Air Gages

Description

Air plug gages are used for testing cylindrical through bores or blind bores. The plug gage bodies are equipped with two opposing measuring jets which record the measured value without contact. This arrangement allows the diameter, the diametric roundness and the cylindricity of bores to be calculated using a single jet air plug gage.

The diameter is measured immediately after the air plug gage is introduced, while the diametric roundness deviation can be tested by rotation around 180° and the cylindricity by movement in a longitudinal direction.

The maximum measuring range of the air plug gages is 76µm/.003in.

Air plug gages are furnished in high chrome stainless steel or chrome plated versions and, if required, with a shut-off valve to conserve air consumption.

The air tooling long service life is due in part to hardened measuring jets which are recessed relative to the generated surface of the measuring body and are, therefore, protected against damage.

The standard Mahr Federal air tooling is compatible with the complete line of evaluation units. These include Dimensionair, uDimensionair, 830 PE, 1840 PE, and 1841 PE signal sharing column. Air/Electric convertors for interfacing to gaging computer systems are also available.

Special air gage designs for measuring taper, straightness and other applications are available. Contact Mahr Federal.

Measuring range/magnification		
Type	**Measuring range**	**Magnification**
DP 50	76µm/ *.003"*	2500:1
DP 20	38µm /*.0015"*	5000:1
DP 10	15µm/ *.0006"*	10,000:1

For applications greater than 1000 feet, special calibration is required.

µDimensionair®

Features

• **Affordable** • **Versatile** • **Innovative** • **Rugged**

No other air gaging system offers so much — in the palm of your hand — mounted to the workbench or even right to the machine tool. µDimensionair is rated IP-54, so, it can be used on the shop floor — and, the air tooling cleans dirt from the part for high performance measurements — fast and easy!

• Air gage readout is right in front of you — simple and clear.
• Fixed resolution and balanced air system makes the gage stable and reliable for your manufacturing environment.
• Single mastering for fast setup.

All other features of the µMaxµm Digital Indicator:
• Inch/metric units
• Digital and analog display
• Bi- and uni-lateral tolerances with presets
• Absolute transducer for eliminating travel errors
• Calibratable — battery retains settings
• Multiple data output formats
• Auto-zeroing
• Normal-reverse settings for ID/OD measurements

The µDimensionair is the ultimate of portability and versatility — in your hand or at the workbench or machine tool.

Technical Data

Measuring Range	Digital Resolution	Tooling I.D. Number
± 0.080mm/ ± *0.003"*	0.01mm/ *0.00005"*	60
± 0.040mm/ ± *0.0016"*	0.0005mm/ *0.00002"*	50
± 0.020mm/ ± *0.00076"*	0.0005mm/ *0.00002"*	20

Operating Temperature	5-35° C/41-95° F
Storage Temperature	0-60° C/32-140° F
Repeatability	± 1 digit
Calibration Accuracy	± 1 digit
Linear Error	± 1 digit
Response Time	Approximately 1 second
Thermal Stability	0.1% of full scale/F
Data Output	ASCII/Digimatic
Tolerance Indicators	Two — over/under
Weight	25kg/5lbs.
Dimensions	Main body — approx. 100x60x70mm (4 x 2.5 x 3 in)
Auto Power Off	15 minutes of non-use
Power Requirements	3 volt lithium battery coin cell, 2 per unit — CR-2450
Battery Life	9 months normal usage — 3000 hours
Air Supply	2.10 ±.01 bar/30.4 ±.15 psi
Display	Rotates through 270 degrees

Ordering Information	Order Number
µDimensionair, complete with handle, adaptor and hose	2095389
Pressure Regulator with filter	2238020
Pressure Meter	2095924
Bench Kit with adaptor	2239307
Output cable — Digimatic	2001025
Serial output cable to DB-9 pin	SCB-4
Battery 3V type CR-2450	EBY-1018
Insulated Handle	2237666
Shut off valve	2240993
Rest Stand	2241109
Swivel Adaptor	2240594
Supply Hose to Regulator/Filter	AHO-2
Oil and water Trap	AFL-9

Dimensionair® Air Gages

Features

- Uses regular shop air (40 -150 psig).
- Internal pressure regulator keeps measuring pressures within calibrated range.
- Adjust meter to zero using a single setting master and the zero setting screw.
- High visibility meter has fine line graduations and a needle-thin hand for clear, precise readings. An air filter is included to remove dust and dirt contaminants from air line.
- Tooling mounts to the front of the unit. Connections are tight with finger pressure.
- No recalibration necessary when changing tooling. Just set zero and measure!
- Models available in 5 magnifications, 2 dial styles, and either Metric or Inch.

Technical Data

Magnification	Tooling ID no.	Range	Minimum Graduation	Dial Style	Surface Finish (recommended)	Part Tolerance (recommended)	Order no.
1250:1	100	.006"	.0001"	Regular	100	±.002"	2095183
2500:1	50	.003"	.00005"	82.6mm/3.25in	50	±.001"	2095184*
5000:1	20	.0015"	.00002"	diameter	20	±.0005"	2095185*
10000:1	10	.0006"	.00001"		10	±.0002"	2095186
20000:1	5	.0003"	.000005"		5	±.0001"	2095189
1250:1M	100	152µm	2µm		100	±50µm	2095190
2500:1M	50	76µm	1µm		50	±25µm	2095191*
5000:1M	20	38µm	0.5µm		20	±13.5µm	2095192*
10000:1M	10	15.2µm	0.2µm		10	±5µm	2095193
20000:1M	5	7.6µm	0.1µm	Large	5	±2.5µm	2095194
4000:1	50	.003"	.000025"	152.4mm/6in	50	±.001"	2095195*
8000:1	20	.0015"	.000010"	diameter	20	±.0005"	2095196*
16000:1	10	.0006"	.000010"		10	±.0002"	2095197
32000:1	5	.0003"	.000005"		5	±.0001"	2095198
4000:1M	50	76µm	0.5µm		50	±25µm	2095199*
8000:1M	20	38µm	0.2µm		20	±13.5µm	2095200*
16000:1M	10	15.2µm	0.2µm		10	±5µm	2095201
32000:1M	5	7.6µm	0.1µm		5	±2.5µm	2095202

Contingent upon Plug having equivalent range, see chart on page 7-15.

Millimar S 1840 PE

Column format air measuring systems

Assess and judge measuring results at a glance – nothing is easier than that with the Millimar S1840 column amplifier.

The Millimar S 1840 column amplifier offers a broad range of functions for combining the signals from both static and dynamic measurements.

Measuring results are indicated by way of 101 three-color LEDs. When the programmable warning and tolerance limits are exceeded, the LEDs change their color from green to yellow or red, accordingly — high visibility from any distance.
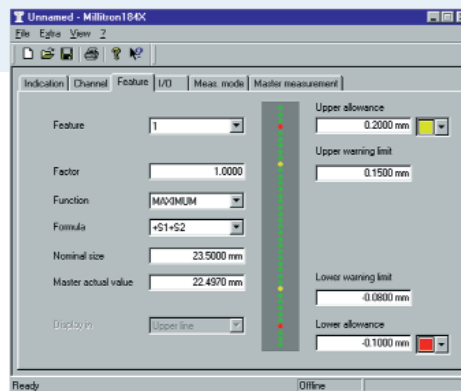
Features

Display
- Three-color illuminated bar graph with analog warning and tolerance limit display
- Two-line backlit LCD for indicating measured values, help texts, and measuring units
- Up to two characteristics can be displayed simultaneously.

Connections
- Single input.
- RS 232 interface.
- Analog output.
- Three digital inputs for measuring start, master measurement, etc.
- Three digital outputs for Accept – Reject – Rework classification, measuring time, etc.

Functions
- Static measurements: ± A, ± B, and all combinations.
- Dynamic measurements: Max, Min, Max-Min, Max+Min, mean.
- Windows® software for configuring the LED display The Millimar S 1840 column amplifier can be programmed either menu-guided via the integrated membrane keypad or with the provided MS Windows® configuration software.
- Single Master or Dual Mastrer setup.
- Password lockout in Setup Mode.

Technical Data

The Millimar S 1840 column amplifier can be programmed either menu-guided via the integrated membrane keypad or with the provided MS Windows® configuration software.

Air/electronic converter for Millimar S 1840 PE

Measuring principle	differential pressure
Measuring value acquisition	piezo
Magnification	2500:1 5000:1 10000:1
Pneumatic measuring	+/- 50 +/-25 +/-12.5
range in µm (in)	(+/-.00196 +/-.00098 +/-.00049)
Measuring error in µm (in)	< 1 % of measuring range, better 0.5 %
Signal noise in µm (µin)	<= 0.4 <= 0.2 <= 0.1
	(15.748) (7.874) (3.937)
Setting time in sec. (1 m/3.3 ft hose)	<= 0.3 <= 0.3 <= 0.5
Setting time in sec. (2 m/6.6 ft hose)	<= 0.5 <= 0.5 <= 0.7
Operating temperature	0 ... 40 °C (32 ... 104 °F)
Supply pressure	2 bar +/- 5 % (> 4 bar before pressure reducer)

Air supply connection	PU hose, dia 8 x 1 (.032 x .0394 in)
Measuring air connection	PU hose, dia. 6 x 1 (.024 x .0394 in)
Zero setter (OFFSET)	electrical
Amplification (GAIN)	electrical
Air consumption	approx. 1-2 m³ (1.308-2.616 cu.yd.)

Millimar S1840PE/F	for 1 Air Gage 2500:1 without Regulator	5330104*
	for 1 Air Gage 5000:1 without Regulator	5330105*
	for 1 Air Gage 10000:1 without Regulator	5330106*
Basefoot	With 1 Regulator for 1 1840PE Column Unit	5330910
	With 2 Regulators for 2 1840PE Column Units	5330911
	With 3 Regulators for 3 1840PE Column Units	5330912
Air Supply Adaptor Kit	Includes AFL-24 Filter and AHO-2 Hose	2121236

Base with Regulator required and sold separately. Air Supply Kit recommended.

832 Dimensionair® Air Gaging System

Features

- Digital and analog displays in a single unit. Large, high contrast digital readout shows exact deviation from zero; analog display shows measurement conditions at a glance.

- Fixed resolution and balanced air system makes the Digital Dimensionair a stable and reliable system for manufacturing environments.

- Only a single master required to set zero; system is precalibrated for correct magnification.

- Ranges and resolutions for virtually any air gage application, including 2-, 3-, 4- and 6-jet tooling plus AirProbes and JetProbes.

- Dynamics measurement capability.

- RS-232 Output – for communicating with a data collector, computer or printer, permitting statistical process control.

- Master Deviation – enhances measurement by making Auto Zero even more accurate.

Features

Model	Measuring Range	Digital Resolution	Analog Resolution	Tooling I.D. Number
Low Magnification Single or Dual Input	±0.080mm/ ± *.003"* ±0.040mm/ ±*0015"* ±0.020mm/ ±*00075"*	0.0002mm/ *10µ"*	0.004mm/ *150µ"* 0.002mm/ *75µ"* 0.001mm/ *38µ"*	60 50 20
High Magnification Single or Dual Input	±0.008mm/ ± *.0003"* ±0.004mm/ ±*00015"*	0.0001mm/ *5µ"*	0.0004mm/ *15µ"* 0.0002mm/ *8µ"*	10 5

Technical Data

Number of Jets	Voltage/Adaptor	Low Magnification Single Input Order no.	High Magnification Single Input Order no.	Low Magnification Dual Input Order no.	High Magnification Dual Input Order no.
1, 2, 3	110/U.S.	2004100	2004103	2004106	2004109
4	110/U.S.	2004101	2004104	2004107	2004110
6	110/U.S.	2004102	2004105	2004108	2004111
1, 2, 3	240/International	2004112	2004115	2004118	2004121
4	240/International	2004113	2004116	2004119	2004122
6	240/International	2004114	2004117	2004120	2004123

Millimar C 1210 & Millimar C 1245

The pneumatic version of Millimar C 1210 features a built-in air-electronic converter. This enables air gages of different magnifications to be connected directly to the Millimar C 1210.

The ideal instrument for performing simple measuring tasks quickly.

The large, clear LCD display with results indicator, tolerance markers and a two-line digital display, outputs measured values, help texts and units of measurement.

Display

- LCD display with quasi analog indicator and two-line digital display
- 5 three-color status lamps for warning and tolerance limits
- Up to 2 characteristics can be displayed at the same time.

Functions

- Static measurements: ±A, ± B, and all combinations
- Dynamic measurements: Max, Min, Max-Min, Max+Min, Mean value.
  You will significantly improve the cost effectiveness of your measuring devices. The modular design enables the Millimar C 1245 to be adapted easily - even to future measuring tasks. Measuring results can be read with extreme ease from the analog dial indicator.

Display

- Analog indicator instrument for display of measurement value.
- Two-line LCD display for values and menu text
- 5 three-color status lamps for warning and tolerance limits.
- Up to 3 characteristics can be displayed at the same time.

Functions

- 16 characteristics can be defined using an equation editor (80 characters), input channels C1 to C8 are mathematically linked with factors and brackets using the 4 basic mathematical functions.
- Static measurements: Current value, square root, arc tangent.
- Dynamic measurements: Max, Min, Max-Min, Max+Min, Mean value.
- Statistical functions: n, x-bar, S, Xmax, Xmin, R.
- Measured value memory for 5000 measured values.
- Measurement start / stop via keyboard, digital input, RS232.

Technical Data

			Order no.
Millimar C 1210 PE/F	For 1 Air Gage 2,500:1	with Regulator	**5331221**
Millimar C 1210 PE/F	For 1 Air Gage 5,000:1	with Regulator	**5331222**
Millimar C 1210 PE/F	For 1 Air Gage 10,000:1	with Regulator	**5331223**
Millimar C 1245 PE/F	For 1 air gage 2,500:1	with Regulator	**5331271**
Millimar C 1245 PE/F	For 1 air gage 5,000:1	with Regulator	**5331272**
Millimar C 1245 PE/F	For 1 air gage 10,000:1	with Regulator	**5331273**
Millimar C 1245 PE/F2	For 2 air gages 2,500:1	without Regulator	**5331275***
Millimar C 1245 PE/F2	For 2 air gages 5,000:1	without Regulator	**5331276***
Millimar C 1245 PE/F2	For 2 air gages 10,000:1	without Regulator	**5331277***
Air Supply Adaptor Kit	includes AFL-24 Filter and AHO-2 Hose		**2121236**

*Baseplate with 2 Regulators (required for 2 Air Gage Units) 5330909

Air Plugs

Calibrated I.D. tooling for the Dimensionair® Air Gaging Systems

Features

- Tooling is interchangeable without adjusting system magnification.
- Federal Air Plugs have large clearance (see table below), allowing easy entrance into the hole being measured and greater measuring range.
- Long life - wide clearance and high chrome stainless steel body extends useful life of the Air Plug. Chromed steel or other materials for extreme use are available.
- Deep, recessed jets - Air jets are recessed into the plug body which protects them from damage.
- Large jet size eliminates clogging from dirts and oils.

Plug Identification

Air Plugs are marked with an identification number which identifies its size, number of jets, plug style, and the Dimensionair® Model the plug should be used with.

For example: **DP50-T2-1.000** is the identification number of an Air Plug for a **2095184** or a standard magnification 832 Dimensionair (DP50), through-hole style with two jets (-T2), and 25mm/1.000in nominal size (-1.000).

The number (50) which identifies the Dimensionair intended is marked on the plug and also appears on the dial of the Dimensionair to help in matching the tooling to its corresponding Dimensionair Model.

Total Clearance from Nominal Size

Plug Identification	Nominal Size above mm/in	To & include mm/in	Clearance from Nominal Size mm/in
DP100, DP60	.63/ *.248"*	76.4/ *3.004"*	0.081/ *.0032"*
DP50	3/ .123"	3.5/ *.140"*	0.015/ *.0006"*
	3.5/ *.140"*	4.7/ *.185"*	0.027/ *.0011"*
	4.7/ *.185"*	6.3/ *.248"*	0.030/ *.0012"*
	6.3/ *.248"*	76.5/ *3.010"*	0.045/ *.0018"*
	76.5/ *3.010"*	127/ *5"*	0.051/ *.0020"*
	Above 127/ *5"*		0.071/ *.0028"*
DP20	3/ .123"	3.5/ .140"	0.009/ *.00035"*
	3.5/ .140"	4.7/ .185"	0.013/ *.0005"*
	4.7/ .185"	6.3/ .248"	0.015/ *.0006"*
	6.3/ .248"	76.5/ *3.010"*	0.023/ *.0009"*
	76.5/ *3.010"*	127/ *5"*	0.028/ *.0011"*
	Above 127/ *5"*		0.033/ *.0013"*
DP10	All sizes		0.009/ *.00035"*
DP5	All sizes		0.004/

Ordering Information

When ordering Air Plugs please specify:

1. Nominal I.D. Size and Tolerance.

2. Dimensionair Model to be used.

3. Air Plug style (Through Hole, Blind Hole, or Counterbore).

4. Air Plug finish (Normally furnished High Chrome stainless steel, or specify chromed steel).
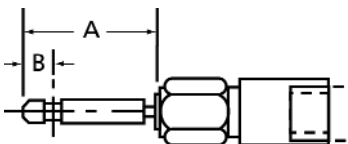
5. Order Master Setting Ring at same time.

Unless otherwise specified, Mahr Federal will furnish a 2-jet, Through Hole, High Chrome Air Plug for a 2500:1 Dimensionair.
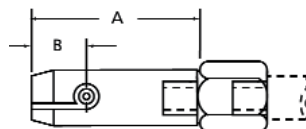
Through Hole and Blind Hole Air Plugs

Through Hole Plugs (DP50 - DP20 & 60)
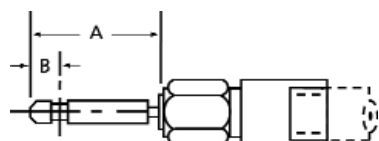
3-3.5mm/.123-.140in

Minimum recommended hole length: .187in

3.5-4.7mm/.140-.185in

Minimum recommended hole length: .187in

4.7-6.3mm/.185-.248in

Minimum recommended hole length: .187in

6.3-9.5mm/.248-.3735in

.156in

Minimum recommended hole length: .250in
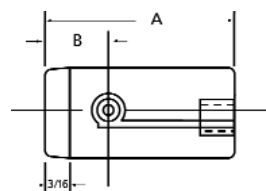*With guide sleeve or stop collar: .070in*

9.5-14.1mm/.3735-.556in

Minimum recommended hole length: .250in. With guide sleeve or stop collar: .070in.
May be used with AEX-1 or -2 Extensions for deep holes.

14.1-37.8mm/.556-1.490in

3/16

Minimum gageable hole length: .250in. With guide sleeve or stop collar: .070in. May be used with AHA-4 or -5 Extensions for deep holes.
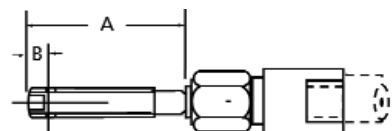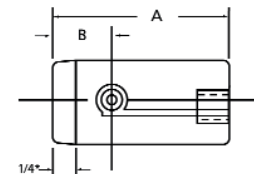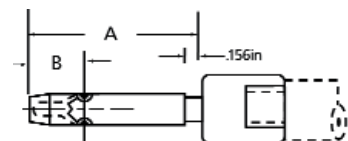
37.8-76.5mm/1.490-3.010in
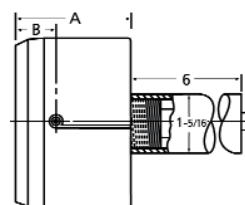
1/4"

*On sizes 1.740in up, this is a two-step taper.

Minimum recommended hole length: .250in. With guide sleeve or stop collar: .070in. May be used with AHA-4 or -5 Extensions for deep holes.

76.5-108.2mm/3.010-4.260in

6

1-5/16"

Minimum recommended hole length: .250in. With guide sleeve or stop collar: .070in.

Through Hole Plugs

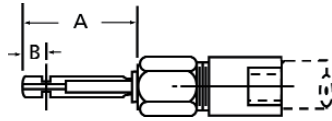| Measured Size mm/inch				Minimum Hole	Measuring Range	
Above	To & include	"A"	"B"	Length*	DP50	DP20
3/ .123"	3.5/ .140"	63.8/ .9375"	4.8/ .1875"	4.7/ .187"	0.025/ .001"	0.013/ .0005"
3.5/ .140"	4.7/ .185"	63.8/ .9375"	4.8/ .1875"	4.7/ .187"	0.038/ .0015"	0.020/ .00075"
4.7/ .185"	6.3/ .248"	38/ 1.5"	12.7/ .500"	4.7/ .187"	0.051/ .002"	0.025/ .001"
6.3/ .248"	9.5/ .3735"	38/ 1.5"	12.7/ .500"	6.4/ .250"	0.076/ .003"	0.038/ .0015"
9.5/ .3735"	14.1/ .556"	38/ 1.5"	12.7/ .500"	6.4/ .250"	0.076/ .003"	0.038/ .0015"
14.1/ .556"	37.8/ 1.490"	41.3/ 1.625"	15.9/ .625"	6.4/ .250"	0.076/ .003"	0.038/ .0015"
37.8/ 1.490"	76.5/ 3.010"	50/ 2"	19/ .750"	6.4/ .250"	0.076/ .003"	0.038/ .0015"
76.5/ 3.010"	114.3/ 4.5"	50/ 2"**	19/ .750"	6.4/ .250"	0.076/ .003"	0.038/ .0015"

*If a guide sleeve or stop collar is used, minimum hole length can be as small as 1.8mm/.070in for holes larger than 6.3mm/.248in.
**A handle 152mm/6in long and 33.3mm/1.31in diameter is supplied with plugs over 76.5mm/3.010in.
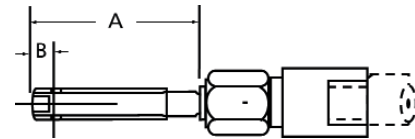
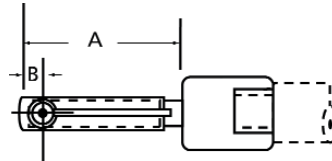## Blind Hole/Counterbore Plugs (DP50 - DP20 & 60)

3.9-4.7mm/.155-.185in

Minimum recommended hole length: .250in.
Note: Masters must simulate work-piece for holes of this size.
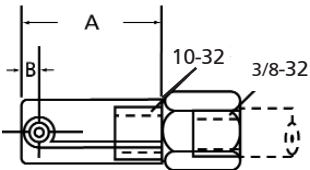
4.7-6.3mm/.185-.248in

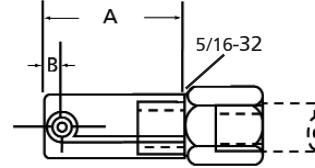*Minimum recommended hole length: .250in.*

6.3-9.47mm/.248-.373in

Minimum recommended hole length: .250in.
Shorter bores can be checked. Consult Mahr Federal Customer Resource Center.

9.47-11.8mm/.373-.467in

10-32   3/8-32

Minimum recommended hole length: .250in. Shorter bores can be checked. Consult Mahr Federal Customer Resource Center. May be used with Extension AHA-28 for deep holes.
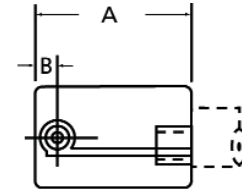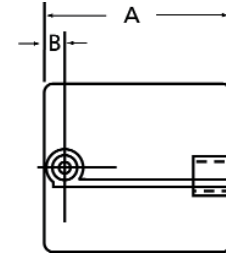
11.8-14.1mm/.467-.556in

5/16-32

Minimum recommended hole length: .250in.
Shorter bores can be checked. Consult Mahr Federal Customer Resource Center. May be used with Extensions AEX-1 or -2 for deep holes.

14.1-37.8mm/.556-1.490in

Minimum recommended hole length: .250in. Shorter bores can be checked. Consult Mahr Federal Customer Resource Center. May be used with AHA-4 or -5 Extensions for deep holes.
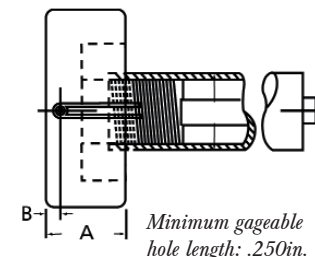
37.8-76.5mm/1.490-3.010in

Minimum recommended hole length: .250in. Shorter bores can be checked. Consult Mahr Federal Customer Resource Center. May be used with AHA-4 or -5 Extensions for deep holes.

76.5-108.2mm/3.010-4.260in

Minimum gageable hole length: .250in.

Blind Hole/Counterbore Plugs

Measured Size mm/inch		"A"	"B"	Minimum Hole Length*	Measuring Range	
Above	To & Include				DP50	DP20
3.9/ *.155"*	4.7/ *.185"*	19/ *.750"*	4/ *.156"*	6.4/ *.250"*	0.038/ *.0015"*	0.01905/ *.00075"*
4.7/ *.185"*	6.3/ *.248"*	29.4/ *1.156"*	4/ *.156"*	6.4/ *.250"*	0.051/ *.002"*	0.025/ *.001"*
6.3/ *.248"*	11.8/ *.467"*	29.4/ *1.156"*	4/ *.156"*	6.4/ *.250"*	0.076/ *.003"*	0.038/ *.0015"*
11.8/ *.467"*	14.1/ *.556"*	29.4/ *1.156"*	4/ *.156"*	6.4/ *.250"*	0.076/ *.003"*	0.038/ *.0015"*
14.1/ *.556"*	37.8/ *1.490"*	29.4/ *1.156"*	4/ *.156"*	6.4/ *.250"*	0.076/ *.003"*	0.038/ *.0015"*
37.8/ *1.490"*	76.5/ *3.010"*	35.7/ *1.406"*	4/ *.156"*	6.4/ *.250"*	0.076/ *.003"*	0.038/ *.0015"*
76.5/ *3.010"*	114.3/ *4.5"*	38/ *1.5"**	4/ *.156"*	6.4/ *.250"*	0.076/ *.003"*	0.038/ *.0015"*

*A handle 152mm/6in long and 33.3mm/1.31in diameter is supplied with plugs over 76.5mm/3.010in.

Super-blind Plugs

Blind Hole Air Plugs can be furnished to check shorter holes than listed, and can be furnished to check closer to the bottom of a hole. Holes must be at least 2.8mm/.110in long, and the distance from the end of the plug to the center-line of the jets can be as short as 2.2mm/.085in for plugs below 6.3mm/.248in or 1.9mm/.075in for plugs above 6.3mm/.248in.

Contact Mahr Federal Customer Resource Center with your requirements

Air Gaging Instruments

Accessories

Handles and Extensions

When an Air Plug is used with a hose, it should be equipped with a Handle to avoid excessive strain on the air connection and corrosion on the polished plug body. Handles may be combined for gaging deep holes.

Selection of a handle or extension is determined by the bore itself and whether or not it is preceded by a larger C-bored diameter. Corresponding thread sizes of the handle or extension must also be considered.

If no portion of the handle or extension enters the part, only thread sizes must be considered. If the plug does enter the part, then both O.D. and thread size must be considered.

AHA-4 and AHA-5 Extensions — accept AHO-1 Hose on one end and the following plug sizes on the opposite end: all 1250:1 thru 8000:1 plugs up to 76.45mm/3.010in (except 2500:1 thru 8000:1 blind hole plugs with 9.53mm/.375in – 11.86mm/.467in diameters).

AHA-6 Handle — accepts AHO-1 Hose on one end and the following plug sizes on the opposite end: all 1250:1 thru 8000:1 plugs up to 76.45mm/3.010in (except 2500:1 thru 8000:1 blind hole plugs with 9.53mm/.375in – 11.86mm/.467in diameters). Has Bakelite insulating cover. Recommended for 37.85mm/1.490in up to 76.45mm/3.010in diameters.

2237666 — High impact and coolant resistant, light weight composite handle — normally furnished with uDimensionair and air snaps.

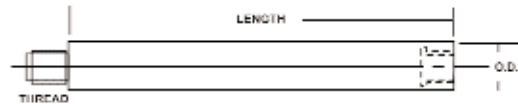AHA-66 and 2236070 — light weight aluminum handles without or with air shutoff valve.

AHA-15 Handle — Used and furnished with 1250:1 thru 8000:1 through or blind hole plugs.

AHA-23 and AHA-24 Handles — Used with 10000:1 thru 32000:1 plugs.

AHA-28 Handle — Used with 2500:1 thru 8000:1 blind hole plugs in the 9.47mm/.373in to 11.86mm/.467in range, using an AAD-315 Adaptor.

AEX-1 and AEX-2 Extensions — Used with 2500:1 thru 8000:1 through hole air plugs in the 9.5mm/.3735in to 14.1mm/556in range and with 11.86mm/.467in to 14.1mm/556in range blind hole plugs, using an AAD-55 Adaptor.
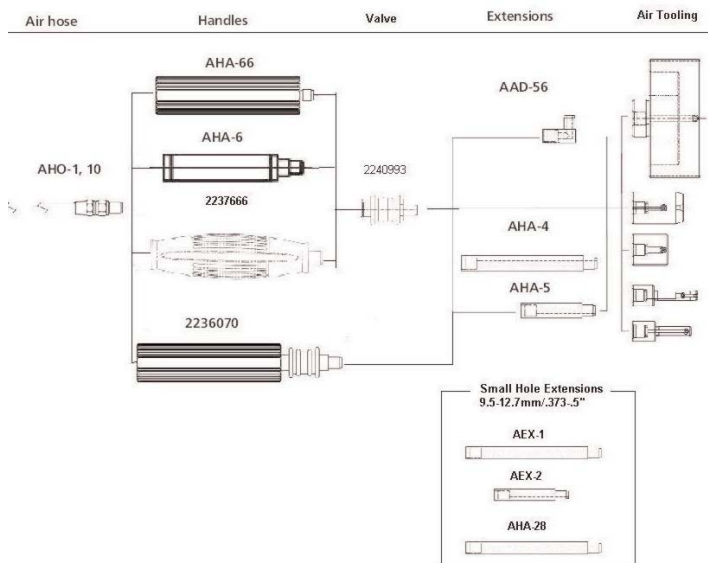
2201975 — extension used with BA-100 adjustable base. Provides easily configured base for bench-mounted air tooling fixturing. See Dimentron Plugs (Chapter 9. MaraMeter).
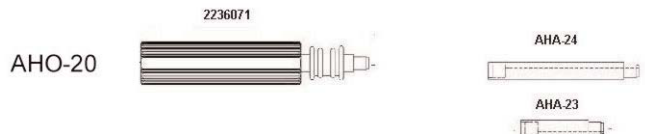

Order no.	Thread	O.D. mm/in	Length mm/in
AHA-4	3/8-32	12.07/ *.475"*	102/ *4"*
AHA-5	3/8-32	12.07/ *.475"*	51/ *2"*
AHA-6	3/8-32	19/ *.750"*	102/ *4"*
AHA-15	1-1/8-18	33.4/ *1.315"*	152/ *6"*
AHA-20	3/8-32	12.7/ *.500"*	133.35/ *5.25"*
AHA-23	9/32-40	9.14/ *.360"*	51/ *2"*
AHA-24	9/32-40	9.14/ *.360"*	102/ *4"*
AHA-28	10-32	9.14/ *.360"*	102/ *4"*
AEX-1	5/16-32	9.02/ *.355"*	51/ *2"*
AEX-2	5/16-32	9.02/ *.355"*	102/ *4"*
2201975*	3/8-32	9.5/ *.374"*	61.7/ *2.43"*

* Use on BA-100

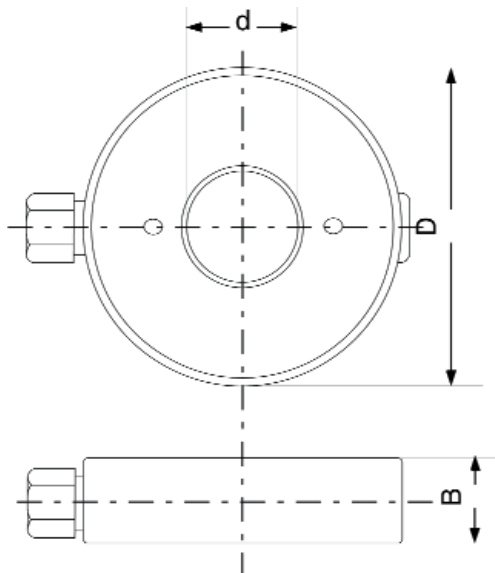Accessory Configuration for DP60/DP50/DP20
Systems — Low Magnification
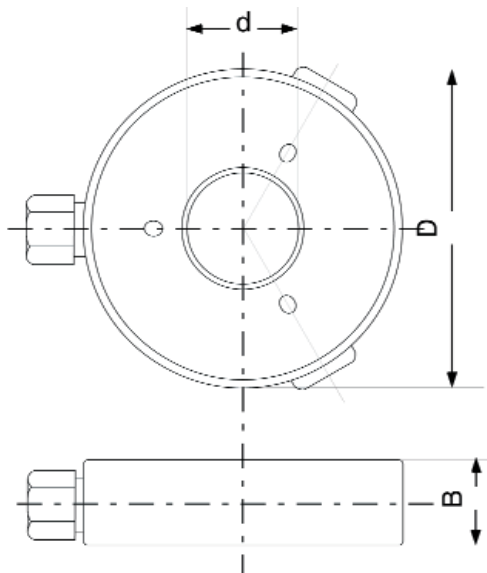

Accessories for High Magnification
Systems — DP10/DP5

Dimensionair® Air Rings

Air rings are supplied in several styles for external measuring. Two and three jet rings are most common, used for checking outside diameters for sizes out of round conditions from 6.3mm/.248in to 63.5mm/2.500in. Four and six jet rings are also available for special applications. All Air Rings have chrome-plated wear surfaces unless otherwise specified.
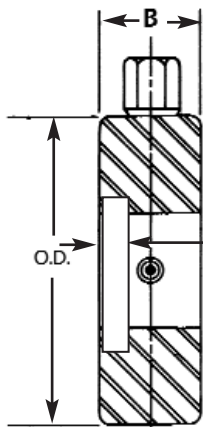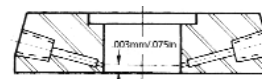

Jet air ring gage with 2 measuring jets

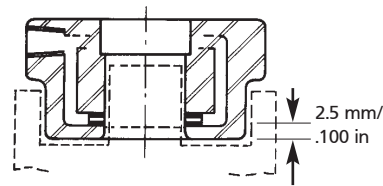*Jet air ring gage with 3 measuring jets*

For applications where O.D.'s need to be checked near a shoulder, or where part length is restricted, contact Mahr Federal for technical assistance about shoulder and SnoutType Air Rings.

Counterbore Type

Shoulder Type
(for 2500:1 & 4000:1
5000:1 & 8000:1 only)

Snout Type

Diameter d mm/in	Diameter D mm/in	Width B mm/in
6.3-7.6/ *.248-.299"*	76.2/ *3.00"*	25.4/ *1.00"*
7.6-9.3/ *.299-.366"*	76.2/ *3.00"*	25.4/ *1.00"*
9.3-13.0/ *.366-.512"*	76.2/ *3.00"*	25.4/ *1.00"*
13.0-21.0/ *.512-.827"*	76.2/ *3.00"*	25.4/ *1.00"*
21.0-25.4/ *.827-1.00"*	76.2/ *3.00"*	25.4/ *1.00"*
25.4-38.4/ *1.00-1.51"*	101.6/ *4.00"*	25.4/ *1.00"*
38.4-44.5/ *1.41-1.75"*	101.6/ *4.00"*	25.4/ *1.00"*
44.5-50.8/ *1.75-2.00"*	127.0/ *5.00"*	25.4/ *1.00"*
50.8-63.5/ *2.00-2.50"*	127.0/ *5.00"*	25.4/ *1.00"*
63.5-76.2/ *2.50-3.00"*	139.7/ *5.50"*	25.4/ *1.00"*

When ordering ring gages, please specify the following:
- Nominal workpiece dimensions
- Tolerance
- Desired magnification
- Instrument used
- Setting plug to be supplied?

Air Rings may be attached directly to a Dimensionair or used on a base and connected to the gage with a plastic hose. Vee type Guide Chutes can be furnished on one or both sides if Air Rings from 6.3mm/.248in through 44.5mm/1.750in. Tube type guide can be furnished on sizes from 6.3mm/.248in through 63.5mm/2.500in.

Accessories

Magnification Kits

Magnification Kits provide a means for checking Amplifier accuracy, traceable to the National Institute of Standards and Technology (NIST). Each Kit contains restrictors that provide pressure characteristics at zero and at both ends of the scale, a calibrated dial diagram and a Certification of Calibration.

Order No.	For use with:	Tooling
AMR-SPEC-136	1250:1	DP/DR100
2094182	1260:1	DP/DR60
AMR-12	2500:1/4000:1	DP/DR50
AMR-13	5000:1/8000:1	DP/DR20
AMR-14	10000:1/16000:1	DP/DR10
AMR-15	20000:1/32000:1	DP/DR5

AMR-12

Manifolds

Manifolds allow connecting multiple pieces of air tooling to one Dimensionair. Toggle valves allow activation of the selected tool. Manifolds are compatible with Dimensionairs 1250:1 through 8000:1M Manifolds for use with other Dimensionairs, contact Mahr Federal Customer Resource Center — **1-800-333-4243.**

Order No.	Description
AAD-82	2-way Manifold
AAD-83	3-way Manifold
AAD-84	4-way Manifold
AAD-85	5-way Manifold

Manifold AAD-83

Hoses

Supply hoses and hoses between Dimensionair and air tooling.

Order No.	Description	Thread
AHO-2	1.5m/5ft Air Supply Hose. Fits all Dimensionair models. (rubber)	7/16-20
AHO-1	0.9m/3ft Air hose for tooling for Models 1250:1 – 8000:1. (Tygon)	3/8-32
AHO-8	1.5m/5ft Air hose for tooling on Models 1250:1 – 8000:1. (Tygon)	3/8-32
AHO-10	1.8m/6ft Air hose for Models 1250:1 – 8000:1. (Tygon)	3/8-32
AHO-20	0.9m/3ftAir hose for tooling on Models 10000:1 – 32000:1. (Tygon)	9/32-40
ARG-1	Replacement O-ring for AHO-1, -8, -10 Hoses and AHA-4, -5, -6, -20 Handles.	
ARG-6	Replacement O-ring for AHO-20 Hose, AHA-23 and -24 Handles.	
ARG-10	For AEX-1, AEX-2 and AHA-28	

Traps and Filters

Good gaging practice requires clean, dry air for gage performance. Dimensionair Models are furnished with a particle filter. Shop air contains water and oil, which should be removed, using Model **AFL-24** Oil and Water Separator Trap.

Model No.	Description
AFL-10	Particle Filter (normally furnished on all Dimensionair Models). Filter size: 5 microns; Maximum pressure: 250 p.s.i.; maximum working temperature: 175°F.
AFL-24	Oil and Water Separator Trap, includes mounting hardware. Filtering capacity: 99.7% removal of oil and water; filter size: 3-6 microns; maximum pressure: 150 p.s.i.; flow rate: 20 cubic feet of air/minute @ 80 p.s.i.
AFL-23	Replacement cartridge for AFL-24.
AFL-21	Replacement cartridge for AFL-10.
AAD-263	Retrofit Kit for AFL-9

AFL-24 Trap