



# **VERO-S NSE-E mini 90**

## **Electromechanical quick-change pallet system**

# Electromechanical quick-change pallet module with 24 V technology as an energy-efficient alternative to pneumatic modules

With its 24 V technology, which is harmless to humans, the VERO-S NSE-E mini 90 integrates seamlessly into SCHUNK's portfolio of fluid-free clamping solutions. The mechatronic modules are designed as a 1:1 replacement for pneumatic components – without compromising on performance or precision. The brushless DC motor offers an impressive and extremely low power consumption of only approx. 30 W when locking and unlocking – making the module an energy-efficient alternative to conventional pneumatic systems. Due to optional monitoring of the clamping slide position, the fluid-free module is suitable for use in manufacturing environments as well as for all other applications where parts require precise clamping at the first attempt.

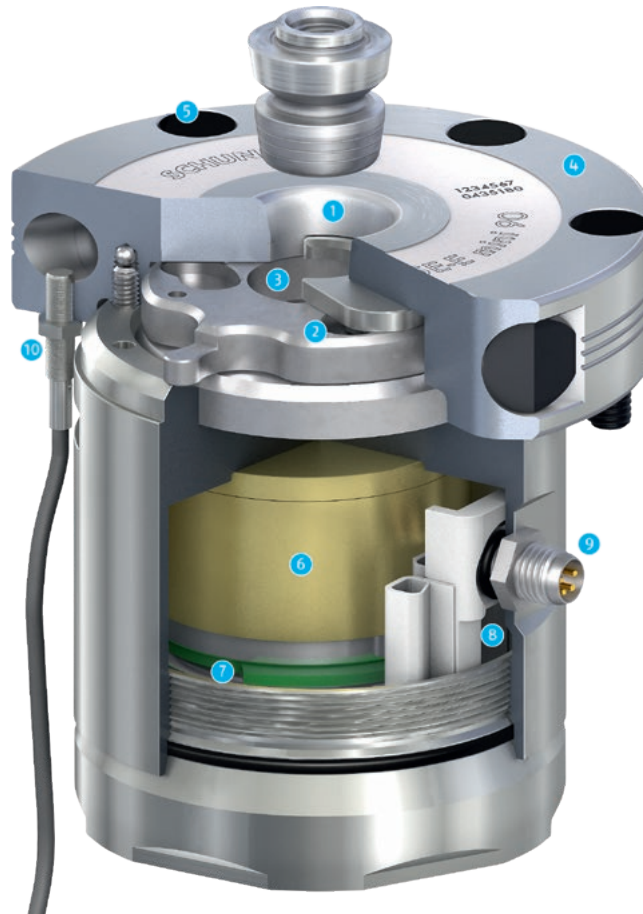


## Advantages – Your benefits

- + No expensive compressed air required**  
Considerable cost savings
- + Actuators and electronics are integrated in the quick-change pallet module**  
Signal processing is done exclusively in the clamping device
- + All modules are operated with 24 V direct voltage**  
A powerful clamping device but still harmless for humans
- + Inductive clamping slide monitoring**  
For the statuses "Open" and "Clamped with clamping pin"
- + Positioning via short taper**  
Very easy joining process at a repeat accuracy of < 0.005 mm
- + Patented dual stroke system**  
Therefore extremely rigid clamping without vibrations
- + SCHUNK modular system**  
Can be 100% integrated into the extensive SCHUNK NSE mini modular system
- + The modules are corrosion-free and completely sealed**  
Long life time and maximum process reliability
- + Form-fit, self-retained locking**  
The full pull-down force is maintained even in the event of a power failure

## Function NSE-E mini 90

The clamping procedure is carried out by an electric motor, which transmits the force to a drive ring via a gear. The force transmission is carried out by a patented drive kinematics which transmits the drive force into a maximum pull-down force at the clamping pin. To actuate the module, a direct current voltage of 24 V is required.



- 1 High-precision short taper centering**  
Ensures  $\mu$ -precise connection
- 2 Patented dual stroke system**  
The patented dual stroke system between drive ring and clamping slide enables extremely high pull-down forces
- 3 Large contact surfaces**  
For transmitting the pull-down and holding forces
- 4 Large flat surface**  
For best support and highest rigidity
- 5 Cover plugs for mounting screws**  
Therefore no accumulation of coolant or chips possible
- 6 Gear**  
For increasing the engine torque
- 7 Electric motor**  
For generating the required torque for the clamping and opening procedure
- 8 Integrated electronics**  
For transmitting power and control signals
- 9 4-pin connection**  
For simple connection of the module to the machine control system
- 10 Inductive proximity switch**  
For monitoring clamping positions "opened" and "closed"

### Centering via short taper

The precise short taper centering combined with the form-fit and self-retaining locking characterizes the SCHUNK quick-change pallet system.



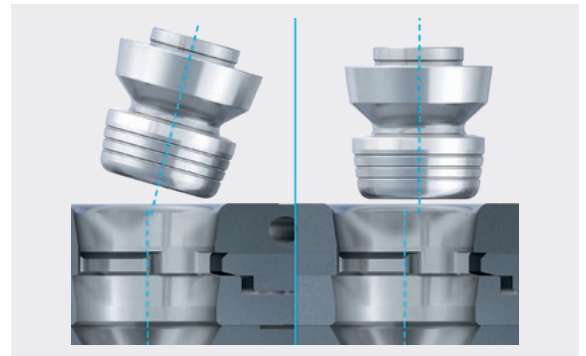
### Locking via clamping slides

Large contact surfaces between clamping slides and clamping pin ensure a low surface pressure, resulting in a long service life.



### Easy joining

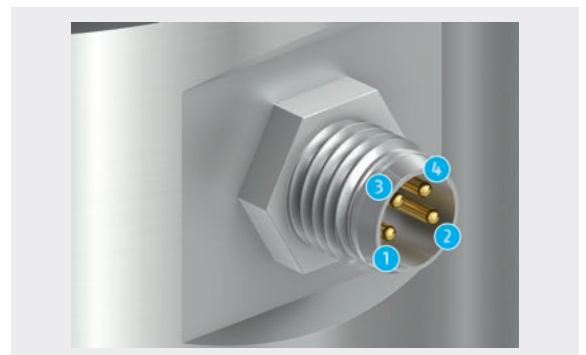
Insertion radii on the clamping pin enable quick and safe joining even at a tilt angle and in case of eccentricity.  
Benefit: More user friendly for manual and automatic loading.



### Control of the quick-change pallet system

The module is controlled via a 4-pin connection on the side. Using 24 V direct voltage, a brushless DC motor is actuated, which in turn operates the module via a gear.  
Benefit: The module has fluid-free actuation.

- ❶ + 24V
- ❷ Mass
- ❸ Open module
- ❹ Close module



### Monitoring of the clamping slide position

For the IN-variants, the position of the clamping slide may be monitored via two inductive proximity switches (module open – closed). This monitoring ensures maximum process reliability with daily use of the NSE-E mini 90 modules.



### Made of stainless steel – long service life

All functional components are made of hardened stainless steel.



## Electromechanical quick-change pallet module

Actuation via 4-PIN connection on the side

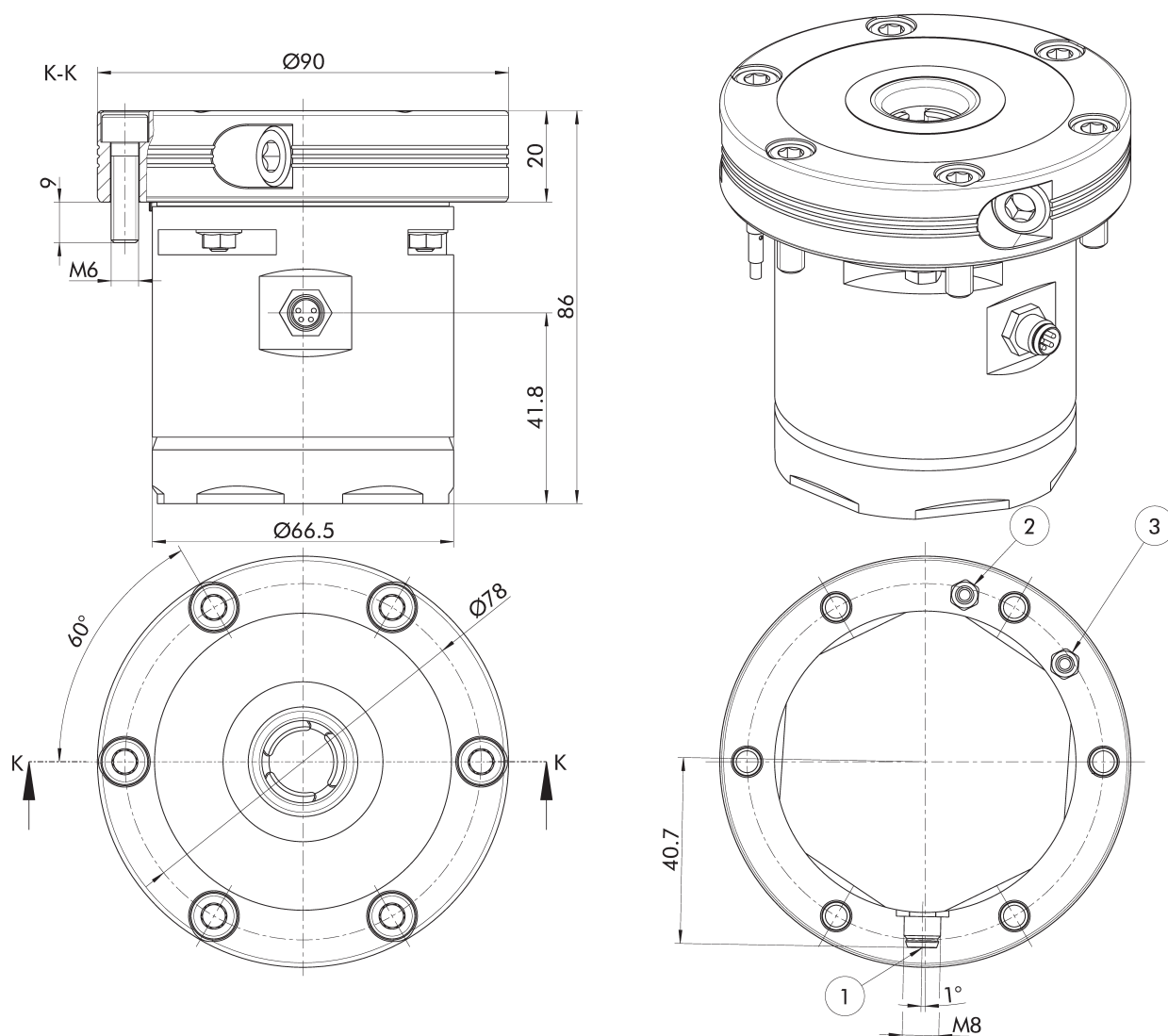
Monitoring the clamping slide positions via inductive proximity switches

### Scope of delivery

Clamping module, mounting screws, cover caps, connecting cable, inductive proximity switches, operating manual; without clamping pins

### Technical data

| Description      | ID      | Pull-down force<br>[kN] | Operating voltage<br>[V DC] | Cycle time<br>[s] | Weight<br>[kg] |
|------------------|---------|-------------------------|-----------------------------|-------------------|----------------|
| NSE-E mini 90-IN | 1313264 | 1.5                     | 24                          | 1                 | 1.7            |



Subject to technical changes.

- ① 4-PIN connection for controlling the module
- ② Monitoring module opened via inductive proximity switch
- ③ Monitoring module closed via inductive proximity switch

## Accessories

### Clamping pins SPx mini

Clamping pin for positive connection with NSE mini clamping modules.



| Suitable for     | Description | ID                      |
|------------------|-------------|-------------------------|
| NSE-E mini 90-IN | SPA mini 20 | <a href="#">0435610</a> |
| NSE-E mini 90-IN | SPB mini 20 | <a href="#">0435620</a> |
| NSE-E mini 90-IN | SPC mini 20 | <a href="#">0435630</a> |

### Clamping pin extension

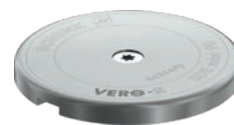
For lifting the workpiece from the machine table, and for improving the accessibility of the machine spindle.



| Suitable for     | Description         | ID                      |
|------------------|---------------------|-------------------------|
| NSE-E mini 90-IN | SP-VL mini 30-6-SPA | <a href="#">0435640</a> |
| NSE-E mini 90-IN | SP-VL mini 60-6-SPA | <a href="#">0435650</a> |

### Protection covers

Used to close the changing interface and to cover the contact surface.



| Suitable for     | Description | ID                      |
|------------------|-------------|-------------------------|
| NSE-E mini 90-IN | SDE mini 90 | <a href="#">0435670</a> |

### Protection covers

For closing the changing interface.



| Suitable for     | Description | ID                      |
|------------------|-------------|-------------------------|
| NSE-E mini 90-IN | SDE mini 20 | <a href="#">0435660</a> |

### Cover caps

Used to cover the mounting screws and to avoid the accumulation of chips.



| Suitable for     | Description | ID                      |
|------------------|-------------|-------------------------|
| NSE-E mini 90-IN | ADK M6-SW5  | <a href="#">9985503</a> |



**H.-D. SCHUNK GmbH & Co.  
Spanntechnik KG**

Lothringer Str. 23  
D-88512 Mengen  
Tel. +49-7572-7614-1300  
Fax +49-7572-7614-1039  
CMM@de.schunk.com  
schunk.com