CONTROL EQUIPMENT FOR THE AUTOMOBILE WIRE INDUSTRY

Engineering and Industrial Systems DINEFER

CHECKER MODULES

INDEX

PNEUMATIC MODULES

- In every module described in the following pages, when you introduce a component, the micro switch of presence is activated, which makes the module's main electrovalve operate.

- All modules have a cavity and key code adequate to the component in order to guarantee that the module only accepts the correct component.

- All modules have a button to release the module when and if necessary. The button has a led that informs the user that the module will be necessary for controlling the harnesses and during the control phase identifies the anomalies detected.

- Dinefer has a qualified development team, which makes it possible to adapt the module's characteristics to the component specificities and to the client's needs.

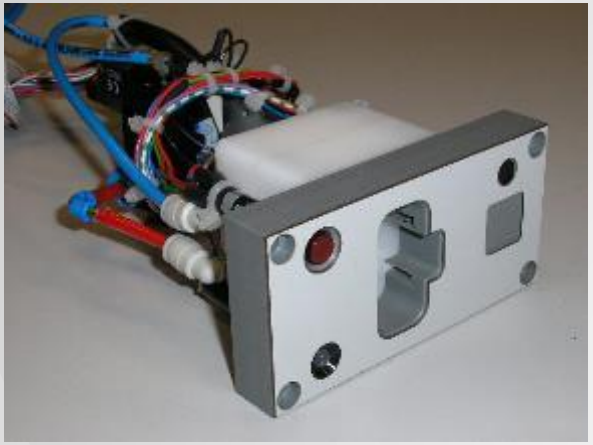
- In every module described it's possible to have the detection of different accessories, such as latch, cover, clip, ferrite, spacer, seal, gromet, *etc.*…

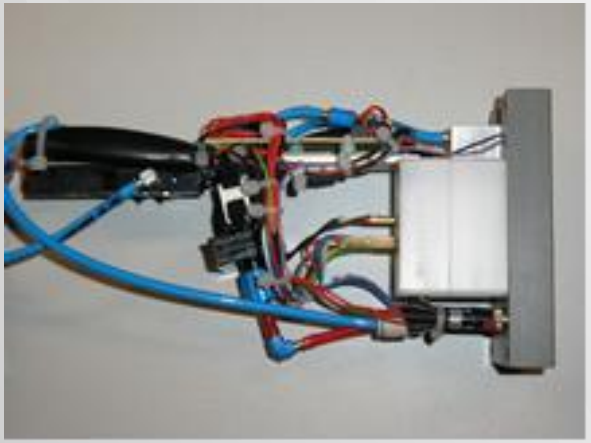
- The colour or contrast detection is also a possible option to be considered in all the types of modules, to assure a correct addition of accessories or connectors without key code on its shape.

- For all the different types of connector modules, Leak Test is also a possible option to be added.

- It is possible to have a "mixed module": in the same module, different types of test for the different terminals on connector. For example, Push back and Zero Force.

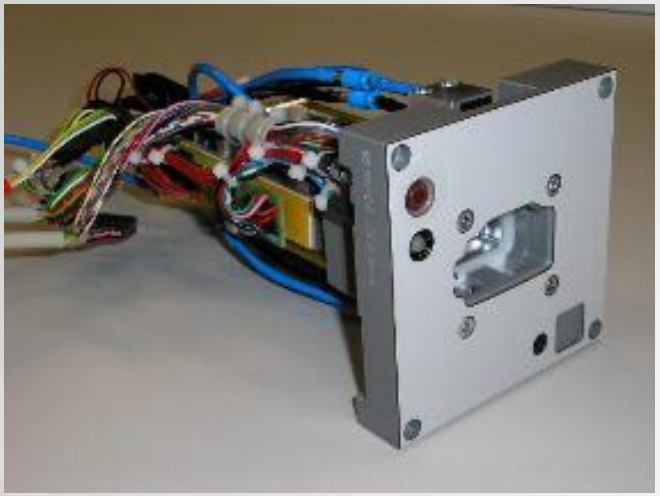
STANDARD MODULES

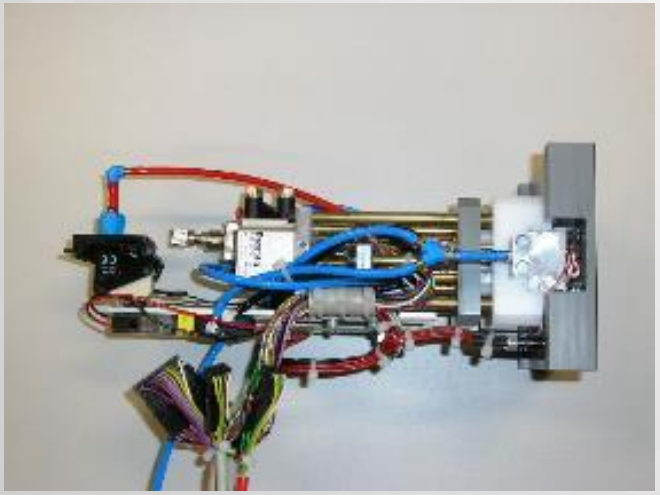




- The continuity probes are placed on a fix plate.
- In this type of module the electrovalve activates the catch that fixes the component adequately.
- The electrical contact is immediately established after the module's activation .

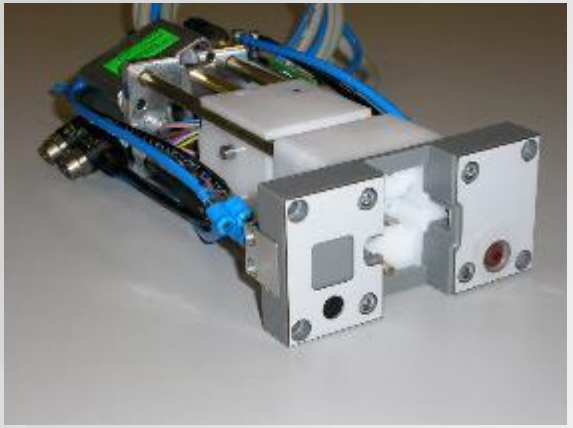
ZERO FORCE MODULES





- In this type of module the plate that contains the test probes is movable and it can be adjusted, so the height of the electrical contact can be regulated.
- The electrovalve activates the catch that fixes the component adequately. Simultaneously the mobile plate containing the test probes is activated, guaranteeing a better movement of the test probes towards the component.
- In this type of modules the operator just makes a small effort to introduce the component.
- The electrical contact is possible only after the component is adequately fixed, guaranteeing therefore more longevity to the test probes.

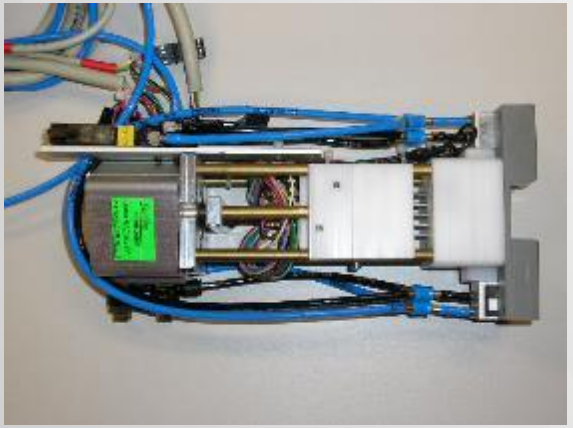
PUSHBACK MODULES



- This type of module is adequate to check correct terminals fixation on connectors without spacer.

- In this type of module the electrovalve activates the catch that adequately fixes the component and the set in which the pushback probes are applied.

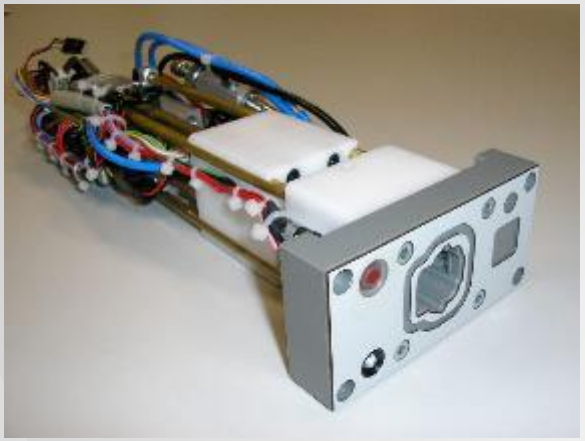
- The pushback probes are made of material resistant to abrasion.

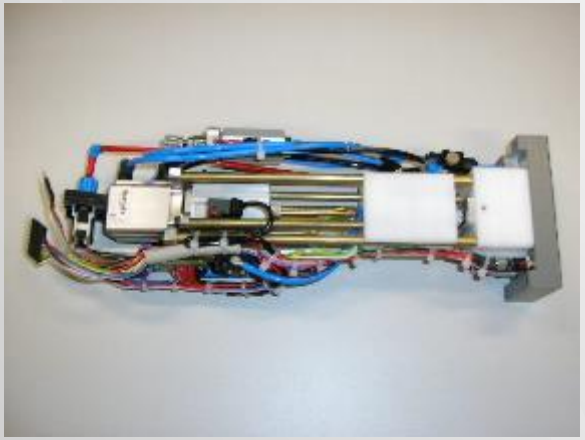


- In the set where the pushback probes are placed in, there is a drawer, which can be easily removed, enabling a quick replacement of the springs and pushback probes.

- As the set where the pushback probes are placed in is movable, the operator makes a small effort to introduce the component. The electrical contact is possible only after the component is adequately fixed, guaranteeing therefore more longevity to the pushback probes.

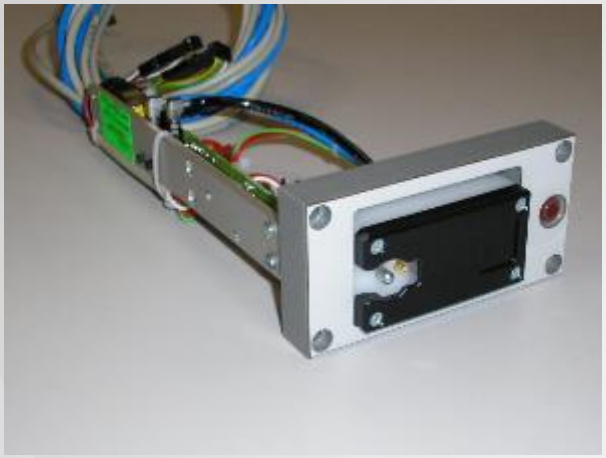
SICMA MODULES

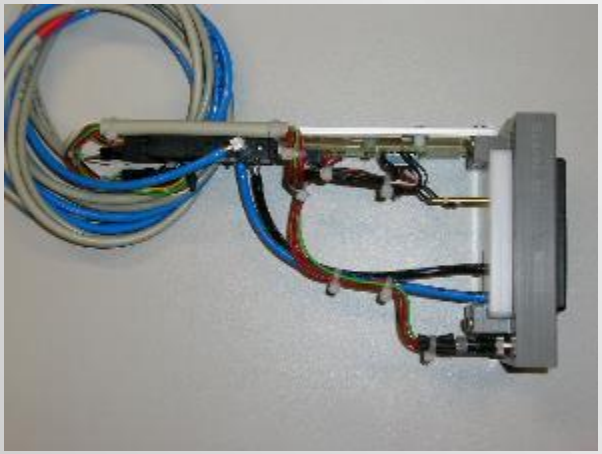




- This type of module is adequate to check correct terminals fixation on connectors with spacer.
- In this type of module the electrovalve activates the catch that adequately fixes the component and the set in which the pushback probes are placed in, working similarly and with the same features of the described for the pushback modules.
- The module guarantees, with a specific detection, that the spacer of the component is open while making the pushback. It also makes and detects the closing of the component's spacer after the electrical test has been considered ok.

BODY CLIP MODULES

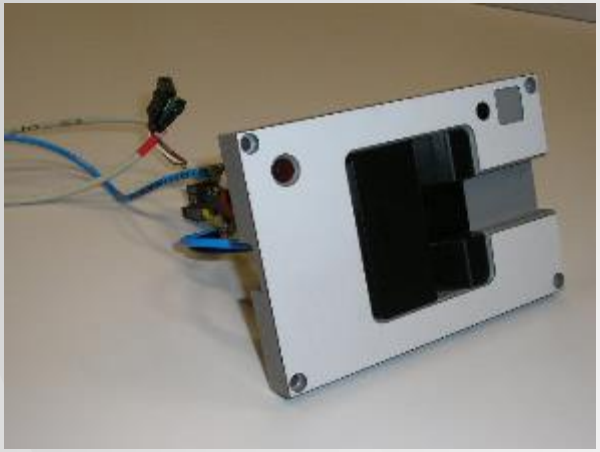


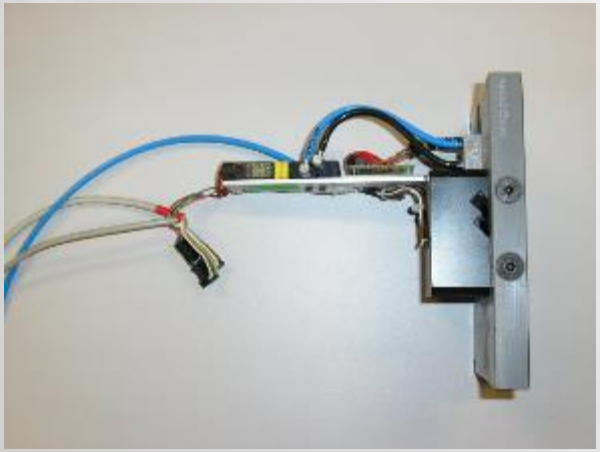


- In this type of module, the electrovalve activates the catch that adequately fixes the body clip.

- The module has a micro switch that only detects the body clip if it’s the correct one.

GROMMET MODULES

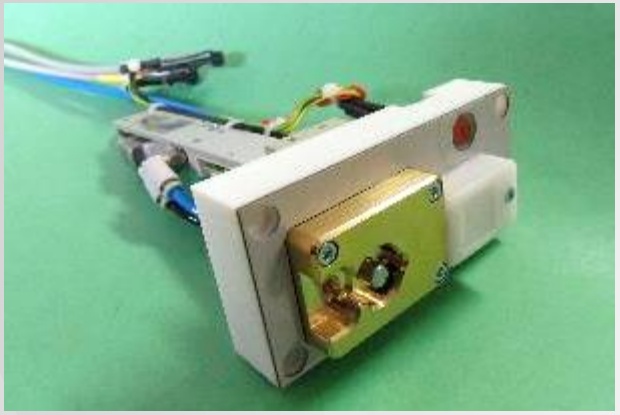


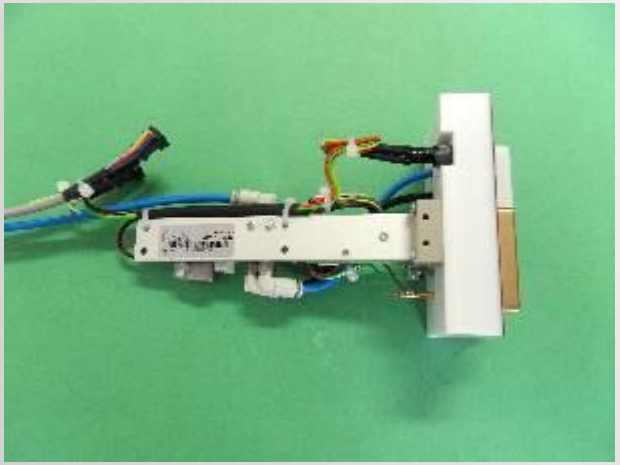


- In this type of module the electrovalve activates the catch that adequately fixes the grommet.

- The module has a micro switch that detects the grommet if it’s the correct one.

RING TERMINAL MODULES





- In this type of module the electrovalve activates the catch that adequately fixes the ring terminal.
- The outline of the ring terminal is made of a material resistant to abrasion, guaranteeing that no bigger external and no smaller internal diameters ring terminals are accepted.
- It is possible to add an option to guarantee external and internal diameters.
- The Shrink Sleeve detection can be considered in ring terminal modules.
- The ring terminal is horizontally inserted in the module (according to the harness natural axis) in order to avoid its damage.

OPTIONS

TEST PROBES EXAMPLES

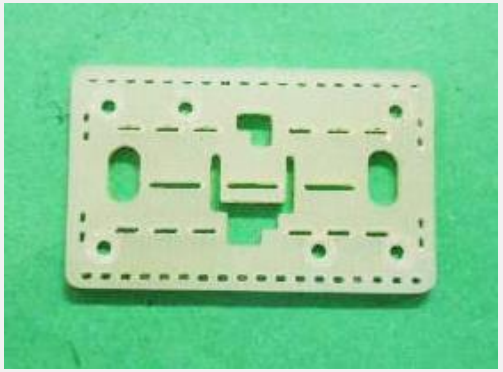

STANDARD PROBES

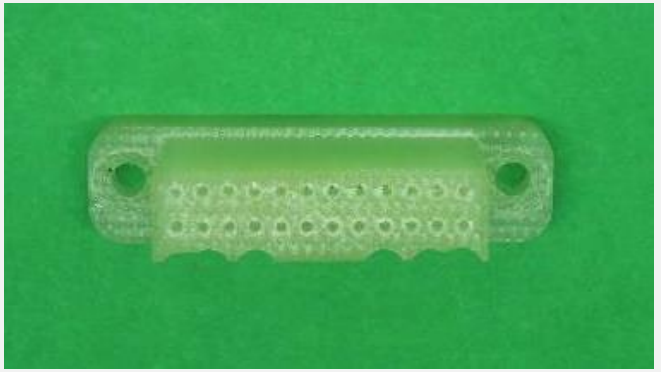

COLLAR PINS


PUSHBACK PROBES
VF 100


SPECIAL PINS
FOR NMQS TERMINAL

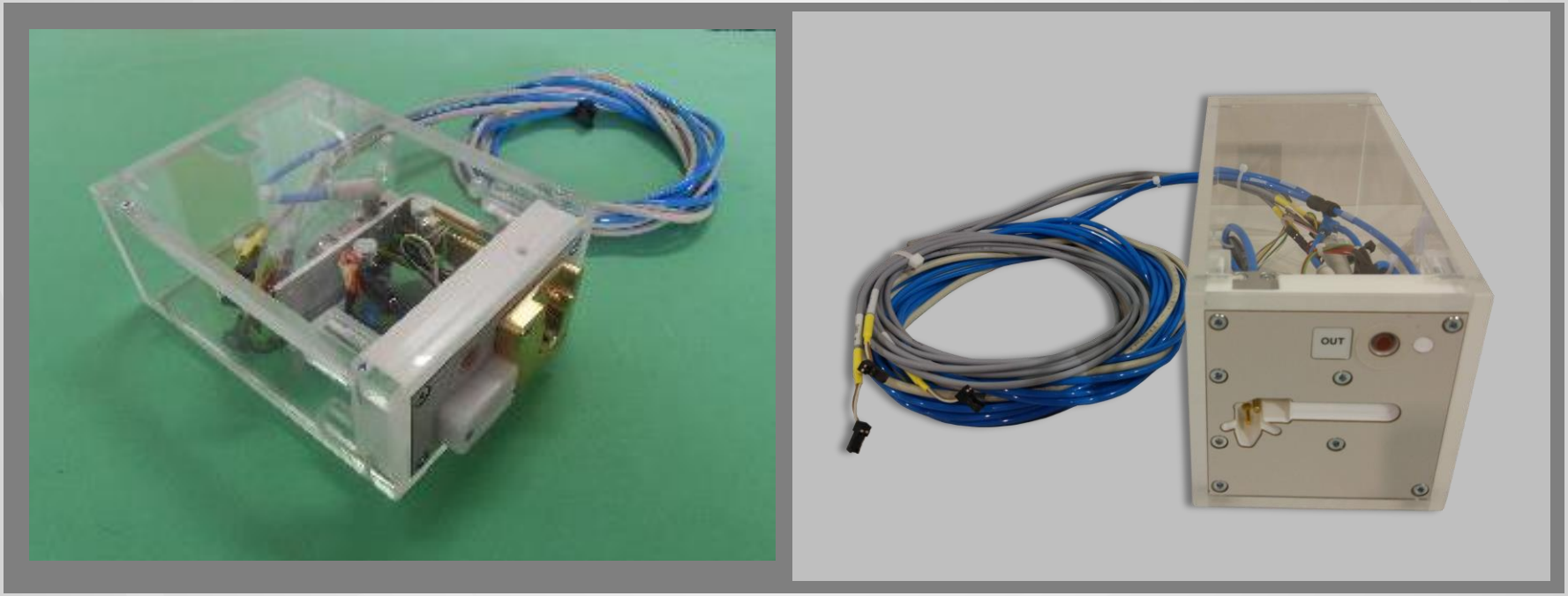
TERMINAL ALIGMENT PLATES





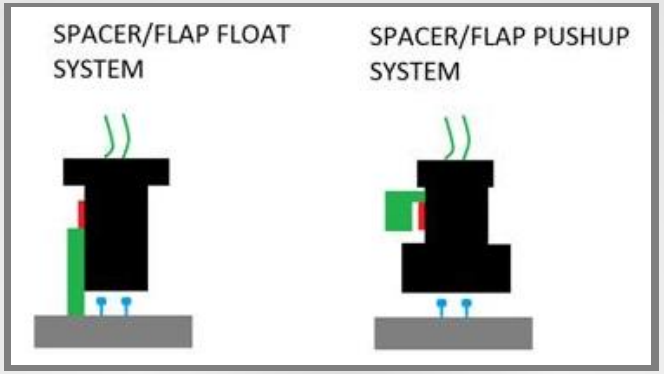
PLEXIGLAS PROTECTION FOR MODULES

Examples



- This kind of protections are developed to allow assembling of test modules on wood tables or over the electrical test tables when a special working way or a special way of insertion is necessary.

SPACER FLAP FLOAT - SPACER FLAP PUSH UP

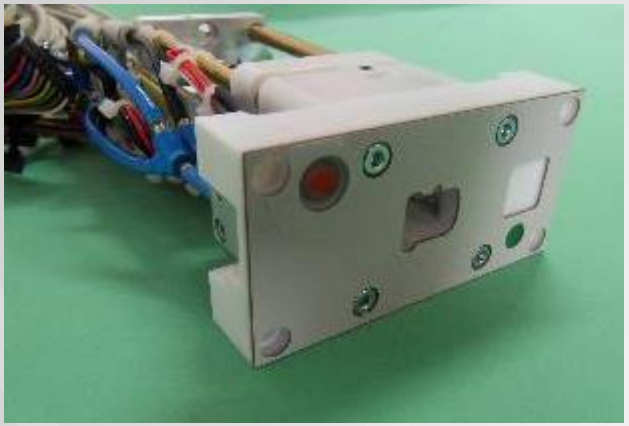


- There are two main precision systems to detect the partly open spacers:
  - **Spacer Flap Float**
  - **Spacer Flap Pushup**

- The selection of the type of system to be used need to be according the connector to be tested (connector has or not material that avoids a direct vertical contact with the Spacer).

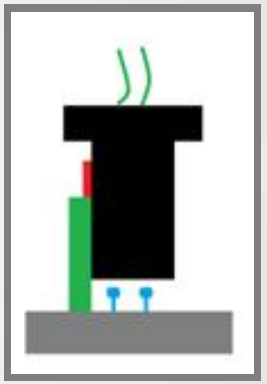
Note: To decrease the gaps between the pieces and improve the precision, there are ball screws that "force and push" the piece that guarantees the spacer closed to the connector.

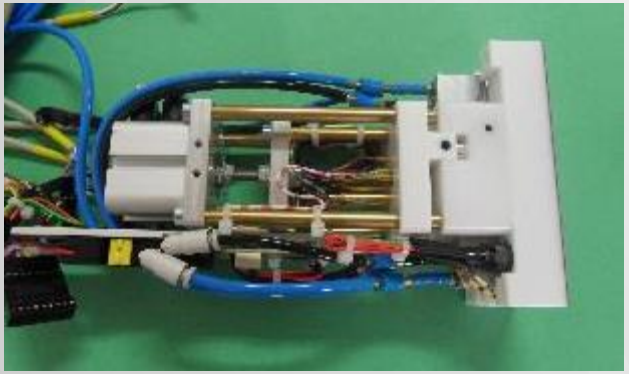
SPACER FLAP FLOAT



Main functionality – Spacer flap Float system:

The piece that guarantees the spacer closed (green) is activated with the moving plate. The moving plate goes up.





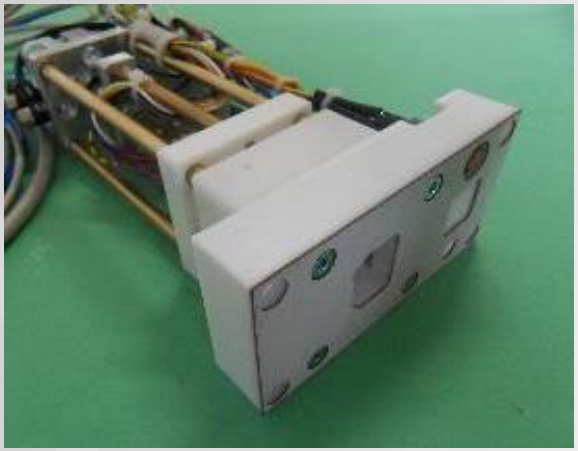
Spacer Open

- The piece that guarantees the spacer closed (green) due to the spacer open is blocked and the pins don't get the testing position – no contact.

Spacer Closed

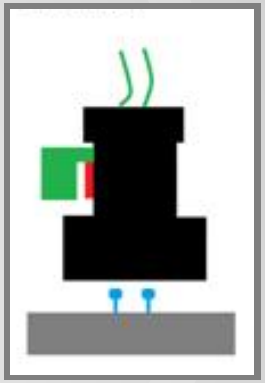
- The piece that guarantees the spacer closed (green) pass the closed spacer and the pins get the testing position – contact ok.

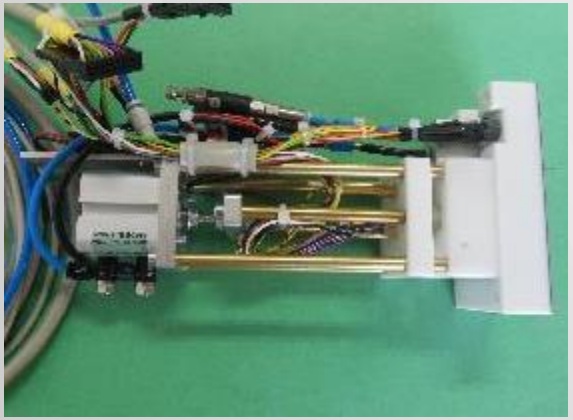
SPACER FLAP PUSH UP



Main functionality – Spacer flap Pushup system:

The piece that guarantees the spacer closed (green) is activated with the moving plate. The moving plate goes up.





Spacer Open

- The catching device (green) is blocked by the open spacer and the connector cannot go to the testing position (top);
- The moving plate is blocked and there is no contact;
- If NOK the situation is detected.

Spacer closed

- The catching device (green) slides in the spacer closed and the connector goes to the testing position (top);
- The moving plate can go up and make contacts.

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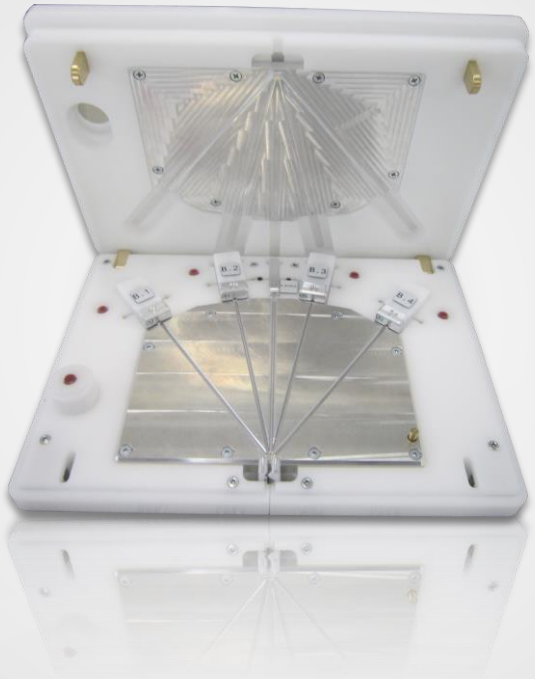

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