

FlexTTH

Flexible Table Top Hemming



ABB's Table Top Hemming provides a flexible and modular solution to improve hemming quality and increase body-in-white production speed, this can reduce traditional hemming cycle time by up to 50 percent.

High quality output with 50% shorter cycle time

ABB's Table Top Hemming provides a flexible and modular table top hemming solution and it is able to perform optimized motions with a short cycle time and high accuracy. This solution improves hemming quality and increases Body-in-White production cycle speed with a total lower cost of ownership. ABB's novel kinematic hemming motion reduces hemming cycle time and consumes less energy, with reductions of up to 50% of traditional hemming cycle time. This solution is particularly suitable for high-volume production.

Flexible and precise process control

Optimized kinematic itinerary makes it possible to hem up to 105° open angle in only two steps. The reinforced Gripper structure together with the proven docking design, assures a stable and effective downholder pressure. As well as being quick to configure to allow the engineer to focus on the design of blades and die. Class-A surface assembly and any quality requirement on hemming thickness and roll-in are all being considered by design simulations and maintained by a dedicated and experienced team of experts.

Robot based technology

The Table Top Hemming uses the same IRC5 robot based technology as other ABB Robots. This means that no special software or training is required. Robot programmers and maintenance personal can immediately begin to use the product with the same interface they are used to.

Offline programming in RobotStudio®

The hemming path can be quickly programmed offline in the ABB virtual simulation software, RobotStudio®. It can program the servo unit like a robot, and allows robot programming to be done on a PC in the office without shutting down production.

Advantages

- Table Top Hemming process is fast and accurate
- Space needed is less than Press Hemming
- Multiple materials can be hemmed together eg. Sheet metal + plastic.
- Optimum panel quality guaranteed through the hemming principle of the closed ring

Features:

- Flexible and precise process control;
- Excellent hemming quality
- Quick & easy system design and setup
- Low effort trial and commission
- Short cycle time
- Integration of additional operations possible
- Minimal maintenance
- Low noise operations

Specifications

- Maximum weight of hemming blade 25 kg per hemming unit
- Pre hemming force up to 38KN / stroke 27mm
- Final hemming force up to 100KN / stroke 100mm
- Hemming flange angle up to 105° (tested on 110 °)
- Hemming time - 4 seconds
- Cycle time (Hemming + docking + undocking) - 14 seconds

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- 03 Standard Hemming Unit
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- 04 Window Channel Hemming Unit

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| Specification | | |
|---------------------|----------------------------|----------|
| | Typical Dimensions (X Y Z) | Weight |
| Complete Station | 3.3m X 3m X 3.8m | 7,000 kg |
| Elevator | | 1,584 kg |
| Hemming Unit | | 338 kg |
| Window Channel Unit | | 510 kg |

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| Performance | |
|-----------------|---|
| Hemming Station | |
| Cycle time | 14 seconds (Docking + Hemming + UnDocking) |

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| Standard Hemming Unit | |
|-----------------------|--|
| Max Blade Weight | 25 kg |
| Pre Hemming Force | 38 kN |
| Pre Hemming Stroke | 27 mm |
| Final Hemming Force | 100 kN |
| Final Hemming Stroke | 100 mm |
| Hemming Time | 4 seconds |
| Hemming Flange Angle | Up to 105 degree for two step hemming. Up to 124 degree for three step hemming. |

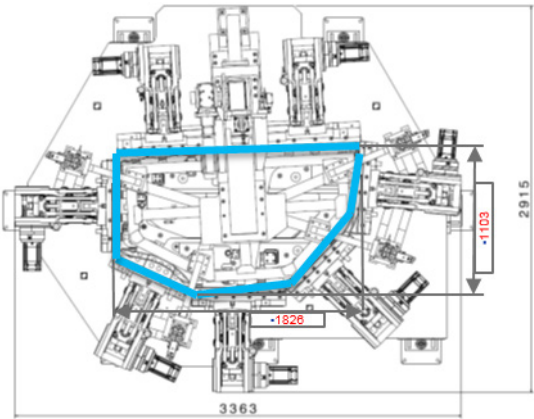
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| Window Channel Hemming Unit | |
|-----------------------------|-----------|
| Hemming Time | 8 seconds |
| Pre Hemming Stroke | 20 mm |
| Final Hemming Force | 90 kN |
| Final Hemming Stroke | 30 mm |

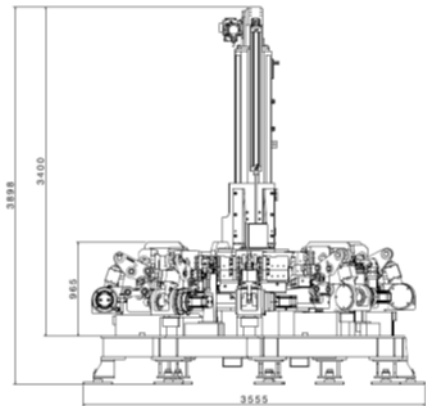
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| Elevator | |
|----------|-----------|
| Stroke | 1200 mm |
| Time | 4 seconds |

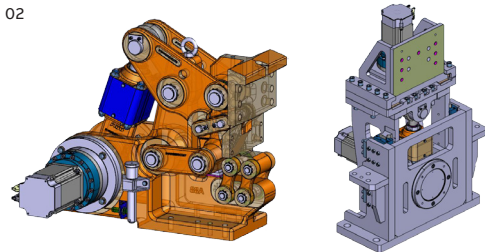
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