

# **GEMÜ 8500**

## **Electrically operated pilot solenoid valve**



### **Features**

- Optional installation position
- Standard manual override
- Rotatable solenoid coil
- Suitable for activating single or double acting pneumatic actuators
- Available with NAMUR connection as an option

### **Description**

The GEMÜ 8500 servo assisted 3/2 or 5/2-way pilot solenoid valve is indirectly controlled. The body is made of aluminium. The plastic encapsulated coil is detachable. The piston valve has a soft elastomer seal.

### **Technical specifications**

- **Media temperature :** -10 to 60 °C
- **Ambient temperature:** -10 to 60 °C
- **Operating pressure :** 2.5 to 10 bar
- **Nominal size:** DN 7
- **Electrical connection types:** Plug, design B
- **Supply voltages:** 110 V AC, 50/60 Hz | 12 V DC | 230 V AC, 50/60 Hz | 24 V AC, 50/60 Hz | 24 V DC
- **Connection types:** Threaded connection
- **Body materials:** Aluminium
- **Conformities:** ATEX | Functional safety

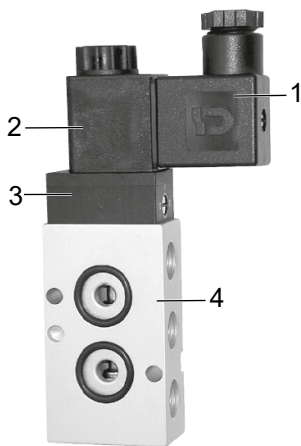
Technical data depends on the respective configuration



## Product line

|                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |  |  |  |  |  |  |  |  |
|                                   | <b>GEMÜ 0322</b>                                                                  | <b>GEMÜ 0324</b>                                                                  | <b>GEMÜ 0326</b>                                                                  | <b>GEMÜ 8303</b>                                                                  | <b>GEMÜ 8357</b>                                                                   | <b>GEMÜ 8458</b>                                                                    | <b>GEMÜ 8500</b>                                                                    | <b>GEMÜ 8506</b>                                                                    |
| <b>Media temperature</b>          | -10 to 50 °C                                                                      | -10 to 50 °C                                                                      | -10 to 50 °C                                                                      | -10 to 60 °C                                                                      | -10 to 60 °C                                                                       | -10 to 50 °C                                                                        | -10 to 60 °C                                                                        | -10 to 50 °C                                                                        |
| <b>Ambient temperature</b>        | -10 to 50 °C                                                                      | -10 to 50 °C                                                                      | -10 to 50 °C                                                                      | -10 to 60 °C                                                                      | -10 to 60 °C                                                                       | -10 to 50 °C                                                                        | -10 to 60 °C                                                                        | -10 to 50 °C                                                                        |
| <b>Operating pressure</b>         | 0 to 10 bar                                                                       | 0 to 10 bar                                                                       | 0 to 10 bar                                                                       | 1 to 10 bar                                                                       | 1 to 10 bar                                                                        | 1 to 10 bar                                                                         | 2,5 to 10 bar                                                                       | 2 to 8 bar                                                                          |
| <b>Nominal sizes</b>              | DN 2                                                                              | DN 2                                                                              | DN 2                                                                              | DN 2                                                                              | DN 6                                                                               | DN 6                                                                                | DN 7                                                                                | DN 6                                                                                |
| <b>Electrical connection type</b> |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| M12 connector                     | -                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   |
| Plug, design A                    | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | -                                                                                   | ●                                                                                   |
| Plug, design B                    | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |
| M12 plug                          | ●                                                                                 | -                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   |
| <b>Voltage</b>                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 110 V AC, 50 Hz                   | -                                                                                 | -                                                                                 | -                                                                                 | ●                                                                                 | -                                                                                  | -                                                                                   | -                                                                                   | ●                                                                                   |
| 110 V AC, 50/60 Hz                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |
| 12 V DC                           | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |
| 120 V AC, 50/60 Hz                | ●                                                                                 | ●                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   |
| 230 V AC, 50 Hz                   | -                                                                                 | -                                                                                 | -                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | -                                                                                   | ●                                                                                   |
| 230 V AC, 50/60 Hz                | ●                                                                                 | ●                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |
| 24 V AC, 50 Hz                    | -                                                                                 | -                                                                                 | -                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | -                                                                                   | ●                                                                                   |
| 24 V AC, 50/60 Hz                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |
| 24 V DC                           | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | ●                                                                                   | ●                                                                                   |
| <b>Connection types</b>           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Threaded connection               | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | ●                                                                                   | ●                                                                                   |
| <b>Body material</b>              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 1.4581                            | -                                                                                 | -                                                                                 | -                                                                                 | ●                                                                                 | -                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   |
| Aluminium                         | -                                                                                 | -                                                                                 | -                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | ●                                                                                   | ●                                                                                   |
| PA                                | ●                                                                                 | ●                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   |
| <b>Conformities</b>               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| ATEX                              | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |
| EAC                               | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | ●                                                                                  | ●                                                                                   | -                                                                                   | ●                                                                                   |
| Functional safety                 | ●                                                                                 | ●                                                                                 | ●                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | ●                                                                                   | -                                                                                   |

Product description



| Item | Name           | Materials  |
|------|----------------|------------|
| 1    | Plug           | PA         |
| 2    | Coil housing   | PA         |
| 3    | Pilot head     | PA         |
| 4    | Valve body     | (AlCuMgSn) |
|      | Seal materials | NBR        |

## Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

## Order codes

| 1 Type                              | Code |
|-------------------------------------|------|
| Pilot valve                         | 8500 |
| 2 Way version                       | Code |
| 3/2-way                             | 32   |
| 5/2-way                             | 52   |
| 3 NAMUR                             | Code |
| Flex plate                          | F    |
| NAMUR                               | N    |
| Thread                              |      |
| 4 DN                                | Code |
| DN 7                                | 7    |
| 5 Body configuration                | Code |
| Multi-port design                   | M    |
| 6 Connection type                   | Code |
| G 1/4, threaded socket, DIN ISO 228 | G2   |
| 7 Valve body material               | Code |
| AA-2015,<br>AlCuMgSn                | 14   |
| 8 Seal material                     | Code |
| NBR                                 | 2    |

| 9 Control function                  | Code |
|-------------------------------------|------|
| Combined spring return              | 1    |
| Pneumatic spring (ATEX)             | A    |
| 10 Voltage/Frequency                | Code |
| 12 V DC                             | B1   |
| 24 V DC                             | C1   |
| 24 V/50–60 Hz                       | C4   |
| 48 V DC                             | D1   |
| 110 V/50–60 Hz                      | E4   |
| 230 V/50–60 Hz                      | L4   |
| 11 Special version                  | Code |
| Without                             |      |
| 180° rotation                       | R    |
| 12 Special version                  | Code |
| Without                             |      |
| UL approval                         | U    |
| ATEX version                        | X    |
| 13 Additional function              | Code |
| Without                             |      |
| Distance plate G3/8",G1/2" included | Z    |

## Order example

| Ordering option        | Code | Description                         |
|------------------------|------|-------------------------------------|
| 1 Type                 | 8500 | Pilot valve                         |
| 2 Way version          | 32   | 3/2-way                             |
| 3 NAMUR                | N    | NAMUR                               |
| 4 DN                   | 7    | DN 7                                |
| 5 Body configuration   | M    | Multi-port design                   |
| 6 Connection type      | G2   | G 1/4, threaded socket, DIN ISO 228 |
| 7 Valve body material  | 14   | AA-2015,<br>AlCuMgSn                |
| 8 Seal material        | 2    | NBR                                 |
| 9 Control function     | 1    | Combined spring return              |
| 10 Voltage/Frequency   | C1   | 24 V DC                             |
| 11 Special version     |      | Without                             |
| 12 Special version     |      | Without                             |
| 13 Additional function |      | Without                             |

## Technical data

### Medium

**Working medium:** Filtered, lubricated or unlubricated compressed air which has no negative impact on the physical and chemical properties of the valve body and seal material.  
Air quality acc. to ISO 8573-1:2010:7-4-4 for particles, water and oil

### Temperature

**Media temperature:** AC operation: -10 to 50 °C  
DC operation: -10 to 60 °C

### Pressure

**Operating pressure:** 2.5 – 10 bar

**Flow rate:** 1250 NI/min

### Product compliance

**Machinery Directive:** 2006/42/EC

**EMC Directive:** 2014/30/EU

**Explosion protection:** Special version X order code

**ATEX marking:** Gas:  II 2G Ex mb IIC T4/T5 Gb  
Dust:  II 2D Ex mb tb IIIC T95°C, T130°C Db

### Mechanical data

**Protection class:** IP 65

**Installation position:** Optional

**Weight:** 3/2-way standard: 0.21 kg  
5/2-way standard: 0.25 kg  
3/2-way and 5/2-way: 0.26 kg  
NAMUR:

### Electrical data

**Power consumption:** AC operation: 5 VA  
DC operation: 3 W

**Switching times:** 20 ms ± 4 ms

**Permissible voltage tolerance:** ±10 % to VDE 0580

**Duty cycle:** Continuous duty

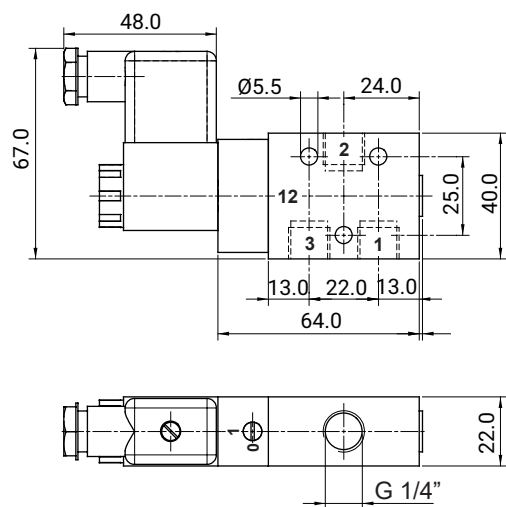
**Electrical connection type:** Plug, design B  
Optional: ATEX version with 3 m cable (H05V2V2-F 3G1, external Ø 7 mm)

**Wiring note:** Special wiring on request. When using electronic switches and additional wiring, carefully design out any potential residual currents upon installation.

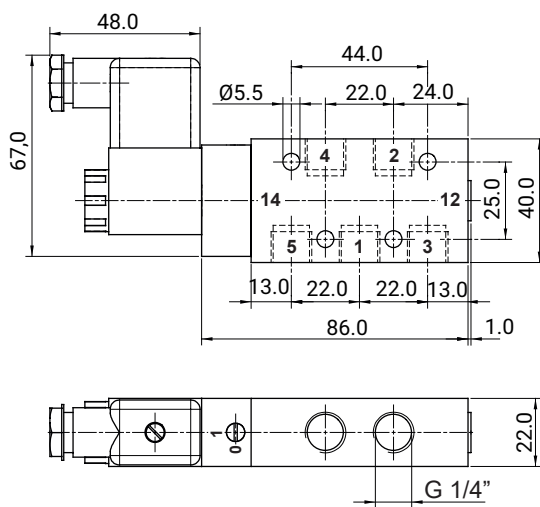
## Dimensions

### Thread

#### 3/2-way version



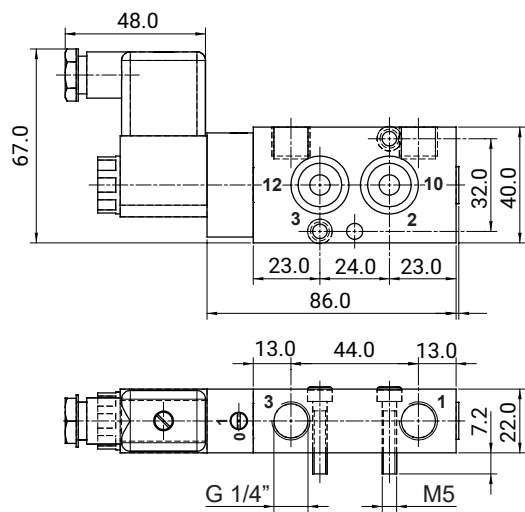
#### 5/2-way version



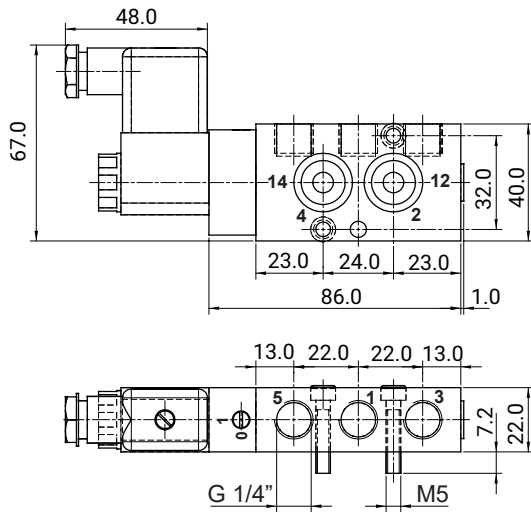
Dimensions in mm

### NAMUR version

#### 3/2-way version



#### 5/2-way version

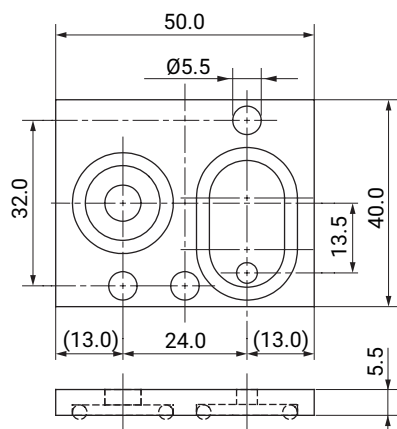


Dimensions in mm

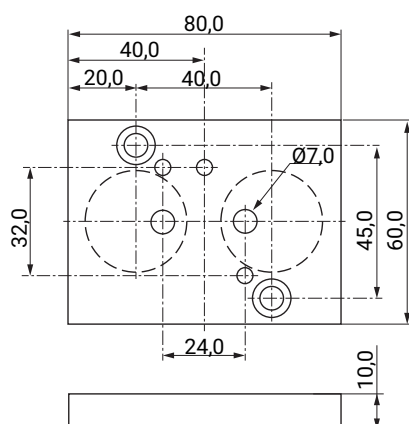
## NAMUR flex plate

For 5/2-way design (code 52), NAMUR standard 1/4"

By adding this flex plate, the valve becomes a 3/2-way NAMUR valve with spring chamber ventilation.



## Mounting plate for air connectors 3/8" and 1/2"



### Pilot valve with mounting plate for air connectors 3/8" and 1/2"

The G1I2 set includes the 1/4" valve + the mounting plate ADPL G1/2 G1/4 10

| Type                   | Designation           | Item number |
|------------------------|-----------------------|-------------|
| 850032N 7M G214 21C1 Z | 3/2 NAMUR pilot valve | 88859708    |
| 850032N 7M G214 21L4 Z | 3/2 NAMUR pilot valve | 88859709    |
| 850052N 7M G214 21C1 Z | 5/2 NAMUR pilot valve | 88859710    |
| 850052N 7M G214 21L4 Z | 5/2 NAMUR pilot valve | 88859711    |

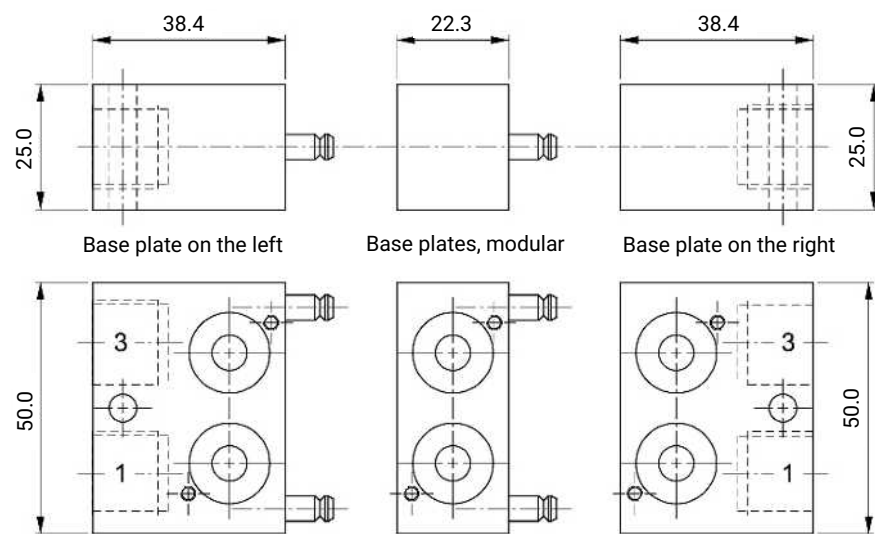
### Mounting plate ADPL

| Type              | Designation | Item number |
|-------------------|-------------|-------------|
| ADPL G1/2 G1/4 10 | ZPN 6-10    | 88416005    |

## Interlinking system

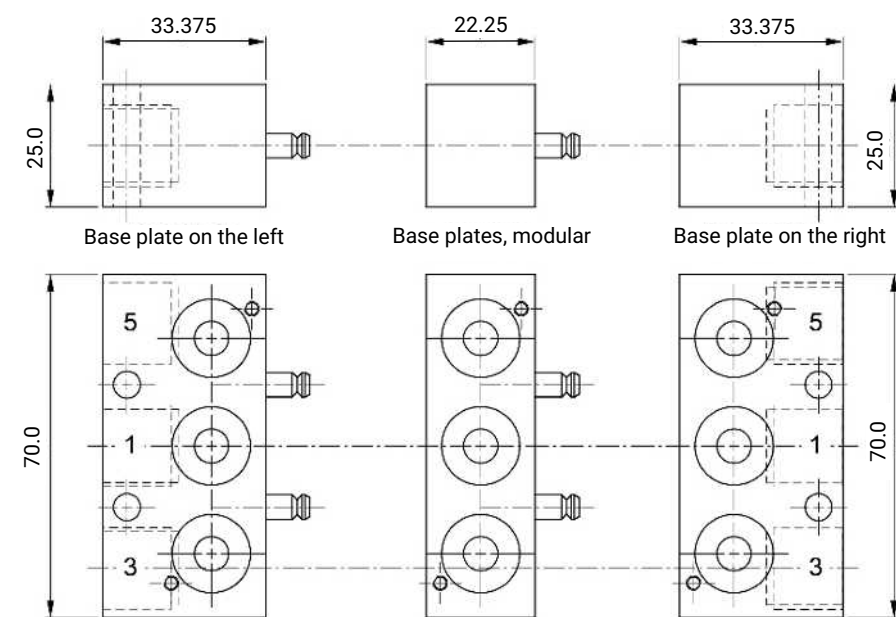
### Individual parts

#### 3/2-way design



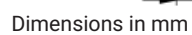
Dimensions in mm

#### 5/2-way design

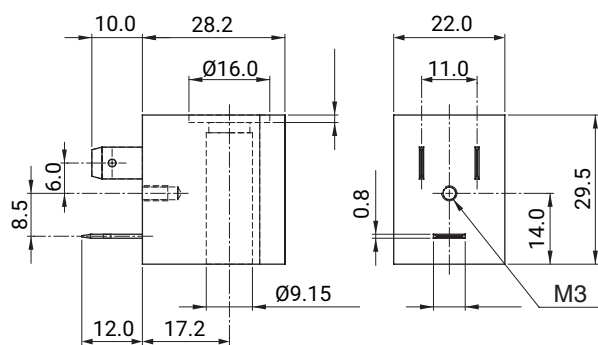


Dimensions in mm



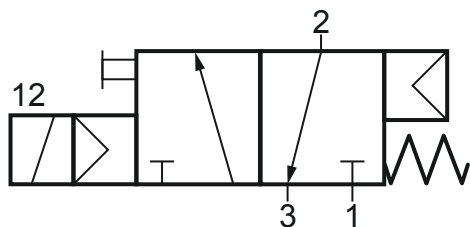


## Solenoid

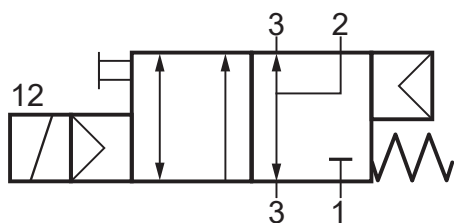


## Circuit diagram

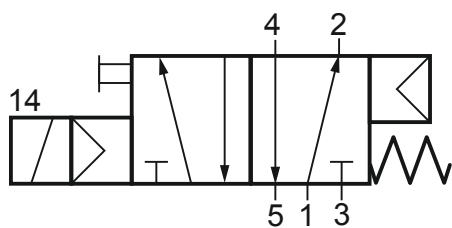
### 3/2-way standard



### 3/2-way NAMUR

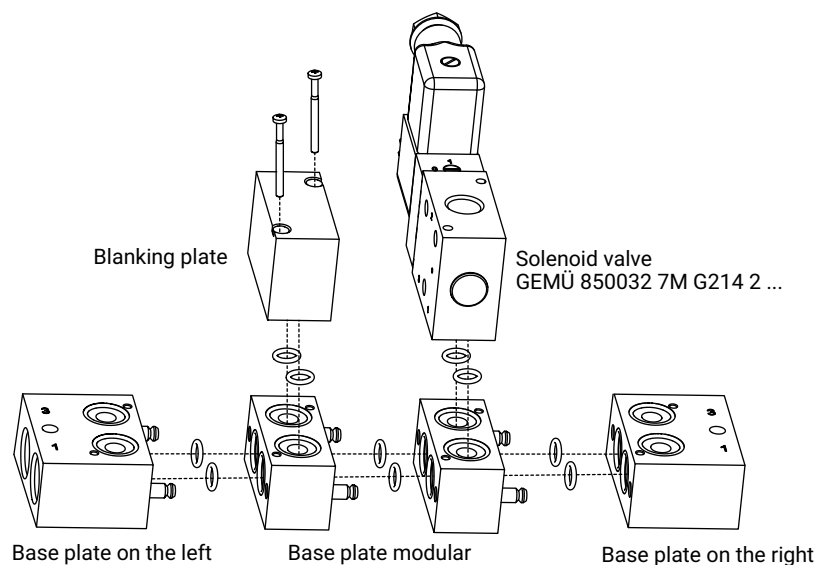


### 5/2-way standard and NAMUR



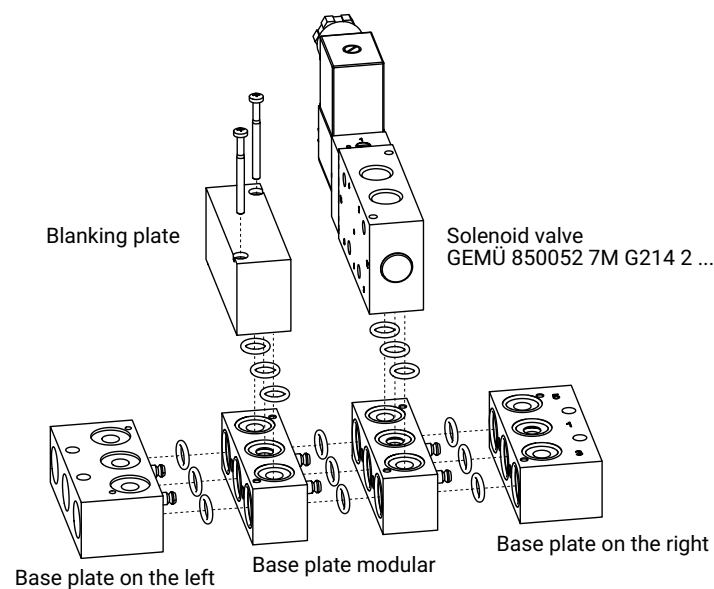
## Interlinking system

### 3/2-way design



| Designation                      | Item     |
|----------------------------------|----------|
| Base plate on the right, 3/2-way | 99115411 |
| Base plate on the left, 3/2-way  | 99115412 |
| Base plate modular, 3/2-way      | 99115413 |
| Blanking plate                   | 99115653 |

### 5/2-way design



| Designation                      | Item     |
|----------------------------------|----------|
| Base plate on the right, 5/2-way | 99115408 |
| Base plate on the left, 5/2-way  | 99115409 |
| Base plate modular, 5/2-way      | 99115410 |
| Blanking plate                   | 99115652 |

## Accessories



### GEMÜ 2026

#### Plug

GEMÜ 2026 are plugs with lights, with or without interference suppression. Various versions available. The DC voltage version with a bridge rectifier has a plug with reverse battery protection. The scope of supply comprises a gasket made from NBR and a M3x35 central screw

| Type                      | Item number | Application        |
|---------------------------|-------------|--------------------|
| 2026000ZBIM16<br>GOS2 2C1 | 88668472    | Plug design B, IND |



### GEMÜ 1750

#### Silencer

The GEMÜ 1750 silencer can be used to reduce the noise caused by leaking compressed air. It is available either in brass or plastic.

| Type  | Item number | Order description   |
|-------|-------------|---------------------|
| 1750* | 88387920    | 1750 000 ZA 214K0K1 |

\* 2 x required for 5/2-way design



### GEMÜ 2022

#### Throttle valve

The GEMÜ 2022 throttle valves are available as throttle valve, throttle check valve and dual throttle check valve. In pneumatic actuators they are used to regulate the compressed air depending on the function for the supply or exhaust air and can be set independently of each other in the case of dual throttle check valves.

| Type  | Item number | Order description             |
|-------|-------------|-------------------------------|
| 2022* | 88011501    | 2022 000 ZA<br>214K000D100CG3 |

\* 2 x required for 5/2-way design



### GEMÜ 8500DRN

#### Throttle plate

Throttle plates can be used to continuously adjust the travel times of pneumatic quarter turn actuators in both the "OPEN" and "CLOSED" directions independently of one another. They are installed between the NAMUR valve and the quarter turn actuator.

| Designation         | Item number | Application                                    |
|---------------------|-------------|------------------------------------------------|
| 850032NDRN 3<br>601 | 88712394    | 3/2-way NAMUR throttle plate,<br>knurled screw |
| 850032NDRN 3<br>611 | 88712395    | 3/2-way NAMUR throttle plate,<br>slotted screw |
| 850052NDRN 5<br>601 | 88712396    | 5/2-way NAMUR throttle plate,<br>knurled screw |
| 850052NDRN 5<br>611 | 88712397    | 5/2-way NAMUR throttle plate,<br>slotted screw |



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