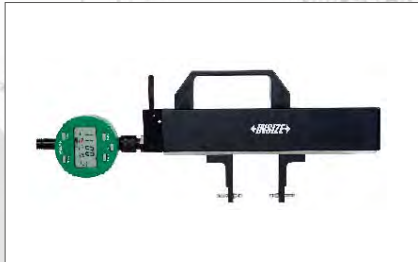




Carbon Fiber Comparison Gages
Page 94



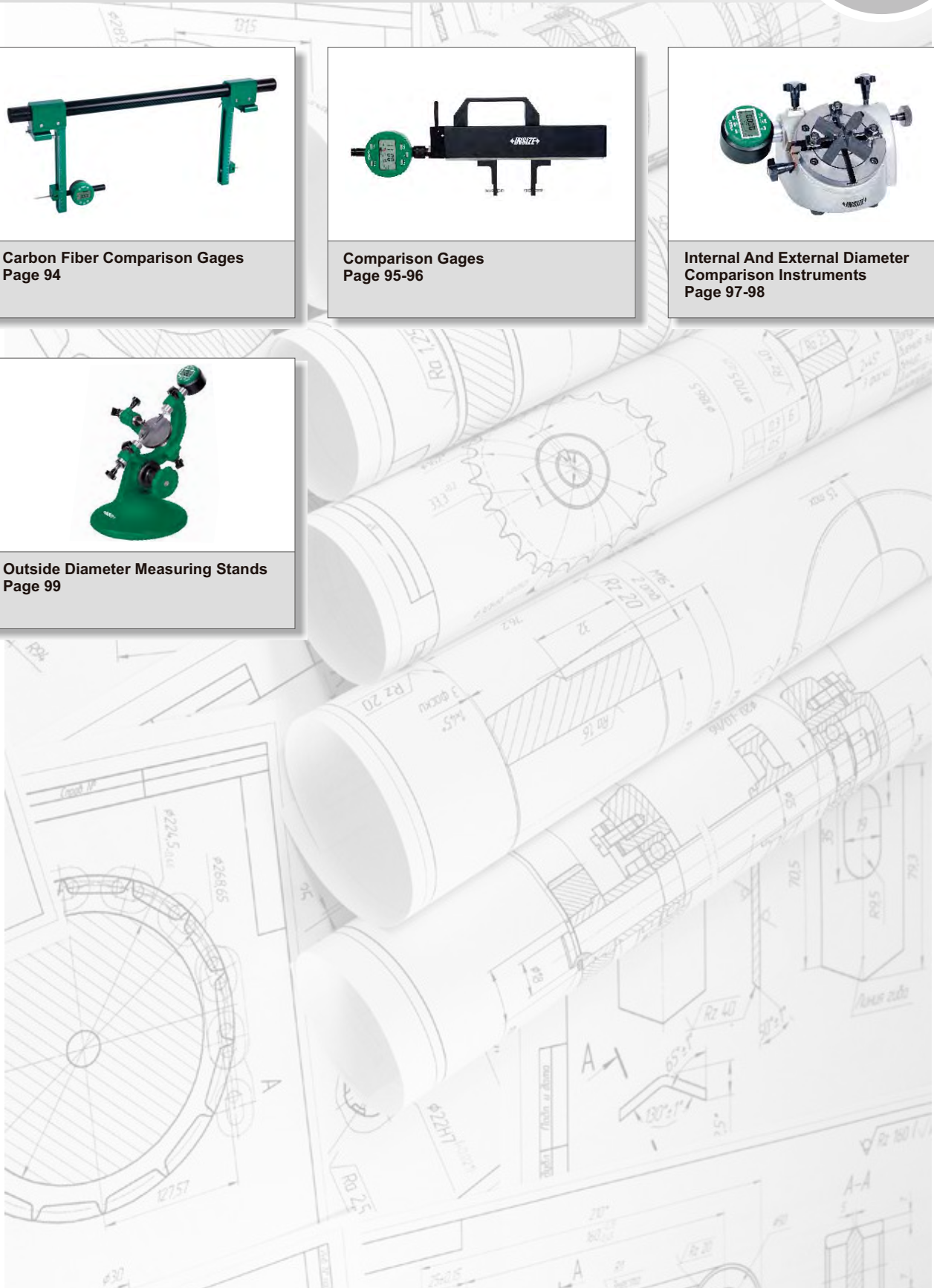
Comparison Gages
Page 95-96



Internal And External Diameter
Comparison Instruments
Page 97-98

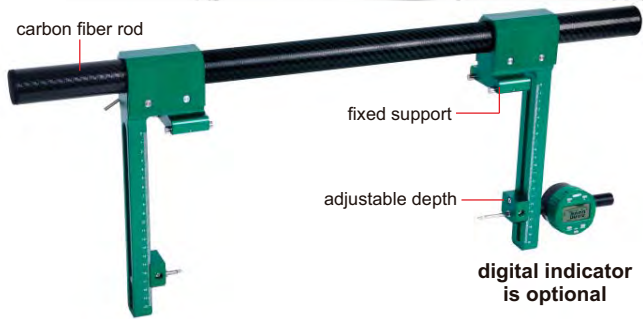


Outside Diameter Measuring Stands
Page 99



CARBON FIBER COMPARISON GAGES

CARBON FIBER RODS, LIGHT WEIGHT, NOT EASY TO DEFORM, NO TEMPERATURE EXPAND, SUITABLE FOR THIN-WALL WORKPIECES AND LARGE-SIZE WORKPIECES



measure outer diameter

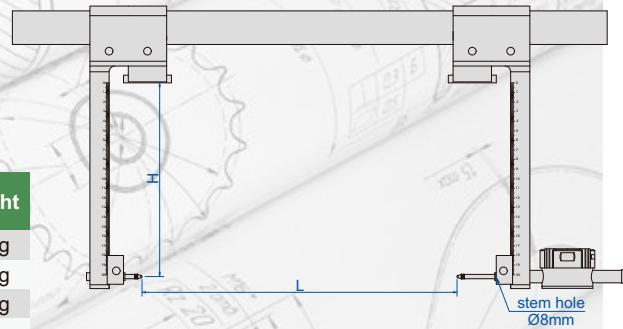


measure inside diameter, minimum diameter is 220mm

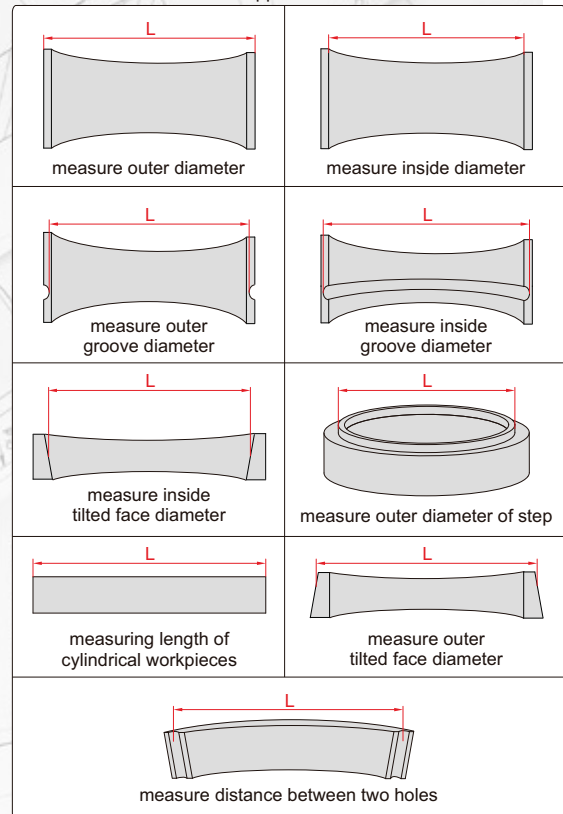
2931-D1000B



- Measure outer diameter, inside diameter, holes distance and cylindrical workpiece length
- Carbon fiber rods, light weight, not easy to deform, no temperature expand
- Optional accessory: cylinder gage blocks (code 4001), digital indicators (code 2138-25SP/2139-25SP/2103-25SP/2104-25SP)



application



Code	Maximum measuring range (L)	Measuring depth (H)	Repeatability	Weight
2931-D1000A	1000mm	0-100mm	5µm	2.0kg
2931-D1000B	1000mm	0-200mm	10µm	2.3kg
2931-D1000C	1000mm	0-300mm	25µm	2.6kg
2931-D1500A	1500mm	0-100mm	8µm	2.3kg
2931-D1500B	1500mm	0-200mm	15µm	2.6kg
2931-D1500C	1500mm	0-300mm	30µm	2.9kg
2931-D2000A	2000mm	0-100mm	10µm	2.6kg
2931-D2000B	2000mm	0-200mm	20µm	2.9kg
2931-D2000C	2000mm	0-300mm	35µm	3.2kg
2931-D2500A	2500mm	0-100mm	12µm	2.9kg
2931-D2500B	2500mm	0-200mm	25µm	3.2kg
2931-D2500C	2500mm	0-300mm	50µm	3.5kg
2931-D3000A	3000mm	0-100mm	14µm	3.2kg
2931-D3000B	3000mm	0-200mm	30µm	3.5kg
2931-D3000C	3000mm	0-300mm	60µm	3.8kg
2931-D4000A	4000mm	0-100mm	16µm	3.8kg
2931-D4000B	4000mm	0-200mm	35µm	4.1kg
2931-D4000C	4000mm	0-300mm	65µm	4.4kg
2931-D5000A	5000mm	0-100mm	25µm	4.4kg
2931-D5000B	5000mm	0-200mm	40µm	4.7kg
2931-D5000C	5000mm	0-300mm	70µm	5.0kg
2931-D6000A	6000mm	0-100mm	28µm	8.4kg
2931-D6000B	6000mm	0-200mm	50µm	8.8kg
2931-D6000C	6000mm	0-300mm	80µm	9.2kg
2931-D7000A	7000mm	0-100mm	30µm	9.2kg
2931-D7000B	7000mm	0-200mm	55µm	9.6kg
2931-D7000C	7000mm	0-300mm	100µm	10kg
2931-D8000A	8000mm	0-100mm	32µm	10kg
2931-D8000B	8000mm	0-200mm	60µm	10.4kg
2931-D8000C	8000mm	0-300mm	110µm	10.8kg
2931-D9000A	9000mm	0-100mm	35µm	10.7kg
2931-D9000B	9000mm	0-200mm	70µm	11.1kg
2931-D9000C	9000mm	0-300mm	120µm	11.5kg

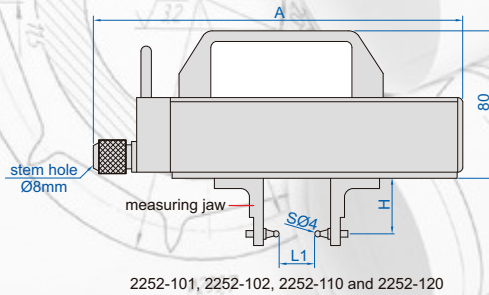
**CUSTOMIZABLE MEASURING
JAWS AND POINTS**

COMPARISON GAGES



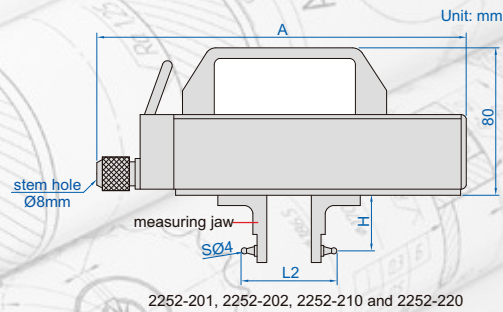
digital indicator
is optional

measure external diameter
2252-110



digital indicator
is optional

measure internal diameter
2252-220



- Measure external diameter, internal diameter and over-pin diameter of gears
- Total range of movable point: 8mm, effective range of movable point: ± 2 mm
- Optional accessory: digital indicator (code 2138-10F), gage block grade 1 (4101-B series)

Measure external diameter

Code	Range of external diameter (L1)	Accuracy*	Repeatability	A	H
2252-101	0-100mm/0-4"	$\pm 5\mu\text{m}$	1 μm	245mm	40mm
2252-102	0-170mm/0-6.6"	$\pm 5\mu\text{m}$	1 μm	315mm	40mm
2252-110	0-100mm/0-4"	$\pm 5\mu\text{m}$	2 μm	245mm	60mm
2252-120	0-170mm/0-6.6"	$\pm 5\mu\text{m}$	2 μm	315mm	60mm

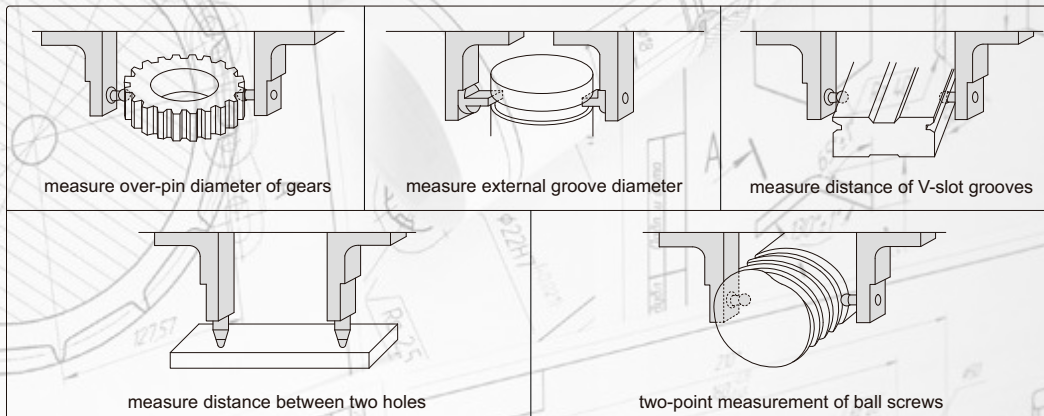
Measure internal diameter

Code	Range of external diameter (L2)	Accuracy*	Repeatability	A	H
2252-201	20-130mm/0.8-5.1"	$\pm 5\mu\text{m}$	1 μm	195mm	40mm
2252-202	20-200mm/0.8-7.8"	$\pm 5\mu\text{m}$	1 μm	265mm	40mm
2252-210	20-130mm/0.8-5.1"	$\pm 5\mu\text{m}$	2 μm	195mm	60mm
2252-220	20-200mm/0.8-7.8"	$\pm 5\mu\text{m}$	2 μm	265mm	60mm

*Within ± 2 mm effective range



external diameter measurement application

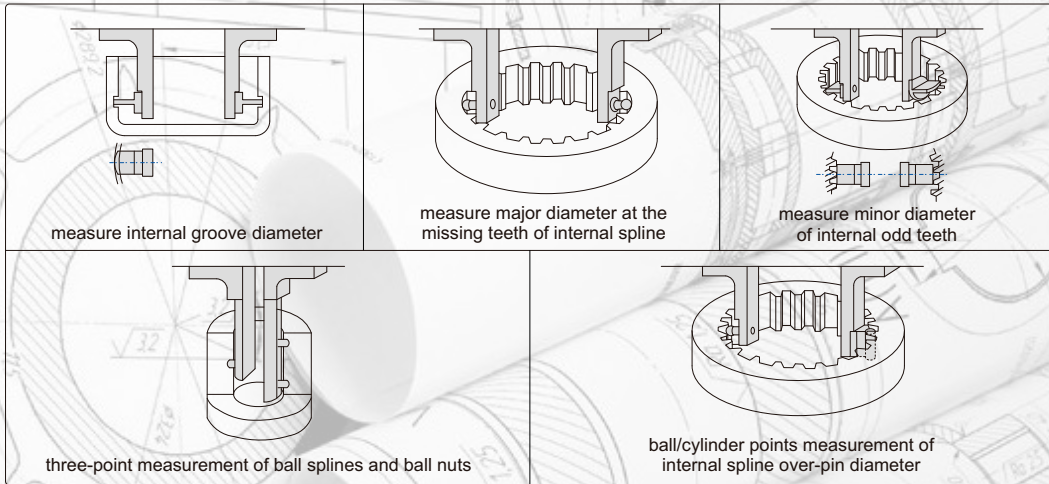


To be continued

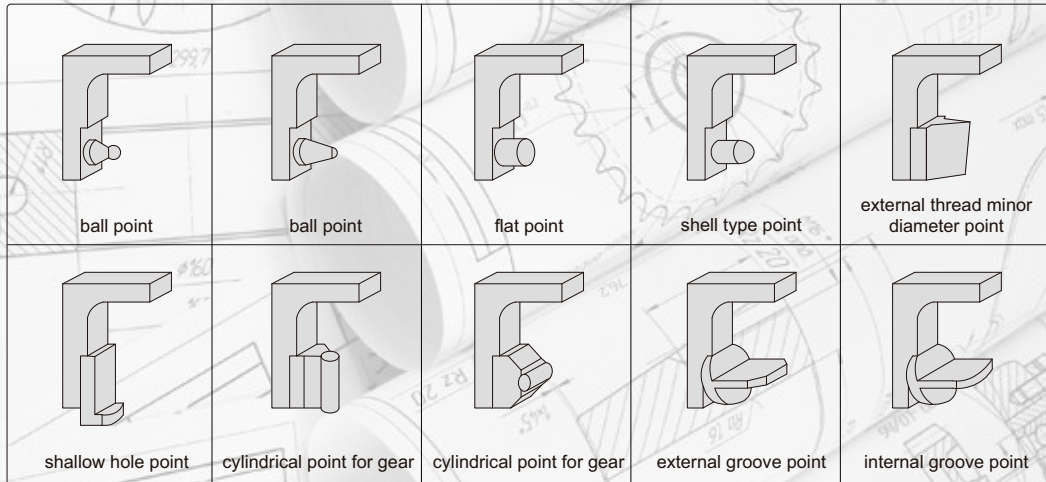
Continued from previous page

5

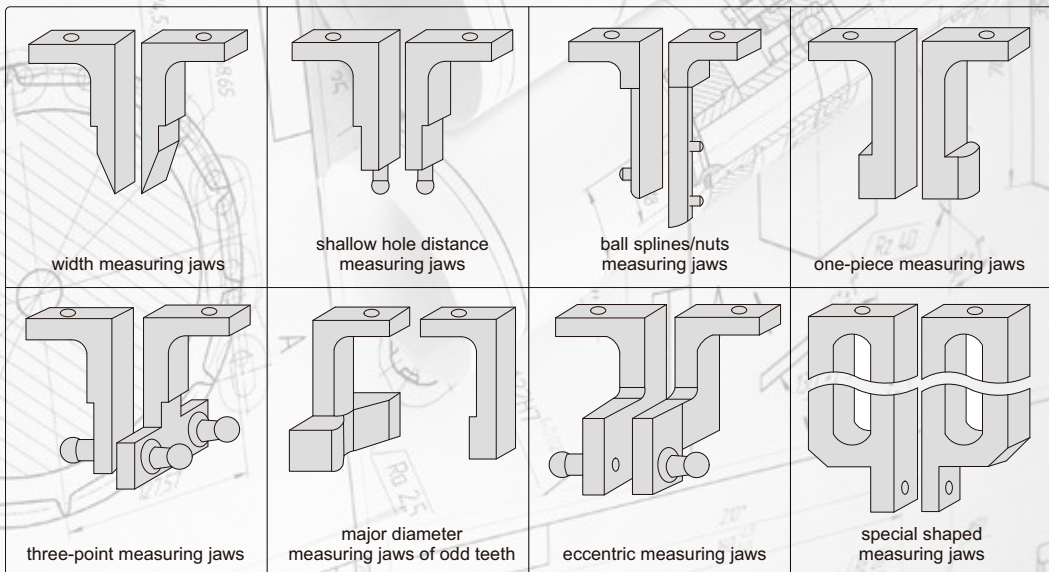
internal diameter measurement application



customizable points



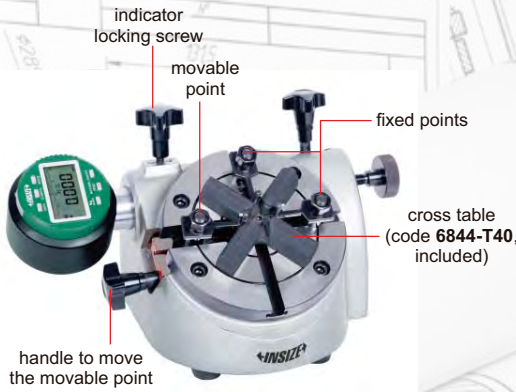
customizable measuring jaws



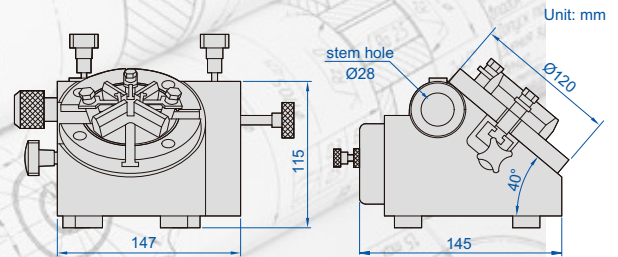
INTERNAL AND EXTERNAL DIAMETER COMPARISON INSTRUMENT



digital/dial indicator is optional



- Measure internal/external diameter, variation and taper
- Total range of movable point: 2mm, effective range of movable point: $\pm 0.1\text{mm}$
- Groove probes and disc probes are included
- Optional accessory: $\text{Ø}28\text{mm}/\text{Ø}8\text{mm}$ bush (code 6843-B8), cross table, 0.001mm digital/dial indicators, high precision digital indicators (code 2140-6, 2140-6WL)



Code	Applicable holding stem	Range of internal diameter	Range of external diameter	Accuracy	Repeatability
6844-100	$\text{Ø}28\text{mm}$	20-100mm/0.8-3.9"	15-80mm/0.6-3.1"	$\pm 0.001\text{mm}$	0.001mm

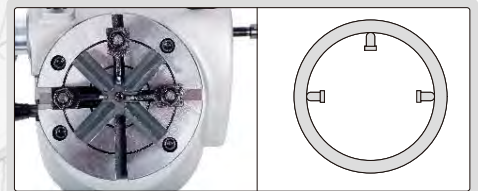
cross table (working with groove probes)



disc probes (included)



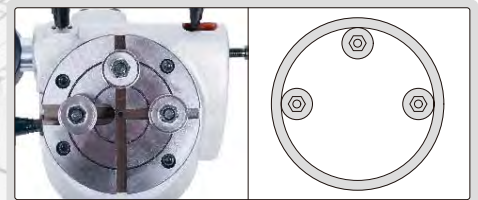
groove probes to measure small internal diameter and internal groove diameter



groove probe (included)



disc probes to measure large internal diameter



Cross table

Code	L	Remark
6844-T40	40mm	included
6844-T80	80mm	optional
6844-T100	100mm	optional

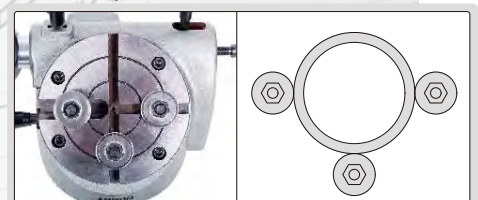
$\text{Ø}28\text{mm}/\text{Ø}8\text{mm}$ bush (optional)



application



disc probes to measure external diameter

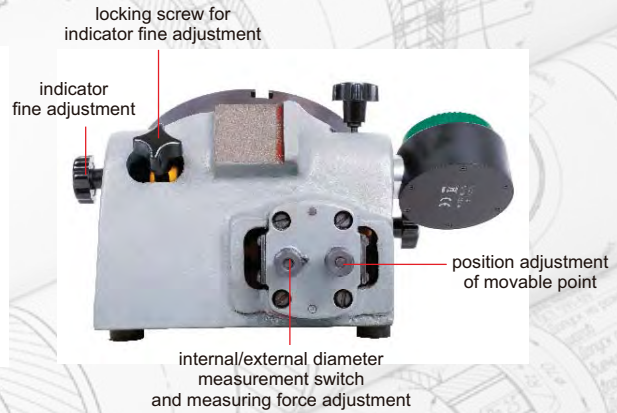
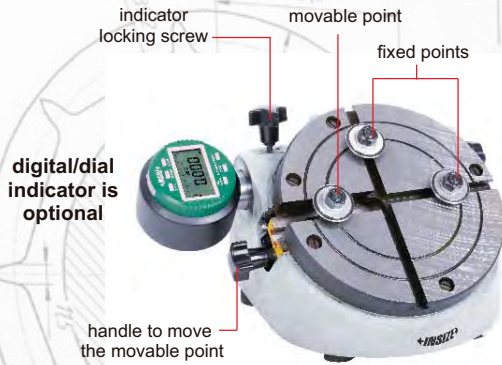


Code
6843-B8

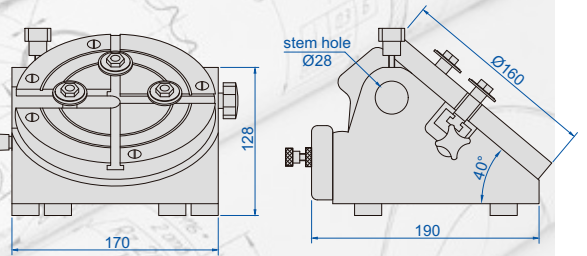
INTERNAL AND EXTERNAL DIAMETER COMPARISON INSTRUMENT



5

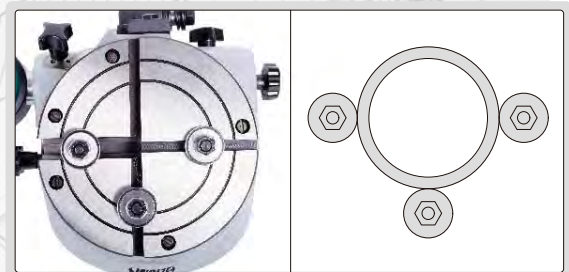
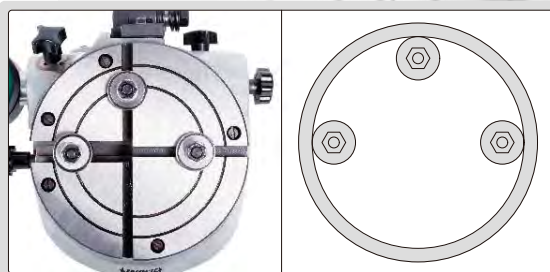


- Measure internal/external diameter, variation and taper
- Total range of movable point: 2mm, effective range of movable point: ± 0.1 mm
- Optional accessory: $\varnothing 28$ mm/ $\varnothing 8$ mm bush (code 6843-B8), 0.001mm digital/dial indicators, high precision digital indicators (code 2140-6, 2140-6WL)



internal diameter measurement

external diameter measurement



Code	Applicable holding stem	Range of internal diameter	Range of external diameter	Accuracy	Repeatability
6843-140	$\varnothing 28$ mm	50-140mm/2-5.5"	30-120mm/1.2-4.7"	± 0.001 mm	0.001mm

$\varnothing 28$ mm/ $\varnothing 8$ mm bush (optional)



application



Code
6843-B8

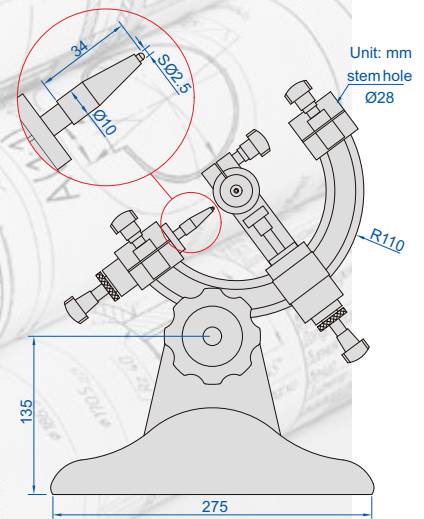
OUTSIDE DIAMETER MEASURING STAND



digital/dial indicator is optional

measuring base (code 6847-A100, included)

6847-50



Unit: mm
stem hole Ø28

- To measure diameter and roundness of cylinders and steel balls
- Supplied with measuring base (code 6847-A100)
- Optional accessory: Ø28mm/Ø8mm bush (code 6843-B8), 0.001mm digital/dial indicators, high precision digital indicators (code 2140-6, 2140-6WL), gage blocks (4101 series, for zero setting of cylinders), custom plug gages (for zero setting of cylinders), ceramic standard balls (4190 series, for zero setting of steel balls)

Measuring base

Code	Diameter	Remark
6847-A10	10mm	optional
6847-A20	20mm	optional
6847-A30	30mm	optional
6847-A40	40mm	optional
6847-A50	50mm	optional
6847-A60	60mm	optional
6847-A70	70mm	optional
6847-A75	75mm	optional
6847-A80	80mm	optional
6847-A90	90mm	optional
6847-A100	100mm	included

Code	Range of outside diameter	Accuracy	Repeatability
6847-50	1.5-50mm/0.06-2"	±0.001mm	0.0005mm

Ø28mm/Ø8mm bush (optional)



Code
6843-B8

application



stem hole Ø8mm