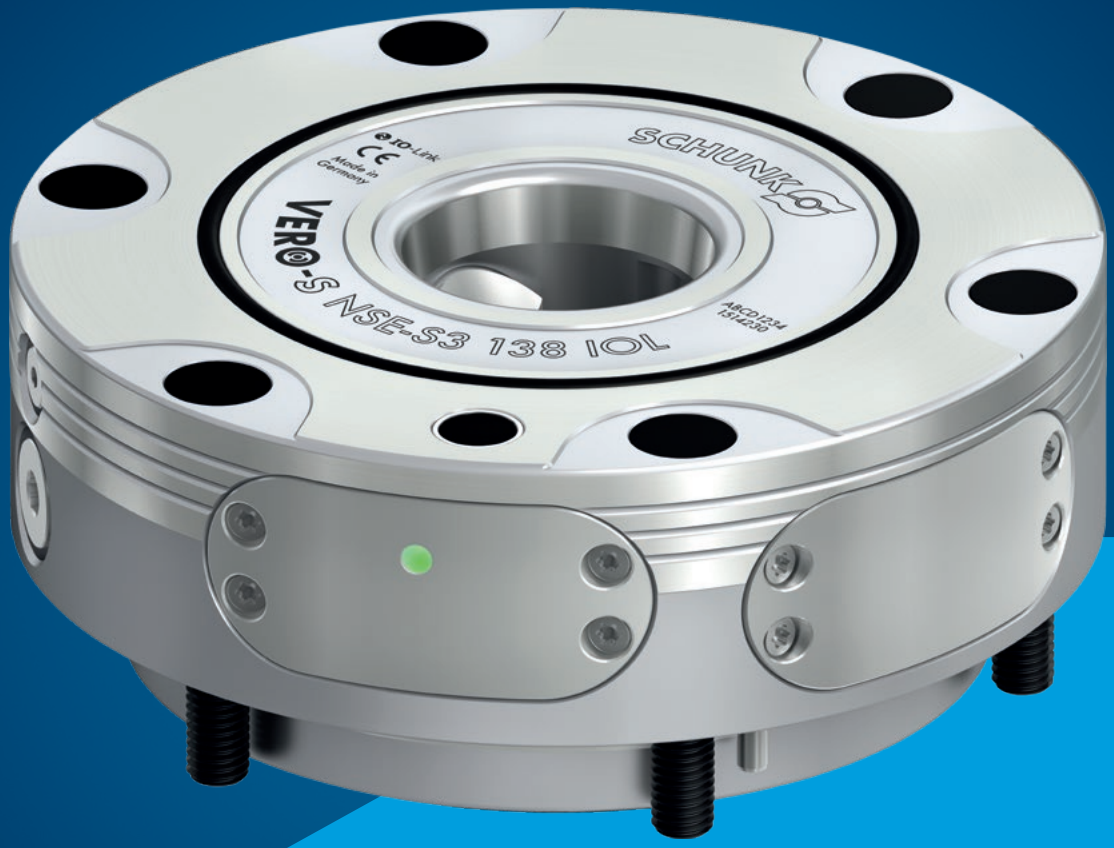
SCHUNK



VERO-S NSE-S3 138 IOL

Sensory quick-change pallet system based on NSE3 138

Hand in hand for tomorrow

Pneumatically actuated premium quick-change pallet modules with fully integrated sensor system and IO-Link interface with identical dimensions

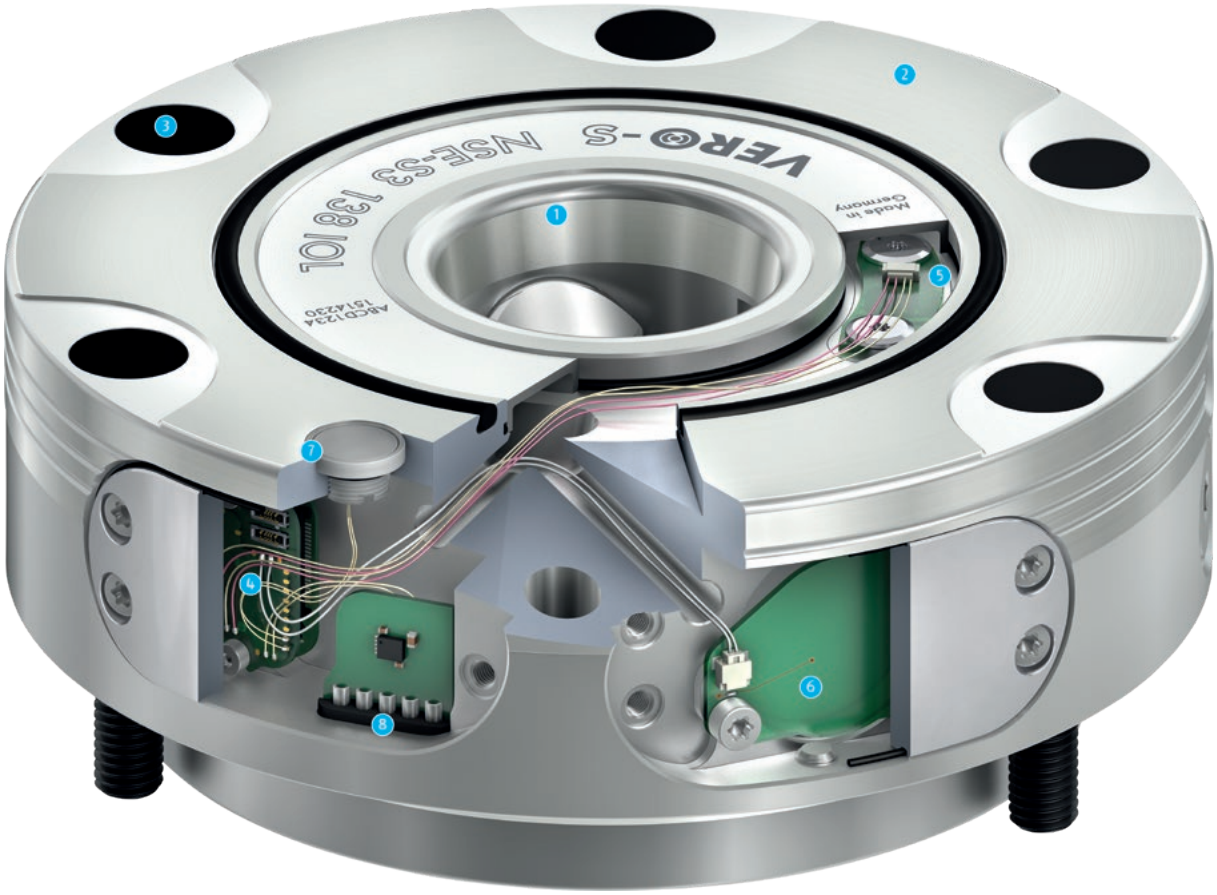
The VERO-S NSE3 138 premium modules have formed the basis for the VERO-S modular system from SCHUNK for years. With the new VERO-S NSE-S3 IOL series, SCHUNK is going one step further: while retaining the same compact dimensions, the modules are now equipped with a fully integrated sensor system. With the help of this sensor system, the clamping slide positions, the pallet presence, and the pressure of the turbo function are recorded in real time – and transmitted directly to the machine control via the IO-Link interface. The result: maximum process reliability, end-to-end transparency and smart automation – all in one compact, high-performance module.

Advantages – Your benefits

- **All features from the NSE3 138 series remain unchanged**
  Tried-and-tested VERO-S technology, ideally suited for automation applications
- **Integrated monitoring of the clamping slide position**
  For the statuses "Open", "Clamped with clamping pin" and "Closed without clamping pin"
- **Integrated monitoring of pallet presence**
  Possible via an inductive proximity sensor
- **Integrated pressure sensor**
  To clearly detect whether the turbo function is active
- **Electronics integrated in the clamping module**
  Signal processing takes place exclusively in the clamping device, with identical dimensions to the standard version
- **Signal transmission via IO-Link**
  For easy integration in commonly used fieldbus systems
- **Maximum process reliability**
  Thanks to various query options and transmission of error messages
- **Optional cone seal**
  For protecting the change interface from coolant, dust, and chips
- **A consistent clamping pin size for all NSE3 modules and 100% compatible with VERO-S NSE plus modules**
  Modules can be seamlessly integrated into existing processes
- **Form-fit, self-retained locking**
  Full pull-down force is maintained even in the event of a pressure drop
- **The modules are corrosion-free and completely sealed**
  Long life time and maximum process reliability

Function of NSE-S3 138 IOL

The clamping procedure for the module is carried out using an axial piston with an integrated spring assembly and patented drive kinematics. Clamping is carried out by two clamping slides and is self-retained. The module is opened pneumatically with a system pressure of 6 bar. The clamping slide positions, pallet presence and turbo function can be detected via the fully integrated electronic components. Thanks to the IO-Link interface, this information can then be passed on to the machine control.



1. **High-precision short taper centering**
   Ensures µ-precise connection
2. **Large flat surface**
   For best support and highest rigidity
3. **Lower-lying countersunk screws with cover plugs**
   For the easiest possible cleaning of the flat surface and to prevent the accumulation of coolant and chips
4. **Integrated electronics**
   Signal processing is done exclusively in the clamping device
5. **Pressure sensor**
   To clearly detect whether the turbo function is active
6. **Inductive analog sensor**
   For the statuses "Open", "Clamped with clamping pin" and "Closed without clamping pin"
7. **Inductive proximity switch**
   For monitoring of the pallet presence
8. **Spring contacts**
   To the electrical energy and signal transmission from the floor

Sensory quick-change pallet module

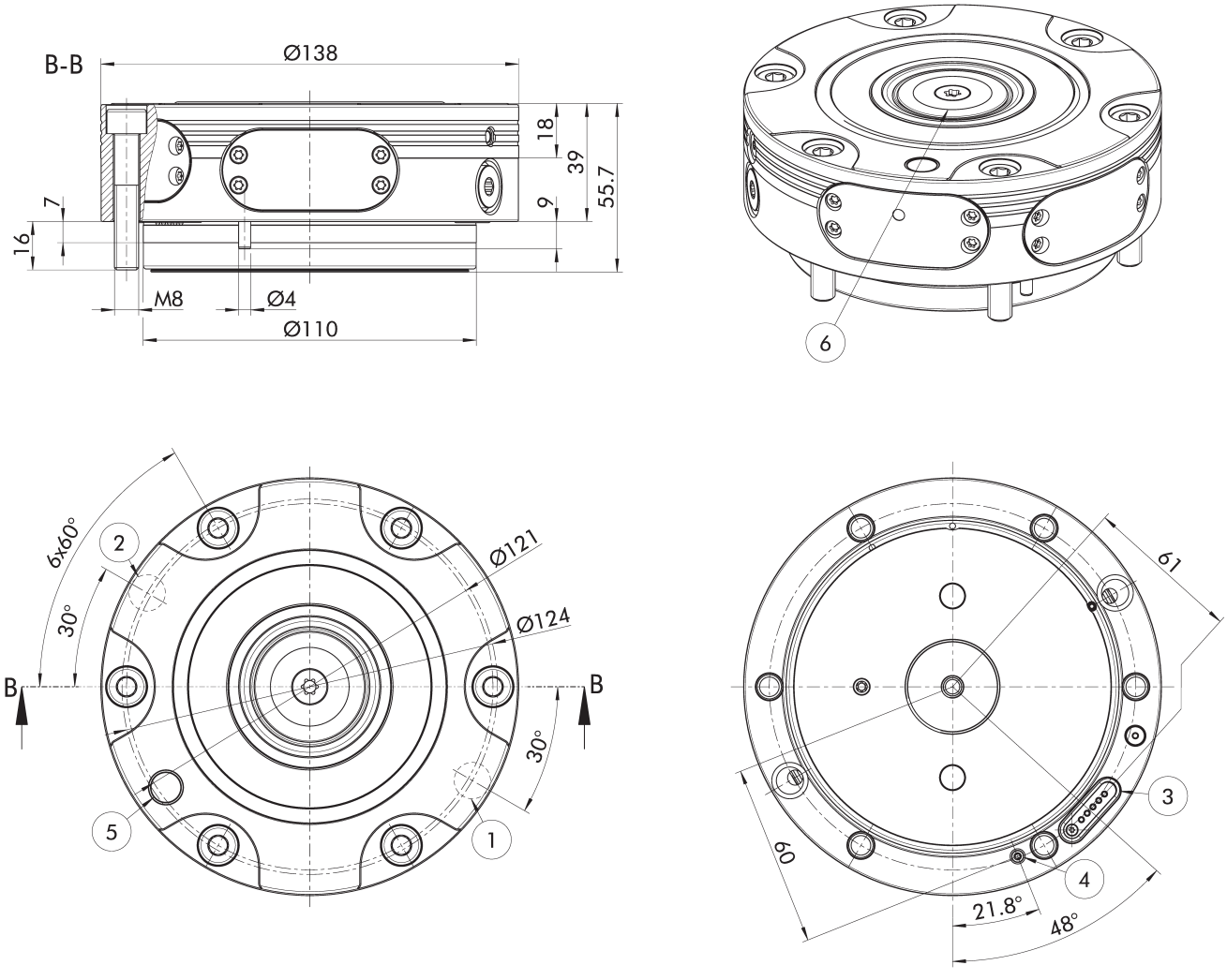
Pneumatically actuated quick-change pallet module
Integrated monitoring of clamping slide positions, pallet presence and the pressure in the turbo chamber via IO-Link

Scope of delivery

Clamping module, mounting screws, O-rings, cover plugs, operating manual; without clamping pins, without electrical fixed contact interface

Technical data

Description	ID	Pull-down force	Pull-down force with turbo	Unlocking pressure	Repeat accuracy	Operating voltage	Weight
		[kN]	[kN]	[bar]	[mm]	[V DC]	[kg]
NSE-S3 138 IOL	*1514230*	8	28	6	< 0.005	24	4.1



Subject to technical changes.

① Unlocking connection
② Turbo connection
③ IO-Link interface via spring contacts
④ Positioning pin for correct module alignment
⑤ Proximity sensor for pallet presence monitoring
⑥ Optional: Cone seal

Sensory quick-change pallet module

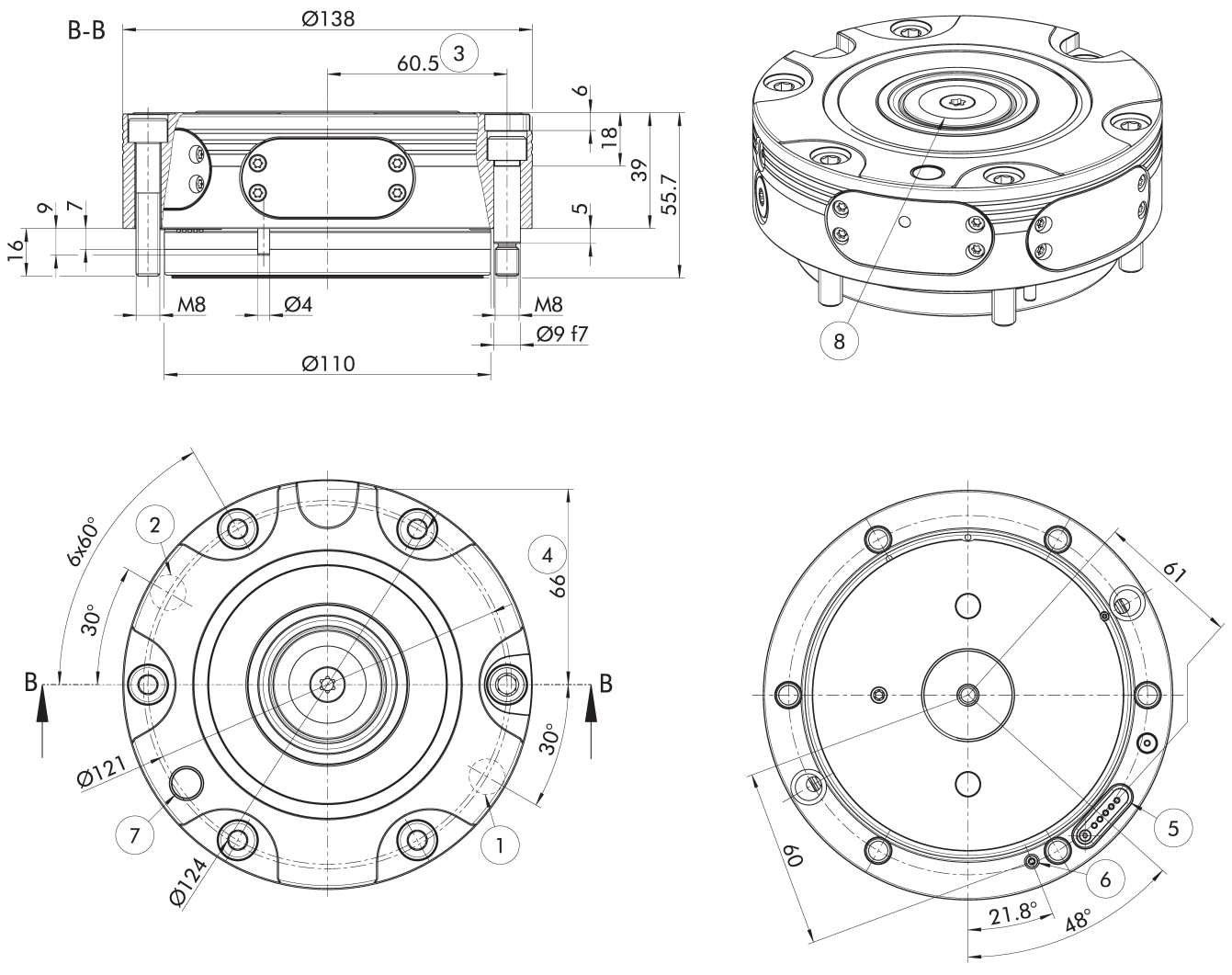
Pneumatically actuated quick-change pallet module with anti-rotation protection V1
Integrated monitoring of clamping slide positions, pallet presence and the pressure in the turbo chamber via IO-Link

Scope of delivery

Clamping module, mounting screws, O-rings, cover plugs, operating manual; without clamping pins, without electrical fixed contact interface

Technical data

Description	ID	Pull-down force	Pull-down force with turbo	Unlocking pressure	Repeat accuracy	Operating voltage	Weight
		[kN]	[kN]	[bar]	[mm]	[V DC]	[kg]
NSE-S3 138-V1 IOL	1514231	8	28	6	< 0.005	24	4.1



Subject to technical changes.

1. Unlocking connection
2. Turbo connection
3. Clearance 60.5 ±0.01 mm for fitting screw
4. Clearance 66 ±0.01 mm for indexing pin IXB V1
5. IO-Link interface via spring contacts
6. Positioning pin for correct module alignment
7. Proximity sensor for pallet presence monitoring
8. Optional: Cone seal

Accessories

Clamping pins SPx
Clamping pin for positive connection with NSE3 clamping modules.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPA 40	0471151
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPB 40	0471152
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPC 40	0471153

Clamping pins SPx
Standard clamping pins with M16 thread for form-fit connection of workpieces or devices with NSE3 clamping modules.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPA 40-16	0471064
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPB 40-16	0471065
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPC 40-16	0471066

Compensation pins
Clamping pin for compensating fluctuations of the bore hole gauges.
SPA-X 40 = compensation in one direction of ±1 mm.
SPA-XY 40 = compensation in all directions of ±1 mm.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPA-X 40	0471155
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPA-XY 40	0471156

Accuracy pin
Clamping pins with patented flex taper with a repeat accuracy of less than 0.002 mm.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPG 40	0471154

Dove tail pins
Clamping pins with a mounting depth of 3.5 mm

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPA-S 40	1310630
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPB-S 40	1323856
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPC-S 40	1323857

Heavy duty pins
Clamping pins with integrated mounting threads for high holding forces.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPA-F 40	0471171
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SPC-F 40	0471172

Indexing pin
Used as an anti-rotation protection for VERO-S modules with anti-rotation protection V1.

Suitable for	Description	ID
NSE-S3 138-V1 IOL	IXB V1	0471980
NSE-S3 138-V1 IOL	IXB V1-K	0432371

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

Suitable for	Description	ID
Module Ø 138	SP-VL 50-10-SPA	0471405
Module Ø 138	SP-VL 50-10-SPB	0471407
Module Ø 138	SP-VL 50-10-SPC	0471409
Module Ø 138	SP-VL 50-12-SPA	0471406
Module Ø 138	SP-VL 50-12-SPB	0471408
Module Ø 138	SP-VL 50-12-SPC	0471410
Module Ø 138	SP-VL 100-10-SPA	0471464
Module Ø 138	SP-VL 100-10-SPB	0471466
Module Ø 138	SP-VL 100-10-SPC	0471468
Module Ø 138	SP-VL 100-12-SPA	0471465
Module Ø 138	SP-VL 100-12-SPB	0471467
Module Ø 138	SP-VL 100-12-SPC	0471469

Cone seal

For quick and easy retrofitting of existing modules NSE3 without cone seal to protect the change interface.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	KVS 40	*1313742*

Electrical fixed contact interface

Electrical fixed contact interface without pre-assembled cable as a counterpart for the spring contact on the adapter plate side.

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	SFC-5P-OC	*1521278*

Cover caps

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

Suitable for	Description	ID
NSE-S3 138 IOL NSE-S3 138-V1 IOL	ADK-1 M8-SW6	*9988527*

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