

FFT weldtec

Inline Projection Welding Machine

*"The **Inline Projection Welding Machine** the compact and smart solution to weld nuts and bolt inside a production line"*

one step ahead in **INTELLIGENT** production systems



Inline Projection Welding Machine

Welding machine for bolts and nuts inside automated production lines

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Technical information

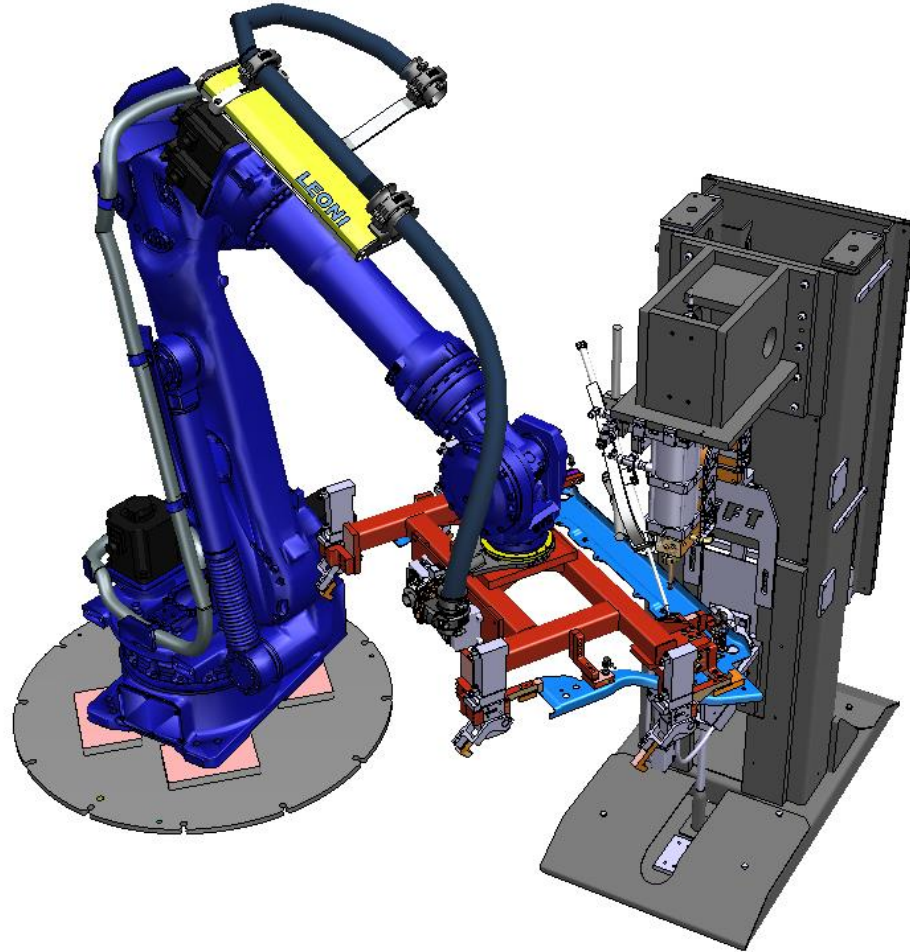
Description, technical Data and
Equipment Configurations

A detailed close-up photograph of a SCHUNK MPG+50-AS chuck. The chuck is a complex mechanical assembly with a central copper-colored mandrel. The main body is made of dark grey metal. A label on the top part of the chuck reads '305532 SCHUNK MPG+50-AS'. The chuck is mounted on a larger metal structure, and a small white component is visible in the center. The background is a blurred blue and white.

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Technical information

Description of the **FFT*weldtec* Inline Projection Welding Machine**



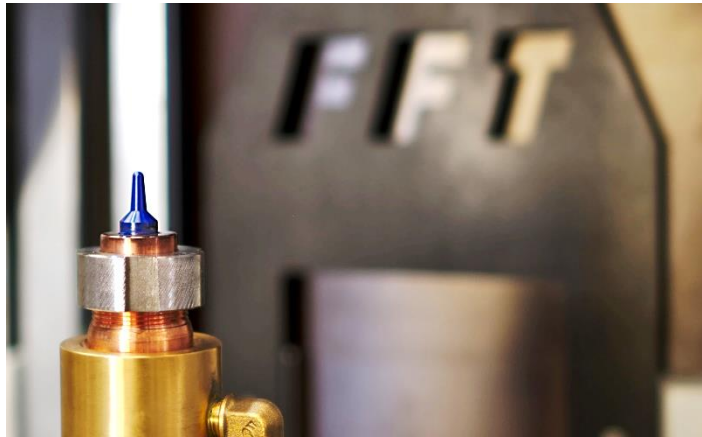
The **FFT*weldtec* Inline Projection Welding Machine** is able to weld many different kind of components (nuts, bolts, plates...) in an automatic way, avoiding the manual intervention of any operation and ensuring the correct position of the item.

FFT*weldtec* Inline Projection Welding Machine is installed inside a production line, and it can be controlled by the PLC line. There is a second option where machine is controlled by its own PLC.

Regarding the component, the cycle time of the welding is between 6-7 seconds per item welded.

Technical information

Data of the **FFT**weldtec **Inline Projection Welding Machine**



Components of the Inline Projection Welding Machine

Weld Control MF	✓
Transformer MF	✓
PLC (Optional)	✓
Mobile HMI	✓
Smart electrode	✓
Isolated cylinder	✓
Nut/Bolt Feeder	✓
Ware parts for commissioning	✓

Height	~ 2200 mm
Wide	~ 1000 mm
Depth	~ 1200 mm
Upper electrode height	~ 1110mm
Lower electrode height	~ 770 mm
Weight	850 - 1200 kg
Max. air pressure	6,0 bar
Water consumption	~ 22 l/min
Cylinder strength	5,8 – 14,4 kN
Different weld control configurations	600 A / 1200 A / 1600 A / 2400 A
Standard nuts-bolts	M4 to M12
Special parts	Brakets, plates, reinforcements..
Cycle time (welding+feeding nut) by cylinder	~ 6-7 secs

Different equipment configurations

Trafo and Weld Control characteristics

- Trafo characteristics**

150 kVA	180 kVA	200 kVA	250 kVA	2x180 kVA	2x250 kVA
6,5 kA *	8 kA *	12 kA *	13 kA *	16 kA *	26 kA *
12 V	14 V	10 V	14 V	14 V	14 V

*Duty cycle 50%



- Weld Control characteristics**

800 A	1200 A	1600 A	2400 A
400...480 V	400...480 V	400...480 V	400...480 V
Air cooling	Water cooling	Water cooling	Water cooling

Smart Electrode

Weld quality control system of the **FFT*weldtec* Inline Projection Welding Machine**



“SMART ELECTRODES”, developed by FFT Spain, provided with a coding system, allows control measurements.

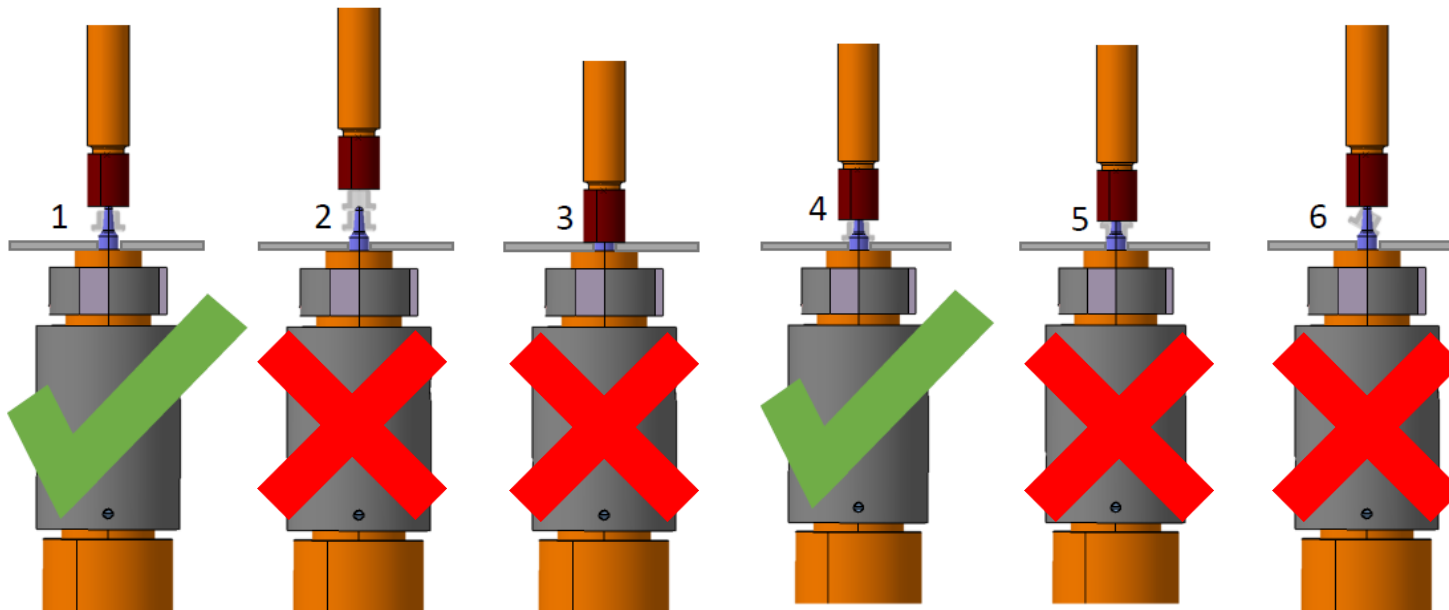
The smart electrodes integrate position sensors (micrometer accuracy). The sensors measure the instantaneous position of Lower and Upper electrodes.

These measures ensure the control of the welding quality and define the conditions for the OK and NOK parts.

Electrodes and pins have been developed for easy and quick replacement for maintenance.

Sensors by **Balluff** IO-Link BTL series.

Ceramic manufactured by **Doceram Cerazur** (blue ceramic)



2

Components

Components of the **Inline Projection Welding Machine**

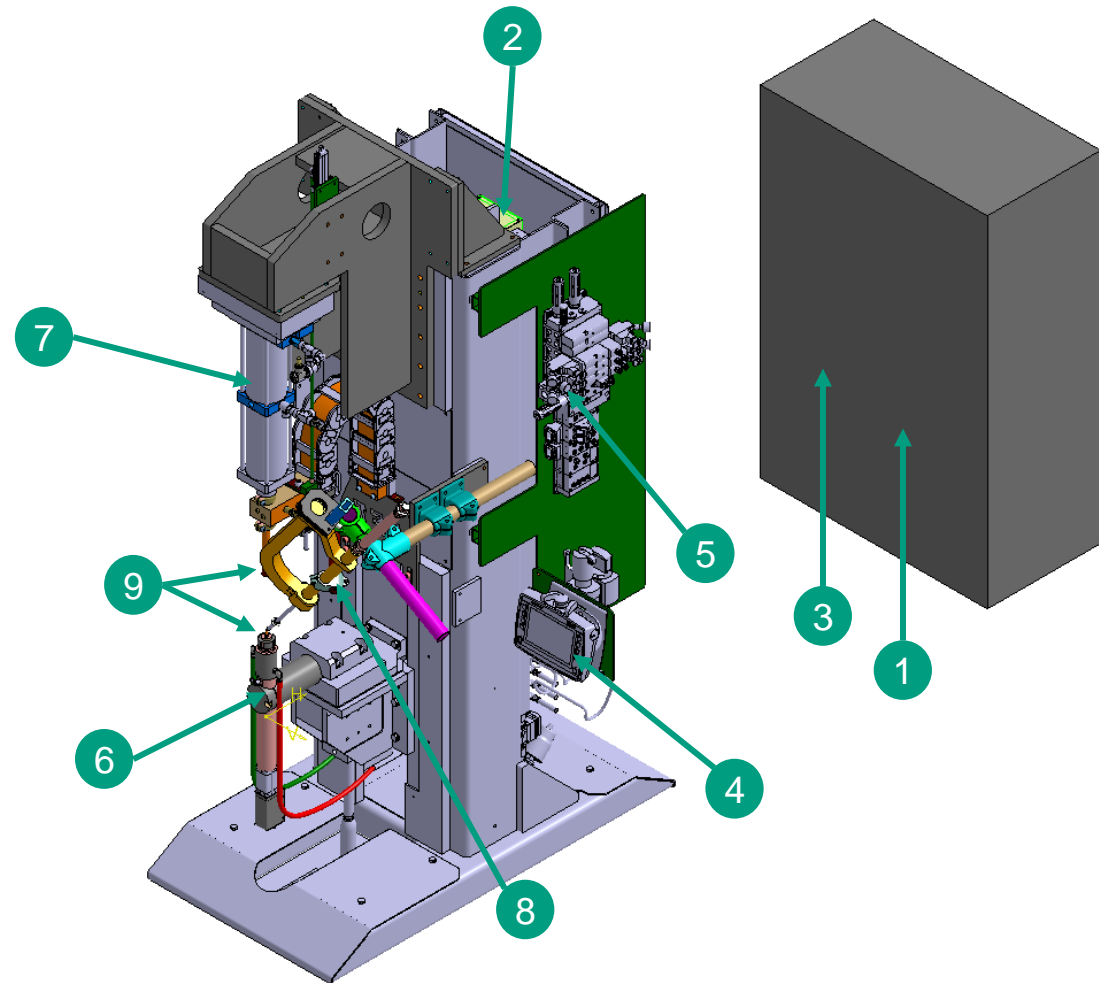
The background image shows a close-up of a projection welding process. A copper electrode is positioned above a metal workpiece, and a bright orange-red glow indicates the point of contact where heat is being generated. Sparks are visible on the right side. Below the workpiece, a large, cylindrical metal component is visible, which is part of the machine's structure.

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Components

Components of the **FFT***weldtec* **Inline Projection Welding Machine**

1. Weld control
2. Transformer
3. PLC (optional)
4. Mobile HMI (optional)
5. Pneumatic panel
6. Smart electrode FFT
7. Welding Cylinder
8. Nut/Bolt feeder
9. Wear parts for commissioning



Set up your machine

WELD CONTROL

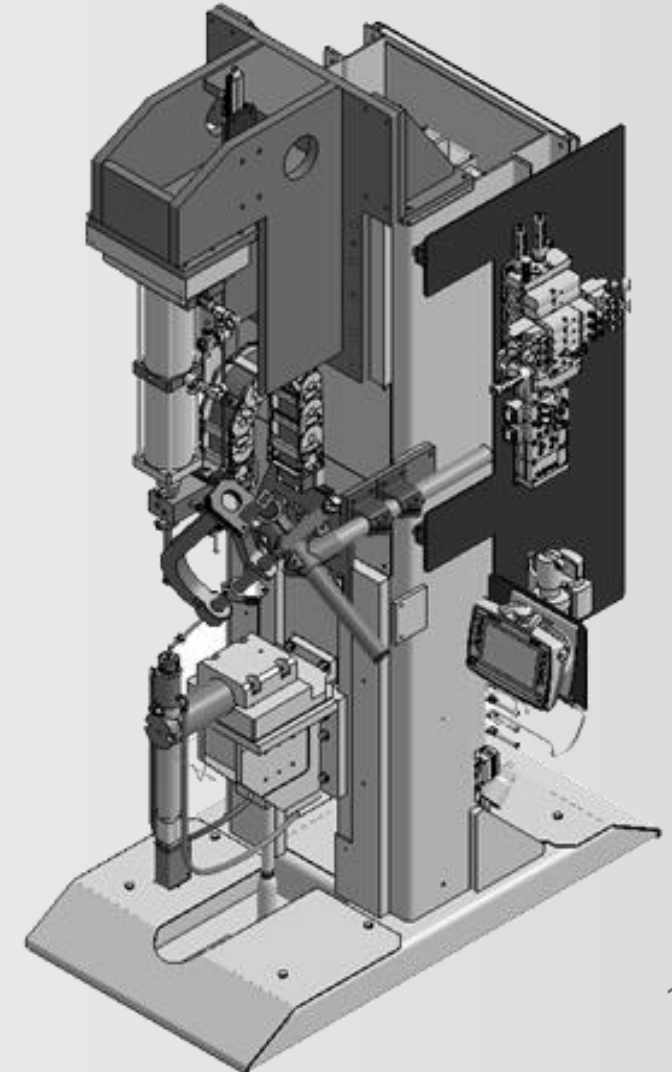
★ OP1-1.1 Bosch	OP1-1.2 GeniusHWI	OP1-1.3 Other Options	OP1-2.1 600A	OP1-2.3 1600A	OP1-2.5 Other options
			OP1-2.2 1200A	OP1-2.4 2400A	

TRANSFORMER

★ OP2-1.1 Bosch	OP2-1.2 Elesa	OP2-1.3 Expert	OP2-1.4 Other Options	OP2-2.1 160kVA	OP2-2.4 250kVA	OP2-2.7 Other options
				OP2-2.2 180kVA	OP2-2.5 2x160kVA	
				OP2-2.3 200kVA	OP2-2.6 2x250kVA	

PLC

★ OP3-1 Siemens	OP3-2 Allen Bradley	OP3-3 Without	Optional Scalance S615 (Remote control)
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Set up your machine



HMI

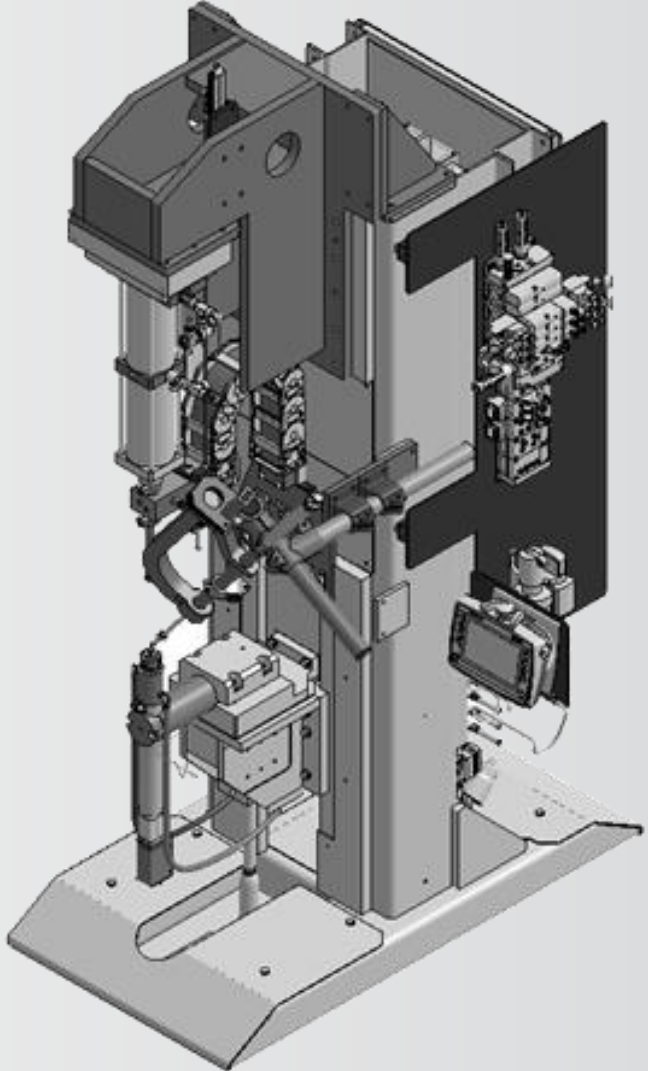
<p>★ OP4-1</p>  <p>Siemens</p>	<p>OP4-2</p>  <p>Allen Bradley</p>	<p>OP4-3</p>  <p>Without</p>
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PNEUMATIC

<p>★ OP5-1</p>  <p>Festo – PL D</p>	<p>OP5-2</p>  <p>SMC</p>	<p>OP5-3</p>  <p>Other options</p>
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SMART ELECTRODE




<p>★ OP6-1</p>  <p>FFT</p>	<p>OP6-2</p>  <p>Doceram</p>	<p>OP6-3</p>  <p>Other options</p>
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★ FFT Standard component

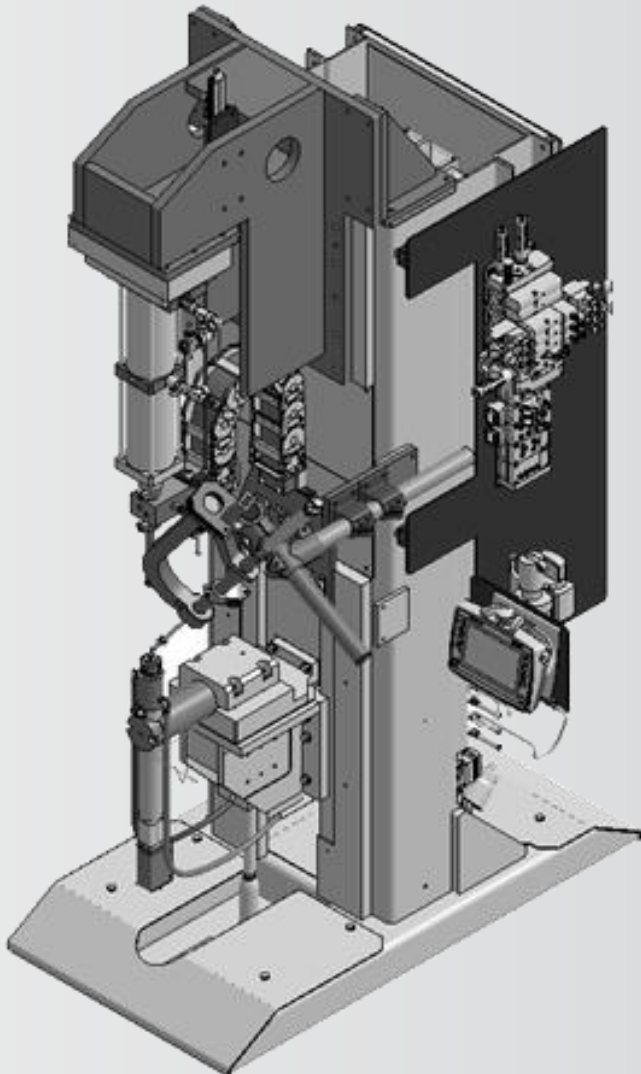
Set up your machine


WELDING CYLINDER

 <p>OP7-1 5,8 kN</p>	 <p>OP7-2 9kN</p>	 <p>OP7-3 14,4 kN</p>	<p>OP7-4 Other options</p>
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NUT/BOLT FEEDER

 <p>★ OP8-1 Intec</p>	 <p>OP8-2 Swedweld</p>	 <p>OP8-3 BAT</p>	 <p>OP8-5 Feldpausch</p>	<p>OP8-6 Other options</p>
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We support our customers in efficiently implementing their production systems according to their specifications.

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DO YOU NEED AN
INDIVIDUAL SOLUTION
FOR YOUR TASK?

3

System advantages

Smart system and re-use opportunities / Reasons to use our system

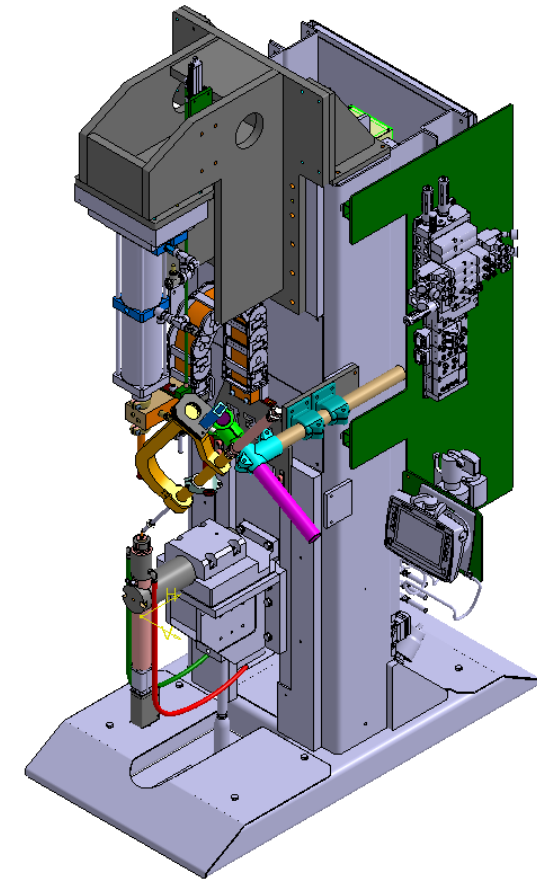
A close-up photograph of a precision-machined metal component, likely a nozzle or a valve tip. The part is cylindrical with a hexagonal base and a small, conical blue-colored tip. The background is blurred, showing other parts of a machine in shades of blue and yellow.

one step ahead in **INTELLIGENT** production systems

System advantages

Advantages of the **FFT*weldtec* Inline Projection Welding Machine**

- ✓ Design and components are adapted to customer needs
- ✓ Smart electrode ensures the correct position, welding quality and poka-yoke of the welded element
- ✓ Machine can be converted in an easy and fast way to other products
- ✓ Easy Access and quick change for maintenance
- ✓ Machine can work with different program of welding forces
- ✓ Easy to relocate the machine at the plant (forklift shoes)



SERVICE OPTIONS

We support your project from the idea to the realization and gladly beyond.



We take into account quality and deadline requirements and we assume the responsibility for the project until turnkey handover.



Consulting

Use our experience for your tasks



Project Management

Support from the idea to the start of production



Risk Analysis

Identification of risks in the process



Custom design

Creation of individual solutions



Manufacturing

Successful manufacturing with modern technologies



Documentation

Clear and logical



Conformity

Compliance with standards and regulations



After Sales

Competent service through FFT



CONTACT

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