HV-CAM/HV-RAM

High-Voltage - C(R)obot Assembly Machine

P/N: 01-03-0007

StoneShield
ENGINEERING

Nominated for the
productronica
innovation award 2021

The HV-CAM, High-Voltage Cobot Assembly Machine, is a solution for assembling HV cable components, using Cobots or Robots.

It can be used in pre-processing (before cutting, stripping, etc) or in post-processing (for connector assembly).

It uses linear bowl feeders to supply each of the components in a fast and autonomous way. In the example of this datasheet's application, it supplies: rear holder; seal; connector housing, shield crimp and stress relief;

The cobot picks up the individual components and puts them into poke-yoke jigs. It then picks up the cables from a rack that holds them after being cut and performs the complete assembly and vision inspection. Finally, it feeds the assembly to the stripping machine.

The entire process has a tacktime of 30 seconds.

The handling of the cables is optional, meaning that this task can be made by an operator (utilizing the cobot only for components' handling) and in this way achieve faster tacktimes.

The disposition of the assembly cell and jigs is fully customizable in order to integrate easily into the current process (to work on a line or in standalone).

Applications:

Assembly of connector's parts in HV cables (pre-processing or post-processing)

Technical Features:

- Fast operation: ready to pickup parts by the use of dedicated bowl feeders;
- Error-proof process: jigs with sensors to detect presence and correct assembly of components;
- Step-by step visualization of assembly process using a tochscreen;
- Easy to readapt to new assemblies, just replacing the assembly jigs;
- High autonomy, which can be increased by using buffers in the bowl feeders;
- Cell with presence sensor to protect operators once they get close to it;
- Easy integration inline or working as standalone;
- Configuration and maintenance modes password protected;
- Dedicated maintenance mode for hardware debug;
- Partial and global cycle counters, with data logs exports;
- Working time counter;
- Several system's languages, including English, Portuguese, ...

Flexibility:
Can be used in pre-processing or post-processing assemblies.
Can work inline or in standalone.

Productivity:
Small tacktime by having ready-to-use components outside dedicated bowl feeders,

High Connectivity
User-friendly interface to operate with the machine.
Touchscreen that shows step-by-step stage of assembly.

Error-Proof:
Error-proof and controlled assembly using vision system

Controlled Process:
Jigs with sensors to detect presence and correct position of components.
Vision system to inspect assembly.

Technical Data:

Dimensions:

Length:	1650 mm
Width:	1200 mm
Height:	1700 mm
Weight:	630 kg

Connections:

Electrical:	230 VAC @ 50 Hz - 1 IEC standard male socket
Consumption:	1.5 kW (peak)
Air pressure:	4.5 to 6 Bar - quick-coupler socket – Ø 8 mm
Interface:	Touchscreen, USB, Ethernet and tower LED

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