S4

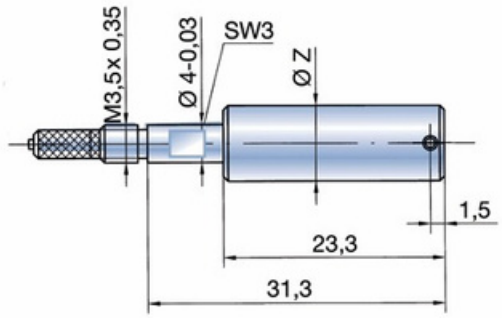
Nominal diameter range: Ø 2.98 - 9.0 mm

Ø Z = Nom. diameter - 0.02 / - 0.04

Sample order:

Bore diameter	Order Code
7 D6	BMD-S4-7.04

Diameters less than 2.98 with T-BMD



S6

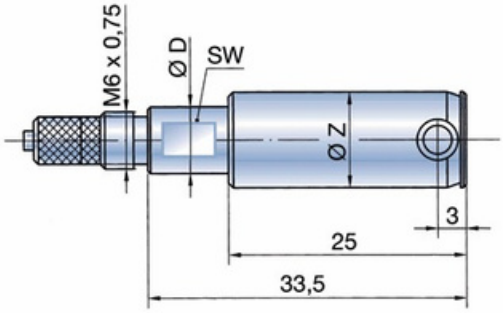
Nominal diameter range: 7.0 - 20.0 mm

Ø Z = Nom. diameter - 0.02 / - 0.04

Sample order:

Bore diameter	Order Code
10 H6	BMD-S6-10.0

Nom. diameter	7.0 - < 8.25	8.25 - 20.0
Ø D	6.8	7.9
SW	6	7



S10 Ø 15 - 44 mm

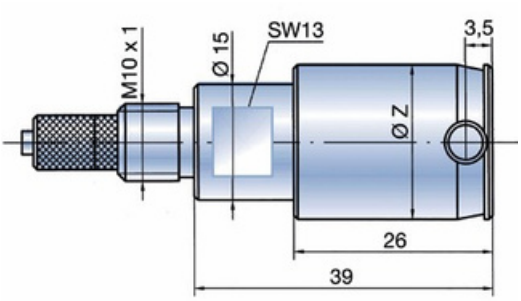
Nominal diameter range: above 15.0 - 44.0 mm

Nom. diameterØ15 - 32.0
Ø Z = Nom. diameter - 0.02 / - 0.05

Nom. diameter Ø > 32 - 44.0
Ø Z = Nom. diameter - 0.03 / - 0.06

Sample order:

Bore	Order Code
40 - 0.007 / + 0.025	BMD-S10-39.993



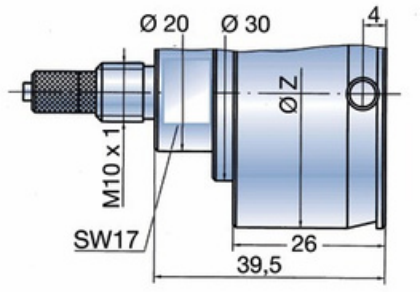
S10 Ø > 44 - 70 mm

Nominal diameter range: above 44.0 - 70.0 mm

Ø Z = Nom. diameter - 0.03 / - 0.06

Sample order:

Bore	Order Code
50 R7	BMD-S10-49.95



S10 Ø > 70 - 270 mm

Nominal diameter range: above 70.0 - 270.0

Nom. diameter > 70 - 200
Ø Z = Nom. diameter - 0.04 / - 0.07

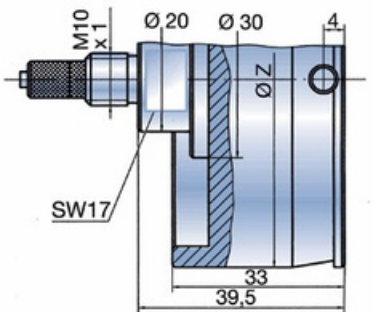
Nom. diameter > 200 - 270
Ø Z = Nom. diameter - 0.06 / - 0.10

BMD > Ø 100 mm with P-Probe

Sample order:

Bore	Order Code
125 - 0.04	BMD-S10-124.96

Nominal diameters over Ø 270 mm on request



BMD XQ – Higher Measurement Certainty

Highly increased measuring reliability for ever tighter tolerances. Especially in combination with the digital display DIATRON1500-S and its resolution of 0.1 µm.

BMD XLT - Xtended Lifetime

Xtended Lifetime: Significant extension of the service life thanks to specially DLC-coated measuring contacts and needle

Nominal dimensions and standard measurement ranges

Plug gauge order dimension (nominal dimension) = minimum bore dimension

Example:

- Ø 35 D7 = Ø 35 +0.08/+0.105
  BMD nom. dimension = 35.08

- Ø 35 H7 = Ø 35 +0/+0.025
  BMD nom. dimension = 35.0

Gauging accuracy

Maximum allowed deviations with new plug gauges:

Repeatability:

- 2-point design fw ≤ 0.001 mm
- 2-point design-XQ fw ≤ 0.0005 mm
- 3-point design fw ≤ 0.002 mm

Measuring range transmission error (Linearity)

- 2-point models fe = 1% of gauging distance min. 0.001
- 2-point models-XQ fe = 0,5% of gauging distance min. 0.0005
- 3-point models fe = 3% of gauging distance min. 0.002
- FB design fe = 2% of gauging distance min. 0.001

Measurement range extension (MB-SO) and special designs may lead to a reduced measuring accuracy.

Reduced cylinder diameter tolerance (MZ)

The manufacturing tolerances for guide cylinders indicated for BMD types S and D are reduced to 0.01 mm (±0.005). The purpose is to reduce axial and radial errors to a minimum. This option should be used only for very small bore tolerances (to approx. 0.01 mm). Cylinder production tolerance (min. bore diameter –0.01) ±0.005 mm

Order suffix: MZ
The MZ dimension is approx. 0.01 mm lower than the minimum bore diameter (= nominal BMD diameter).

Example:

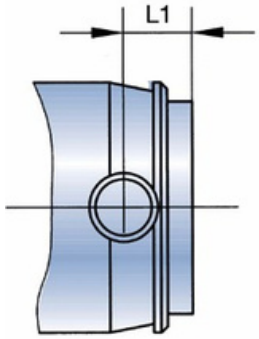
- Min. bore diameter = 35.0 MZ diameter = 34.99 BMD-S10-35.0-MZ-34.99 The guide cylinder is manufactured with a diameter of Ø 34.99 ±0.005 mm

Range of application Ø 4.0 – 100.0 mm.
Other diameter dimensions on request.

Contact Points

Large contact point radii are important to ensure long service life and are required when gauging bores with rough surfaces. Our BMD gauging contacts meet these requirements. The selection of gauging contact material depends on the composition of the workpiece and the conditions affecting wear. BMD gauging contacts are available in several different materials.

Protective cover (AD)



Protective covers should be used with caution. Covers protect mechanical parts and reduce the risk of dirt accumulation. However, they make it difficult to remove chips, coolants and other deposits. Standard protective covers are made of aluminum. Covers made of steel, hardened steel and other materials are available on request. Depending on nominal diameter and design, protective covers are either glued or screwed in place.

Covers for type S and S-FB

Covers for type S are available for nominal diameters of 4.0 and above. Up to a nominal diameter of 28.0, the dimension L1 increases by 0.5 mm. For nominal diameters of 28.0 and above, dimension L1 increases by 2.0 mm.

- Order suffix: AD-S
- Example: BMD-S10-35.0-AD-S

Covers for type D

Dimension L1 increases by 1 mm.

- Order suffix: AD-D
- Example: BMD-D10-35,0-AD-D

Covers for type FB

BMD-FB6: Dimension L1 increases by 0.5 mm. For series BMD-FB10, nominal diameters 15-28 mm, dimension L1 increases by 0.5 mm and for nominal diameters of 28 mm by 2 mm.

- Order suffix: AD-FB
- Example: BMD-FB10-35.0-AD-FB

Indicators, measuring pressure

Plug gauges can be used with nearly all mechanical and electronic indicator units with Ø 8h and 3/8“ stem. Measuring pressure has a significant influence on the service life and accuracy of BMD.

Recommended measuring pressures for standard measurement ranges:

- BMD Series 4: **0.3 – 0.4 N**
- BMD Series 6: **0.6 – 1.0 N**
- BMD Series 10: **1.0 – 1.6 N** (Ø15-100 mm)
- BMD Series 10: **1.2 – 1.6 N** (Ø > 100-270 mm)

Measuring range, based on nominal BMD dimension		
BMD Series	**Application Range**	**Measuring Range**
Series 4	Ø 2.98 - 9.0 mm	+0.10 mm
Series 6 FB Series 6 3 point (Series 6)	Ø 7.0 - 20.0 mm Ø 7.0 - 16.0 mm Ø 8.0 - 20.0 mm	+ 0.15 mm + 0.15 mm + 0.15 mm
Series 10 FB Series 10 3-point (Series 10)	Ø 15.0 - 270.0 mm Ø 15.0 - 150.0 mm Ø 15.0 – 100.0 mm	+ 0.20 mm + 0.15 mm + 0.20 mm

DIATRON1500-S-V10
DIATRON1500-S-V6
DIATRON1500-S-V4

Network-compatible indicator holder with integrated precision display

- Complete system with 7-digit display
- High data security
- Resolution 0.0001 mm, can be switched to 0.001 mm
- 3.5 mm measuring travel
- mm/inch display
- Password protection for programme and / or calibration
- Possibility of continuous data transmission for dynamic measurement with high readout rate: values are transmitted with 20 measurements per second
- Transmission of multiple results possible, e.g. max and min, etc.
- Static and dynamic measurement: Max / Min / (Max+Min)/2 / (Max-Min), arithmetic mean, classification
- LED tolerance display can be switched on in all modes: red, yellow, green
- Input of a factor possible
- With fine adjustment
- Large and clear display
- Tolerance band in the display
- Time and temperature-controlled calibration
- Splash-proof
- Autopower off

Software

- Programmable on the measuring instrument or by radio
- Free software for programming the DIATRON1500-S and saving programmes DIA-Gauge Prof. software for direct programming of the DIATRON1500-S and programming of the handle buttons for control via DIA-Gauge Prof. (subject to a charge). Programming with software takes place solely by radio

Radio

- Permanently installed radio module as standard, which
- can be deactivated
  Up to 120 devices can be connected to one receiver
  Range up to 200 m (depending on environment)

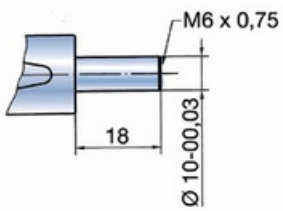
MH10-P
MH6-P

Indicator holder with impact shroud protection

Temperature-stabilized holder for indicators MDU125, MU10m, MU1m and F1000 (indicator not included in price). The holder is supplied with 2 marking strips. The impact protection can be removed simply by loosening the two clamping screws (see also MH10-150).

Types With clamping

8 mm	With clamping 3/8“
MH10-150-P	MH10-150-P-Z
MH10-61-P	MH10-61-P-Z
MH6-150-P	MH6-150-P-Z
MH6-51-P	MH6-51-P-Z



A complete range of compatible indicators, holders and specialised attachments is available in the DIATEST product catalogue.

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