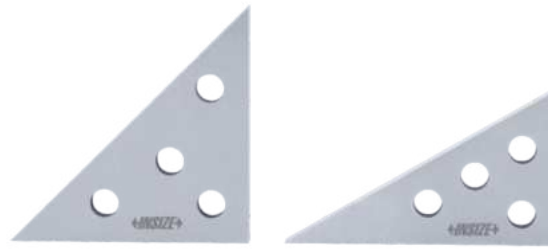


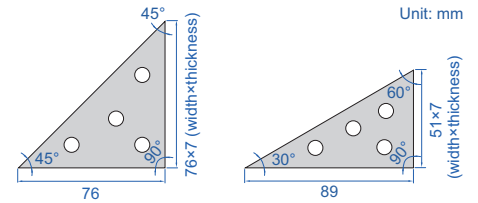
ANGLE BLOCK SET



6540-1

- For angle set-up in tooling, production and inspection
- Accuracy of angle: ± 9 seconds
- Made of alloy steel
- Hardness HRC60 ± 2

| Code | Angle plates included | Angle |
|--------|-----------------------|---------------|
| 6540-1 | 2 | 45°, 45°, 90° |
| | | 30°, 60°, 90° |



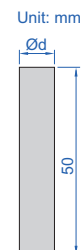
CARBIDE PIN GAUGE SETS

- Meet DIN2269, grade 1
- Made of carbide
- Hardness HRA90-90.5
- Diameter accuracy: $\pm 1\mu\text{m}$



4194-10D

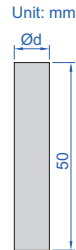
| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|---------------------------------|--------|--------------------|
| 4194-1S | 0.30, 0.31, 0.32, ..., 1.00 | 0.01mm | 71 |
| 4194-2S | 1.00, 1.01, 1.02, ..., 2.00 | 0.01mm | 101 |
| 4194-3S | 2.00, 2.01, 2.02, ..., 3.00 | 0.01mm | 101 |
| 4194-4S | 3.00, 3.01, 3.02, ..., 4.00 | 0.01mm | 101 |
| 4194-5S | 4.00, 4.01, 4.02, ..., 5.00 | 0.01mm | 101 |
| 4194-6S | 5.00, 5.01, 5.02, ..., 6.00 | 0.01mm | 101 |
| 4194-7S | 6.00, 6.01, 6.02, ..., 7.00 | 0.01mm | 101 |
| 4194-8S | 7.00, 7.01, 7.02, ..., 8.00 | 0.01mm | 101 |
| 4194-9S | 8.00, 8.01, 8.02, ..., 9.00 | 0.01mm | 101 |
| 4194-10S | 9.00, 9.01, 9.02, ..., 10.00 | 0.01mm | 101 |
| 4194-10D | 10.00, 10.01, 10.02, ..., 10.50 | 0.01mm | 51 |
| 4194-11 | 10.50, 10.51, 10.52, ..., 11.00 | 0.01mm | 51 |
| 4194-11D | 11.00, 11.01, 11.02, ..., 11.50 | 0.01mm | 51 |
| 4194-12 | 11.50, 11.51, 11.52, ..., 12.00 | 0.01mm | 51 |
| 4194-12D | 12.00, 12.01, 12.02, ..., 12.50 | 0.01mm | 51 |
| 4194-13 | 12.50, 12.51, 12.52, ..., 13.00 | 0.01mm | 51 |
| 4194-13D | 13.00, 13.01, 13.02, ..., 13.50 | 0.01mm | 51 |
| 4194-14 | 13.50, 13.51, 13.52, ..., 14.00 | 0.01mm | 51 |
| 4194-14D | 14.00, 14.01, 14.02, ..., 14.50 | 0.01mm | 51 |
| 4194-15 | 14.50, 14.51, 14.52, ..., 15.00 | 0.01mm | 51 |



STEEL PIN GAUGE SETS

POPULAR MODEL

- Meet DIN2269, grade 1
- Made of alloy steel
- Hardness HRC62-65
- Diameter accuracy: $\pm 1\mu\text{m}$



4166-10

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|-------------------------------|--------|--------------------|
| 4166-2S | 1.00, 1.01, 1.02, ..., 2.00 | 0.01mm | 101 |
| 4166-3S | 2.00, 2.01, 2.02, ..., 3.00 | 0.01mm | 101 |
| 4166-4S | 3.00, 3.01, 3.02, ..., 4.00 | 0.01mm | 101 |
| 4166-5S | 4.00, 4.01, 4.02, ..., 5.00 | 0.01mm | 101 |
| 4166-6S | 5.00, 5.01, 5.02, ..., 6.00 | 0.01mm | 101 |
| 4166-7S | 6.00, 6.01, 6.02, ..., 7.00 | 0.01mm | 101 |
| 4166-8S | 7.00, 7.01, 7.02, ..., 8.00 | 0.01mm | 101 |
| 4166-9S | 8.00, 8.01, 8.02, ..., 9.00 | 0.01mm | 101 |
| 4166-10S | 9.00, 9.01, 9.02, ..., 10.00 | 0.01mm | 101 |

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|-------------------------------|-------|--------------------|
| 4166-411 | 1.0, 1.1, 1.2, ..., 5.0 | 0.1mm | 41 |
| 4166-511 | 5.0, 5.1, 5.2, ..., 10.0 | 0.1mm | 51 |
| 4166-512 | 10.0, 10.1, 10.2, ..., 15.0 | 0.1mm | 51 |
| 4166-513 | 15.0, 15.1, 15.2, ..., 20.0 | 0.1mm | 51 |

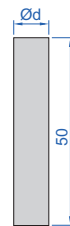
| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|---------|-------------------------------|--------|--------------------|
| 4166-0D | 0.20, 0.21, 0.22, ..., 0.50 | 0.01mm | 31 |
| 4166-1 | 0.50, 0.51, 0.52, ..., 1.00 | 0.01mm | 51 |
| 4166-1D | 1.00, 1.01, 1.02, ..., 1.50 | 0.01mm | 51 |
| 4166-2 | 1.50, 1.51, 1.52, ..., 2.00 | 0.01mm | 51 |
| 4166-2D | 2.00, 2.01, 2.02, ..., 2.50 | 0.01mm | 51 |
| 4166-3 | 2.50, 2.51, 2.52, ..., 3.00 | 0.01mm | 51 |
| 4166-3D | 3.00, 3.01, 3.02, ..., 3.50 | 0.01mm | 51 |
| 4166-4 | 3.50, 3.51, 3.52, ..., 4.00 | 0.01mm | 51 |
| 4166-4D | 4.00, 4.01, 4.02, ..., 4.50 | 0.01mm | 51 |
| 4166-5 | 4.50, 4.51, 4.52, ..., 5.00 | 0.01mm | 51 |
| 4166-5D | 5.00, 5.01, 5.02, ..., 5.50 | 0.01mm | 51 |
| 4166-6 | 5.50, 5.51, 5.52, ..., 6.00 | 0.01mm | 51 |
| 4166-6D | 6.00, 6.01, 6.02, ..., 6.50 | 0.01mm | 51 |
| 4166-7 | 6.50, 6.51, 6.52, ..., 7.00 | 0.01mm | 51 |
| 4166-7D | 7.00, 7.01, 7.02, ..., 7.50 | 0.01mm | 51 |
| 4166-8 | 7.50, 7.51, 7.52, ..., 8.00 | 0.01mm | 51 |
| 4166-8D | 8.00, 8.01, 8.02, ..., 8.50 | 0.01mm | 51 |
| 4166-9 | 8.50, 8.51, 8.52, ..., 9.00 | 0.01mm | 51 |
| 4166-9D | 9.00, 9.01, 9.02, ..., 9.50 | 0.01mm | 51 |
| 4166-10 | 9.50, 9.51, 9.52, ..., 10.00 | 0.01mm | 51 |

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|---------------------------------|--------|--------------------|
| 4166-10D | 10.00, 10.01, 10.02, ..., 10.50 | 0.01mm | 51 |
| 4166-11 | 10.50, 10.51, 10.52, ..., 11.00 | 0.01mm | 51 |
| 4166-11D | 11.00, 11.01, 11.02, ..., 11.50 | 0.01mm | 51 |
| 4166-12 | 11.50, 11.51, 11.52, ..., 12.00 | 0.01mm | 51 |
| 4166-12D | 12.00, 12.01, 12.02, ..., 12.50 | 0.01mm | 51 |
| 4166-13 | 12.50, 12.51, 12.52, ..., 13.00 | 0.01mm | 51 |
| 4166-13D | 13.00, 13.01, 13.02, ..., 13.50 | 0.01mm | 51 |
| 4166-14 | 13.50, 13.51, 13.52, ..., 14.00 | 0.01mm | 51 |
| 4166-14D | 14.00, 14.01, 14.02, ..., 14.50 | 0.01mm | 51 |
| 4166-15 | 14.50, 14.51, 14.52, ..., 15.00 | 0.01mm | 51 |
| 4166-15D | 15.00, 15.01, 15.02, ..., 15.50 | 0.01mm | 51 |
| 4166-16 | 15.50, 15.51, 15.52, ..., 16.00 | 0.01mm | 51 |
| 4166-16D | 16.00, 16.01, 16.02, ..., 16.50 | 0.01mm | 51 |
| 4166-17 | 16.50, 16.51, 16.52, ..., 17.00 | 0.01mm | 51 |
| 4166-17D | 17.00, 17.01, 17.02, ..., 17.50 | 0.01mm | 51 |
| 4166-18 | 17.50, 17.51, 17.52, ..., 18.00 | 0.01mm | 51 |
| 4166-18D | 18.00, 18.01, 18.02, ..., 18.50 | 0.01mm | 51 |
| 4166-19 | 18.50, 18.51, 18.52, ..., 19.00 | 0.01mm | 51 |
| 4166-19D | 19.00, 19.01, 19.02, ..., 19.50 | 0.01mm | 51 |
| 4166-20 | 19.50, 19.51, 19.52, ..., 20.00 | 0.01mm | 51 |

CERAMIC PIN GAUGE SETS



Unit: mm



- Meet DIN2269, grade 1
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability
- Diameter accuracy: $\pm 1\mu\text{m}$

4169-3

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|-------------------------------|--------|--------------------|
| 4169-2S | 1.00, 1.01, 1.02, ... 2.00 | 0.01mm | 101 |
| 4169-3S | 2.00, 2.01, 2.02, ... 3.00 | 0.01mm | 101 |
| 4169-4S | 3.00, 3.01, 3.02, ... 4.00 | 0.01mm | 101 |
| 4169-5S | 4.00, 4.01, 4.02, ... 5.00 | 0.01mm | 101 |
| 4169-6S | 5.00, 5.01, 5.02, ... 6.00 | 0.01mm | 101 |
| 4169-7S | 6.00, 6.01, 6.02, ... 7.00 | 0.01mm | 101 |
| 4169-8S | 7.00, 7.01, 7.02, ... 8.00 | 0.01mm | 101 |
| 4169-9S | 8.00, 8.01, 8.02, ... 9.00 | 0.01mm | 101 |
| 4169-10S | 9.00, 9.01, 9.02, ... 10.00 | 0.01mm | 101 |

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|-------------------------------|-------|--------------------|
| 4169-411 | 1.0, 1.1, 1.2, ... 5.0 | 0.1mm | 41 |
| 4169-511 | 5.0, 5.1, 5.2, ... 10.0 | 0.1mm | 51 |
| 4169-512 | 10.0, 10.1, 10.2, ... 15.0 | 0.1mm | 51 |
| 4169-513 | 15.0, 15.1, 15.2, ... 20.0 | 0.1mm | 51 |

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|---------|-------------------------------|--------|--------------------|
| 4169-0D | 0.30, 0.31, 0.32, ... 0.50 | 0.01mm | 21 |
| 4169-1 | 0.50, 0.51, 0.52, ... 1.00 | 0.01mm | 51 |
| 4169-1D | 1.00, 1.01, 1.02, ... 1.50 | 0.01mm | 51 |
| 4169-2 | 1.50, 1.51, 1.52, ... 2.00 | 0.01mm | 51 |
| 4169-2D | 2.00, 2.01, 2.02, ... 2.50 | 0.01mm | 51 |
| 4169-3 | 2.50, 2.51, 2.52, ... 3.00 | 0.01mm | 51 |
| 4169-3D | 3.00, 3.01, 3.02, ... 3.50 | 0.01mm | 51 |
| 4169-4 | 3.50, 3.51, 3.52, ... 4.00 | 0.01mm | 51 |
| 4169-4D | 4.00, 4.01, 4.02, ... 4.50 | 0.01mm | 51 |
| 4169-5 | 4.50, 4.51, 4.52, ... 5.00 | 0.01mm | 51 |
| 4169-5D | 5.00, 5.01, 5.02, ... 5.50 | 0.01mm | 51 |
| 4169-6 | 5.50, 5.51, 5.52, ... 6.00 | 0.01mm | 51 |
| 4169-6D | 6.00, 6.01, 6.02, ... 6.50 | 0.01mm | 51 |
| 4169-7 | 6.50, 6.51, 6.52, ... 7.00 | 0.01mm | 51 |
| 4169-7D | 7.00, 7.01, 7.02, ... 7.50 | 0.01mm | 51 |
| 4169-8 | 7.50, 7.51, 7.52, ... 8.00 | 0.01mm | 51 |
| 4169-8D | 8.00, 8.01, 8.02, ... 8.50 | 0.01mm | 51 |
| 4169-9 | 8.50, 8.51, 8.52, ... 9.00 | 0.01mm | 51 |
| 4169-9D | 9.00, 9.01, 9.02, ... 9.50 | 0.01mm | 51 |
| 4169-10 | 9.50, 9.51, 9.52, ... 10.00 | 0.01mm | 51 |

| Code | Diameter $\varnothing d$ (mm) | Step | Pin gauges per set |
|----------|--------------------------------|--------|--------------------|
| 4169-10D | 10.00, 10.01, 10.02, ... 10.50 | 0.01mm | 51 |
| 4169-11 | 10.50, 10.51, 10.52, ... 11.00 | 0.01mm | 51 |
| 4169-11D | 11.00, 11.01, 11.02, ... 11.50 | 0.01mm | 51 |
| 4169-12 | 11.50, 11.51, 11.52, ... 12.00 | 0.01mm | 51 |
| 4169-12D | 12.00, 12.01, 12.02, ... 12.50 | 0.01mm | 51 |
| 4169-13 | 12.50, 12.51, 12.52, ... 13.00 | 0.01mm | 51 |
| 4169-13D | 13.00, 13.01, 13.02, ... 13.50 | 0.01mm | 51 |
| 4169-14 | 13.50, 13.51, 13.52, ... 14.00 | 0.01mm | 51 |
| 4169-14D | 14.00, 14.01, 14.02, ... 14.50 | 0.01mm | 51 |
| 4169-15 | 14.50, 14.51, 14.52, ... 15.00 | 0.01mm | 51 |
| 4169-15D | 15.00, 15.01, 15.02, ... 15.50 | 0.01mm | 51 |
| 4169-16 | 15.50, 15.51, 15.52, ... 16.00 | 0.01mm | 51 |
| 4169-16D | 16.00, 16.01, 16.02, ... 16.50 | 0.01mm | 51 |
| 4169-17 | 16.50, 16.51, 16.52, ... 17.00 | 0.01mm | 51 |
| 4169-17D | 17.00, 17.01, 17.02, ... 17.50 | 0.01mm | 51 |
| 4169-18 | 17.50, 17.51, 17.52, ... 18.00 | 0.01mm | 51 |
| 4169-18D | 18.00, 18.01, 18.02, ... 18.50 | 0.01mm | 51 |
| 4169-19 | 18.50, 18.51, 18.52, ... 19.00 | 0.01mm | 51 |
| 4169-19D | 19.00, 19.01, 19.02, ... 19.50 | 0.01mm | 51 |
| 4169-20 | 19.50, 19.51, 19.52, ... 20.00 | 0.01mm | 51 |

CARBIDE INDIVIDUAL PIN GAUGES



- Meet DIN2269, grade 1
- Diameter range: $\varnothing 0.300\text{--}\varnothing 30.000\text{mm}$ with three decimal, for example 0.311mm, 5.562mm, 16.298mm
- Diameter accuracy: $\pm 1\mu\text{m}$
- Made of carbide
- Hardness HRA90-90.5

| Code | Diameter range $\varnothing d$ (mm) |
|------------|-------------------------------------|
| 4193-□□□□* | 0.300~30.000 |

*Supplied with manufacturer inspection certificate



Ordering examples:

| Diameter | Code |
|----------|-------------|
| 0.311mm | 4193-0D311 |
| 5.562mm | 4193-5D562 |
| 16.298mm | 4193-16D298 |

Note: "D" stands for "."

STEEL INDIVIDUAL PIN GAUGES WITH TWO DECIMAL PLACES (0.01MM STEP)

Ordering examples:

| Diameter | Code |
|----------|------------|
| 0.21mm | 4110-0D21 |
| 5.56mm | 4110-5D56 |
| 16.00mm | 4110-16D00 |

Note: "D" stands for "."



- Meet DIN2269, grade 1
- Diameter range: $\varnothing 0.20\text{--}\varnothing 20.00\text{mm}$
- Diameter accuracy: $\pm 1\mu\text{m}$
- Made of alloy steel
- Hardness HRC62-65

| Code |
|-----------|
| 4110-□□□□ |

| Diameter $\varnothing d$ (mm) |
|---------------------------------------|
| 0.20, 0.21, 0.22, 0.23, ... 1.00 |
| 1.01, 1.02, 1.03, 1.04, ... 2.00 |
| 2.01, 2.02, 2.03, 2.04, ... 3.00 |
| 3.01, 3.02, 3.03, 3.04, ... 4.00 |
| 4.01, 4.02, 4.03, 4.04, ... 5.00 |
| 5.01, 5.02, 5.03, 5.04, ... 6.00 |
| 6.01, 6.02, 6.03, 6.04, ... 7.00 |
| 7.01, 7.02, 7.03, 7.04, ... 8.00 |
| 8.01, 8.02, 8.03, 8.04, ... 9.00 |
| 9.01, 9.02, 9.03, 9.04, ... 10.00 |
| 10.01, 10.02, 10.03, 10.04, ... 11.00 |
| 11.01, 11.02, 11.03, 11.04, ... 12.00 |
| 12.01, 12.02, 12.03, 12.04, ... 13.00 |
| 13.01, 13.02, 13.03, 13.04, ... 14.00 |
| 14.01, 14.02, 14.03, 14.04, ... 15.00 |
| 15.01, 15.02, 15.03, 15.04, ... 16.00 |
| 16.01, 16.02, 16.03, 16.04, ... 17.00 |
| 17.01, 17.02, 17.03, 17.04, ... 18.00 |
| 18.01, 18.02, 18.03, 18.04, ... 19.00 |
| 19.01, 19.02, 19.03, 19.04, ... 20.00 |

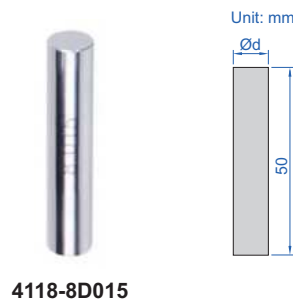
STEEL INDIVIDUAL PIN GAUGES WITH THREE DECIMAL PLACES (0.001MM STEP)



- Meet DIN2269, grade 1
- Diameter range: $\varnothing 0.200\text{--}\varnothing 30.000\text{mm}$ with three decimal, for example 0.211mm, 5.562mm, 16.298mm
- Diameter accuracy: $\pm 1\mu\text{m}$
- Made of alloy steel
- Hardness HRC62-65

| Code | Diameter range $\varnothing d$ (mm) |
|------------|-------------------------------------|
| 4118-□□□□* | 0.200~30.000 |

*Supplied with manufacturer inspection certificate



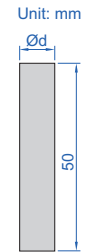
Ordering examples:

| Diameter | Code |
|----------|-------------|
| 0.211mm | 4118-0D211 |
| 5.562mm | 4118-5D562 |
| 16.298mm | 4118-16D298 |

Note: "D" stands for "."

CERAMIC INDIVIDUAL PIN GAUGES WITH TWO DECIMAL PLACES (0.01MM STEP)

- Meet DIN2269, grade 1
- Diameter range: Ø0.30~Ø20.00mm
- Diameter accuracy: ±1µm
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability



4113-10D00

Ordering examples:

| Diameter | Code |
|----------|------------|
| 1.21mm | 4113-1D21 |
| 5.56mm | 4113-5D56 |
| 15.00mm | 4113-15D00 |

Note: "D" stands for "."

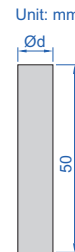
| Diameter Ød (mm) |
|------------------------------------|
| 0.30, 0.31, 0.32, 0.33, ..., 1.00 |
| 1.01, 1.02, 1.03, 1.04, ..., 2.00 |
| 2.01, 2.02, 2.03, 2.04, ..., 3.00 |
| 3.01, 3.02, 3.03, 3.04, ..., 4.00 |
| 4.01, 4.02, 4.03, 4.04, ..., 5.00 |
| 5.01, 5.02, 5.03, 5.04, ..., 6.00 |
| 6.01, 6.02, 6.03, 6.04, ..., 7.00 |
| 7.01, 7.02, 7.03, 7.04, ..., 8.00 |
| 8.01, 8.02, 8.03, 8.04, ..., 9.00 |
| 9.01, 9.02, 9.03, 9.04, ..., 10.00 |

| Diameter Ød (mm) |
|--|
| 10.01, 10.02, 10.03, 10.04, ..., 11.00 |
| 11.01, 11.02, 11.03, 11.04, ..., 12.00 |
| 12.01, 12.02, 12.03, 12.04, ..., 13.00 |
| 13.01, 13.02, 13.03, 13.04, ..., 14.00 |
| 14.01, 14.02, 14.03, 14.04, ..., 15.00 |
| 15.01, 15.02, 15.03, 15.04, ..., 16.00 |
| 16.01, 16.02, 16.03, 16.04, ..., 17.00 |
| 17.01, 17.02, 17.03, 17.04, ..., 18.00 |
| 18.01, 18.02, 18.03, 18.04, ..., 19.00 |
| 19.01, 19.02, 19.03, 19.04, ..., 20.00 |

| Code |
|-----------|
| 4113-□□□□ |

CERAMIC INDIVIDUAL PIN GAUGES WITH THREE DECIMAL PLACES (0.001MM STEP)

- Meet DIN2269, grade 1
- Diameter range: Ø0.300~Ø30.000mm
- With three decimal, for example 1.211mm, 5.562mm, 14.955mm
- Diameter accuracy: ±1µm
- Made of ceramic, extremely wear resistance, corrosion resistance and dimensional stability



4192-10D000

Ordering examples:

| Diameter | Code |
|----------|-------------|
| 1.211mm | 4192-1D211 |
| 5.562mm | 4192-5D562 |
| 14.955mm | 4192-14D955 |

Note: "D" stands for "."

| Code | Diameter range Ød (mm) |
|-----------|------------------------|
| 4192-□□□□ | 0.300-30.000 |

BOXES FOR PIN GAUGES

- For individual pin gauges (4110, 4118, 4192, 4113 and 4193 series)



7340

| Code | Applicable pin gauge diameter Ød | Quantity of pin gauges |
|----------|----------------------------------|------------------------|
| 7340 | 0.20-10.00mm | 51 pcs |
| 7340-101 | 0.20-10.00mm | 101 pcs |
| 7340-201 | 10.00-15.00mm | 51 pcs |
| 7340-202 | 15.00-20.00mm | 51 pcs |