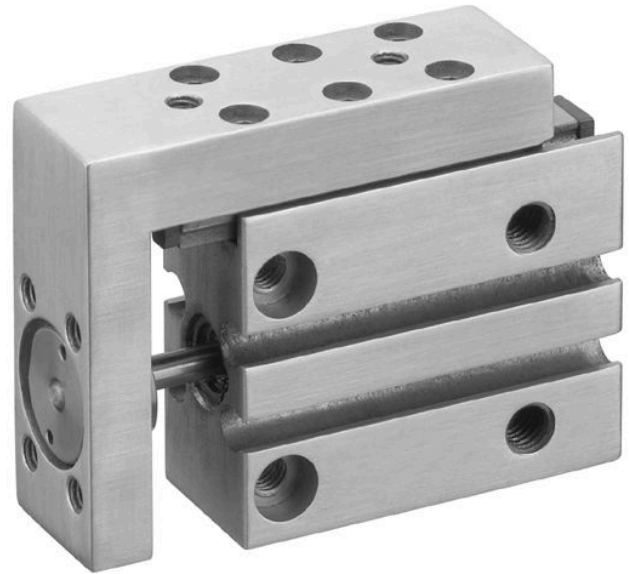


- Compact narrow design
- Precise load capacity
- Unlimited mounting options

AVENTICS Series MSN Guide cylinders

The AVENTICS Series MSN mini slides offer precise guidance without play in a very narrow package. With their wide variety of mounting and air supply options the Series allows for applications in virtually any position and location.



Technical data

Industry

Industrial

Note

Archive product: Do not use in new constructions!
narrow version

Piston Ø

10 mm

Stroke

15 mm

Functional principle

Double-acting

Port

M5

Cushioning

elastic

Min. working pressure

1 bar

Max. working pressure

10 bar

Min. ambient temperature

0 °C

Max. ambient temperature

60 °C

Medium

Compressed air

Retracting piston force, theoretical

42 N

Extracting piston force, theoretical

49 N

Max. speed

0.8 m/s

Cushioning energy

0.05 J

Min. oil content of compressed air

0 mg/m³

Max. oil content of compressed air

1 mg/m³

Max. particle size

5 µm

Mini slide, Series MSN

0821406508

Series MSN

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| | |
|--|---|
| Pressure for determining piston forces with integrated ball rail guide | 6,3 bar |
| Weight | with integrated ball rail guide 0.131 kg |

Material

| | |
|--------------------------|----------------------|
| Housing material | Aluminum |
| Surface housing | anodized |
| Material piston rod | Stainless Steel |
| Seal material | Polyurethane |
| Material ball rail table | Aluminum |
| Surface ball rail table | anodized |
| Material guide rail | Steel, chrome-plated |
| Surface guide rail | hardened |
| Part No. | 0821406508 |

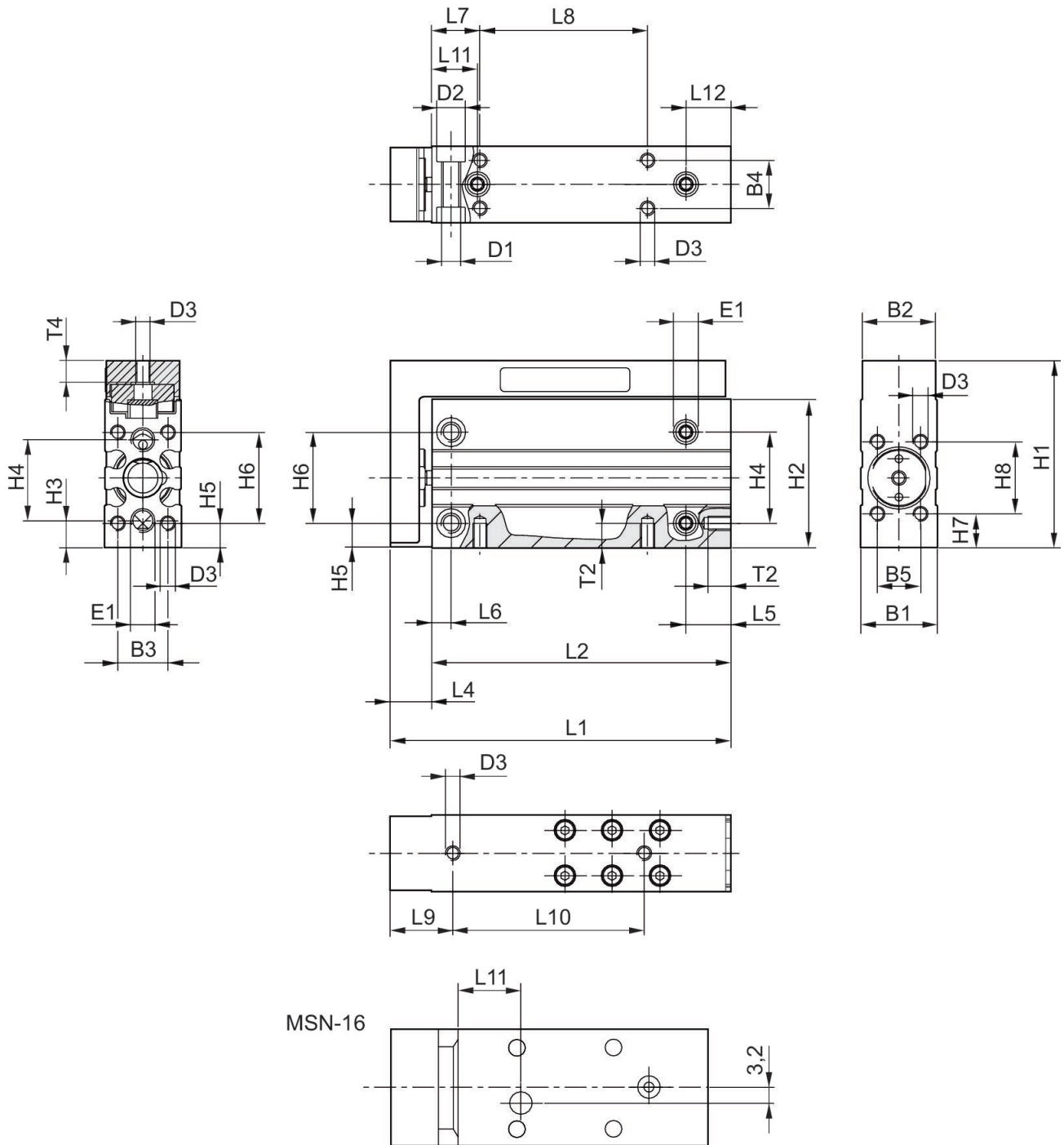
Technical information

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in <https://www.emerson.com/en-us/support>).

Dimensions



Dimensions

| Piston Ø | B1 | B2 | B3 | B4 | B5 | D1 | D2 | D3 | E1 Compressed air connection |
|----------|----|------|------|----|----|----|-----|----|------------------------------|
| 6 | 16 | 15.3 | 10.5 | 10 | 9 | M4 | 6 | M3 | M5 |
| 10 | 20 | 19.3 | 13 | 13 | 11 | M5 | 7.5 | M4 | M5 |

Mini slide, Series MSN

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| Piston Ø | B1 | B2 | B3 | B4 | B5 | D1 | D2 | D3 | E1 Compressed air connection |
|----------|----|------|----|----|----|----|-----|----|------------------------------|
| 16 | 24 | 23.3 | 17 | 17 | 16 | M5 | 7.5 | M4 | M5 |

| Piston Ø | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 |
|----------|----|----|-----|----|-----|----|-----|----|
| 6 | 39 | 31 | 5.5 | 17 | 5 | 19 | 7 | 15 |
| 10 | 45 | 36 | 6.5 | 20 | 5 | 23 | 7.5 | 18 |
| 16 | 51 | 41 | 6 | 25 | 5.5 | 27 | 6 | 26 |

MSN-16

| Part No. | Piston Ø | Stroke | L1 | L2 | L4 | L5 | L6 | L7 | L8 |
|------------|----------|--------|----|----|----|------|----|----|----|
| R452000852 | 16 | 5 | 66 | 52 | 14 | 12.5 | 5 | 12 | 20 |
| R452000853 | 16 | 10 | 66 | 52 | 14 | 12.5 | 5 | 12 | 20 |
| R452000854 | 16 | 15 | 76 | 62 | 14 | 12.5 | 5 | 12 | 30 |
| R452000855 | 16 | 20 | 76 | 62 | 14 | 12.5 | 5 | 12 | 30 |
| R452000856 | 16 | 25 | 86 | 72 | 14 | 12.5 | 5 | 12 | 40 |
| R452000857 | 16 | 30 | 91 | 77 | 14 | 12.5 | 5 | 12 | 45 |

| Part No. | L9 | L10 | L11 | L12 | T2 | T4 |
|------------|----|-----|------|------|----|----|
| R452000852 | 18 | 24 | 13 | 12.5 | 6 | 6 |
| R452000853 | 18 | 35 | 13 | 12.5 | 6 | 6 |
| R452000854 | 18 | 45 | 13.5 | 12.5 | 6 | 6 |
| R452000855 | 18 | 50 | 13.5 | 12.5 | 6 | 6 |
| R452000856 | 18 | 50 | 17.5 | 12.5 | 6 | 6 |
| R452000857 | 18 | 55 | 17.5 | 12.5 | 6 | 6 |

MSN-10

| Part No. | Piston Ø | Stroke | L1 | L2 | L4 | L5 | L6 | L7 | L8 |
|------------|----------|--------|------|----|------|------|----|----|----|
| R452000846 | 10 | 5 | 51.5 | 40 | 11.5 | 12.5 | 5 | 12 | 10 |
| R452000847 | 10 | 10 | 56.5 | 45 | 11.5 | 12.5 | 5 | 12 | 14 |
| R452000848 | 10 | 15 | 61.5 | 50 | 11.5 | 12.5 | 5 | 12 | 18 |
| R452000849 | 10 | 20 | 66.5 | 55 | 11.5 | 12.5 | 5 | 12 | 24 |
| R452000850 | 10 | 25 | 73.5 | 62 | 11.5 | 12.5 | 5 | 12 | 32 |
| R452000851 | 10 | 30 | 78.5 | 67 | 11.5 | 12.5 | 5 | 12 | 35 |

| Part No. | L9 | L10 | L11 | L12 | T2 | T4 |
|------------|----|-----|-----|------|----|-----|
| R452000846 | 15 | 14 | 11 | 9.5 | 6 | 5.5 |
| R452000847 | 15 | 19 | 11 | 9.5 | 6 | 5.5 |
| R452000848 | 15 | 25 | 11 | 9.5 | 6 | 5.5 |
| R452000849 | 15 | 30 | 11 | 9.5 | 6 | 5.5 |
| R452000850 | 15 | 40 | 12 | 10.5 | 6 | 5.5 |
| R452000851 | 15 | 45 | 12 | 10.5 | 6 | 5.5 |

Mini slide, Series MSN

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Series MSN

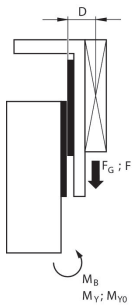
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MSN-6

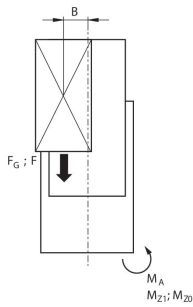
| Part No. | Piston Ø | Stroke | L1 | L2 | L4 | L5 | L6 | L7 | L8 |
|------------|----------|--------|----|------|-----|----|----|----|----|
| R452000840 | 6 | 5 | 46 | 37.5 | 8.5 | 10 | 4 | 10 | 10 |
| R452000841 | 6 | 10 | 51 | 42.5 | 8.5 | 10 | 4 | 10 | 15 |
| R452000842 | 6 | 15 | 56 | 47.5 | 8.5 | 10 | 4 | 10 | 20 |
| R452000843 | 6 | 20 | 61 | 52.5 | 8.5 | 10 | 4 | 10 | 25 |
| R452000844 | 6 | 25 | 66 | 57.5 | 8.5 | 10 | 4 | 10 | 30 |
| R452000845 | 6 | 30 | 71 | 62.5 | 8.5 | 10 | 4 | 10 | 35 |

| Part No. | L9 | L10 | L11 | L12 | T2 | T4 |
|------------|----|-----|-----|-----|-----|----|
| R452000840 | 13 | 20 | 9.5 | 9.5 | 4.8 | 5 |
| R452000841 | 13 | 20 | 9.5 | 9.5 | 4.8 | 5 |
| R452000842 | 13 | 25 | 9.5 | 9.5 | 4.8 | 5 |
| R452000843 | 13 | 30 | 9.5 | 9.5 | 4.8 | 5 |
| R452000844 | 13 | 40 | 9.5 | 9.5 | 4.8 | 5 |
| R452000845 | 13 | 40 | 9.5 | 9.5 | 4.8 | 5 |

Correction factor (a, d) vertical



| | |
|-------|------------------------------|
| stat. | $M_{B0} = (F_G + F) \cdot D$ |
| dyn. | $M_B = F_G \cdot D$ |

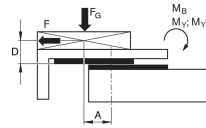


| | |
|-------|------------------------------|
| stat. | $M_{A0} = (F_G + F) \cdot B$ |
| dyn. | $M_A = F_G \cdot B$ |

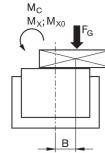
| | |
|-------|--|
| dyn. | $\frac{M_A}{M_1} + \frac{M_B}{M_2} \leq 1$ |
| stat. | $\frac{M_{A0}}{M_{Z0}} + \frac{M_{B0}}{M_{Y0}} \leq 1$ |

$F = m \cdot a$ $F_G = m \cdot g$ $a = 1250 \cdot V^2 / H$
 F = deceleration force [N] F_G = force due to weight [N] m = load mass [kg] a = deceleration [m/s²] g = gravitational acceleration 9,81 [m/s²] V = velocity [m/s] H = stroke length of shock absorber [mm]

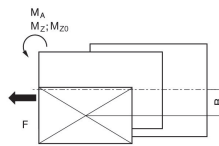
Correction factor (a, d) horizontal



| | |
|-------|------------------------------------|
| stat. | $M_{B0} = F_G \cdot A + F \cdot D$ |
| dyn. | $M_B = F_G \cdot A$ |



| | |
|-------|------------------------|
| stat. | $M_{C0} = F_G \cdot B$ |
| dyn. | $M_C = F_G \cdot B$ |

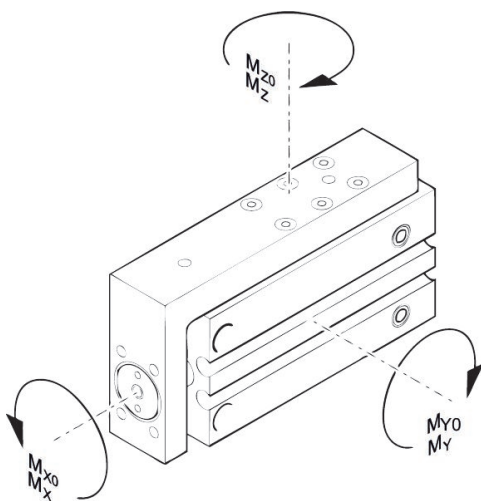


| | |
|-------|----------------------|
| stat. | $M_{A0} = F \cdot B$ |
| dyn. | $M_A = 0$ |

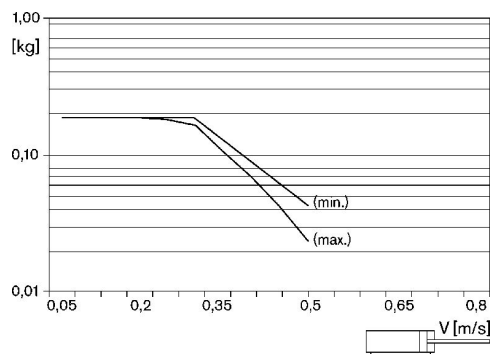
| | |
|-------|--|
| dyn. | $\frac{M_A}{M_1} + \frac{M_B}{M_2} + \frac{M_C}{M_3} \leq 1$ |
| stat. | $\frac{M_{A0}}{M_{Z0}} + \frac{M_{B0}}{M_{Y0}} + \frac{M_{C0}}{M_{X0}} \leq 1$ |

$F = m \cdot a$ $F_G = m \cdot g$ $a = 1250 \cdot V^2 / H$
 F = deceleration force [N] F_G = force due to weight [N] m = load mass [kg] a = deceleration [m/s²] g = gravitational acceleration 9,81 [m/s²] V = velocity [m/s] H = stroke length of shock absorber [mm]

Max. permissible torque

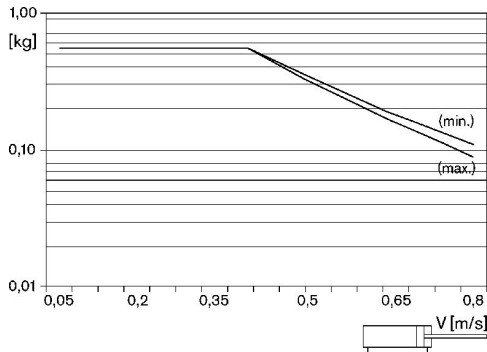


Maximum additionally moving mass (min. stroke, max. stroke) MSN - 6



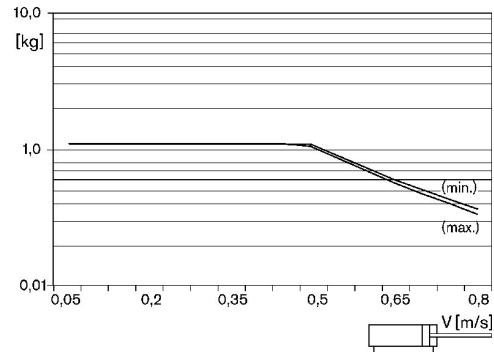
Maximum additionally moving mass
(min. stroke, max. stroke)

MSN - 10

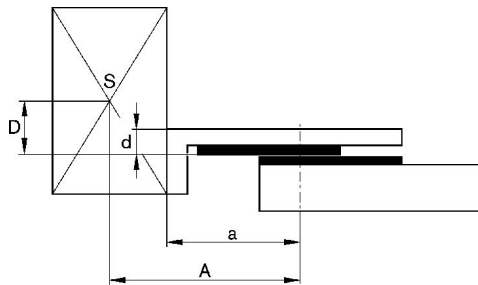


Maximum additionally moving mass
(min. stroke, max. stroke)

MSN-16



Correction factor (a, d)



Correction factor (a, d)

| Part No. | Piston Ø | Stroke | a [mm] | d [mm] | Mx0 Static moment M [Nm] | My0 Static moment M [Nm] | Mz0 Static moment M [Nm] | Mx Dynamic moment M [Nm] | My Dynamic moment M [Nm] |
|------------|----------|--------|--------|--------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 0821406500 | 6 | 5 | 27 | 6 | 3 | 3.2 | 3.2 | 0.6 | 0.9 |
| 0821406501 | 6 | 10 | 32 | 6 | 3 | 3.2 | 3.2 | 0.6 | 0.9 |
| 0821406502 | 6 | 15 | 32 | 6 | 3 | 3.2 | 3.2 | 0.6 | 0.9 |
| 0821406503 | 6 | 20 | 37 | 6 | 3 | 3.2 | 3.2 | 0.6 | 0.9 |
| 0821406504 | 6 | 25 | 42 | 6 | 3 | 3.2 | 3.2 | 0.6 | 0.9 |
| 0821406505 | 6 | 30 | 47 | 6 | 3 | 3.2 | 3.2 | 0.6 | 0.9 |
| 0821406506 | 10 | 5 | 31 | 6.8 | 2.3 | 2.4 | 2.4 | 0.6 | 0.8 |
| 0821406507 | 10 | 10 | 36 | 6.8 | 2.3 | 2.4 | 2.4 | 0.6 | 0.8 |
| 0821406508 | 10 | 15 | 41 | 6.8 | 2.3 | 2.4 | 2.4 | 0.6 | 0.8 |
| 0821406509 | 10 | 20 | 41 | 6.8 | 3.2 | 3.3 | 3.3 | 0.7 | 1.2 |
| 0821406510 | 10 | 25 | 48 | 6.8 | 3.2 | 3.3 | 3.3 | 0.7 | 1.2 |
| 0821406511 | 10 | 30 | 53 | 6.8 | 3.2 | 3.3 | 3.3 | 0.7 | 1.2 |
| 0821406512 | 16 | 5 | 40 | 7.5 | 6.8 | 6.9 | 6.9 | 1.7 | 2.1 |
| 0821406513 | 16 | 10 | 40 | 7.5 | 6.8 | 6.9 | 6.9 | 1.7 | 2.1 |
| 0821406514 | 16 | 15 | 50 | 7.5 | 6.8 | 6.9 | 6.9 | 1.7 | 2.1 |
| 0821406515 | 16 | 20 | 50 | 7.5 | 6.8 | 6.9 | 6.9 | 1.7 | 2.1 |
| 0821406516 | 16 | 25 | 55 | 7.5 | 10 | 12.3 | 12.3 | 1.9 | 2.7 |
| 0821406517 | 16 | 30 | 60 | 7.5 | 10 | 12.3 | 12.3 | 1.9 | 2.7 |

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| Part No. | Mz Dynamic moment M [Nm] |
|------------|-----------------------------|
| 0821406500 | 0.9 |
| 0821406501 | 0.9 |
| 0821406502 | 0.9 |
| 0821406503 | 0.9 |
| 0821406504 | 0.9 |
| 0821406505 | 0.9 |
| 0821406506 | 0.8 |
| 0821406507 | 0.8 |
| 0821406508 | 0.8 |
| 0821406509 | 1.2 |
| 0821406510 | 1.2 |
| 0821406511 | 1.2 |
| 0821406512 | 2.1 |
| 0821406513 | 2.1 |
| 0821406514 | 2.1 |
| 0821406515 | 2.1 |
| 0821406516 | 2.7 |
| 0821406517 | 2.7 |

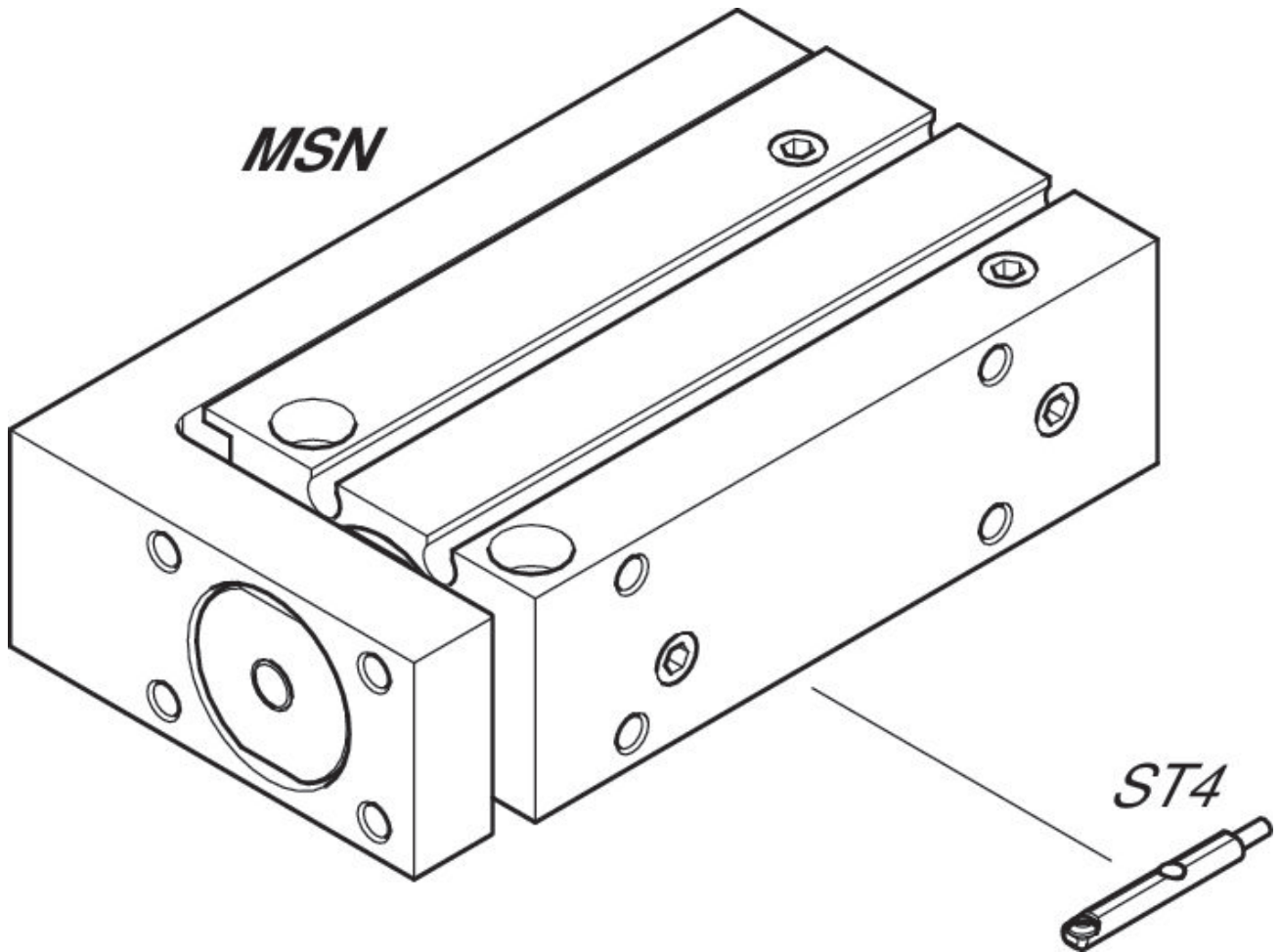
Mini slide, Series MSN

0821406508

Series MSN

2024-09-05

Overview drawing



NOTE: This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.