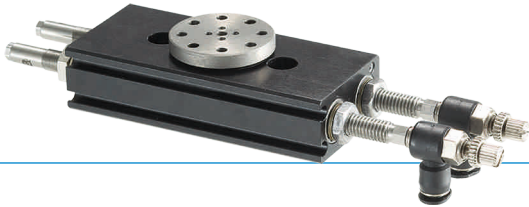


# FLAT SWIVEL UNITS

## SERIES MSF

### ▶ PRODUCT ADVANTAGES



#### “The unique”

##### ▶ **Decide for yourself!**

Flange connection or journal shaft, with or without shock absorbers: The multitude of variants ensure you always find what you need

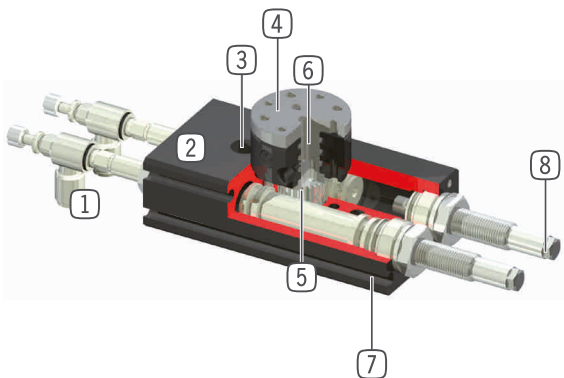
##### ▶ **Flat structure**

Thanks to the reverse double piston drive, the unit can work in operations requiring flat conditions. This is how you can build your application to save more space

##### ▶ **Infinitely adjustable swivel angle**

Become flexible and unique with the completely adjustable swivel angle that also reduces set up times

### ▶ BENEFITS IN DETAIL



#### ① **Air flow control valve**

- for speed regulation
- included in scope of delivery

#### ② **Robust, lightweight housing**

- Hard-coated aluminum alloy

#### ③ **Mounting and positioning**

- mounting possible from several sides for versatile positioning

#### ④ **Tool intake**

- with shaft extension or flange available

#### ⑤ **Force transfer**

- rack and pinion

#### ⑥ **Up to 2 way integrated air feed-through**

- for hoseless air transfer
- hose package does not have to be pivoted

#### ⑦ **Sensing slot**

- mounting and positioning of magnetic field sensors

#### ⑧ **Integrated shock absorbers with spiral groove technology**

- adjustable end position damping



## ► SERIES CHARACTERISTICS

| Installation size |   | Version |        |        |        |      |      |
|-------------------|---|---------|--------|--------|--------|------|------|
| MSFXX             |   | N-F001  | S-F001 | N-F002 | S-F002 | N-D2 | S-D2 |
|                   | 10 million maintenance-free cycles (max.) | •       | •      | •      | •      | •    | •    |
|                   | IP41                                      | •       | •      | •      | •      | •    | •    |
|                   | Magnetic field sensor                     | •       | •      | •      | •      | •    | •    |
|                   | Flange                                    | •       | •      |        |        | •    | •    |
|                   | Shaft extension                           |         |        | •      | •      |      |      |
|                   | Fluid feed-through                        |         |        |        |        | •    | •    |
|                   | Elastomer end position damping            | •       |        | •      |        | •    |      |
|                   | Powerstop end position damping            |         | •      |        | •      |      | •    |
|                   | Positionability - 2 positions             | •       | •      | •      | •      | •    | •    |
|                   | Adjustable swivel angle                   | •       | •      | •      | •      | •    | •    |

## ► TECHNICAL DATA

| Installation size | Swivel angle [°] | Torque [Nm] | Weight [kg] | IP class |
|-------------------|------------------|-------------|-------------|----------|
| MSF34             | 90-180           | 0,3 - 0,4   | 0,17 - 0,21 | IP41     |
| MSF40             | 90-180           | 0,6 - 0,7   | 0,26 - 0,29 | IP41     |
| MSF44             | 90-180           | 1 - 1,2     | 0,41 - 0,46 | IP41     |

## ► FURTHER INFORMATION IS AVAILABLE ONLINE



All information just a click away at: [www.zimmer-group.com](http://www.zimmer-group.com). Find data, illustrations, 3D models and operating instructions for your installation size using the order number for your desired product. Quick, clear and always up-to-date.

# FLAT SWIVEL UNITS

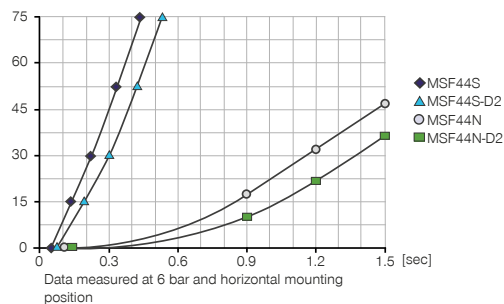
## INSTALLATION SIZE MSF44

### ▶ PRODUCT SPECIFICATIONS



#### ▶ Moment of inertia

[kg cm<sup>2</sup>] Shows the expected swivel time vs the calculated moment of inertia



### ▶ INCLUDED IN DELIVERY



2 [piece]  
Flow Control Valves - with Swivel joint  
**DRVM3X4**



2 [piece]  
Centering Disc  
**DST40800**

### ▶ RECOMMENDED ACCESSORIES



#### ENERGY SUPPLY



**GVM3**  
Straight Fittings - Barb Style Connection



**DSV1-8**  
Pressure safety valve



**DSV1-8E**  
Pressure safety valve with quick exhaust



#### SENSORS



**MFS01-S-KHC-P1-PNP**  
Magnetic field sensor angled, cable 0.3 m - M8 connector



**MFS02-S-KHC-P1-PNP**  
Magnetic field sensor straight, cable 0.3 m - M8 connector



**MFS01-S-KHC-P2-PNP**  
2-point sensor angled, cable 0.3 m - M8 connector



#### SENSORS



**MFS02-S-KHC-P2-PNP**  
2-point sensor straight, cable 0.3 m - M8 connector



#### CONNECTIONS / OTHER



**KAG500**  
Plug-in connector Straight Cable 5m - Socket M8 (female)



**KAW500**  
Plug-in connector Angled Cable 5m - Socket M8 (female)



**S8-G-3**  
Plug-in connector customizable Straight - Connector M8



**S12-G-3**  
Plug-in connector customizable Straight - Connector M12

| Order no.                                    | ► Technical data |             |                 |                 |           |           |
|--|------------------|-------------|-----------------|-----------------|-----------|-----------|
|  | MSF44N-F001      | MSF44S-F001 | MSF44N-F002     | MSF44S-F002     | MSF44N-D2 | MSF44S-D2 |
| Swivel angle [°]                             | 90-180           | 90-180      | 90-180          | 90-180          | 90-180    | 90-180    |
| Torque [Nm]                                  | 1.2              | 1.2         | 1.2             | 1.2             | 1         | 1         |
| End position damping by                      | Elastomer        | PowerStop   | Elastomer       | PowerStop       | Elastomer | PowerStop |
| Tool holder via                              | Flange           | Flange      | Shaft extension | Shaft extension | Flange    | Flange    |
| Repetition accuracy +/- [°]                  | 0.07             | 0.01        | 0.07            | 0.01            | 0.07      | 0.01      |
| Pneumatic energy transfer [Quantity]         |                  |             |                 |                 | 2         | 2         |
| Axial bearing load [N]                       | 520              | 520         | 520             | 520             | 520       | 520       |
| Radial bearing load [Nm]                     | 19               | 19          | 19              | 19              | 19        | 19        |
| Operating pressure min. [bar]                | 3                | 3           | 3               | 3               | 3         | 3         |
| Operating pressure max. [bar]                | 8                | 8           | 8               | 8               | 8         | 8         |
| Nominal operating pressure [bar]             | 6                | 6           | 6               | 6               | 6         | 6         |
| Operating temperature min. [°C]              | 5                | 5           | 5               | 5               | 5         | 5         |
| Operating temperature max. [°C]              | +80              | +80         | +80             | +80             | +80       | +80       |
| Air volume per cycle 90° [cm <sup>3</sup> ]  | 7.7              | 7.7         | 7.7             | 7.7             | 7.7       | 7.7       |
| Air volume per cycle 180° [cm <sup>3</sup> ] | 15.4             | 15.4        | 15.4            | 15.4            | 15.4      | 15.4      |
| Weight [kg]                                  | 0.41             | 0.42        | 0.41            | 0.42            | 0.45      | 0.46      |

