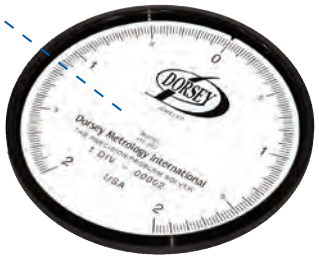
HIGH AMPLIFICATION DIAL INDICATORS

Dorsey's high amplification dial indicators feature a shock proof "following" type jeweled movement utilizing the unique lever principle of amplification and lightweight low inertia segmented precision gears for unparalleled accuracy and repeatability.

Available in single revolution or multi-revolution styles

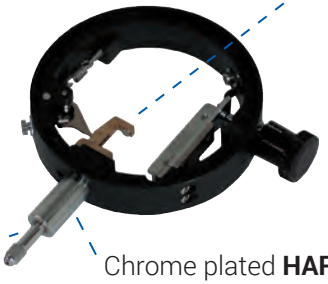
Revolution counters are a standard feature on all Dorsey multi-revolution indicators



Friction free fully jeweled movement

High accuracy gear segment movement

Jam proof/Shock proof- "following lever spindle" eliminates the possibility of jamming as the gage movement is not driven by rack & pinion spindle



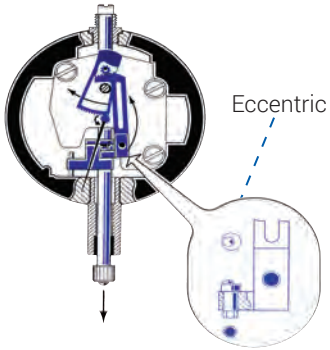
Zero adjustment knob keeps the zero always at 12:00 position (ANSI/AGD 3 & 4 only)

"Cartridge Style" movement can be easily replaced as an assembly or removed for repair

Universal movements can be used in either ANSI/AGD group 2, 3, or 4 indicators

Lapped chrome plated steel spindle

Chrome plated **HARDENED STEEL STEM** is virtually crush proof



Eccentric cam

The illustration to the left shows Dorsey's unique shock proof, high amplification indicator movement. Our indicators feature this lever principal and an adjustable eccentric cam to achieve unparalleled accuracy and repeatability.

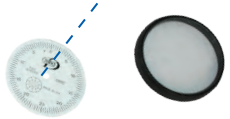
TRADITIONAL DIAL INDICATORS

Dorsey's traditional rack and pinion dial indicators feature heavy duty forged bronze cases, massive gears & spindles, and fully jeweled hardened stainless steel cartridge style movements.

Fully jeweled, heavy duty replaceable cartridge movement

Forged bronze, chrome plated case

Revolution counters are standard on all multi-revolution indicators



Machined aluminum bezel, sealed with teflon "O" ring

Unique case design features solid back to protect movement from contamination

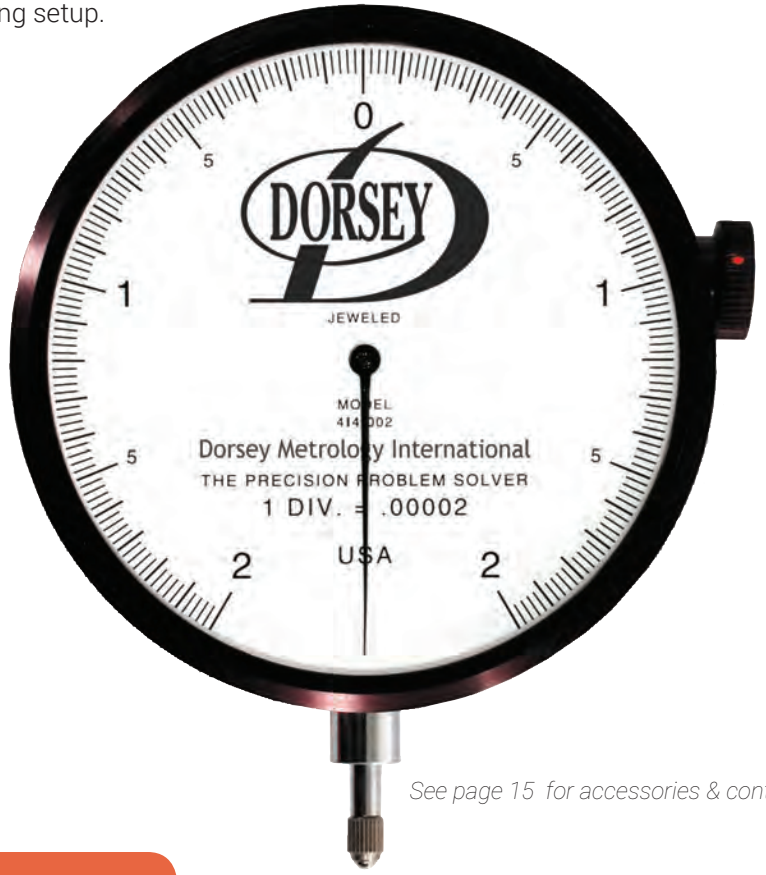
Stainless steel heavy duty rack spindle

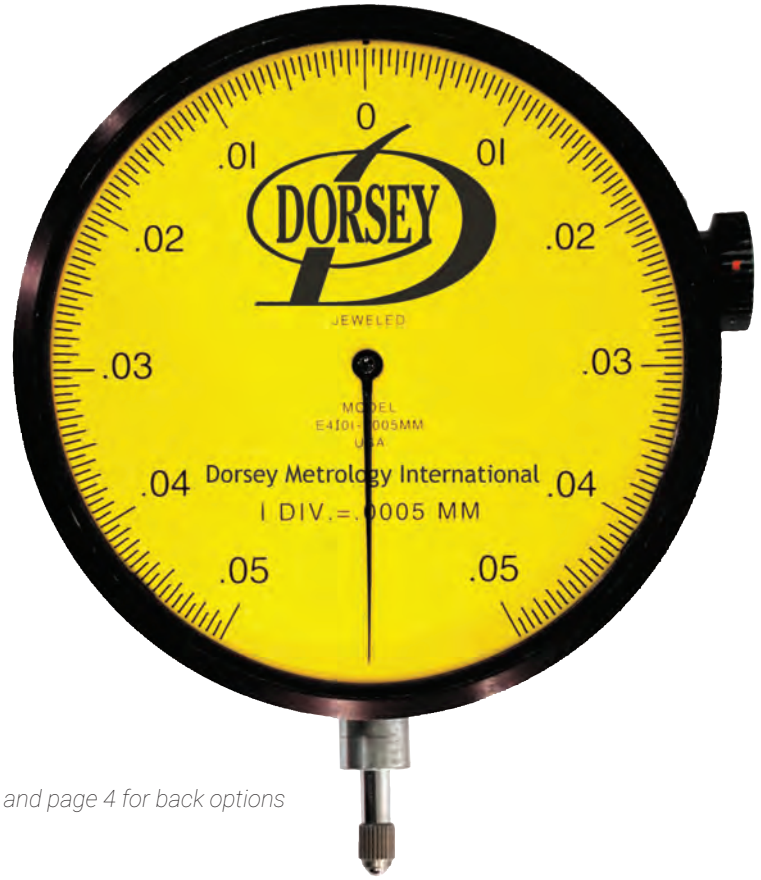
Hardened stainless steel stem screwed onto case boss

20 MILLIONTHS THAT YOU CAN ACTUALLY READ!

FEATURES:

- **Available with ISO 17025 certification.**
- High amplification movement permits:
  - Graduations as fine as 0.00002".
  - Improved readability and minimized judgement error.
  - Performance comparable to more expensive gaging methods.
  - Convenient portability - no external connections required.
  - Interchangeability - can be used in the same environment as any other mechanical dial indicator.
  - Simplified service - complete movement is easily removed from the case for cleaning or direct replacement at low cost.
- Lever principle of amplification - minimizes effect of spindle sideshake. Linearity and repeatability maintained through millions of cycles.
- 3-5/8" bezel - conforms to ANSI/AGD standards.
- Adjustable gaging force - easily adjustable from 2 to 5 oz. by externally accessible screw.
- External zero adjustment knob - makes possible the advantage of adjusting indicator hand to zero rather than rotating bezel to 'zero' hand.
- Optional lifting lever or cable release. Use lifting lever only when indicator is back mounted. Cable release may be used when indicator is back or stem mounted for enhanced stability of gaging setup.

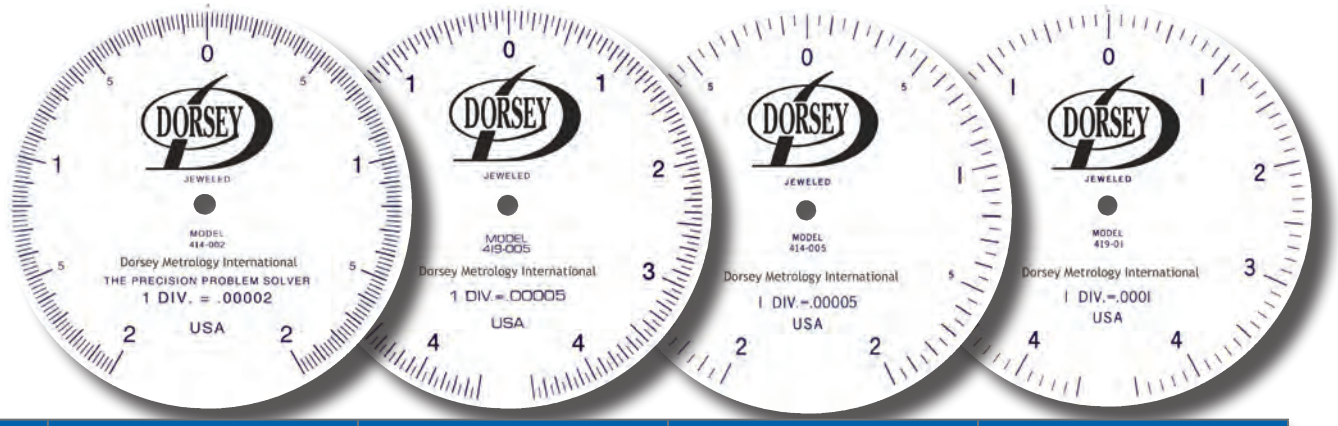




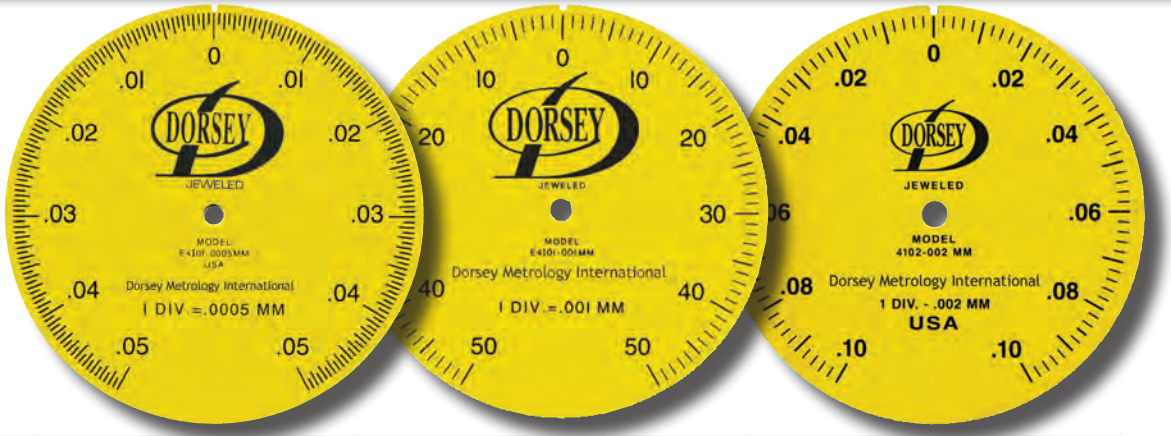
See page 15 for accessories & contacts and page 4 for back options

GROUP 4 ULTRA HIGH AMPLIFICATION

THE MOST PRECISE INDICATOR ON THE PLANET!



INCH MODEL	4I4-002	4I9-005	4I4-005	4I9-01
Graduation	.00002"	.00005"	.00005"	.0001"
Total Travel	.004"	.009"	.004"	.009"
Dial	.002"-0-.002"	.0045"-0-.0045"	.002"-0-.002"	.0045"-0-.0045"
Revolutions	1 Rev.	1 Rev.	1 Rev.	1 Rev.
Accuracy	less than +/- .00002"	less than +/- .00005"	less than +/- .00005"	less than +/- .0001"
Repeatability	+/- 10 millionths (.000010")	+/-10 millionths (.000010")	+/-10 millionths (.000010")	+/- 20 millionths (.00002")



METRIC MODEL	4I01-0005mm	4I01-001mm	*4I02-002mm
Graduation	0.0005mm	0.001mm	0.002mm
Total Travel	0.1mm	0.1mm	0.2mm
Dial	0.05-0-0.05mm	0.05-0-0.05mm	0.10-0-0.10mm
Revolutions	1 Rev.	1 Rev.	1 Rev.
Accuracy	less than +/- 0.0005mm	less than +/- 0.001mm	less than +/- 0.002mm
Repeatability	+/- 0.0001mm	+/- 0.0002mm	+/- 0.0004mm

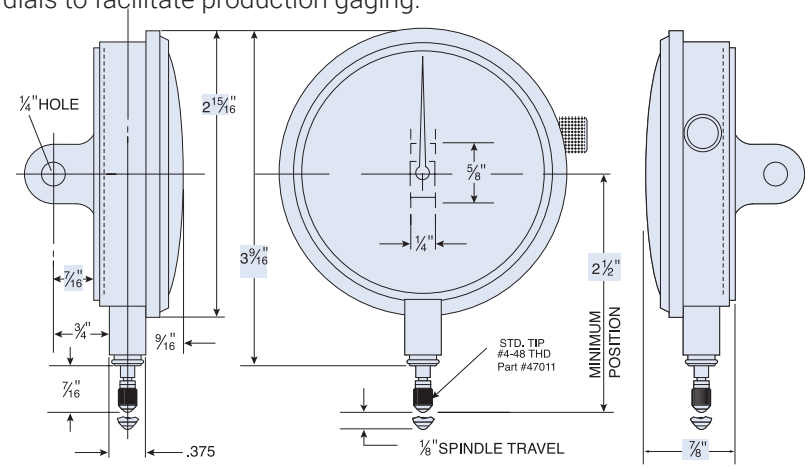
** Special order*

GROUP 3 ULTRA HIGH AMPLIFICATION

FEATURES:

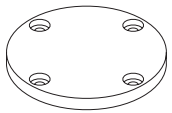
- **Available with ISO 17025 certification.**
- High amplification movement - graduations as fine as .00005". Improves readability and minimizes judgement error.
- Lever principle of amplification - minimizes effect of spindle sideshake. Linearity and repeatability maintained through millions of cycles.
- 2-15/16" Bezel - fits many existing fixtures. Conforms to ANSI/AGD standards.
- Adjustable gaging force - easily adjusts from 2 to 5 ounces by externally accessible screw.
- External zero adjustment knob makes possible the advantage of adjusting indicator hand to zero rather than rotating bezel to 'zero' hand.
- Optional lifting lever or cable release. Use lifting lever only when indicator is back mounted. Cable release may be used when indicator is back or stem mounted and enhances stability of gaging setup.
- Optional tolerance hands or shaded dials to facilitate production gaging.

See page 15 accessories and contacts options



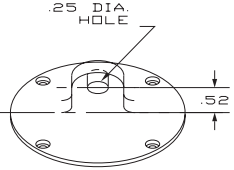
Indicator back options for Group 3 & 4

K



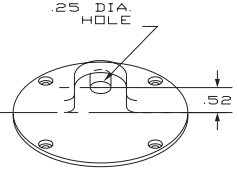
Flat
Part # 49162

L



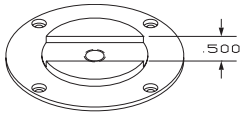
Lugback
Part# 49161

N



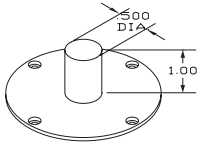
Offset Lugback
Part # 49160

H



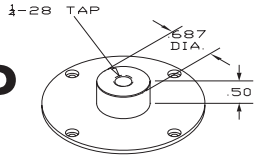
Slideback
Part # 49188

R



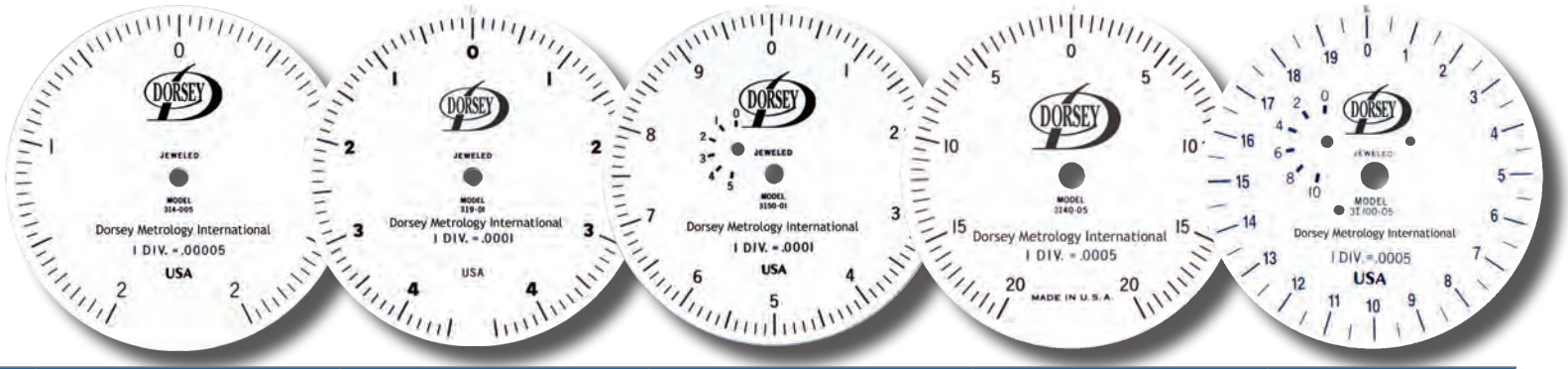
Screwback
Part # 49201

P



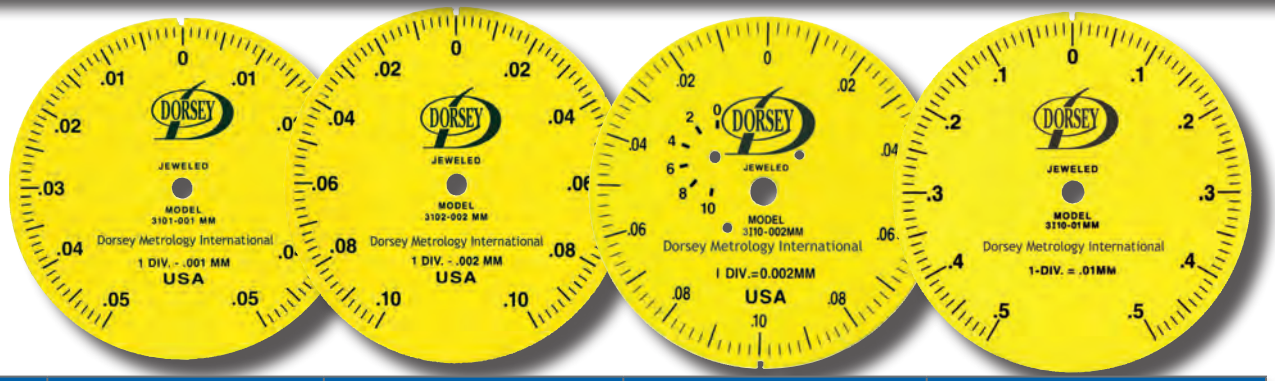
Postback
Part #49293

GROUP 3 ULTRA HIGH AMPLIFICATION



MODEL	3I4-005	3I9-01	3I50-01	*3I40-05	*3I100-05
Graduation	.00005"	.0001"	.0001"	.0005"	.0005"
Total Travel	.004"	.009"	.050"	.040"	.100"
Dial	.002"-0-.002"	.0045"-0-.0045"	0-.005"-0	.02"-0-.02"	0-.010"-0
Revolutions	1 Rev.	1 Rev.	5 Rev.	1 Rev.	5 Rev.
Accuracy	+/- .00005"	+/- .0001"	+/- .0001"	+/- .0005"	+/- .0005"
Repeatability	+/- .00002"	+/- .00002"	+/- .00002"	+/- .0001"	+/- .0001"

** Special order*



MODEL	3I01-001mm	3I02-002mm	*3I10-002mm	3I10-01mm
Graduation	0.001mm	0.002mm	0.002mm	0.01mm
Total Travel	0.1mm	0.2mm	1.0mm	1.0mm
Dial	0.05-0-0.05mm	0.10-0-0.10mm	0.5-0-0.5mm	0.05-0-0.05mm
Revolutions	1 Rev.	1 Rev.	5 Rev.	1 Rev.
Accuracy	+/- 0.001mm	+/- 0.002mm	+/- 0.002mm	+/- 0.01mm
Repeatability	+/- 0.0005mm	+/- 0.0005mm	+/- 0.0005mm	+/- 0.002mm

** Special order*

AGD/ANSI GROUP 3 & 4	
ACCESSORIES	PART #
Bottom Mounted Lifting Lever	49341
Tolerance Hands	49156
Cable Release	47935
Special Shaded Dials	As Quoted

Bottom mounted lifting lever

Cable retraction for spindle

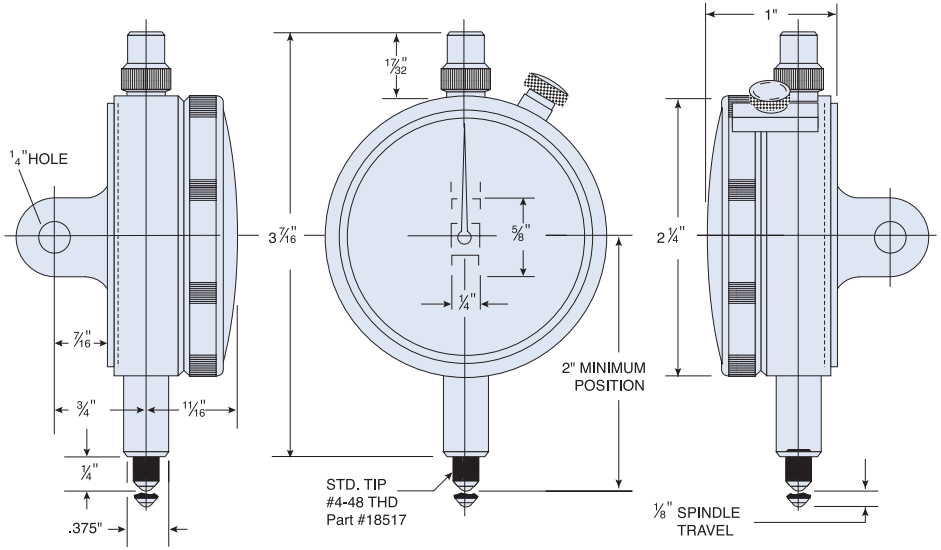
Tolerance hands

GROUP 2 ULTRA HIGH AMPLIFICATION

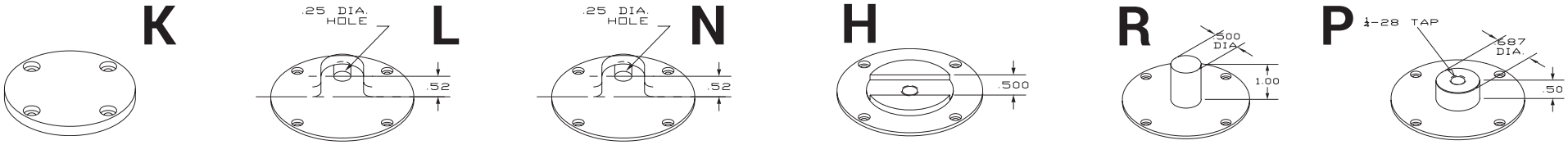
All Dorsey Ultra High Amplification Indicators utilize the lever principle of motion. They do not rely on rack and pinion motion. This eliminates the inherent error between the meshing of racks and gears.

FEATURES:

- **Available with ISO 17025 certification.**
- High amplification movement - graduations as low as .00005". Improves readability and minimizes judgement error.
- Lever principle of amplification - minimizes effect of spindle sideshake. Linearity and repeatability maintained through millions of cycles.
- 2.25" Bezel - fits many existing fixtures. Conforms to ANSI/AGD standards.
- Low gaging force - standard is 3 oz. Available at higher or lower values with factory adjustment.
- Chrome plated hardened steel stem is designed for clamping. It is virtually crush proof.
- Bezel zero adjustment - ensures positive lock.
- Straight through spindle - permits installation of top mounted accessories and options.
- Optional lifting lever positions - can be attached to top bushing or stem.
- Optional tolerance hands or shaded dials to facilitate production gaging.



Indicator back options for Ultra High Amplification Group 2



Flat
Part# 49262

Lugback
Part# 49261

Offset Lugback
Part# 49260

Slideback
Part# 49259

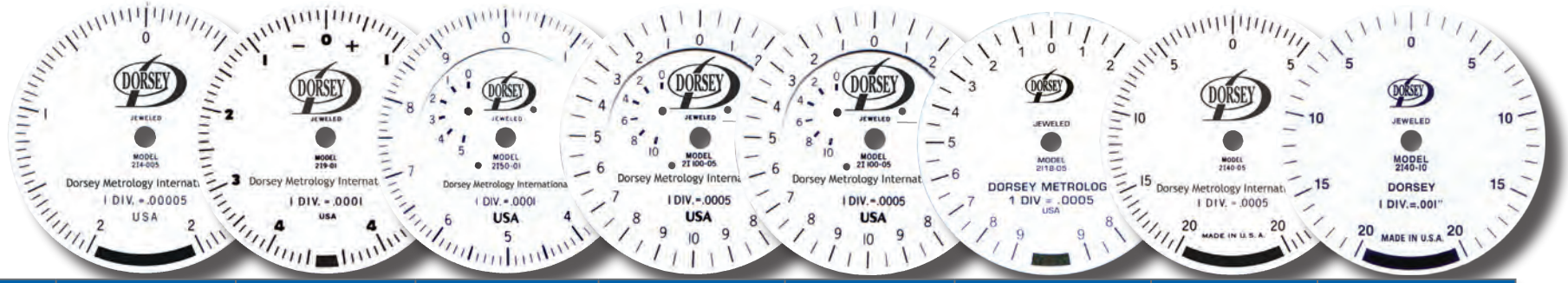
Postback
Part# 49289

Screwback
Part# 49230

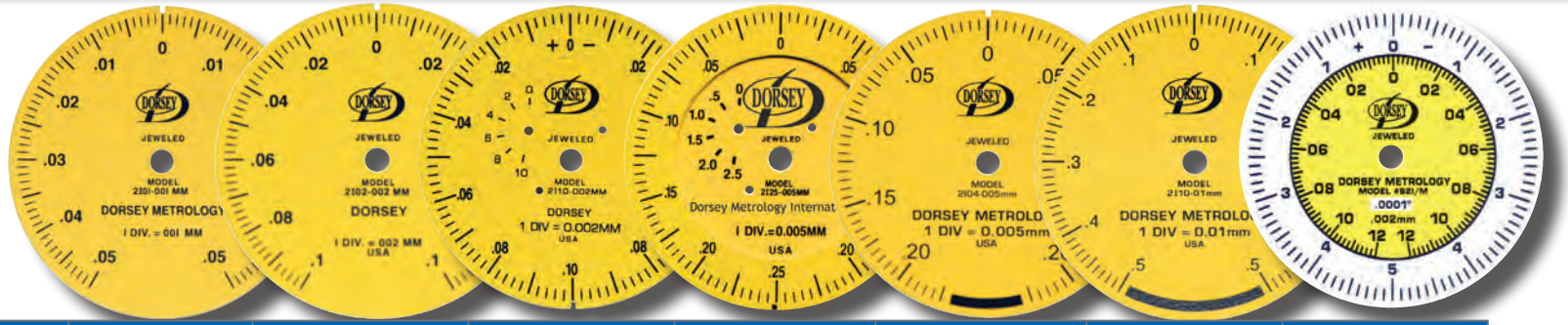
See page 14 for dial face options, page 15 for accessories and contacts

GROUP 2 ULTRA HIGH AMPLIFICATION

Dials can be supplied to your specification. See page 14 for options.



MODEL	2I4-005	2I9-01	2I50-01	2I100-025	2I100-05	2I18-05	2I40-05	2I40-10
Graduation	.00005"	.0001"	.0001"	.00025"	.0005"	.0005"	.0005"	.001"
Total Travel	.004"	.009"	.050"	.100"	.100"	.018"	.040"	.040"
Dial	.002"-0-.002"	.0045"-0-.0045"	0-.005"-0	0-.010"-0	0-.010"-0	.009"-0-.009"	.020"-0-.020"	.020"-0-.020"
Revolutions	1 Rev.	1 Rev.	5 Rev.	5 Rev.	5 Rev.	1 Rev.	1 Rev.	1 Rev.
Accuracy	+/- .00005"	+/- .0001"	+/- .0001"	+/- .00025"	+/- .0005"	+/- .0005"	+/- .0005"	+/- .0005"
Repeatability	+/- .00001"	+/- .00002"	+/- .00002"	+/- .00005"	+/- .0001"	+/- .0001"	+/- .0001"	+/- .0001"

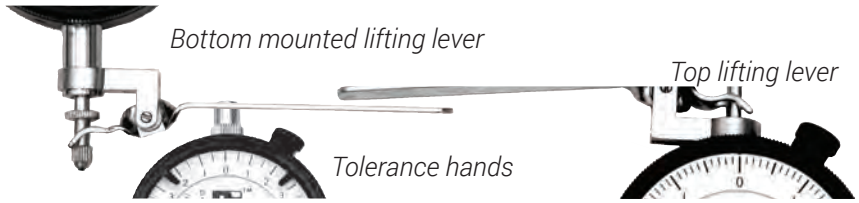


MODEL	2I01-001mm	2I02-002mm	2I10-002mm	2I25-005mm	2I04-005mm	2I10-01mm	S2I/M
Graduation	0.001mm	0.002mm	0.002mm	0.005mm	0.005mm	0.01mm	.0001" (0.002mm)
Total Travel	0.1mm	0.2mm	1.0mm	2.5mm	0.4mm	1.0mm	.010" / 0.24mm
Dial	0.05-0-0.05mm	0.1-0-0.1mm	0-.1mm-0	0-.25mm-0	0.2-0-0.2mm	0.5-0-0.5mm	0-.005"-0
Revolutions	1 Rev.	1 Rev.	5 Rev.	5 Rev.	1 Rev.	1 Rev.	1 Rev.
Accuracy	+/- 0.001mm	+/- 0.002mm	+/- 0.002mm	+/- 0.005mm	+/- 0.005mm	+/- 0.01mm	+/- .0001" (0.002mm)
Repeatability	+/- 0.0002mm	+/- 0.0004mm	+/- 0.0004mm	+/- 0.001mm	+/- 0.001mm	+/- 0.002mm	+/- .00002" (.0005mm)

For extended indicator stem of 3 inches add D4- as prefix.
Example: D4-2I50-01

For perpendicular indicator add -90 as suffix.
Example: 2I01-001mm-90

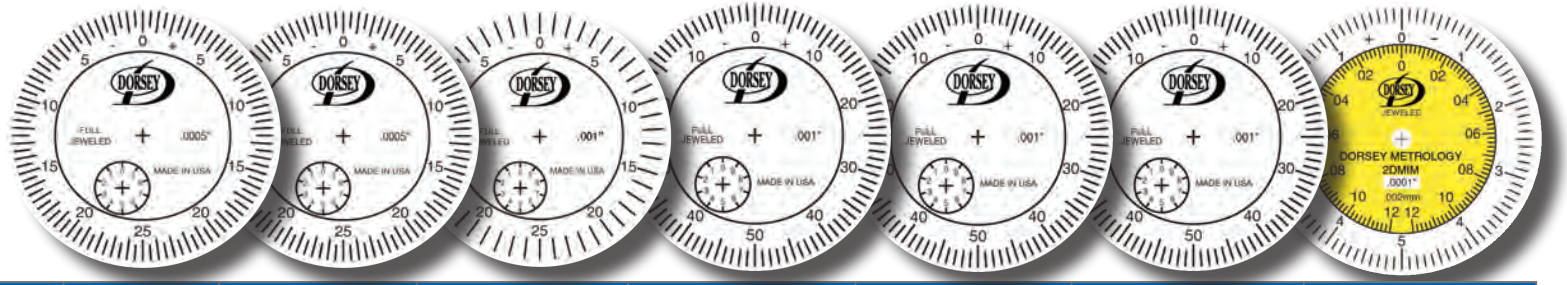
ACCESSORIES	AGD 2 PART #
Bottom Mounted Lifting Lever	49341
Top Mounted Lifting Lever	49340
Tolerance Hands	49255
Special Shaded Dials	As Quoted



FEATURES:

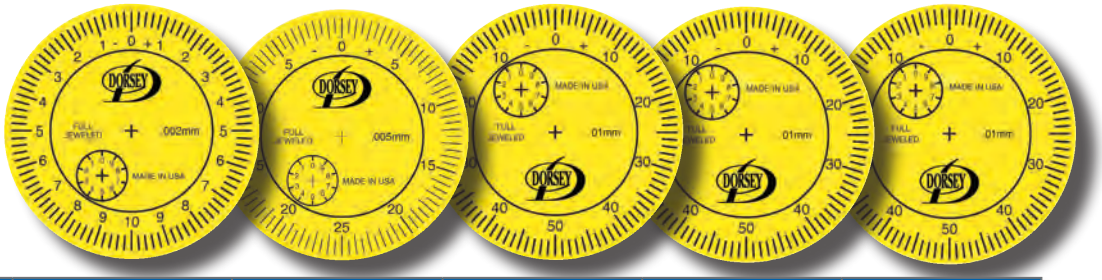
- Precision rack and pinion design.
- Protective case opens from front to protect movement from contamination.
- Fully jeweled movement with rev. counter.
- Forged bronze, chrome plated case.
- Screwed-on, hardened steel, chrome plated stem.
- Universal .375" diameter stem with #4-48 spindle thread.
- Balanced and continuous dial faces available.

MODEL	2DM025-01	2DM100-01	2DM500-01	2DM050-05	2DM075-05	2DM125-05	2DM250-05
Graduation	.0001"	.0001"	.0001"	.0005"	.0005"	.0005"	.0005"
Total Travel	.025"	.100"	.500"	.050"	.075"	.125"	.250"
Revolutions	2.5 Rev.	10 Rev.	50 Rev.	2.5 Rev.	2.5 Rev.	2.5 Rev.	5 Rev.
Travel/Rev.	.010"	.010"	.010"	.020"	.030"	.050"	.050"



MODEL	2DM500-05	2DM1000-05	2DM125-10	2DM250-10	2DM500-10	2DM1000-10	2DMIM
Graduation	.0005"	.0005"	.001"	.001"	.001"	.001"	.0001"/0.002mm
Total Travel	.500"	1.00"	.125"	.250"	.500"	1.00"	.010"/0.24mm
Revolutions	10 Rev.	20 Rev.	5 Rev.	2.5 Rev.	5 Rev.	10 Rev.	1 Rev.
Travel/Rev.	.050"	.050"	.050"	.100"	.100"	.100"	.010"/0.24mm

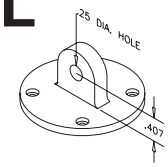
TRADITIONAL DIAL INDICATORS, GROUP 2-CONTINUED



MODEL	2DM005-002mm	2DM012-005mm	2DM5-01mm	2DM10-01mm	2DM25-01mm
Graduation	0.002mm	0.005mm	0.01mm	0.01mm	0.01mm
Total Travel	.5mm	1.25mm	5mm	10mm	25mm
Revolutions	2.5 Rev.	2.5 Rev.	5 Rev.	10 Rev.	25 Rev.
Travel/Rev.	0.200mm	0.50mm	1.0mm	1.0mm	1.0mm

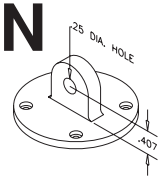
BACK OPTIONS FOR GROUP 2

L



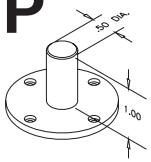
Lug
Part #C20

N



Offset Lug
Part #C22

P

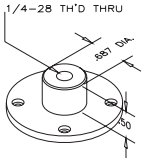


Post
Part #C24

K

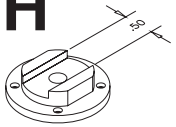
Flat
(Sheet metal)
Part #C21

R

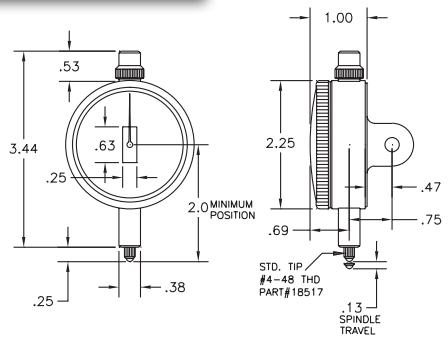


Screw
Part #C25

H



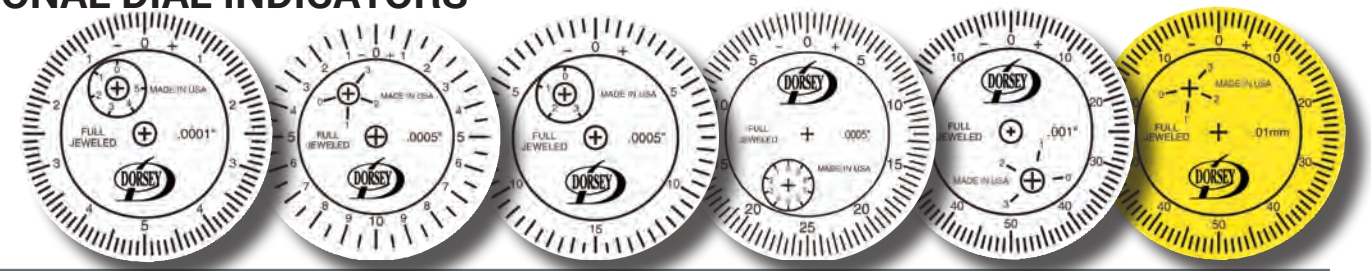
Adjustable
Part #C23



The letter designating the indicator back follows the letter designating the dial format.			
Example #1: 2I50-01B	H	Example #2: 2DM100-01B	H

See page 14 for dial face options, 15 for accessories and contacts

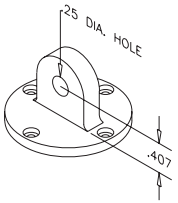
GROUP 1 TRADITIONAL DIAL INDICATORS



MODEL	1DM025-01	1DM050-05	1DM075-05	1DM125-05	1DM250-10	1DM2-01mm
Graduation	.0001"	.0005"	.0005"	.0005"	.001"	0.01mm
Total Travel	.025"	.050"	.075"	.125"	.250"	2.5mm
Revolutions	2.5 Rev.	2.5 Rev.	2.5 Rev.	2.5 Rev.	2.5 Rev.	2.5 Rev.
Travel/Rev.	.010"	.020"	.030"	.050"	.100"	1.0mm

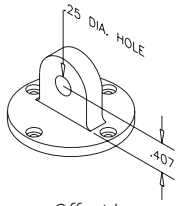
BACK OPTIONS FOR GROUP 1-CONTINUED

L



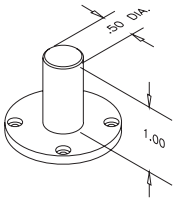
Lug
Part #C201

N



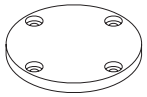
Offset Lug
Part #C221

P



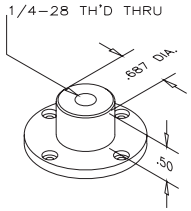
Post
Part #C241

K



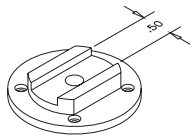
Flat
Part #C211

R

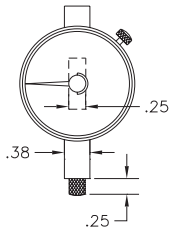


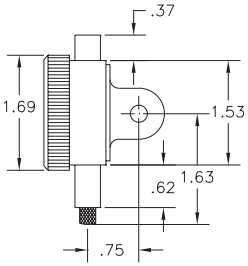
Screw
Part #C251

H



Adjustable
Part #C231

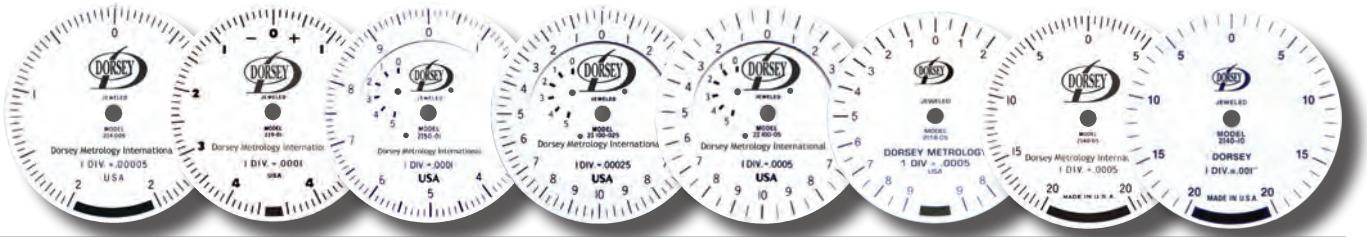




The letter designating the indicator back follows the letter designating the dial format.			
Example #1: 2I50-01B	H	Example #2: 2DM100-01B	H

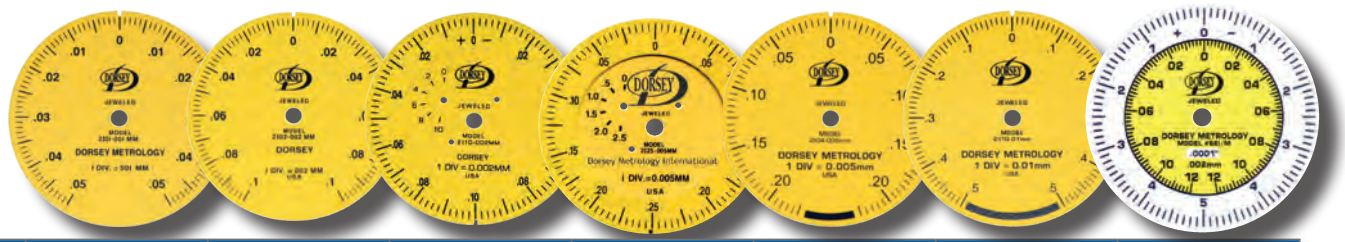
HIGH AMPLIFICATION FEATURES

- Shock proof fully jeweled Dorsey high amplification movement.
- Cartridge style movement assembly is easily replaced to limit gage downtime.
- Heavy duty aluminum housing.
- Directly interchangeable with Standard Gage® Brown and Sharp bore gaging products.
- All resolutions feature .125" spindle travel.



Model	DS-2I4-005	DS-2I9-01	DS-2I50-01	DS-2I100-025	DS-2I100-05	DS-2I18-05	DS-2I40-05	DS-2I40-10
Graduation	.00005"	.0001"	.0001"	.00025"	.0005"	.0005"	.0005"	.001"
Total Travel	.004"	.009"	.050"	.100"	.100"	.018"	.040"	.002"
Dial	.002"-0-.002"	.0045"-0-.0045"	0-.005"-0	0-.10"-0	0-.10"-0	.009"-0-.009"	.020"-0-.020"	.002"-0-.002"
Revolutions	1 Rev.	1 Rev.	3 Rev.	3 Rev.	3 Rev.	1 Rev.	1 Rev.	1 Rev.
Accuracy	+/- 0.00005"	+/- 0.0001"	+/- 0.0001"	+/- 0.00025"	+/- 0.0005"	+/- .0005"	+/- 0.0005"	+/- 0.001"
Repeatability	+/- 0.00001"	+/- 0.00002"	+/- 0.00002"	+/- 0.00005"	+/- 0.0001"	+/- .0001"	+/- 0.0001"	+/- 0.0005"

ULTRA HIGH AMPLIFICATION-CONTINUED

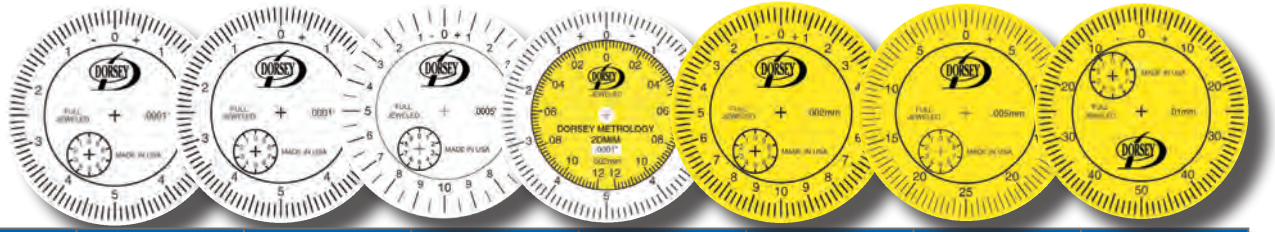


Model	DS-2I01-001mm	DS-2I02-002mm	DS-2I10-002mm	DS-2I25-005mm	DS-2I04-005mm	DS-2I10-01mm	DS-S2I/M
Graduation	0.001mm	0.002mm	0.002mm	0.005mm	0.005mm	0.01mm	.0001" (0.002mm)
Total Travel	0.1mm	0.2mm	1.0mm	2.5mm	0.4mm	1.0mm	.010" / 0.24mm
Dial	0.05-0-0.05mm	0.10-0-0.10mm	0-.10mm-0	0-.25mm-0	0.2-0-0.2mm	0.5-0-0.5mm	0-.050"-0
Revolutions	1 Rev.	1 Rev.	3 Rev.	3 Rev.	1 Rev.	1 Rev.	1 Rev.
Accuracy	+/- 0.001mm	+/- 0.002mm	+/- 0.002mm	+/- 0.005mm	+/- 0.005mm	+/- 0.01mm	+/- .0001" (.002mm)
Repeatability	+/- 0.0002mm	+/- 0.0004mm	+/- 0.0004mm	+/- 0.001mm	+/- 0.001mm	+/- 0.002mm	+/- .00002" (.0005mm)

For perpendicular indicator unit add -90 as suffix.
Example: DS-2I40-05-90
High Amplification Series only

TRADITIONAL MOVEMENT (RACK & PINION MOVEMENT) FEATURES

- Precision rack and pinion design.
- Protective case opens from front to protect movement from contamination.
- Fully jeweled movement with rev. counter.

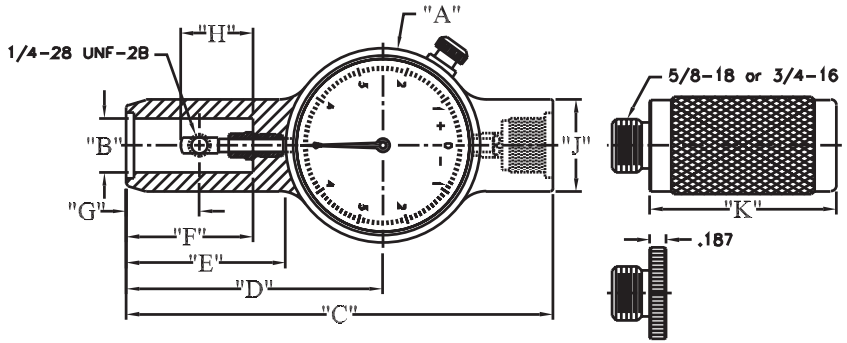


Model	DS-2DM025-01	DS-2DM100-01	DS-2DM050-05	DS-2DMIM	DS-2DM005-002mm	DS-2DM012-005mm	DS-2DM5-01mm
Graduation	.0001"	.0001"	.0005"	.0001"/0.002mm	0.002mm	0.005mm	0.01mm
Total Travel	.025"	.100"	.050"	.010" / 0.24mm	.5mm	1.25mm	5mm
Revolutions	2.5 Rev.	10 Rev.	5 Rev.	1 Rev.	2.5 Rev.	2.5 Rev.	5 Rev.
Travel/Rev.	.010"	.010"	.020"	.010"/0.24mm	0.200mm	0.50mm	1.0mm

TECHNICAL SPECIFICATIONS

Dorsey offers an integrated indicator housing for just about any application.

DIAL UNIT HOUSINGS					
DIM.	AGD 1	SMALL AGD2	STANDARD AGD 2	HEAVY DUTY AGD 2 HD	1" SHAFT AGD 3
A	1.90"	2.25"	2.25"	2.25"	2.75"
B	.38"	.50"	.62"	1.00"	1.00"
C	3.50"	4.25"	5.25"	6.12"	6.5"
D	2.42"	2.40"	3.16"	3.66"	3.81"
E	1.50"	1.30"	1.90"	2.40"	2.45"
F	1.00"	1.10"	1.50"	2.00"	2.00"
G	.36"	.60"	.84"	1.13"	1.06"
H	.50"	.50"	.84"	.88"	1.19"
J	.56"	.88"	1.06"	1.44"	1.44"
K	.91"	2.00"	2.20"	3.00"	3.00"



INDICATOR HOUSING OPTIONS

For .500" dia. shaft
Part # Example:
DS-2I50-01-2

For .625" dia. shaft
Part # Example:
DS-2I50-01
Standard unit

For .625" dia shaft
Part # Example:
DS-2DM025-01

For 1" dia. shaft
Part # Example:
DS-2I50-01-6

Digital or independent dial indicator housing
Pt # DX4-81035 for most digital indicators

DIGITAL INDICATORS

Dorsey offers the most popular styles of digital indicators to complement our gages. Use the matrix below to select the proper indicator for your application. Please note that we offer many other digital indicators. Contact us if your requirements are not met by these selections.

	PART#	RANGE	RESOLUTION	ACCURACY	FEATURES/DESCRIPTION
STYLE 1	MT543-XX1	.500" / 12.7mm	.00005" / 0.001mm	< .0008"	ID-S series, SPC output, inch/metric select, rotating face, capacitive system, 20,000 hour battery life.
	MT543-XX2	.500" / 12.7mm	.00005" / .0001"/ .0005" Inch and 0.001mm / 0.01mm Metric Selectable	< .00012"	This ID-C series includes large digital readout display, Inch/Metric switchable, go/ no-go feature by setting upper & lower limits, and SPC data output, rotating face, 5,000 hour battery life.
	MT543-XBG	.500" / 12.7mm	.00005" / 0.001mm	< .00012"	This ID-C series is designed for ID/bore gage applications, digital readout and analog bar graph displays, Inch/Metric switchable, minimum value holding function, go/no-go feature and SPC data output, 2,000 hour battery life.
	MT543-XX3	.500" / 12.7mm	.00001"-.05"/ 0.0002 - 1mm	< .00012"	Programmable model Inch/Metric 2:1 and 4:1 Digital Indicator
STYLE 2	A2500-C	.250"	.0001" / 0.002mm	+/- .0001"	Numeric & analog visual display, inch/metric selectable, floating zero, rotating bezel, incremental measuring mode, high/low tolerance settings, min/max hold reading, TIR, absolute/preset measuring mode, max/min reading and display/freeze reading hold, programmable lock combination, data output.
	A3500-C	.250"	.00005" / 0.001mm	+/- .00005"	
	A2600-C	.600"	.0001" / 0.002mm	+/- .00005"	
	A2110-C	1.00"	.0001" / 0.002mm	+/- .00005"	
	Q2500-C	.250"	.0001" / 0.002mm		Same as above except without analog visual display and with programmable presets and ratios used for three point gages and countersink and chamfer gages.
	Q3500-C	.250"	.00005" / 0.001mm		
	Q2600-C	.600"	.0001" / 0.002mm		
STYLE 3	M2034101	+/- .040"/1.00mm	.00001"/ 0.0002mm .00002"/ 0.0005mm .00005"/ 0.001mm .0001"/ 0.002mm .0002"/ 0.005mm .0005"/ 0.01mm .001"/ 0.02mm	+/- .020" = 0.25%	Digital readout and analog bar graph display, Inch/Metric and resolution switchable, deviation from zero or preset capabilities for actual size, auto power down, Go/No-go feature and data output.
	M2034201	+/- .040"/1.00mm		+/- .040" = 0.50%	Utilizes the features above plus hold, min/max & TIR functions, multiplier function for ratios and two point difference measurement.
STYLE 4	M2033101	+/- .040"/1.00mm	Digital Display .00002"/ 0.0005mm .00005"/ 0.001mm .0005"/ 0.001mm .0001"/ 0.002mm Analog Display .0005"/ 0.001mm .0001"/ 0.002mm .001" / 0.02mm	+/- 0.50%	Inch/Metric, resolution switchable Digital readout and analog fan display, min/max TIR, hold and reset function without output.
	M2033111	+/- .040"/1.00mm		+/- 0.50%	Includes same features as above, but also includes RS232 output.
STYLE 5	FV545301350	.50"/12.5mm	.00005" / 0.001mm	+/- .00012"/.003mm	Mark VI electronic indicator, USB/RS232 output, wireless, 10,000 hours battery life, bezel rotates 270 degrees.
	FV545301550	1.00"/25mm		+/- .00016"/.004mm	

Note: All indicator part numbers shown above include a standard flat back. Contact us for other optional backs & accessories.