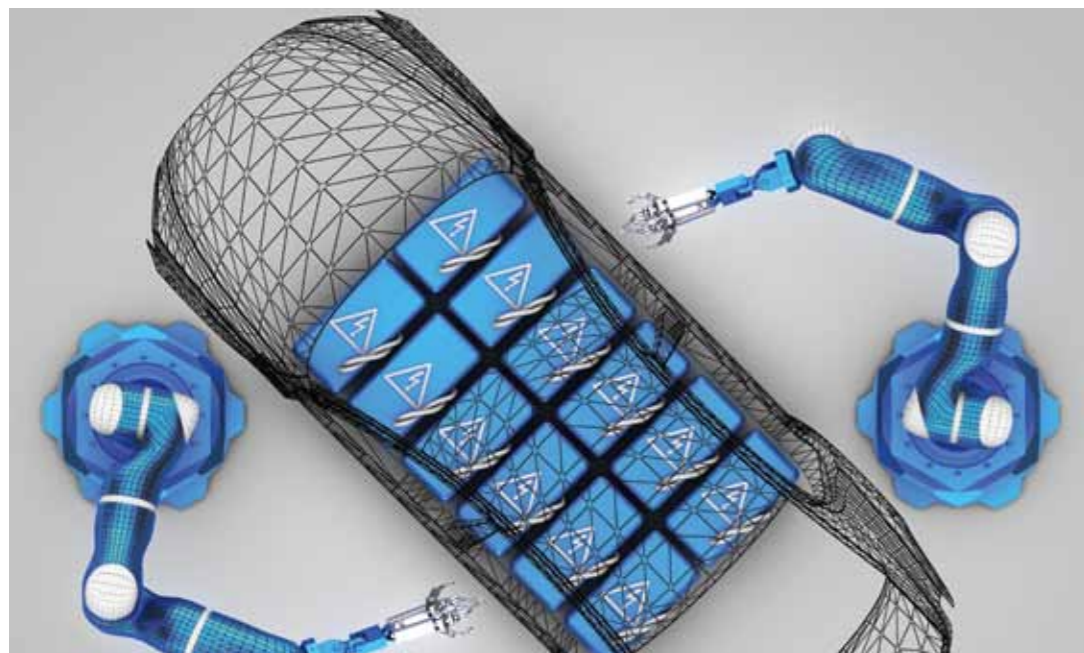
1_4618.1

Cable hose package

Cable hose package, 10 m length
Connection from control cabinet to robot axis 1, pluggable on sides of control and gun (quick couplings).
Consisting of: water flow and water return hoses, power cable, air hose and control line, designed in reinforced robust hose.



16_2433.2



Item no.

You are interested in our process control, which is not only used for spot welding, but also in arc and thermal coating processes?

At www.elmatech-gmbh.de you can download our whitepaper!



Whitepaper

Process Control Virtual Machine (VM)

for the control of complex processes in the fields

- Manual and automated spot welding
- Manual and automated arc welding
- Automated thermal coating (Arc wire spraying, plasma coating i.a.)



Future-oriented technologies from the welding process - Verstehen ...

Aluminium spot welding system (ELMA VMC VISION Alu, ELMA CM VISION Alu)

Item no.

Description

The ELMA CM VISION Alu manual welding gun in combination with the ELMA VMC VISION Alu control cabinet provides an efficient and reliable spot welding system for joining aluminium in the industrial sector.

The design of the complete system follows the Keep it small principle and, in addition to an optional external water recoler, consists of only these two components - no additional equipment or mechanical devices such as circulating processing belts or cap cleaning systems are required.

Also advantageous: 16 mm standard electrode caps (copper chrome zirconium) can be used. In addition to the „VISION AV Alu“ welding programme for aluminium, the system is also supplied with the familiar welding programmes for high-strength and ultra-high-strength steels.

Technical features control cabinet

- Digital process control *Virtual Machine* (VM3)
- Interface for Interbus, Profibus or Profinet (assignment according to customer specification)
- Incl. welding program „VISION AV Alu“
- Incl. welding programs for high-strength / ultra-high-strength steels
- Static / dynamic control with „Spot QS Viewer“ quality monitoring system
- Integrated inverter
- Flow monitor, electrical precision pressure regulator
- Quick couplings to accommodate the pluggable cable hose package
- 10 m mains cable, 32 Amp. CEE plug
- Media distributor HIP (Hall installation plate) with connections for air and water
 - Connection for external cooling, e.g. ring line
- 1 control for 1 spot welding gun

Technical features C spot welding gun

- Aluminium version with higher transformer and cooling capacity
- Electrode force approx. 5 kN at 6 bar compressed air network
- Electronic precision pressure regulator
- Linear potentiometer for automatic sheet thickness detection
- With slewing ring and handrim
- Cable hose package 6 m, pluggable and detachable on both sides
- 16 mm CopperChromeZirconium electrode caps on standard electrode shafts
- 600 weld spots can be welded without changing the electrode caps (depending on sheet combination)

Cooling

- SMC HRS 50 water recolling unit
For optimum cooling of the spot welding gun and the control cabinet (Optional. Recommended.)



With welding process control *Virtual Machine* VM3

Fully automatic spot welding of Aluminium & Steel

User information

Positive welding results have so far been achieved with the aluminium material classes 5000, 6000 and 7000.

In view of the large number of aluminium alloys on the market and the complexity of the aluminium spot welding process, ELMA-Tech cannot guarantee at this time that the aluminium welding process presented in this information will allow every aluminium alloy to be welded reliably with the same maximum number of spots.

Only after welding tests have been performed, precise statements can be made whether a certain aluminium alloy or aluminium joints can be reliably spotted.

Aluminium spot welding system (Technical Data)

Item no.

Technical data control cabinet

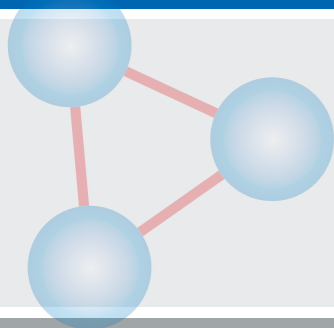
Connection data	
Mains voltage	3 x 400 V 50 Hz
Maximum power	540 kVA (10 ms)
Fuse (slow-blow)	125 A
Permanent power (100 % ED)	10 kVA
Connection line	4 x 10 mm ² / 16 mm ²
Protection	IP 21
Isolation class	F
Compressed air supply	min. 6 bar / max. 10 bar
Noise emission	≤ 70 dB (A)
Construction	
Dimensions H x W x D (mm)	1520 x 600 x 700
Wight	170 kg

Technical data C spot welding gun

Welding power	
Adjustment range	0 - 32 kA
Welding current	DC
Maximum current	32 kA
Open-voltage circuit	11,1 V DC
Maximum electrode force at 6 bar	5 kN
Construction	
Wight (without arms & cable hose package)	88 kg

Aluminium spot welding system

Aluminium spot welding system, vertical version	2_1153.1
consisting of:	
Control cabinet ELMA VMC VISION Alu	
Manual spot welding gun ELMA CM VISION Alu (10 kHz medium frequency inverter technology)	2_2037.1
Hall installation plate (HIP) with flow monitors, water flow / return, distributor, manometer etc.	
Cable hose package, 6 m, pluggable on both sides, water, power, air, control, reinforced hose	16_0199.2
Optional:	
Water recolling unit SMC HRS 50 with 4.700 W cooling power, self-diagnosis, temp. 5- 40° C, 69 kg	90_1747.4
Balancer for spot welding gun, load capacity 90 - 105 kg	90_1206.4_15
Balancer for cable hose package, load capacity 13 - 19 kg	90_1206.4_3
Bracket for suspending the spot welding gun	16_2444.2



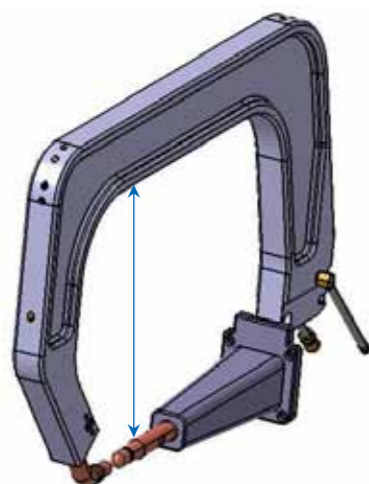
Special fittings (C- gun, outreach: 25 - 49 mm)

Individually manufactured fittings according to customer specifications

Certain spot welding tasks in industry or automotive production cannot be solved with standard ELMA-Tech guns because the geometries of the parts to be machined require different projections, different arm lengths or even 3D geometries.

We therefore design and manufacture special fittings according to customer specifications, which are listed on the following pages.

For a better overview, we have divided the illustrations of the special fittings according to the size of outreach. The dimension of the outreach gives the size of the gun window - the maximum distance in mm between the counter electrode (electrode center) and the inner edge of the opposite gun arm.



Item no.

Special fittings (C- gun, outreach: 50 - 74 mm)

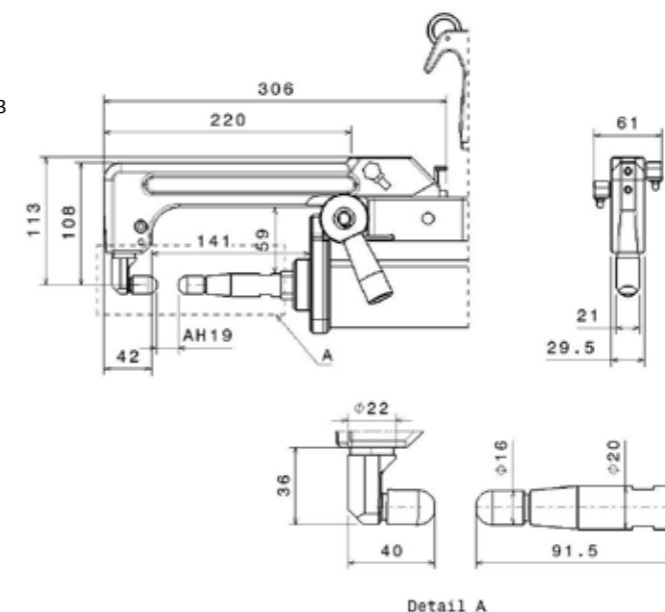
C-Zange/C-gun:

Zangenarmatur besteht aus/

gun instrument consists of:

Elektrodenarm/electrode arm 16_0482.3

Elektrode Plus/electrode plus: 16_0484.



16_0482.3
16_0484.3

(Note: The article numbers in this grey column are decisive!)

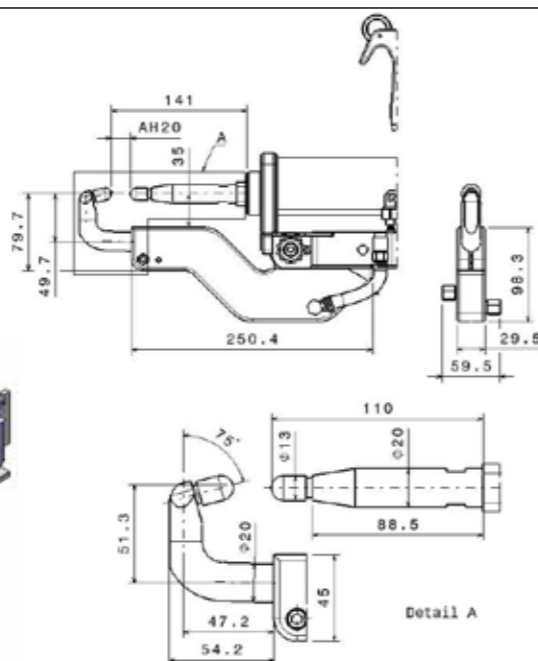
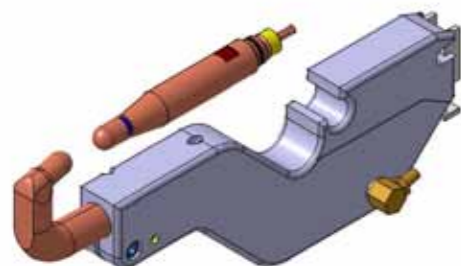
C-Zange/C-gun:

Zangenarmatur besteht aus/

gun instrument consists of:

Elektrodenarm/electrode arm C35_00061_2

Elektrode Plus/electrode plus C35_00061_1



C35_00061 (Set)
C35_00061_2
C35_00061_1

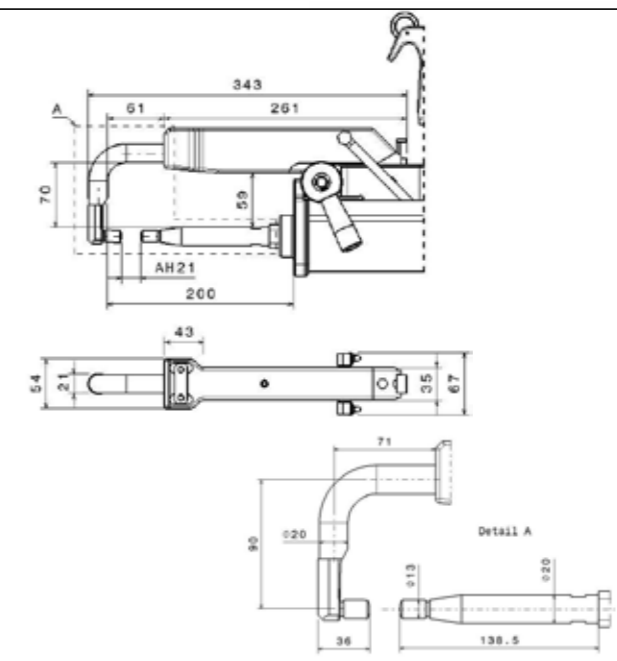
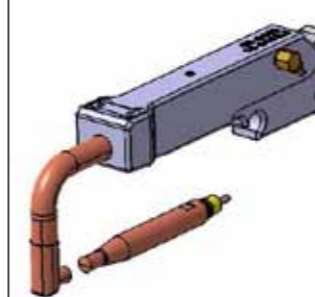
C-Zange/C-gun:

Zangenarmatur besteht aus/

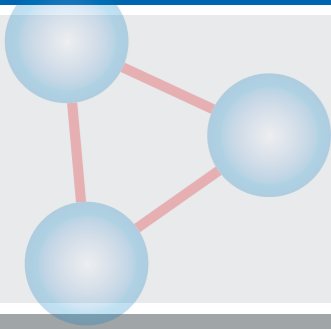
gun instrument consists of:

Elektrodenarm/electrode arm 16_0469.3

Elektrode Plus/electrode plus 90_1325.4



16_0469.3
90_1325.4_AV

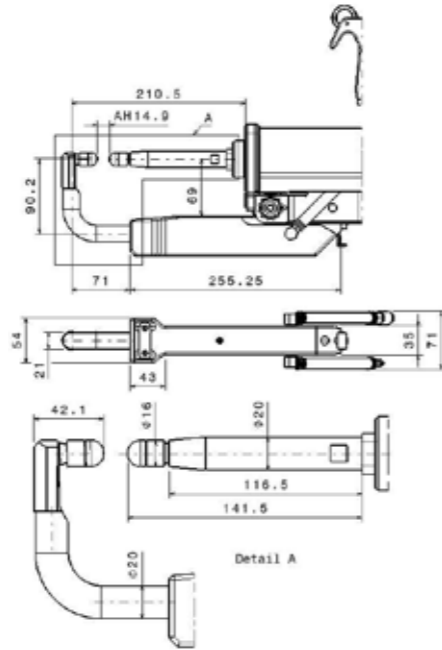
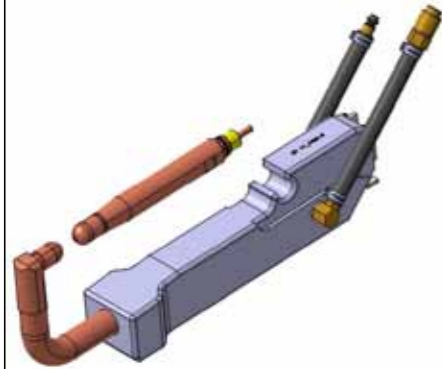


Special fittings (C- gun, outreach: 50 - 74 mm)

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

- Elektrodenarm/electrode arm C70_00013 1
- Elektrode Plus/electrode plus 90_1916.4



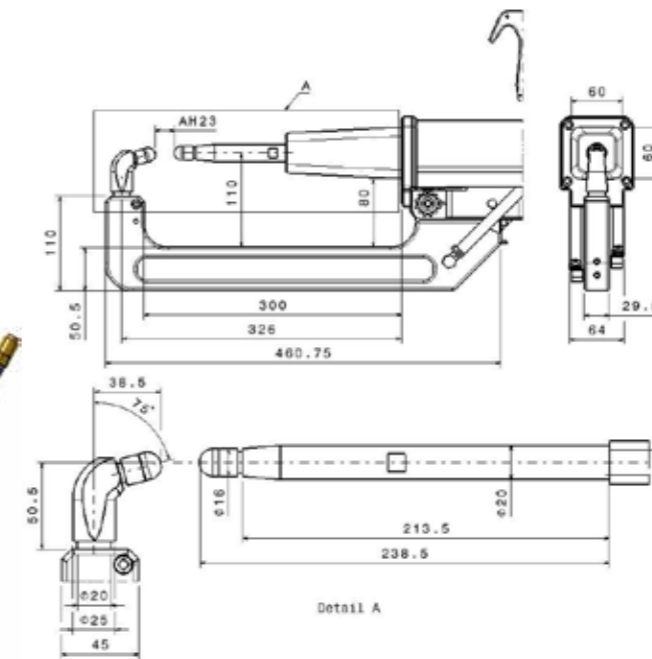
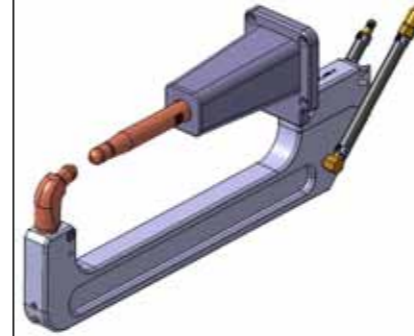
C70_00013 (Set)
C70_00013_1
90_1916.4

Special fittings (C- gun, outreach: 100 - 124 mm)

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

- Elektrodenarm/electrode arm 16_1256.3
- Elektrode Plus/electrode plus 16_1257.3

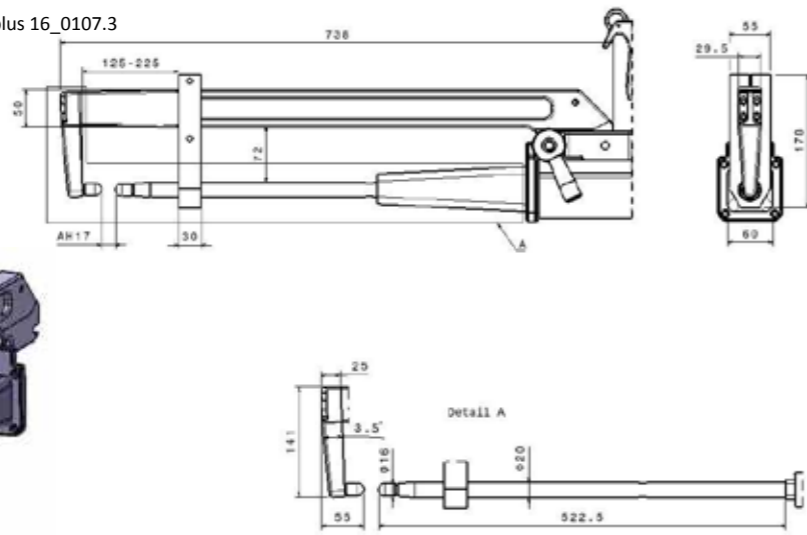
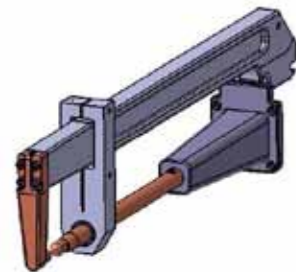


16_1256.3
16_1257.3

C-Zange/C-gun:

Zangenarmatur besteht aus/gun instrument consists of:

- Elektrodenarm/electrode arm 16_0106.3
- Elektrode Plus/electrode plus 16_0107.3

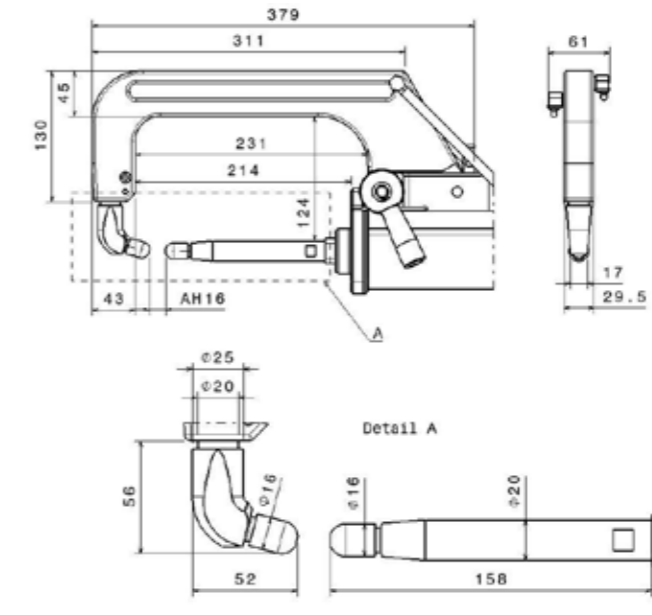
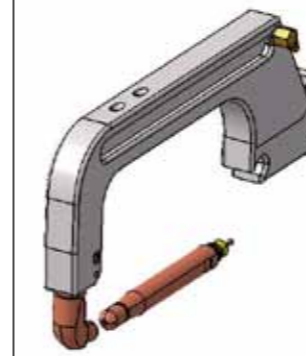


16_0106.3
16_0107.3

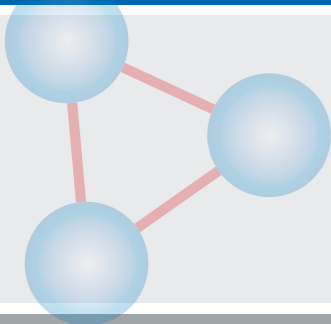
C-Zange/c-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

- Elektrodenarm/electrode arm 16_0526.3
- Elektrode Plus/electrode plus 16_0525.3



16_0526.3
16_0525.3



Special fittings (C- gun, outreach: 125 - 149 mm)

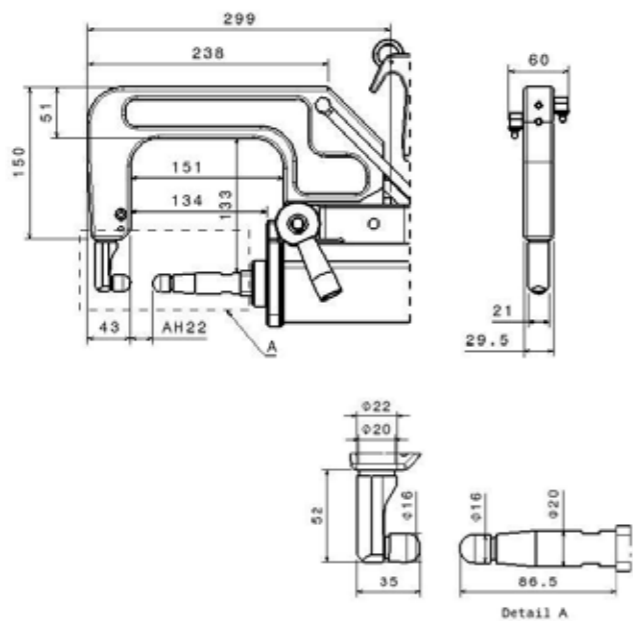
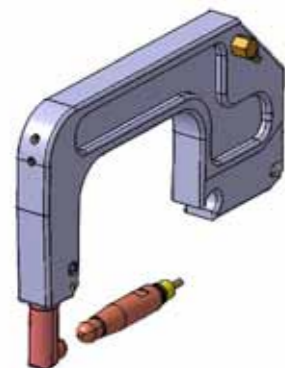
Item no.

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm 16_0465.3

Elektrode Plus/electrode plus 16_0463.3



16_0465.3
16_0463.3

Special fittings (C- gun, outreach: 125 - 149 mm)

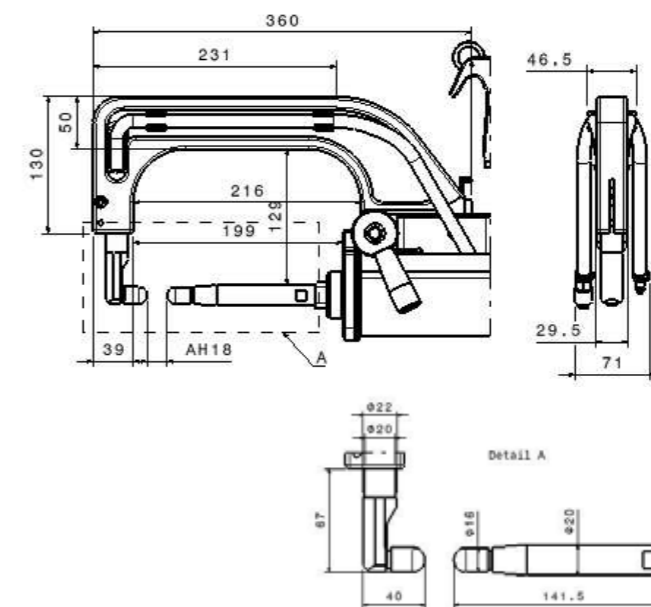
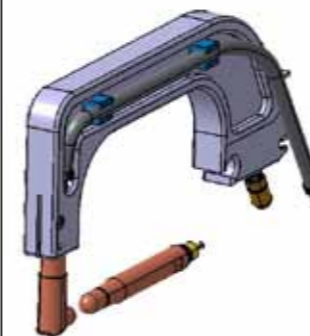
Item no.

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm 16_0514.3

Elektrode Plus/electrode plus 16_0515.3



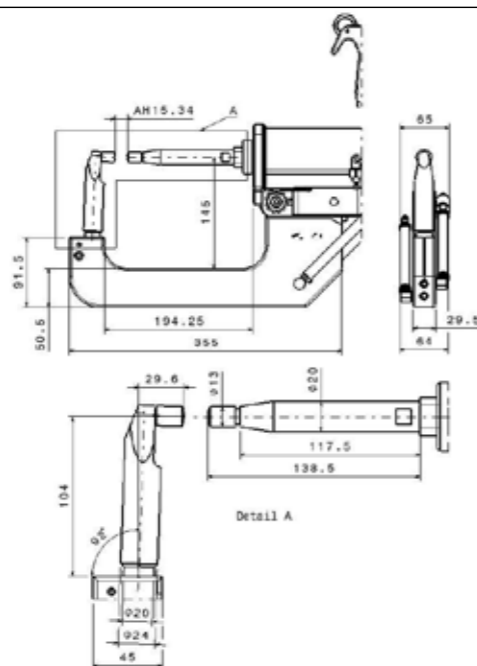
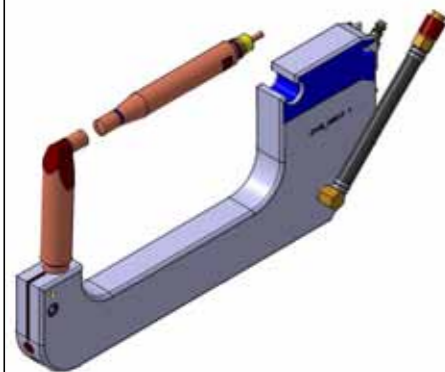
16_0514.3
16_0515.3

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm C145_00017 1

Elektrode Plus/electrode plus 90_1325.4_AV



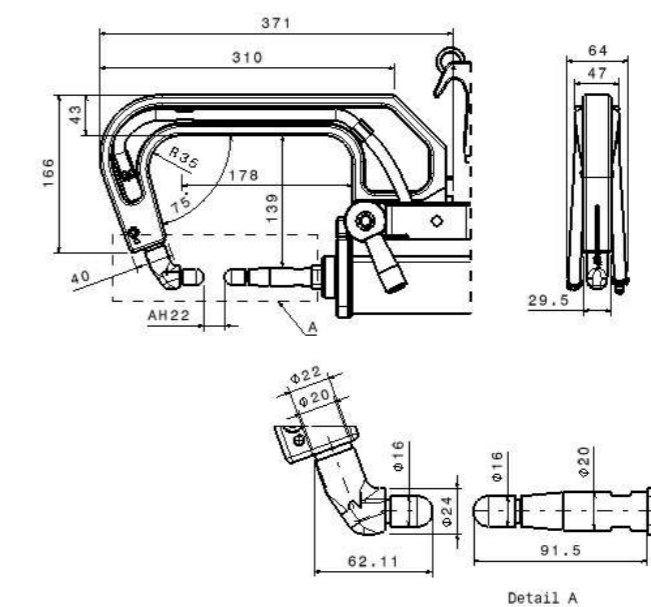
C145_00017 (Set)
C145_00017_1
90_1325.4_AV

C-Zange/C-gun:

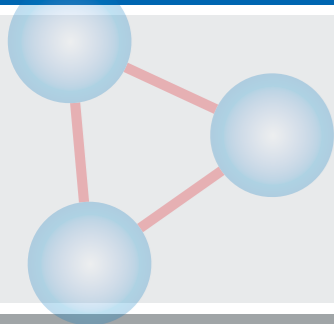
Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm 16_0481.3

Elektrode Plus/electrode plus 16_0484.3



16_0481.3
16_0484.3

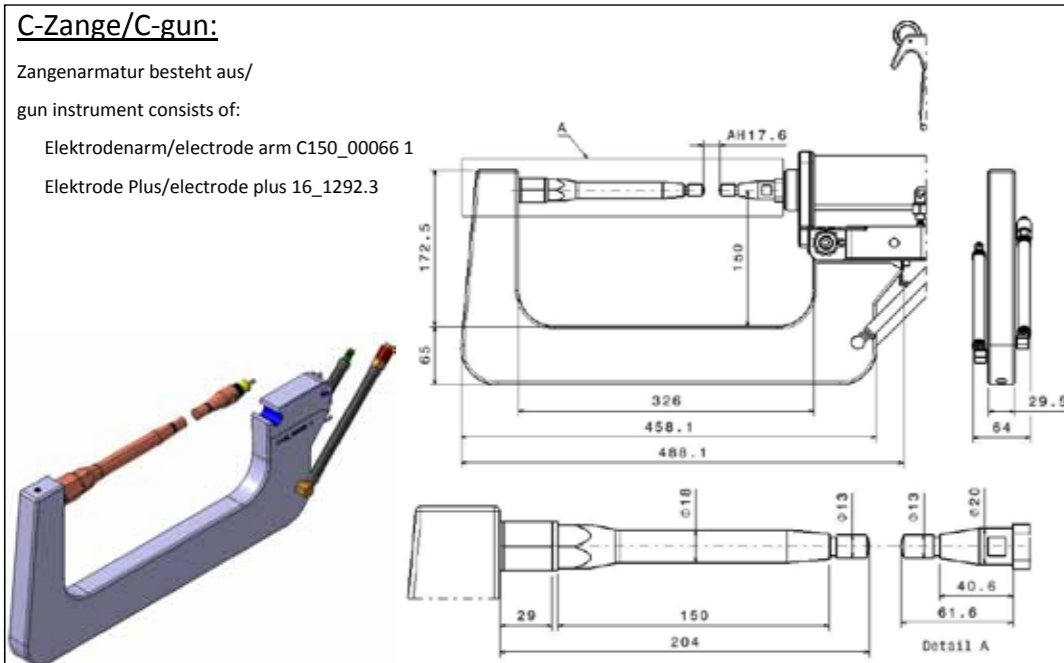


Special fittings (C- gun, outreach: 150 - 174 mm)

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

- Elektrodenarm/electrode arm C150_00066 1
- Elektrode Plus/electrode plus 16_1292.3



Item no.

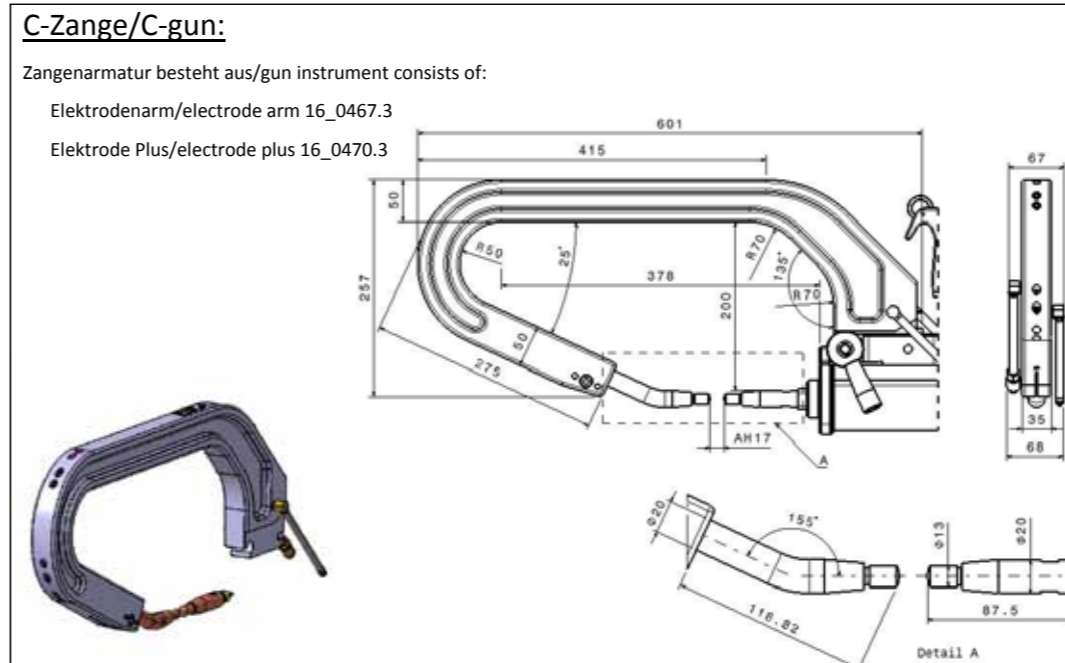
C150_00066
C150_00066_1
16_1292.3

Special fittings (C- gun, outreach: 200 - 224 mm)

C-Zange/C-gun:

Zangenarmatur besteht aus/gun instrument consists of:

- Elektrodenarm/electrode arm 16_0467.3
- Elektrode Plus/electrode plus 16_0470.3



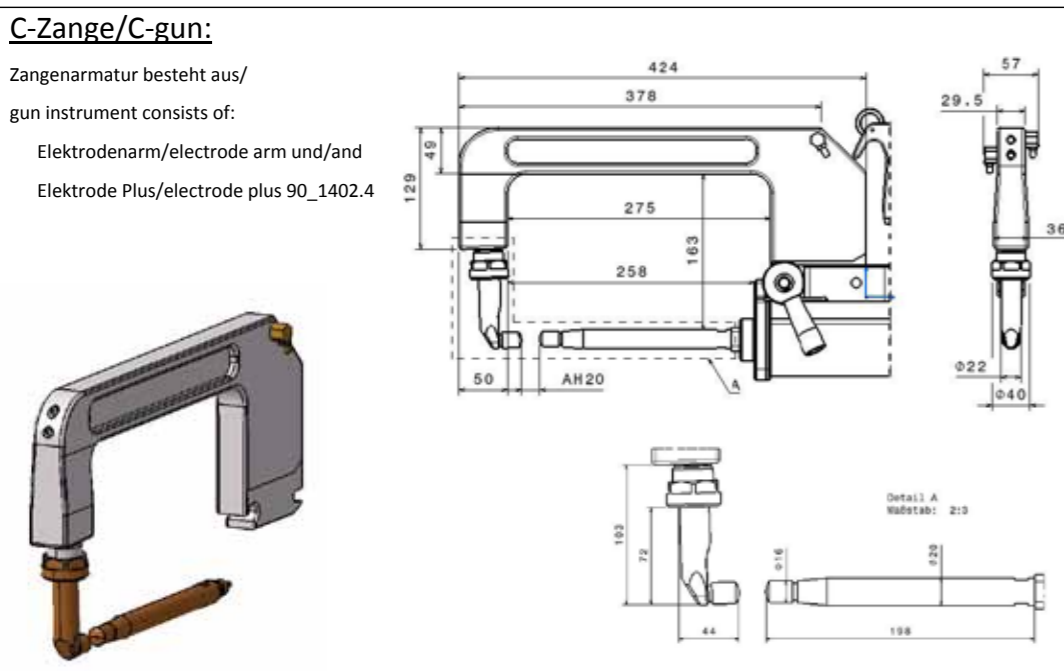
Item no.

16_0467.3
16_0470.3

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

- Elektrodenarm/electrode arm und/and
Elektrode Plus/electrode plus 90_1402.4



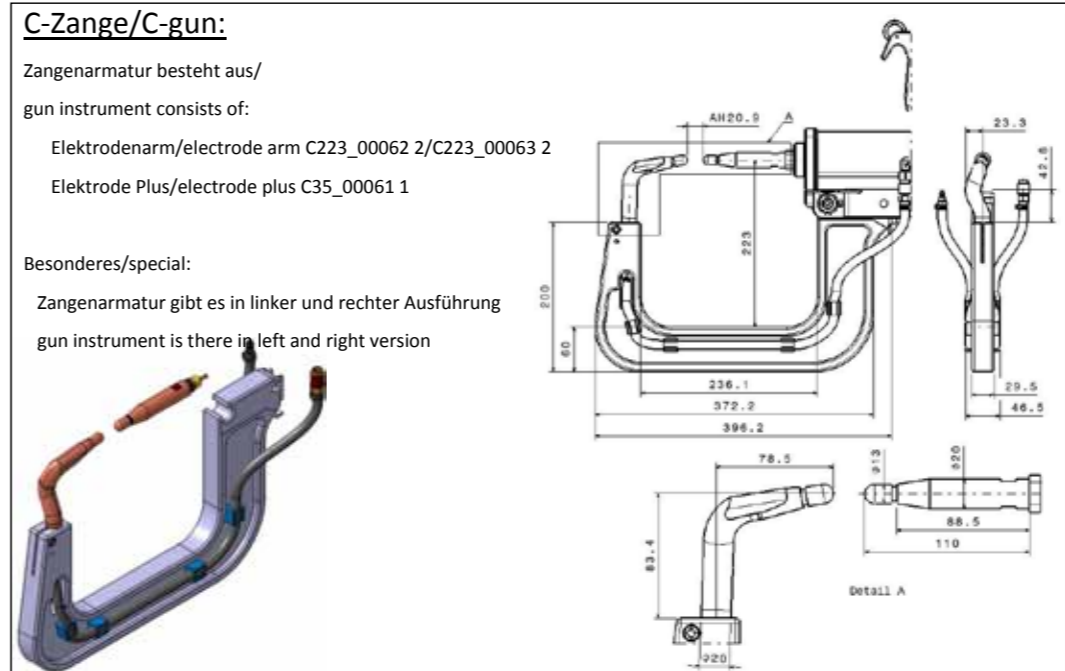
???????? (Set)
????????
90_1402.4

?

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

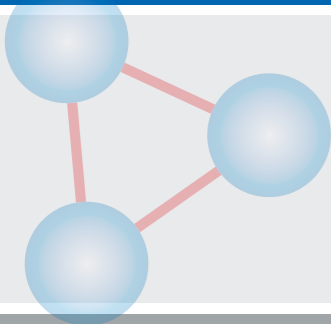
- Elektrodenarm/electrode arm C223_00062 2/C223_00063 2
- Elektrode Plus/electrode plus C35_00061 1



C223_00063 (Set)
C223_00063_2
C35_00061_1

Besonderes/special:

Zangenarmatur gibt es in linker und rechter Ausführung
gun instrument is there in left and right version



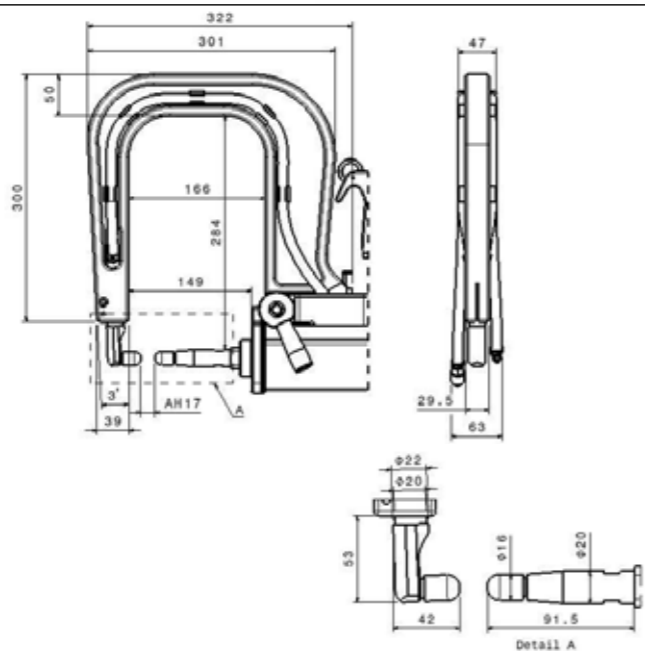
Special fittings (C- gun, outreach: 275 - 299 mm)

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm 16_0480.3

Elektrode Plus/electrode plus 16_0484.3



16_0480.3
16_0484.3

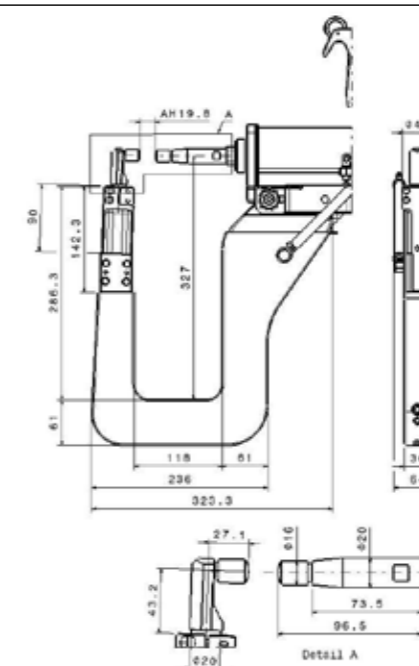
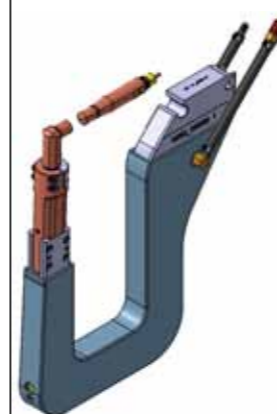
Special fittings (C- gun, outreach: 325 - 349 mm)

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm C330_00036 1

Elektrode Plus/electrode plus 90_1622.4



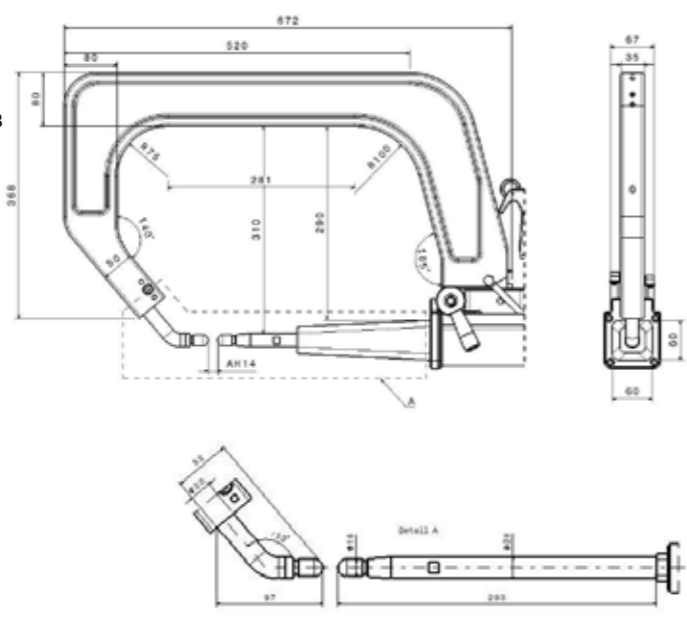
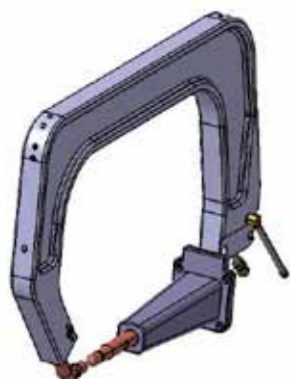
C330_00036 (Set)
C330_00036_1
90_1622.4

C-Zange/C-gun:

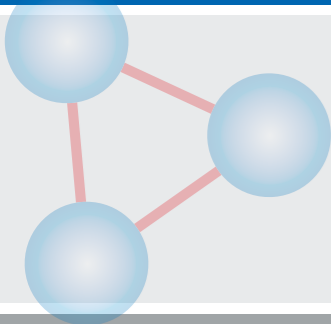
Zangenarmatur besteht aus/
gun instrument consists of:

Elektrodenarm/electrode arm 16_0542.3

Elektrode Plus/electrode plus 16_0541.3



16_0542.3
16_0541.3



Special fittings (C- gun, custom-made)

C-Zange/C-gun:

Zangenarmatur besteht aus/
gun instrument consists of:

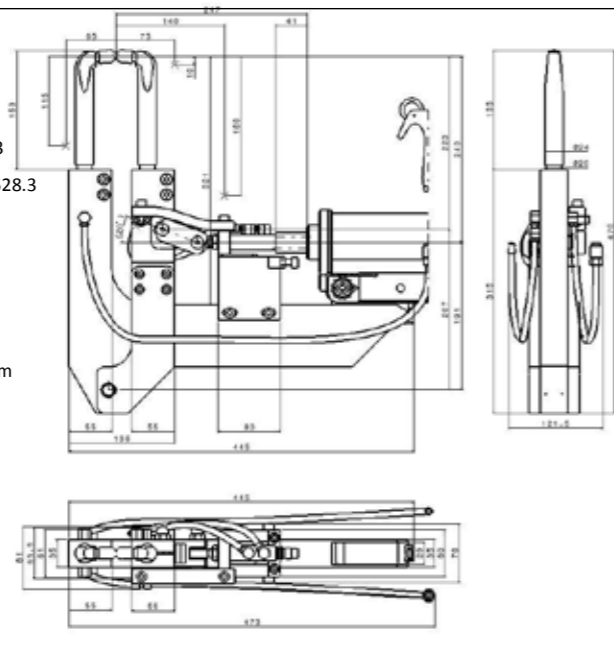
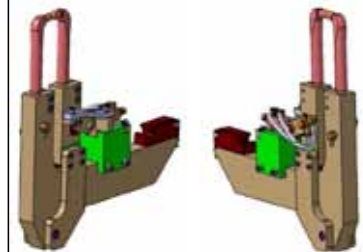
Elektrodenarm Plus/electrode arm plus 16_0527.3

Elektrodenarm Minus/electrode arm minus 16_0528.3

Besonderes/special:

Elektrodenkappen haben ein Öffnungsmaß von
max. 55mm.

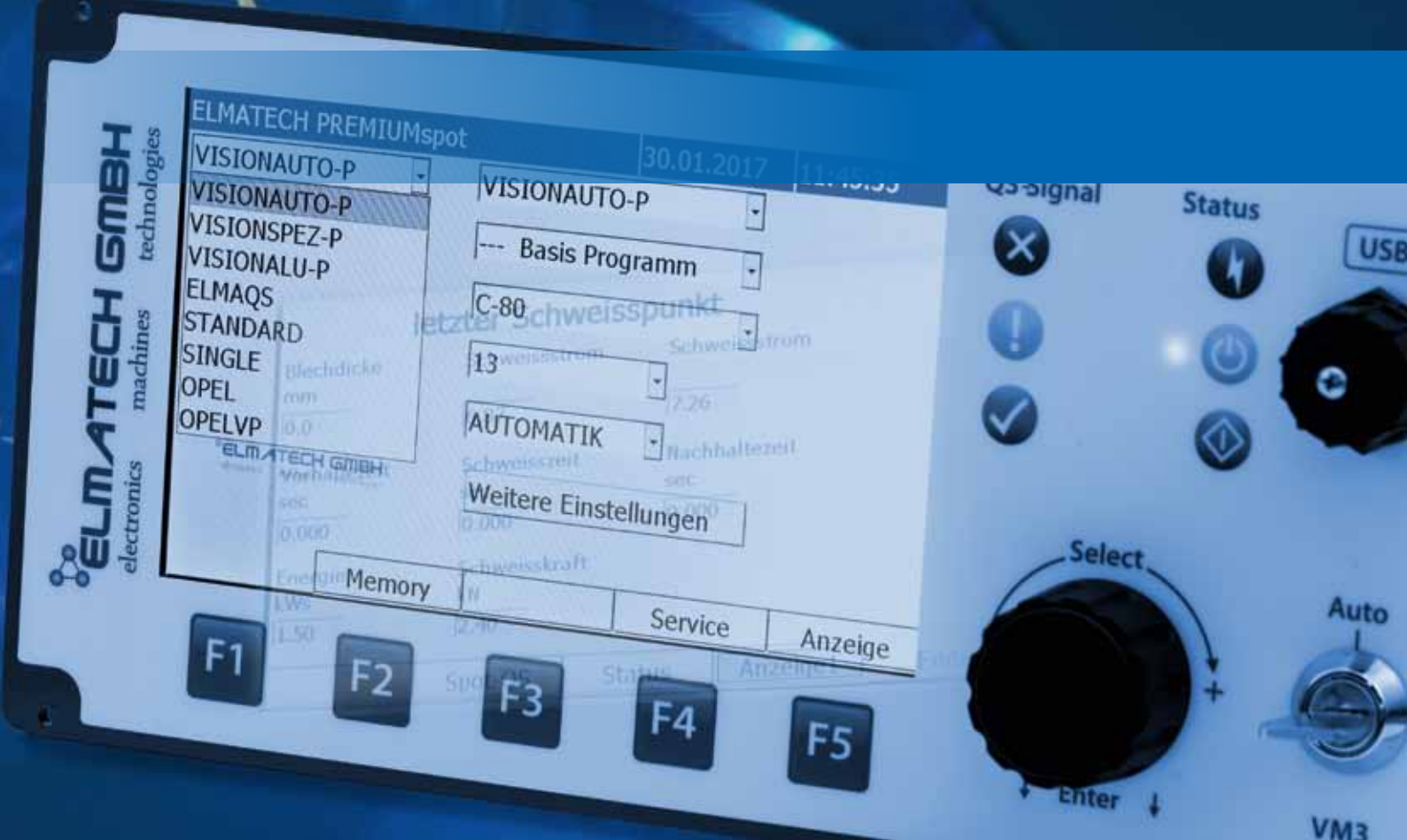
Electrode caps have an opening size of max. 55mm



Item no.

16_0527.3
16_0528.3

Item no.



Product Catalogue Resistance Spot Welding

