Pin Gages 426 according to DIN 2269

426

426 G

Features

- To be used as setting standards for indicating measuring instruments, testing the distances between axes, tapers and other work pieces in conjunction with gage blocks. Also for determining pitch diameter of threads or pitch circle diameter on gears and serrations

Pin Gages 426 made from steel, without a handle from dia. 5.01 mm inscribed with diameter on the end face

Ø mm		Wear-resistant gage steel, hardened, multi-aged, ground and **lapped** Grade 0, DIN 2269 Manufacturing tolerance ± 0.5 µm **Length** mm	**Increments** 0.01 mm **Order no.**	0.001 mm **Order no.**	Wear-resistant gage steel, hardened, multi-aged, ground and **lapped** Grade 1, DIN 2269 Manufacturing tolerance ± 1.0 µm **Length** mm	**Increments** 0.01 mm **Order no.**	0.001 mm **Order no.**	Wear-resistant gage steel, hardened, multi-aged and precision ground **Better** than Grade 2, DIN 2269 Manufacturing tolerance ± 1.5 µm **Length** mm	**Increments** 0.01 mm **Order no.**
0.06	0.09	20	**4828100**	**4828300**	20	**4828110**	**4828310**	20	**4828130**
0.10	0.19	32	**4828101**	**4828301**	32	**4828111**	**4828311**	40	**4828131**
0.20	0.29	32	**4828102**	**4828302**	32	**4828112**	**4828312**	40	**4828132**
0.30	0.49	32	**4828103**	**4828303**	32	**4828113**	**4828313**	40	**4828133**
0.50	0.99	32	**4828104**	**4828304**	32	**4828114**	**4828314**	40	**4828134**
1.00	2.99	32	**4828105**	**4828305**	32	**4828115**	**4828315**	40	**4828135**
3.00	5.99	40	**4828106**	**4828306**	40	**4828116**	**4828316**	***	**4828136**
6.00	9.99	50	**4828107***	**4828307***	50	**4828117**	**4828317**	70	**4828137**
10.00	11.99				70**	**4828118**	**4828318**	70	**4828138**
12.00	13.99				70	**4828119**	**4828319**	70	**4828139**
14.00	15.99				70	**4828120**	**4828320**	70	**4828140**
16.00	18.99				70	**4828121**	**4828321**	70	**4828141**
19.00	20.00				70	**4828122**	**4828322**	70	**4828142**

* *applies up to dia. 10 mm*

** *dia. 10 mm = 50 mm long*

*** *dia. 3 - 4 mm = 50 mm long,*
> 4 - 5 mm = 60 mm long,
> 5 mm = 70 mm long

Pin Gages 426 G made from steel, with a handle

Ø mm		Wear-resistant gage steel, hardened, multi-aged, ground and **lapped** Grade 0, DIN 2269 Manufacturing tolerance ± 0.5 µm **Effective Length** mm	**Increments** 0.01 mm **Order no.**	0.001 mm **Order no.**	Wear-resistant gage steel, hardened, multi-aged, ground and **lapped** Grade 1, DIN 2269 Manufacturing tolerance ± 1.0 µm **Effective Length** mm	**Increments** 0.01 mm **Order no.**	0.001 mm **Order no.**	Wear-resistant gage steel, hardened, multi-aged and precision ground **Better** than Grade 2, DIN 2269 Manufacturing tolerance ± 1.5 µm **Effective Length** mm	**Increments** 0.01 mm **Order no.**
0.06	0.09	10	**4828150**	**4828350**	10	**4828160**	**4828360**	10	**4828170**
0.10	0.19	25	**4828151**	**4828351**	25	**4828161**	**4828361**	33	**4828171**
0.20	0.29	25	**4828152**	**4828352**	25	**4828162**	**4828362**	33	**4828172**
0.30	0.49	25	**4828153**	**4828353**	25	**4828163**	**4828363**	33	**4828173**
0.50	0.99	25	**4828154**	**4828354**	25	**4828164**	**4828364**	33	**4828174**
1.00	2.99	25	**4828155**	**4828355**	25	**4828165**	**4828365**	33	**4828175**
3.00	5.99	25	**4828156**	**4828356**	25	**4828166**	**4828366**	***	**4828176**
6,00	10,00	42*	**4828157**	**4828357**	42**	**4828167**	**4828367**	62	**4828177**

* *dia. 6 mm = 25 mm long*

** *dia. 6 mm = 25 mm long*

*** *Ø 3 - 4 mm = 43 mm long,*
> 4 - 5 mm = 53 mm long,
> 5 mm = 62 mm long

Length of handle see Page 13-12 (426 D)

Accessories

Wooden case with plastic inlay for pin gages up to D = 10 mm

Number of pin gages	**Order no.**
max. 50 Pin gages (without handle)	**4827609**
max. 50 Pin gages (with handle)	**4827610**
max. 100 Pin gages (without handle)	**4827611**

Pin Gage sets 426 S made of steel, without a handle in a high quality wooden box with pedestral

Technical Data

ø mm	Wear-resistant gage steel, hardened, multi-aged, ground and **lapped** Grade 0, DIN 2269 Manufacturing tolerance ± 0.5 µm			Wear-resistant gage steel, hardened, multi-aged, ground and **lapped** Grade 1, DIN 2269 Manufacturing tolerance ± 1.0 µm			Wear-resistant gage steel, hardened, multi-aged and precision ground **Better** than Grade 2, DIN 2269 Manufacturing tolerance ± 1.5 µm		
	Increments	**Quantity of pin gages**	**Order no.**	**Increments**	**Quantity of pin gages**	**Order no.**	**Increments**	**Quantity of pin gages**	**Order no.**
1.00 - 10.00	0.1	91	**4828190**	0.1	91	**4828210**			
0.10 - 0.50	0.01	41	**4828181**	0.01	41	**4828191**	0.01	41	**4828211**
0.50 - 1.00	0.01	51	**4828182**	0.01	51	**4828192**	0.01	51	**4828212**
0.10 - 1.00	0.01	91	**4828183**	0.01	91	**4828193**	0.01	91	**4828213**
1.00 - 2.00	0.01	101	**4828184**	0.01	101	**4828194**	0.01	101	**4828214**
2.00 - 3.00	0.01	101	**4828195**	0.01	101	**4828215**			
3.00 - 4.00	0.01	101	**4828196**	0.01	101	**4828216**			
4.00 - 5.00	0.01	101	**4828197**	0.01	101	**4828217**			
5.00 - 6.00	0.01	101	**4828198**	0.01	101	**4828218**			
6.00 - 7.00	0.01	101	**4828199**	0.01	101	**4828219**			
7.00 - 8.00	0.01	101	**4828200**	0.01	101	**4828220**			
8.00 - 9.00	0.01	101	**4828201**	0.01	101	**4828221**			
9.00 - 10.00	0.01	101	**4828202**	0.01	101	**4828222**			

Pin gage lengths are the same as the individual pin gages

Individual Plug Gages 426 D made from steel, with a handle

Features

- For testing diameters of small bores
- To be used as setting standards for indicating measuring instruments, testing the distances between axes, grooves and slots on work pieces in conjunction with gage blocks
- Unbreakable plastic handle inscribed with the diameter
- Set with pin gages in diameter increments of 0.01 mm
  Manufacturing tolerance ± 0.5 µm
- Supplied with:
  Wooden case with plastic inlay

Technical Data

Wear-resistant gage steel. hardened. multi-aged, ground and **lapped**
plastic handle inscribed with the diameter
Manufacturing tolerance ± 0.5 µm
Increment 0.01 mm

dia. d mm	Order no.	dia. d mm			Dimensions l mm	dia. D	LG	L
0.06 - 0.09	**4828230**		0.06	- 0.30	2.0	4	32	34
0.10 - 0.19	**4828231**	>	0.30	- 0.50	3.5	4	32	35.5
0.20 - 0.29	**4828232**	>	0.50	- 1.50	5.0	4	32	37
0.30 - 0.49	**4828233**	>	1.50	- 2.00	6.0	4	32	38
0.50 - 0.99	**4828234**	>	2.00	- 3.50	8.0	5	35	43
1.00 - 2.99	**4828235**	>	3.50	- 6.00	10.0	5	45	55
3.00 - 5.99	**4828236**	>	6.00	- 8.00	14.0	10	45	59
6.00 - 10.00	**4828237**	>	8.00	- 10.00	18.0	10	45	63

Plug Gage Sets 426 DS made from steel, with a handle in a high quality wooden box with pedestral

Technical Data

Wear-resistant gage steel, hardened, multi-aged, ground and **lapped**
plastic handle inscribed with the diameter
Manufacturing tolerance ± 0.5 µm

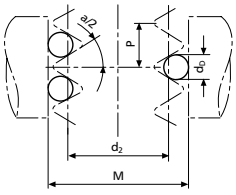
dia. mm	Increment	Quantity	Length	Order no.	dia. mm	Increment	Quantity	Length	Order no.
0.06 - 0.50	0.01	45	2*	**4825000**	5.01 - 5.50	0.01	50	10	**4825010**
0.51 - 1.00	0.01	50	5	**4825001**	5.51 - 6.00	0.01	50	10	**4825011**
1.01 - 1.50	0.01	50	5	**4825002**	6.01 - 6.50	0.01	50	14	**4825703**
1.51 - 2.00	0.01	50	6	**4825003**	6.51 - 7.00	0.01	50	14	**4825704**
2.01 - 2.50	0.01	50	8	**4825004**	7.01 - 7.50	0.01	50	14	**4825705**
2.51 - 3.00	0.01	50	8	**4825005**	7.51 - 8.00	0.01	50	14	**4825706**
3.01 - 3.50	0.01	50	8	**4825006**	8.01 - 8.50	0.01	50	18	**4825707**
3.51 - 4.00	0.01	50	10	**4825007**	8.51 - 9.00	0.01	50	18	**4825708**
4.01 - 4.50	0.01	50	10	**4825008**	9.01 - 9.50	0.01	50	18	**4825709**
4.51 - 5.00	0.01	50	10	**4825009**	9.51 - 10.00	0.01	50	18	**4825710**

**dia. > 0.3 mm = 3.5 mm long*

Thread Pin Gages 426 M in holders 426 A with an eyelet

426 M

426 A



Features

426 M

- For determining pitch diameter of external threads according to the three-wire method
- In conjunction with micrometers, indicating measuring instruments or measuring machines
- Each pair consists of: 1 holder with 1 pin gage and 1 holder with 2 pin gages
- Holder has a satin chrome finish, the retainer ring can be locked yet the measuring spindle can still rotate
- Pin gages are hardened and lapped. Freely floating in holder to allow proper positioning and contact with thread flanks

Manufacturing tolerance ± 0.5 µm
Mounting hole 7.5 mm
(Mounting hole 6.35 mm = 1/4", 6.5 mm and 8 mm
on request)

426 MS
Set of thread Pin Gages in Holder consists of:
18 Holder Pairs 426 M

Diameter 0,.7 - 3.2 mm
Delivered in a wooden box

		Order no.
Mounting hole	7.5 mm	**4820000**
Mounting hole	6.5 mm	**4820003**

426 A

- For determining pitch diameter of external threads according to the three-wire method
- Designed to be suspended over a test specimen
- Set consists of 3 Pin Gages

Manufacturing tol. ± 0.5 µm
Pin gage length 32 mm

Technical Data

Pin Gage	Order no.			for thread pitch												
				Metric				Whitworth range tpi			American UST range tpi			Trapezoid		
dia. mm	426 M Pair dia. 7.5 mm	426 M Pair dia. 6.5 mm	426 A Set	mm										mm		
0.17	**4820010**	**4820132**	**4821000**	0.25		0.3										
0.195	**4820011**	**4820149**	**4821001**								80					
0.22	**4820012**	**4820133**	**4821002**		0.35						72					
0.25	**4820013**	**4820131**	**4821003**		0.4						64					
0.29	**4820014**	**4820134**	**4821004**	0.45		0.5					56					
0.335	**4820015**	**4820135**	**4821005**		0.6						48					
0.39	**4820016**	**4820150**	**4821006**					40			44		40			
0.455	**4820017**	**4820137**	**4821007**	0.7	0.75	0.8		32			36					
0.53	**4820018**	**4820151**	**4821008**					28			32		28			
0.62	**4820019**	**4820139**	**4821009**		1		26		24		24					
0.725	**4820020**	**4820140**	**4821010**		1.25		22		20		20					
0.895	**4820021**	**4820141**	**4821011**		1.5		19	18	16		18					
1.1	**4820022**	**4820142**	**4821012**		1.75		14	16	14		13			2		
1.35	**4820023**	**4820143**	**4821013**		2		12		11	12		11				
1.65	**4820024**	**4820144**	**4821014**		2.5		10		9	10		9		3		
2.05	**4820025**	**4820145**	**4821015**	3		3.5	8		7	8		7		4		
2.55	**4820026**	**4820146**	**4821016**	4		4.5		6			6			5		
3.2	**4820027**	**4820147**	**4821017**	5		5.5	5		$4^1/_2$	5		$4^1/_2$		6		
4	***4820028**	***4820152**	**4821018**		6		4		$3^1/_2$		4			7		

* *These holder pairs require the use of a 3 mm gage block for the holder with 2 pin gages to enlarge the measuring face. This gage block is inserted into the holder recess provided.*

417/1 Gage Block -steel Grade 1
Nominal size 3 mm **Order no.** **4801285**

Setting Standards for indicating measuring instruments

AGD Masters

Master Rings

- Traceable certification and calibration available on request.
- Lapped to size and polished.
- Non-gaging areas black oxidized – ring faces ground.
- Meet all requirements of ANSI Specification B47.1-1988
- Manufactured in accordance with ANSI Specification B89.1.6-1984.

Master Discs AGD Style 3

- Traceable certification and calibration available on request.
- Lapped to size and polished.
- Non-gaging areas black oxidized – ring faces ground.
- Meet all requirements of ANSI Specification B47.1-1988
- Manufactured in accordance with ANSI Specification B89.1.5.
- Furnished with clear insulators.
- All dimensions are AGD style 3.

Master Plugs

- Traceable certification and calibration available on request.
- Stabilized and hardened.
- 100 % usable gaging surface.
- Ends ground square
- Lapped finish.

Setting Standards for indicating measuring instruments

355 E

390

715 E

Ring Gages 355 E

- Special wear-resistant gage steel. Hardened and lapped

Dimensions	DIN 2250, Type C
Manufacturing tolerance	DIN 2250
Uncertainty of actual deviation	1/2 IT 1
Nominal diameter	0.5 - 200 mm

Pin Gages 426

- Special wear-resistant gage steel. Hardened and lapped. Available with or without handles.
- According to DIN 2269

For further details please refer to Page 13-15
Nominal diameter 0.1 - 10 mm

Reference Discs 390

- Special wear-resistant gage steel. Hardened and lapped. .

Manufacturing tolerance	± 1/2 IT 2
Uncertainty of actual deviation	1/2 IT 0
Nominal diameter over	10 - 100 mm

Setting standards with a DKD calibration certificate from the Mahr Calibration Laboratory are available on request (threads are excluded:

Pin Gages from dia.	3 mm
Ring Gages dia.	10 - 100 mm
Reference Discs dia.	3 - 100 mm

Thread Setting Ring Gage 708 E

- With full thread profile
- Actual deviation is engraved on the gage
- For setting indicating thread measuring instruments
- For metric threads for tolerance class "H" according to DIN 2241
- For other thread types please state tolerance requirements

Thread Setting Plug Gage 715 E

- With full thread profile
- Actual deviation is engraved on the gage
- For setting indicating thread measuring instruments
- Metric threads in accordance with DIN 2241: Tolerance class h applies to standard threads dia. 1 - 1.4 mm and for pitches 0.2 and 0.25, for all other sizes the tolerance class g is applicable
- For other thread types please state tolerance requirements

Thread Gages, Checking Plug Gages

705

708 N

708 G

Thread Limit Plug Gage 705

- Special wear-resistant gage steel. Hardened and ground
- GO end with full thread profile, pitch diameter corresponds to minimum permissible dimension of internal thread
- NO-GO end has only 3 threads and a shortened flank profile, pitch diameter corresponds to maximum permissible dimension of internal thread
- Accuracy for metric ISO threads according to DIN ISO 1502 (up to 40 mm the GO end and NO-GO end are on a common handle. Over 40 mm the GO / NO-GO end are on separate handles for easier handling)
- Nominal diameter 1 - 100 mm. For all standard and special threads

Thread Ring Gages

- Special wear-resistant gage steel. Hardened and ground Accuracy of metric ISO threads according to DIN ISO 1502

- Nominal diameter 1 - 200 mm
- For all standard and special threads

GO Thread Ring Gage 708 G
- With full thread profile. Pitch diameter corresponds to the maximum permissible dimension of an external thread. The external diameter is relieved

NO-GO Thread Ring Gage 708 N
- With reduced thread profile. For checking minimum permissible dimension of pitch diameter on external thread

Master Thread Plug Gages

- Special wear-resistant gage steel. Hardened and lapped. Accuracy for metric ISO thread DIN ISO 1502. Other threads are in accordance to the respective standards

- Diameter 1 - 200 mm
  Available for all standard and special threads

Go Thread Checking Gage 715 G
Counter Plug Gage for GO Thread Ring Gage

Go Thread Checking Gage 715 N
Counter Plug Gage for NO-GO Thread Ring Gage

- With full thread profile and outside diameter with maximum dimension of external thread. Plug Gage must screw easily into Ring Gage

Wear Testing Plug Gage 716 G
For GO Thread Ring Gage

Wear Testing Plug Gage 716 N
For NO-GO Thread Ring Gage

- Three threads with considerably shortened flanks. Must not screw in more than one turn

Calibration Services

International Standards require complete documentation and calibration of all gaging instruments. Mahr Federal Inc., as well as being a manufacturer of quality dimensional measuring instruments, is an established primary source or high accuracy dimensional measurement services.

Mahr Federal offers an inspection and recalibration program for dimensional standards including:

- gage blocks / master rings / master discs and plugs / masterballs (roundness)
- cylindrical form and precision reference specimens surface roughness standards.

For these services, we have created an ideal environment - a metrology laboratory in Providence, Rhode Island that is ranked as one of the world's finest.:

- High quality measurements - 0.06 micron / 2.3 microinch uncertainty of measurement on gage blocks (up to 50 mm / 2" long).
- All measurements traceable to the Standards of the United States.
- Grand Masters/Primary standards used in our Measurement Center have been certified by NIST.
- Calibration system is certified to ISO-9001:2000 by NQA, USA and accredited to ISO 17025 NVLAP Lab Code 200605-0.
- We offer Fast turnaround and competitive prices.

Mahr Federal also specializes in the calibration and certification of the following gages including:

- Dial, Digital & Test Indicators
- Mikrokators®
- Micrometers
- Dial & Vernier Calipers
- Pin & Radius Gages
- Snaps, I.D. / O.D. & Bore Gages
- Dimentron® Plugs
- Plug & Ring Gages
- Groove, Caliper, Thickness
- Air Gages & Magnification Kits
- Electronic Amplifiers & Gage Heads
- Surface Finish Gages
- Level Systems

NQA
NATIONAL QUALITY ASSURANCE, USA

CERTIFICATE OF REGISTRATION

This is to certify that the Quality Management System of:

MAHR FEDERAL, INC.
1144 EDDY STREET
PROVIDENCE, RI 02940

has been assessed and approved by National Quality Assurance, U.S.A., against the following quality assurance management system standard:

ISO 9001: 2000

The Quality Management System is applicable to:

DESIGN, MANUFACTURE AND SERVICING OF DIMENSIONAL GAGES AND GAGING SYSTEMS AND DIMENSIONAL CALIBRATION SERVICES INCLUDING FIELD SERVICE FOR MASTERS, STANDARDS AND GAGES

The approval is subject to the company maintaining its system to the required standards, which will be monitored by NQA, U.S.A.

Certificate No: 10057

Date: October 6, 1995
Reissued: October 29, 2004
Valid Until: September 1, 2007

ANSI-RAB QMS ACCREDITED

For and On Behalf of NQA, USA
Acton, MA 01720

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200605-0

Mahr Federal Inc.
Providence, RI

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

CALIBRATION LABORATORIES

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated 18 June 2003).

2007-04-01 through 2008-03-31
Effective dates

For the National Institute of Standards and Technology