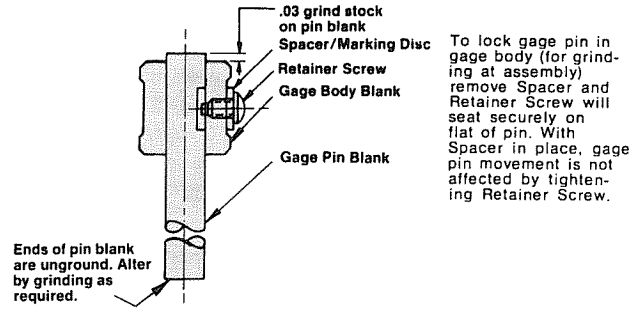


Flush Pin Gages Indicator Depth Gages Set Masters



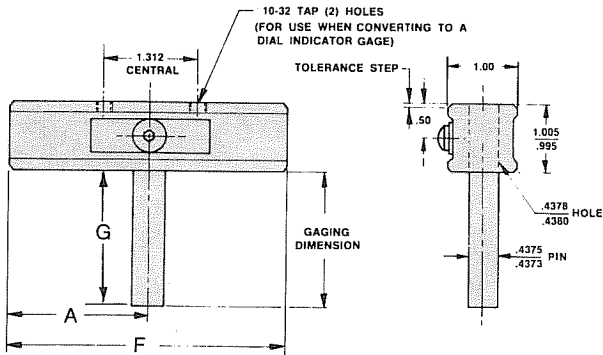
A G DAVIS BAR TYPE FLUSH PIN GAGES

The name A. G. Davis has for almost two decades been synonymous with flush-pin gaging. Although flush-pin gages had been in general use for at least half a century, it wasn't until A. G. Davis introduced flush-pin gage blanks that true standardization and economy was brought to this field of gaging. Many large metal-working companies had achieved engineering economies by standardizing on flush-pin gage designs. But, each gage had to be custom built one-at-a-time. Deliveries were usually figured in months and fabrication economies were marginal. A. G. Davis applied mass production techniques to the fabrication of their flush-pin gage designs. The results, off-the-shelf gage blanks that can be finish ground to your specifications at 50% to 60% cost savings and delivered in less than one week after receipt of order. Interchangeability of A. G. Davis gage blank component parts means that they can be used and reused from job to job. This concept of total gaging economy has made A. G. Davis Gage Blanks the "STANDARD OF INDUSTRY".



A. G. Davis Gage Blanks are hardened and ground gage bodies and gage pins. They are finish ground with the exception of the ends of the gage pin, which will be altered by grinding to your specifications. Body and pin blanks are heat treated through to the center to ensure that extensive grinding modifications can be performed without affecting hardness of wear surfaces (see Specifications, Page 12). Gage blanks can be finish ground to your specifications by A. G. Davis or your own tool room. If finish ground by A. G. Davis, shipment can be one week after receipt of order. Standardized alteration charges at A. G. Davis ensures that finish ground gages are available at very nominal costs.

"BF" SERIES BAR



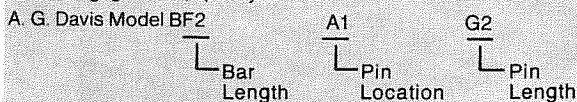
USE FULL SCALE TRACING TEMPLATE 15

SELECTIVE GAGE BLANK DIMENSIONS

F		A		G	
Bar Length	Model Number	Pin Location	Model Number	Pin Length	Model Number
2.0	BF2	1.0	A1	2.0	G2
4.0	BF4	2.0	A2	4.0	G4
6.0	BF6	3.0	A3	6.0	G6
8.0	BF8	4.0	A4	8.0	G8
10.0	BF10	5.0	A5	—	—
12.0	BF12	6.0	A6	—	—

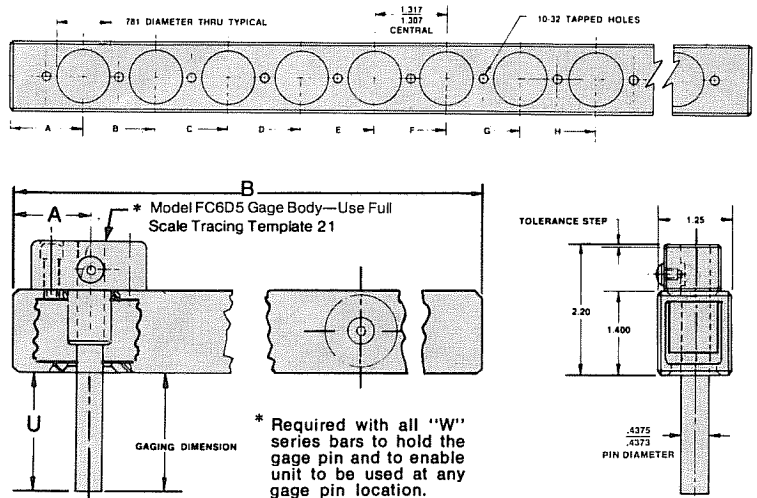
ORDERING INSTRUCTIONS

To order gage blank, specify:



To order finish ground gage,
ALSO SPECIFY:
Minimum gaging dimension _____
Maximum gaging dimension _____
Tolerance step on gage pin
(or gage bar, as desired)

"W" SERIES BAR



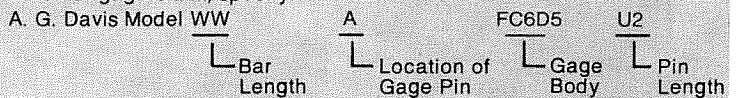
USE FULL SCALE TRACING TEMPLATE 9

BAR SELECTOR AND PIN LOCATION GUIDE

(B) Bar Length	Bar Model Number	Gage Pin Location A								U	
		1.32	2.62	3.94	5.25	6.56	7.88	9.18	10.50	Pin Length	Model Number
13.12	WW	A	B	C	D	E	—	—	—	2.0	U2
15.75	WX	A	B	C	D	E	F	—	—	4.0	U4
18.38	WY	A	B	C	D	E	F	G	—	6.0	U6
21.00	WZ	A	B	C	D	E	F	G	H	8.0	U8

ORDERING INSTRUCTIONS

To order gage blank, specify:



To order finish ground gage,
ALSO SPECIFY:
Minimum gaging dimension _____
Maximum gaging dimension _____
Tolerance step on gage pin
(or gage bar, as desired)

*See page 8 for method of determining manufacturing tolerance on gaging dimension and step dimension.

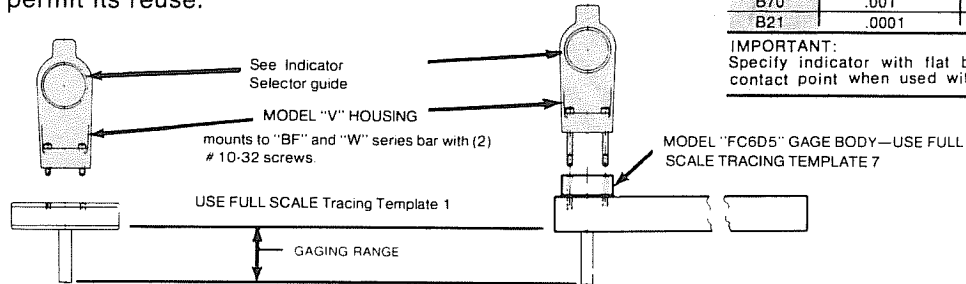
CONVERTING "BF" AND "W" SERIES FLUSH PIN GAGES TO DIAL INDICATOR GAGES— with the A. G. DAVIS Model "V" housing

No modification to the flush pin gage is required if the tolerance step is on the gage body. Where the tolerance step is on the gage pin (and does not exceed .050) the end of the gage pin can be ground flat and adjustment in the Model "V" housing will permit its reuse.

INDICATOR SELECTOR GUIDE

MODEL NO.	GRADUATION	RANGE	BALANCE DIAL
B3Q	.0005	.050	0-10-0
B5M	.0005	.075	0-15-0
B70	.001	.125	0-25-0
B21	.0001	.025	0-5-0

IMPORTANT: Specify indicator with flat back and 1" long flat contact point when used with model "V" housing



"BF" SERIES BAR

"W" SERIES BAR

USE FULL SCALE TRACING TEMPLATE 8

ORDERING INSTRUCTIONS

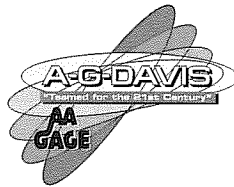
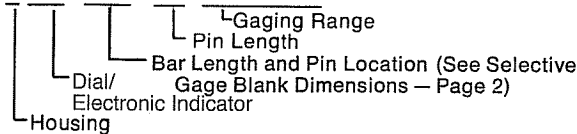
EXAMPLE:

To convert A. G. Davis Model BF2A1 flush pin gage with gaging range of 1.740/1.746 to dial indicator gage

Specify: A. G. Davis Model VB3Q
 Housing ———
 Dial Indicator ———

To order complete gage

Specify: A. G. Davis Model VB3Q—BF2A1—G2—1.740/1.746



USE FULL SCALE TRACING TEMPLATE 9

ORDERING INSTRUCTIONS

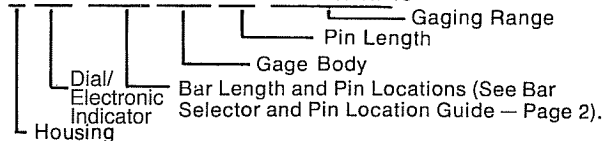
EXAMPLE:

To convert A. G. Davis Model WWA-FC6D5-U2 flush pin gage with gaging range of 1.740/1.746 to dial indicator gage

Specify: A. G. Davis Model VB3Q
 Housing ———
 Dial Indicator ———

To order complete gage

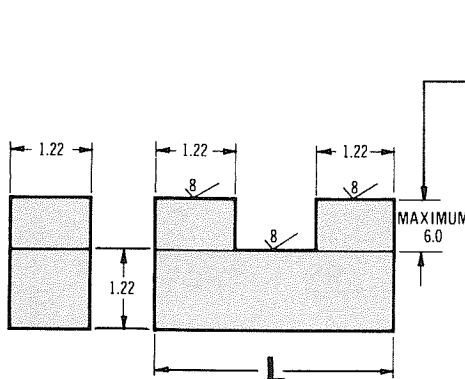
Specify: A. G. Davis Model VB3Q—WWA-FC6D5—U2—1.740/1.746



"Off-the-Shelf" DEPTH MASTERS MODEL DM SERIES

MODELS DM-3.5 through DM-10

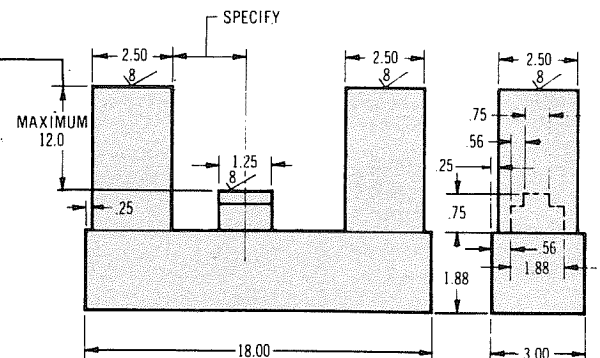
MODEL DM-18 only



MEAN SET DIMENSIONS
 Specify tolerance code for allowable manufacturing tolerance on mean set dimensions.

Tolerance Code *	Manufacturing Tolerance
A	±.0001
B	±.0002
C	±.0005

*Actual measured dimension marked on request



Depth Master Model Number	L Dimension
DM- 3.5	3.5
DM- 6	6.0
DM- 8	8.0
DM-10	10.0
DM-18	18.0

NOTE: All Depth Masters are processed through an extensive stress relief and deep freeze cycle for lasting stability

ORDERING INSTRUCTIONS

EXAMPLE:

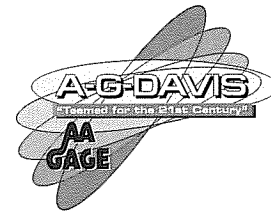
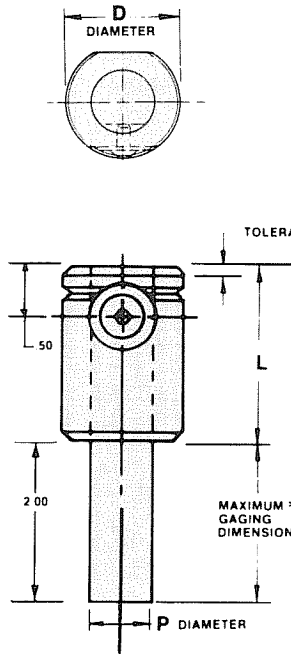
To order a Depth Master for use with A. G. Davis "BF" or "W" Series Depth Gage to check 1.740/1.746 dimension

Specify
 A. G. Davis Model DM 3.5 B 1.743
 Model Number Tolerance Code Mean Set Dimension

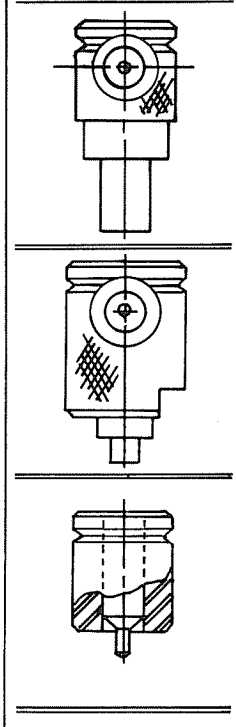
AG DAVIS BARREL TYPE FLUSH PIN GAGES

BARREL TYPE FLUSH-PIN GAGE BLANK SELECTOR GUIDE

BARREL BLANK MODEL NUMBER	P	D	L
	GAGE PIN DIAMETER +.0000 -.0003	BARREL DIA.	BARREL LENGTH
250	.250	1.00	1.00
281	.2812	1.00	1.00
312	.3125	1.00	1.00
343	.3437	1.00	1.00
375	.375	1.00	1.25
406	.4062	1.03	1.32
437	.4375	1.06	1.38
468	.4687	1.09	1.44
500	.500	1.12	1.50
562	.5625	1.18	1.62
593	.5937	1.21	1.68
625	.625	1.25	1.75
687	.6875	1.32	1.88
750	.750	1.38	2.00



TYPICAL MODIFICATIONS



USE FULL SCALE TRACING
TEMPLATE 10

ORDERING INSTRUCTION:

To order gage blank, specify:
A. G. Davis Model 250

TO ORDER FINISH GROUND GAGE

Also specify:
Minimum gaging dimension _____
Maximum gaging dimension _____
Tolerance step on gage pin _____
(or gage body, as desired)

*See page 8 for method of determining manufacturing tolerance on gaging dimension and step dimension.

CONVERTING BARREL TYPE FLUSH PIN GAGES TO DIAL INDICATOR GAGES

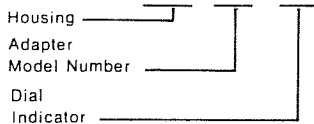
No modification to the gage pin is required if the tolerance step is on the gage body. Where the tolerance step is on the gage pin (and does not exceed .050) the end of the gage pin can be ground flat and adjustment in the Model CHR. 1 housing will permit its reuse. Gage body alterations are required as per drawing.

ORDERING INSTRUCTIONS

EXAMPLE:

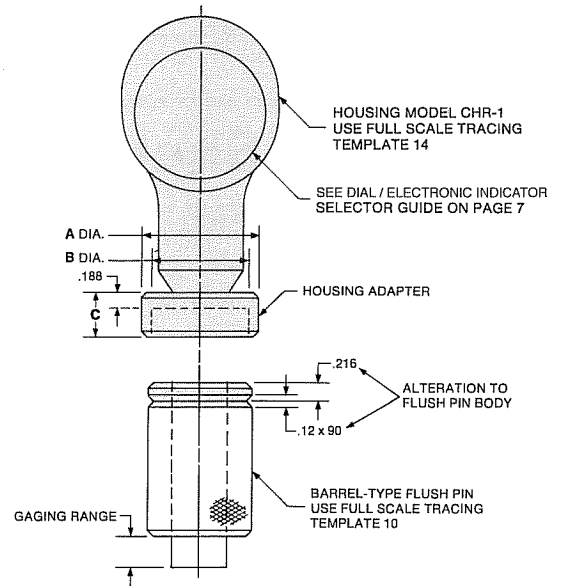
To convert Davis Barrell Type Flush Pin Gage with Model 250 .372-.378 Gaging Range to Dial Indicator Gage

Specify: A. G. Davis Model
CHR-1 - A687 - B3Q



HOUSING ADAPTER SELECTOR GUIDE

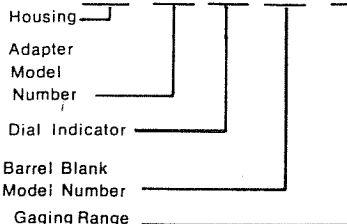
Barrel Blank Number	A Outside Dia.	B Inside Dia.	C Adapter Length	Adapter Model Number
250 Thru 375	1.20	1.02	.56	A 687
406 Thru 500	1.32	1.14	.56	A 688
562 Thru 625	1.45	1.27	.56	A 689
687 Thru 750	1.58	1.39	.56	A 690



TO ORDER COMPLETE GAGE

Specify: A. G. Davis Model

CHR-1 - A687 - B3Q - 250 - .372/.378



OFF-THE-SHELF DEPTH MASTERS MODEL DM-B

ORDERING INSTRUCTIONS

EXAMPLE:

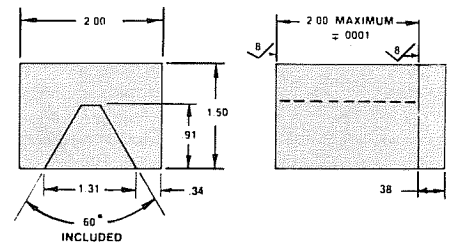
To order a depth master for use with A. G. Davis barrel type indicator depth gage with gaging range of .372/.378

SPECIFY: A. G. Davis Model DM-B - .3750

Master Model Number _____
Mean Set Dimension _____

NOTE:

All depth masters are processed through an extensive stress relief and deep freeze cycle for lasting stability



AG DAVIS LARGE DIAMETER COUNTERSINK TYPE FLUSH PIN GAGES MODEL 1500, 3000 and 4500

ORDERING INSTRUCTIONS

To order gage blanks

Specify:

A. G. Davis Model 1500, 3000 or 4500

To order finish ground gage
also specify:

MINIMUM COUNTERSINK DIAMETER _____

MAXIMUM COUNTERSINK DIAMETER _____

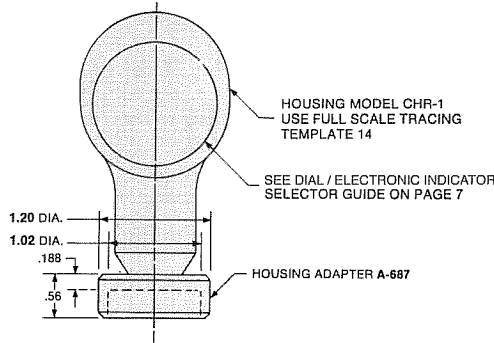
MEAN INCLUDED ANGLE _____

Tolerance step on gage pin
(or gage bar) as desired

***SEE PAGE 8 FOR METHOD OF
DETERMINING FINISH GRIND
DIMENSIONS**

CONVERTING 1500, 3000 AND 4500 MODEL FLUSH PIN GAGES TO DIAL INDICATOR

No modification to the flush pin gage is required if the tolerance step is on the gage body. Where the tolerance step is on the gage pin, (and does not exceed .050) the end of the gage pin can be ground flat and adjustment in the model "CHR-1" housing will permit its reuse.

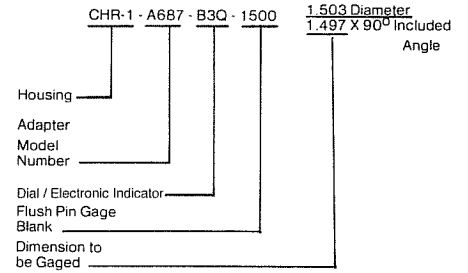


ORDERING INSTRUCTIONS

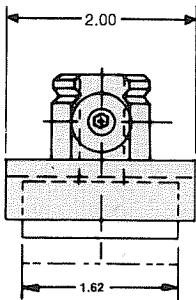
Example:

To convert Davis Model 1500 Flush Pin Gage for checking 1.504/1.497 Diameter Countersink with 90° included Angle

Specify: A. G. Davis Model

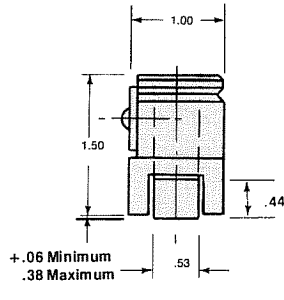


(SETTING MASTERS
AVAILABLE UPON REQUEST)



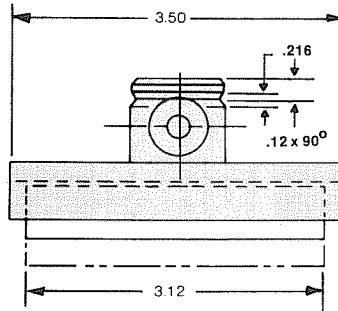
MODEL 1500

For countersink diameters
from .75 to 1.50
Use full scale tracing
Template 11



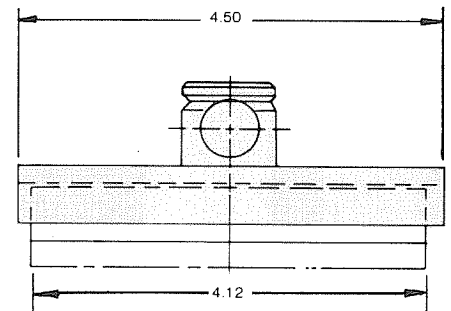
MODEL 3000

For countersink diameters
from 1.50 to 3.00
Use full scale tracing
Template 12

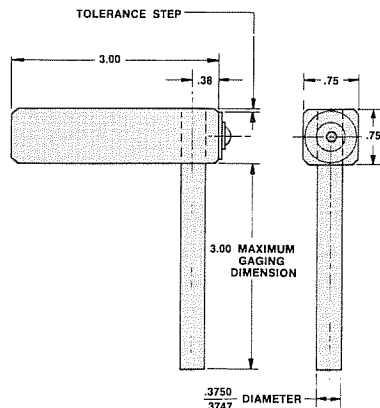


MODEL 4500

For countersink diameters
from 3.00 to 4.00
Use full scale tracing
Template 13



AG DAVIS "S" SERIES FLUSH PIN BAR



MODEL S

ORDERING INSTRUCTIONS

To order gage blank, Specify
A. G. Davis Model "S"

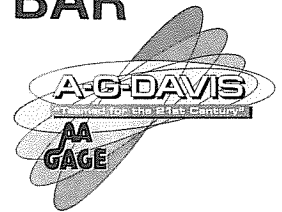
To order finish ground gage,
also Specify:

MAXIMUM GAGING DIMENSION _____

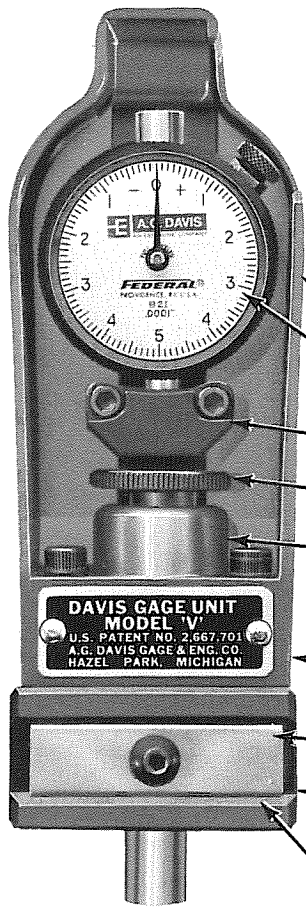
MINIMUM GAGING DIMENSION _____

Tolerance step on gage pin
(or gage body) as desired

**USE FULL SCALE TRACING
TEMPLATE 16**



A G DAVIS INDICATOR DEPTH GAGES



INDICATOR DEPTH GAGE MODEL V

ACCESSORY CONTACT POINTS can be mounted in # 4-48 NF tapped hole in end of gage pin.

GROUND AND LAPPED surface full length of gage pin allows pin to be reversed in Model "SM" housing to use accessory contact points.

A.G.Davis standards available on tracing and AutoCAD templates

Sturdy, lightweight aluminum guard for maximum protection of the dial indicator.

Simple, fast, .200 vertical adjustment of dial indicator to master settings.

Positive, safe clamping and positioning of dial indicator is assured with A. G. Davis "recessed" clamp.

"In-Travel" limit adjustment prevents internal damage to dial indicator and eliminates full revolution misreading.

Constant preload spring tension assures repeat readings between set master and piece part.

Gage Transfer Mechanism minimizes wear from side pressure on the indicator contact point.

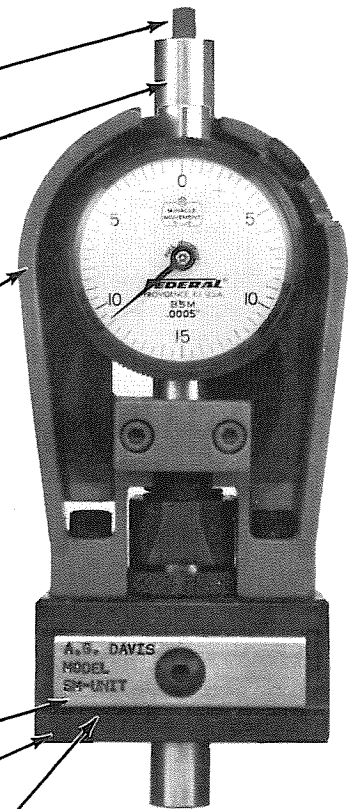
A. G. Davis Indicator Housings may be mounted from the top with # 10-32 or from the bottom with 1/4-20 socket-head screws.

Replaceable soft marking plates are provided for stamping gage identification.

Rust preventive black oxide treatment on all non-gaging surfaces.

"B" Series Bars and Gage Pins are of highest grade tool steel hardened to R/C 62-64 and stabilized. ("W" Series Bars are hardened to R/C 58-62 and stabilized.)

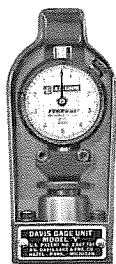
Finger groove is provided on both sides of "B" Series Bars for positive gripping.



ADJUSTABLE SELF ZEROING DEPTH GAGE MODEL SM



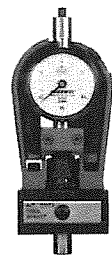
MODEL "K"



MODEL "V"



MODEL "H"



MODEL "SM"

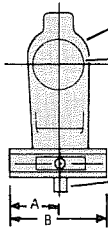
A. G. Davis Indicator Depth Gages are made up of interchangeable "building-block" gage components. In minutes, the individual components can be assembled and set up to check specific depth dimensions. Upon completion of the job, the components may be disassembled and placed in storage—ready for the next depth gage problem. Setting Davis depth gages to a specific gaging dimension is fast and simple. Once set they can be read easily and precisely by the operator.

When using indicator depth gages on high production jobs (where gage member wear is a factor) good gaging practice dictates the use of a set master that simulates the piece part condition. Often designing and building a special set master is either too costly or too time-consuming to meet job deadlines. So—Davis Depth Gages and economical off-the-shelf Set Masters are an ideal solution. Rigidity and accuracy is combined with adjustability and interchangeability, and equally important, they are available to you right now.

A G DAVIS DEPTH GAGE SELECTOR GUIDE

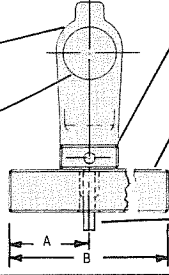
To select A. G. DAVIS Depth Gage, specify the model numbers of the individual components in the order shown below.

"BF" SERIES



- Specify Housing Model "V", "K", "SM" or "H" (depending on the size and type dial indicator required) from Selector Guide
- Specify Dial / Electronic Indicator Model from Indicator Selector Guide
- Specify Bar Model (refer to bar length "B" and pin location "A" in Bar Selector Guide)
- Specify Pin Model from Pin Selector Guide

"W" SERIES



- Specify Housing Model "V", "K", "SM" or "H" (depending on the size and type dial indicator required) from Selector Guide
- Specify Dial / Electronic Indicator Model from Indicator Selector Guide
- Specify Gage Body Model FC6D5 required with all "W" Series Bars to hold the Gage Pin and to enable the housing to be used at any gage pin location
- Specify Bar Model (refer to bar length "B" and pin location "A" in Bar Selector Guide)
- Specify Pin Model from Pin Selector Guide

A. G. DAVIS HOUSING AND INDICATOR SELECTOR GUIDE

Housing	Model No.	Graduation	Range	Balance Dial
MODEL "V" or MODEL "SM" Specify Model "V" or "SM"; when using American Gage Design (AGD) Group I Dial Indicators. (1-11/16" Bezel Diameter). Specify indicator with flat back, 1" long flat end contact point with "V" unit. Specify flat back and regular point with "SM" unit.	B21	.0001	.025	0-5-0
	B2Q	.00025	.025	0-5-0
	B3K	.00025	.050	0-10-0
	B3Q	.0005	.050	0-10-0
	B3W	.001	.050	0-10-0
	B5M	.0005	.075	0-15-0
	B6K	.0005	.100	0-20-0
	B71	.0005	.125	0-25-0
MODEL "H" Specify indicator with 3/4" flat end contact point.	J1K	.0001	.008	0-4-0
	J6K	.0005	.040	0-20-0
	J8I	.001	.100	0-50-0

Housing	Model No.	Graduation	Range	Balance Dial
MODEL "K" Specify Model "K" when using American Gage Design (AGD) Group II Dial Indicators (2-1/4" Bezel Diameter). Specify indicator with flat back and 1" long flat end contact point.	C1/2K	.00005	.010	0-2-0
	C1K	.0001	.020	0-4-0
	C21	.0001	.025	0-5-0
	C2Q	.00025	.025	0-5-0
	C3K	.00025	.050	0-10-0
	C3Q	.0005	.050	0-10-0
	C3W	.001	.050	0-10-0
	C5M	.0005	.075	0-15-0
	C6K	.0005	.100	0-20-0
	C6Q	.001	.100	0-20-0
	C71	.0005	.125	0-25-0
	C7Q	.001	.125	0-25-0

BAR SELECTOR AND PIN LOCATION GUIDE ("BF" Series)

BAR LENGTH "B"	GAGE PIN LOCATION "A"					
	1.0	2.0	3.0	4.0	5.0	6.0
2.0	BF2A1					
4.0	BF4A1	BF4A2				
6.0	BF6A1	BF6A2	BF6A3			
8.0	BF8A1	BF8A2	BF8A3	BF10A4		
10.0	BF10A1	BF10A2	BF10A3	BF10A4	BF10A5	
12.0	BF12A1	BF12A2	BF12A3	BF12A4	BF12A5	BF12A6

BAR SELECTOR AND PIN LOCATION GUIDE ("W" Series)

(B) BAR LENGTH	BAR MODEL NUMBER	GAGE PIN LOCATION "A"							
		1.32	2.62	3.94	5.25	6.56	7.88	9.18	10.50
13.12	WW	A	B	C	D	E	-	-	-
15.75	WX	A	B	C	D	E	F	-	-
18.38	WY	A	B	C	D	E	F	G	-
21.00	WZ	A	B	C	D	E	F	G	H

PIN SELECTOR GUIDE ("BF" Series) WITH "V", "K" or "H" UNIT

GAGE PIN MODEL NO.	LENGTH ADJUSTMENT MINIMUM	LENGTH ADJUSTMENT MAXIMUM	GAGE PIN MODEL NO.	LENGTH ADJUSTMENT MINIMUM	LENGTH ADJUSTMENT MAXIMUM
R1	0	200	R16	3 000	3 200
R2	200	400	R17	3 200	3 400
R3	400	600	R18	3 400	3 600
R4	600	800	R19	3 600	3 800
R5	800	1 000	R20	3 800	4 000
R6	1 000	1 200	R21	4 000	4 200
R7	1 200	1 400	R22	4 200	4 400
R8	1 400	1 600	R23	4 400	4 600
R9	1 600	1 800	R24	4 600	4 800
R10	1 800	2 000	R25	4 800	5 000
R11	2 000	2 200	R26	5 000	5 200
R12	2 200	2 400	R27	5 200	5 400
R13	2 400	2 600	R28	5 400	5 600
R14	2 600	2 800	R29	5 600	5 800
R15	2 800	3 000	R30	5 800	6 000

PIN SELECTOR GUIDE ("W" Series) WITH "V", "K" or "H" UNIT

GAGE PIN MODEL NO.	LENGTH ADJUSTMENT MINIMUM	LENGTH ADJUSTMENT MAXIMUM	GAGE PIN MODEL NO.	LENGTH ADJUSTMENT MINIMUM	LENGTH ADJUSTMENT MAXIMUM
M7	0	200	M22	3 000	3 200
M8	200	400	M23	3 200	3 400
M9	400	600	M24	3 400	3 600
M10	600	800	M25	3 600	3 800
M11	800	1 000	M26	3 800	4 000
M12	1 000	1 200	M27	4 000	4 200
M13	1 200	1 400	M28	4 200	4 400
M14	1 400	1 600	M29	4 400	4 600
M15	1 600	1 800	M30	4 600	4 800
M16	1 800	2 000	M31	4 800	5 000
M17	2 000	2 200	M32	5 000	5 200
M18	2 200	2 400	M33	5 200	5 400
M19	2 400	2 600	M34	5 400	5 600
M20	2 600	2 800	M35	5 600	5 800
M21	2 800	3 000	M36	5 800	6 000

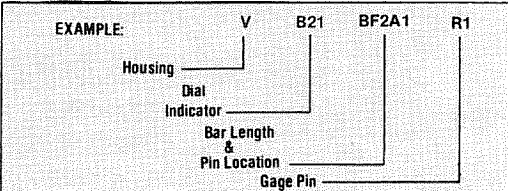
PIN SELECTOR GUIDE ("BF" Series) WITH "SM" UNIT

GAGE PIN MODEL NO.	LENGTH ADJUSTMENT MINIMUM-MAXIMUM
P3	.000 - 3.000
P6	3.000 - 6.000
P9	6.000 - 9.000

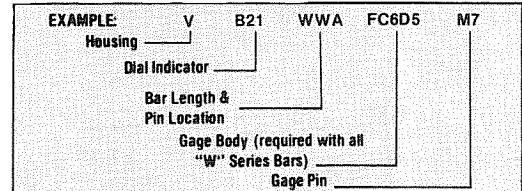
PIN SELECTOR GUIDE ("W" Series) WITH "SM" UNIT

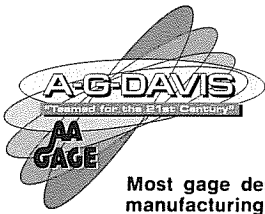
GAGE PIN MODEL NO.	LENGTH ADJUSTMENT MINIMUM-MAXIMUM
K3	.000 - 3.000
K6	3.000 - 6.000
K9	6.000 - 9.000
K12	9.000 - 12.000

"BF" SERIES ORDERING INSTRUCTIONS



"W" SERIES ORDERING INSTRUCTIONS





AG DAVIS ENGINEERING AND MANUFACTURING STANDARDS

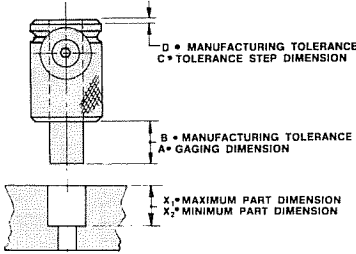
Most gage designs using A. G. Davis Gage Blanks will specify the manufacturing tolerances of finish grind dimensions. Where manufacturing tolerances are not shown, the generally accepted practice of using 10% of the total part gaging tolerance will be followed. This manufacturing tolerance will be divided equally between the required dimensions to control the linear movement of the gage pin and will be directed with a plus or minus sign toward the mean dimension. Using this method of applying manufacturing tolerances the gage cannot accept an out-of-tolerance part.

METHOD OF CALCULATING FINISH GRIND DIMENSIONS OF FLUSH PIN GAGES

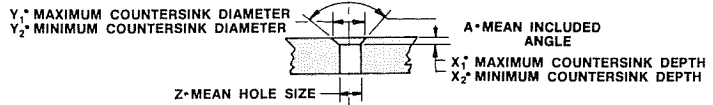
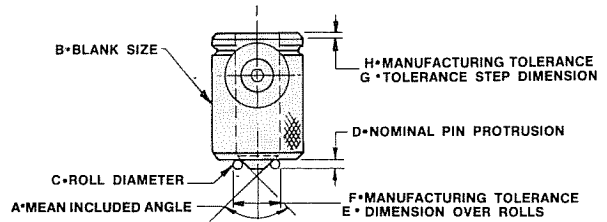
SYMBOL	DESCRIPTION	FORMULA	EXAMPLE
X_1	Maximum Part Dimension		.380
X_2	Minimum Part Dimension		.370
A	Gaging Dimension	Maximum Part Dimension	.3800
B	Manufacturing Tolerance on Gaging Dimension	$(X_1 - X_2) \times .05$ Apply with a Minus Sign	-.0005
C	Tolerance Step Dimension	$(X_1 - X_2) \times .95$	.0095
D	Manufacturing Tolerance on Tolerance Step Dimension	$(X_1 - X_2) \times .05$ Apply with a Minus Sign	-.0005
A	Gaging Dimension	Minimum Part Dimension	.3700
B	Manufacturing Tolerance on Gaging Dimension	$(X_1 - X_2) \times .05$ Apply with a Plus Sign	+.0005
C	Tolerance Step Dimension	$(X_1 - X_2) \times .95$	.0095
D	Manufacturing Tolerance on Tolerance Step Dimension	$(X_1 - X_2) \times .05$ Apply with a Minus Sign	-.0005

SYMBOL	DESCRIPTION	FORMULA	EXAMPLE
Z	Mean hole size		.50
A	Mean included angle		60°
K_2	Constant for Tolerance Step Dimension	Obtain from Chart of Constants, Page 8, using Angle A	.86603
X_1	Maximum countersink depth	Known or $(Y_1 - Z) \times K_2$	.09
X_2	Minimum countersink depth	Known or $(Y_2 - Z) \times K_2$	.08
Y_1	Maximum countersink diameter	Known or $Z + \frac{X_1}{K_2}$	.60392
Y_2	Minimum countersink diameter	Known or $Z + \frac{X_2}{K_2}$	.59237
B	Flush pin blank size B = Pin diameter of blank	First blank with pin diameter larger than diameter Y_1 See gage blank selector guide, page 4	.625
C	Recommended roll diameter	First roll size from Chart of Constants, Page 8, larger than X_1	.09375
D	Nominal pin protrusion	Same as roll diameter, (A. G. Davis uses $+.02$ as a Manufacturing Tolerance on this Dimension)	.09 \pm .02
K	Constant for roll dimension	Obtain from Chart of Constants, Page 8, using Angle A and roll diameter C	.14788
E	Dimension over rolls	$Y_1 + K$	.75180
F	Manufacturing Tolerance on dimension over rolls	$(Y_1 - Y_2) \times .05$ Apply with a Minus sign	-.00058
G	Tolerance step dimension	$(X_1 - X_2) \times .95$ or $(Y_1 - Y_2) \times K_2 \times .95$	.0095
H	Manufacturing Tolerance on Tolerance step dimension	$(X_1 - X_2) \times .05$ or $(Y_1 - Y_2) \times K_2 \times .05$ Apply with a Minus sign	-.0005
E	Dimension over rolls	$Y_2 + K$	.74025
F	Manufacturing Tolerance on dimension over rolls	$(Y_1 - Y_2) \times .05$ Apply with a Plus sign	+.00058
G	Tolerance step dimension	$(X_1 - X_2) \times .95$ or $(Y_1 - Y_2) \times K_2 \times .95$	.0095
H	Manufacturing Tolerance on Tolerance step dimension	$(X_1 - X_2) \times .05$ or $(Y_1 - Y_2) \times K_2 \times .05$ Apply with a Minus sign	-.0005

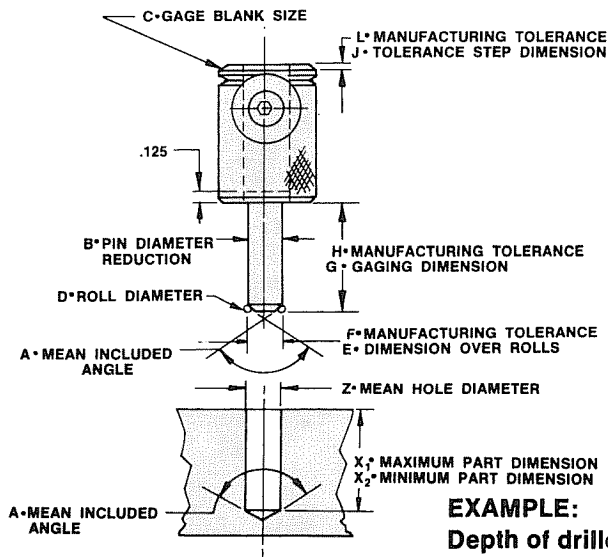
SYMBOL	DESCRIPTION	FORMULA	EXAMPLE
X_1	Maximum part dimension		.740
X_2	Minimum part dimension		.730
Z	Mean hole diameter		.500 \pm .002
A	Mean included angle		118°
B	Diameter of gage pin reduction	Minimum hole diameter minus .010 (A. G. Davis uses $+.005$ as a Manufacturing Tolerance on this dimension).	.488 \pm .005
C	Recommended gage blank size C = pin diameter of blank	First gage blank with pin diameter the same as, or larger than, B See blank selector guide, Page 4	.500
D	Recommended roll size	Use .0625 diameter rolls	.0625
K	Constant for roll dimension	Obtain from Chart of Constants, Page 8, using Angle A and roll diameter D	.07983
E	Dimension over rolls	$Z + K$	.57983
F	Manufacturing Tolerance on dimension over rolls	$(X_1 - X_2) \times .04$ Apply with a Minus sign	-.0004
G	Gaging dimension	$X_1 + D$	.8025
H	Manufacturing Tolerance on gaging dimension	$(X_1 - X_2) \times .03$ Apply with a Minus sign	-.0003
J	Tolerance step dimension	$(X_1 - X_2) \times .93$	.0093
L	Manufacturing Tolerance on Tolerance step dimension	$(X_1 - X_2) \times .03$ Apply with a Minus Sign	-.0003
E	Dimension over rolls	$Z + K$	.57983
F	Manufacturing Tolerance on dimension over rolls	$(X_1 - X_2) \times .04$ Apply with a Plus sign	+.0004
G	Gaging dimension	$X_1 + D$	.7925
H	Manufacturing Tolerance on gaging dimension	$(X_1 - X_2) \times .03$ Apply with a Plus sign	+.0003
J	Tolerance step dimension	$(X_1 - X_2) \times .93$	.0093
L	Manufacturing Tolerance on Tolerance step dimension	$(X_1 - X_2) \times .03$ Apply with a Minus sign	-.0003



EXAMPLE:
Depth of counterbored holes and/or surface to surface dimensions



EXAMPLE:
Countersink diameter or chamfer depth



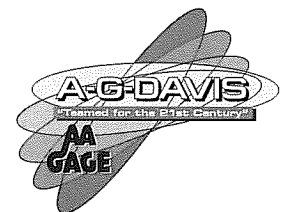
EXAMPLE:
Depth of drilled holes

A G DAVIS REFERENCE DATA FOR DETERMINING “ROLL DIMENSIONS”

The “Roll Dimension Chart of Constants” is offered as an aid for use when designing countersink type flush-pin gages. By using the constants in the chart, both the “Roll Dimension” and Tolerance Step may be easily determined (see Examples on page 8).

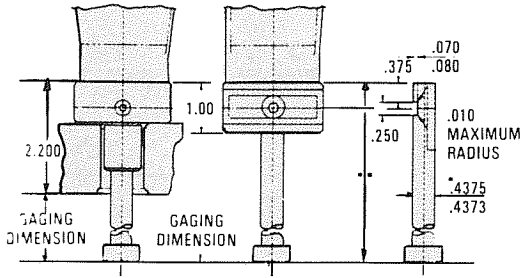
Mean Included Angle	K ₂ Constant For Tolerance Step Dimension	K-Constant For Roll Dimension					
		Roll Diameter					
		.03125	.0625	.09375	.125	.1875	.250
30	1.86602	.05523	.11046	.16569	.22092	.33137	.44183
31	1.80294	.05501	.11002	.16504	.22005	.33008	.44010
32	1.74370	.05480	.10960	.16440	.21919	.32879	.43839
33	1.68797	.05458	.10917	.16376	.21834	.32751	.43668
34	1.63543	.05437	.10875	.16312	.21750	.32624	.43499
35	1.58580	.05416	.10833	.16249	.21665	.32498	.43331
36	1.53885	.05395	.10791	.16186	.21582	.32373	.43164
37	1.49434	.05375	.10749	.16124	.21499	.32248	.42997
38	1.45211	.05354	.10708	.16062	.21416	.32124	.42832
39	1.41196	.05334	.10667	.16000	.21334	.32001	.42668
40	1.37374	.05313	.10626	.15939	.21252	.31879	.42505
41	1.33731	.05293	.10586	.15879	.21172	.31757	.42343
42	1.30254	.05273	.10546	.15818	.21091	.31636	.42182
43	1.26932	.05253	.10505	.15758	.21011	.31516	.42022
44	1.23754	.05233	.10466	.15698	.20931	.31397	.41862
45	1.20711	.05213	.10426	.15639	.20852	.31278	.41704
46	1.17793	.05193	.10387	.15580	.20774	.31160	.41547
47	1.14992	.05174	.10348	.15521	.20695	.31043	.41390
48	1.12302	.05154	.10309	.15463	.20618	.30926	.41235
49	1.09715	.05135	.10270	.15405	.20540	.30810	.41080
50	1.07225	.05116	.10232	.15348	.20463	.30695	.40927
51	1.04827	.05097	.10193	.15290	.20387	.30580	.40774
52	1.02515	.05078	.10155	.15233	.20311	.30466	.40622
53	1.00285	.05059	.10118	.15176	.20235	.30353	.40470
54	.98131	.05040	.10080	.15120	.20160	.30240	.40320
55	.96049	.05021	.10042	.15064	.20085	.30128	.40170
56	.94036	.05003	.10005	.15008	.20011	.30016	.40022
57	.92089	.04984	.09968	.14952	.19937	.29905	.39873
58	.90202	.04966	.09932	.14897	.19863	.29794	.39726
59	.88375	.04947	.09895	.14842	.19790	.29685	.39580
60	.86603	.04929	.09858	.14788	.19716	.29575	.39434
61	.84883	.04911	.09822	.14733	.19644	.29466	.39288
62	.83214	.04893	.09786	.14679	.19572	.29358	.39144
63	.81593	.04875	.09750	.14625	.19500	.29250	.39000
64	.80017	.04857	.09714	.14572	.19429	.29143	.38858
65	.78484	.04839	.09679	.14518	.19358	.29036	.38715
66	.76993	.04822	.09643	.14465	.19287	.28930	.38574
67	.75542	.04804	.09608	.14412	.19216	.28824	.38433
68	.74128	.04786	.09573	.14360	.19146	.28719	.38292
69	.72750	.04769	.09538	.14307	.19076	.28615	.38153
70	.71407	.04752	.09504	.14255	.19007	.28510	.38014
71	.70097	.04734	.09469	.14203	.18938	.28407	.37876
72	.68819	.04717	.09434	.14152	.18869	.28304	.37738
73	.67571	.04700	.09400	.14100	.18800	.28201	.37601
74	.66352	.04683	.09366	.14049	.18732	.28098	.37464
75	.65161	.04666	.09332	.13998	.18664	.27996	.37328

Mean Included Angle	K ₂ Constant For Tolerance Step Dimension	K-Constant For Roll Dimension					
		Roll Diameter					
		.03125	.0625	.09375	.125	.1875	.250
76	.63997	.04649	.09298	.13947	.18597	.27895	.37193
77	.62859	.04632	.09265	.13897	.18529	.27794	.37058
78	.61745	.04616	.09231	.13846	.18462	.27693	.36924
79	.60655	.04599	.09198	.13796	.18395	.27593	.36791
80	.59588	.04582	.09164	.13746	.18329	.27493	.36658
81	.58543	.04566	.09131	.13697	.18262	.27394	.36525
82	.57518	.04549	.09098	.13647	.18196	.27295	.36393
83	.56515	.04533	.09065	.13598	.18131	.27196	.36262
84	.55531	.04516	.09033	.13549	.18065	.27098	.36130
85	.54565	.04500	.09000	.13500	.18000	.27000	.36000
86	.53618	.04484	.08968	.13451	.17935	.26903	.35870
87	.52689	.04468	.08935	.13403	.17870	.26806	.35741
88	.51777	.04451	.08903	.13354	.17806	.26709	.35612
89	.50880	.04435	.08871	.13306	.17742	.26612	.35483
90	.50000	.04419	.08839	.13258	.17678	.26516	.35355
91	.49135	.04403	.08807	.13210	.17614	.26421	.35228
92	.48284	.04388	.08775	.13163	.17550	.26325	.35100
93	.47448	.04372	.08743	.13115	.17487	.26230	.34974
94	.46625	.04356	.08712	.13068	.17424	.26136	.34848
95	.45817	.04340	.08680	.13021	.17361	.26041	.34722
96	.45020	.04324	.08649	.12974	.17298	.25947	.34596
97	.44236	.04309	.08618	.12927	.17236	.25854	.34472
98	.43464	.04293	.08587	.12880	.17174	.25760	.34347
99	.42704	.04278	.08556	.12834	.17111	.25667	.34223
100	.41955	.04262	.08525	.12787	.17050	.25574	.34099
101	.41217	.04247	.08494	.12741	.16988	.25482	.33976
102	.40489	.04232	.08463	.12695	.16926	.25390	.33853
103	.39772	.04216	.08432	.12649	.16865	.25298	.33730
104	.39064	.04201	.08402	.12603	.16804	.25206	.33608
105	.38366	.04186	.08372	.12557	.16743	.25115	.33486
106	.37677	.04170	.08341	.12512	.16682	.25024	.33365
107	.36998	.04155	.08311	.12466	.16622	.24933	.33244
108	.36327	.04140	.08281	.12421	.16561	.24842	.33123
109	.35665	.04125	.08251	.12376	.16501	.24752	.33002
110	.35010	.04110	.08220	.12331	.16441	.24662	.32882
111	.34364	.04095	.08191	.12286	.16381	.24572	.32762
112	.33725	.04080	.08161	.12241	.16322	.24482	.32643
113	.33094	.04066	.08131	.12196	.16262	.24393	.32524
114	.32470	.04051	.08101	.12152	.16203	.24304	.32405
115	.31853	.04036	.08072	.12108	.16143	.24215	.32287
116	.31243	.04021	.08042	.12063	.16084	.24126	.32168
117	.30640	.04006	.08013	.12019	.16025	.24038	.32050
118	.30043	.03992	.07983	.11975	.15966	.23950	.31933
119	.29452	.03977	.07954	.11931	.15908	.23862	.31816
120	.28867	.03962	.07925	.11887	.15849	.23774	.31698



SPECIAL GAGE PINS

When designing special gage pins for use with A. G. Davis "BF" or "W" Series Indicator Depth Gages, follow procedures outlined below.



* Maintain 4.375 pin diameter for 1,000 plus .200 below bottom of "B" Bar and/or 2.200 plus .200 below bottom of "W" Bar.

* Dimension 1,000 plus gaging dimension when used with "B" Bar and 2,200 plus gaging dimension when used with "W" Bar.

STOCK GAGE PINS

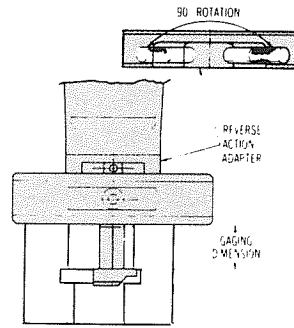
Stock pins available from A. G. Davis with the following "A" diameters: .625, .750, .875, 1.000, 1.125, 1.375, 1.500, 2.000.



To order: Specify any model R or M Gage Pin with the diameter "A" required.

Example: Model R14A.625.

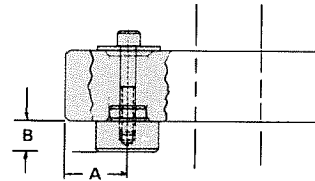
REVERSE ACTION GAGE PINS



The A. G. Davis Reverse Action Adapter (for use with "BF" or "W" Series Indicator Depth Gages) permits 90° rotation of gage pin.

Quotation on request—please furnish outline of piece part to be checked and configuration of gage pin.

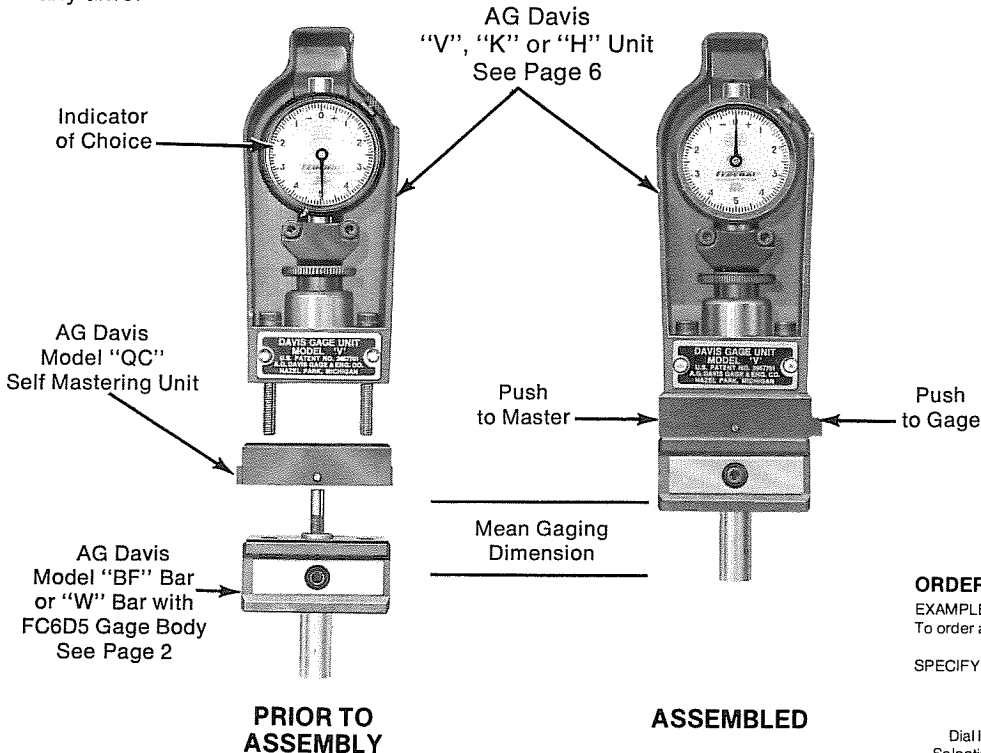
RISERS FOR "W" SERIES BARS



Risers are available from A. G. Davis for quick mounting in any gage pin location "A". (See Bar Selector and Pin Location Guide, page 2.) Quotation on request—Specify riser dimension "B".

AG DAVIS SELF MASTERING UNIT MODEL "QC"

Use with A. G. Davis "BF" or "W" bar. Eliminate costly special masters. Check setting of indicator at any time.



ORDERING INSTRUCTIONS

EXAMPLE:

To order a Self Mastering Indicator depth gage to check 1.740/1.746 dimension

