ModulMaster
WELDING DEVICE WITH INTELLIGENT SENSOR TECHNOLOGY
NEW!
TOP PERFORMANCE IN A NUTSHELL.

MORE EFFICIENCY, LESS WASTE.

The ModulMaster from DOCERAM is setting standards in terms of quality, process reliability and efficiency. The new welding device is compatible with almost any projection welding machine in the automotive industry and can be precisely adapted to the respective performance requirements thanks to the modular design. With the new design of centring pins, centring sleeves and change electrodes, extremely short retooling times can be achieved with the ModulMaster.

MAJOR ADVANTAGES IN A CONFINED SPACE.

- Completely retractable centring pin
- Safe and fast change of components
- Wide range of other handling options

Fast retooling
- A pin mounting for centring pin sizes for weld nuts ranging from M4 to M12 and 7/16”
- Mounting with a stainless steel union nut

Improved change electrode
- Large surface and contact area
- Including marking for post-processing

Optimised operating safety
- Effective water cooling directly on the device to minimise wear on the change electrode
- High-quality metal hose connections for compressed air and water cooling

More stable function
- Slide bearing with collar and circlip
- Extended maintenance intervals

Quality control before welding
- Sensor-controlled real-time detection of the pin position
- Interface for secure connectivity to an existing PLC

Higher load capacity
- Compact size 45 x 45 x 140 mm
- Large piston diameter 32 mm

INTELLIGENT SENSOR TECHNOLOGY.

INVERTED NUTS ARE A THING OF THE PAST.

The new DOCERAM welding device enables reliable quality control with sensor-controlled real-time detection of the centring pin position. The integrable sensors are connected through an interface to an existing PLC for secure connectivity.

The top model N300 is equipped with sensor-controlled detection of the pin position. The outstanding feature: it enables detection of the nuts and identifies a variety of potential production errors before the welding process is triggered: from inverted or incorrect nuts to incorrect or missing components and/or sheet metal parts.

FIGURE AT A SCALE OF 1:1

Nut is seated correctly

Nut is inverted
**ModulMaster: MASTER OF MODULARITY**

The modular concept makes the ModulMaster extremely versatile. On the basis of three different cylinder housings and four connection plate types, a large number of device variants can be realised and precisely adapted to the respective production requirements.

The ModulMaster N100 is the standard DOCERAM welding device. The ModulMaster N200 also offers sensor technology to detect the position of the centring pin. The top model ModulMaster N300 has a position measuring system with an enhanced sensor function for the detection of nuts. In addition, the ModulMaster S300 constitutes a modified model for welding screws and bolts. All ModulMaster models have effective water cooling.

**INTELLIGENT: A WELL THOUGHT-OUT DESIGN.**

The stainless steel union nut can be loosened quickly and safely with the hook wrench supplied.

Retooling now in three simple steps:
1. Loosen the union nut with the hook wrench
2. Replace the centring pin/centring sleeve and change electrode
3. Tighten the union nut by hand without the hook wrench

Thanks to the new design, centring pins / centring sleeves in all available sizes can be used with one and the same mounting. It is quick and easy to change over from one centring pin or centring sleeve size to another without having to disassemble the device.

A choice of four different connection plates are available for use in all common projection welding machines.

The new DOCERAM ModulMaster comprises a cylinder housing with connection plate, a change electrode as well as a pneumatically actuated pull centring pin or a centring sleeve made of Cerazur® or Volcera® high-performance ceramic.

The pin and sleeve are fully retracted, thus permitting a wide range of other component handling options.

DOCERAM centring pins achieve a service life 40 times longer than steel centring pins.
ModulMaster N300

AUTOMATICALLY FLAWLESS WELDING OF PROJECTION WELD NUTS

The top model brings the entire spectrum of the new DOCERAM welding device into the production process. The sensor technology integrated into the ModulMaster N300 offers enhanced functionality through a precise position measuring system that detects a wide range of possible production errors in real-time.

The sensor unit is connected to an existing PLC. The welding process is only triggered if the specified parameters are correct.

The following process errors, amongst others, can be avoided with the ModulMaster N300 sensor technology.

**Queried parameters are correct**
- Nut is inverted
- Nut is too small
- Nut is too large
- Nut is of poor quality: no projections
- Nut is missing

**Sheet thickness**
- Sheet thickness is too thin
- Sheet thickness is too thick
- Sheet is missing
- Sheet is incorrectly positioned
- Top electrode is without bore

**Welding screw**
- Welding screw is missing
- Welding screw is too small
- Welding screw is too long
- Welding screw is of poor quality: no projections

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ModulMaster S300

THE EXPERT FOR WELDING BOLTS AND SCREWS

The advantages of the new ModulMaster can also be exploited when welding screws and bolts. The ModulMaster S300 is equipped with the newly developed DOCERAM centring sleeve that was specially designed for this, made of Volcera® high-performance ceramic with the appropriate change electrode.

The following process errors, amongst others, can be avoided with the ModulMaster S300 sensor technology.

**Queried parameters are correct**
- Welding screw is too short
- Welding screw is too long
- Welding screw is of poor quality: no projections

**Welding screw**
- Welding screw is missing
- Welding screw is too small
- Welding screw is too long
- Welding screw is of poor quality: no projections
ModulMaster N200
GREATER CONVENIENCE WHEN WELDING PROJECTION WELD NUTS

The ModulMaster N200 is equipped with a sensor that detects the start and end position of the centring pin. Consequently, this DOCERAM welding device ensures greater production safety for a wide range of common projection welding applications.

The sensor unit detects whether the centring pin is extended or retracted. The release signal for feeding the nut and triggering the welding process is given as soon as the centring pin is properly extended. The sensor technology gives the signal to remove the component as soon as the pin is in the lower position after the welding process.

ModulMaster N100
THE NEW STANDARD FOR WELDING PROJECTION WELD NUTS

The standard version of the ModulMaster offers the same advantages of the new DOCERAM welding device with the exception of the sensor technology features. The well thought-out design enables fast retooling and the water cooling ensures a higher load capacity and longer service life for the change electrode. In addition, the completely retractable centring pin on the ModulMaster N100, made of Cerazur® high-performance ceramic, ensures safe handling of the components in the production process.
INCLUDING: THE APPROPRIATE ACCESSORIES.

The hook wrench for the union nut, the open-end wrench for the piston rod attachment and high-quality metal hose connections for compressed air and water cooling are included in the scope of delivery of your ModulMaster.

CREATE YOUR ModulMaster WELDING DEVICE IN FIVE STEPS.

1. Select the device variant: N100, N200, N300 or S300 (see page 4)

2. Select the connection plate mounting

   - Mounting: Ø 28 mm, shaft length: 40 mm
   - Mounting: MK3, shaft length: 30 mm
   - Mounting: with M18 x 1.5 thread, length 14 mm
   - Mounting: with four bores for M6 screws

3. Specify the nut or screw size (M4 to M12, 7/16")

4. Specify the sheet hole diameter

5. Select the DOCERAM centring pin/centring sleeve:
   - Short, long or with a collar
   - Cerazur® or Volcera® high-performance ceramic

Our team of consultants for technical applications will be happy to provide you with detailed information on the new ModulMaster welding device. Please call us or write to us!

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