



Dial Gauge Stands



Comparator Stands

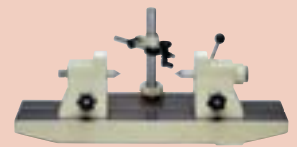
Joint Magnetic Stands  
Concentricity testers



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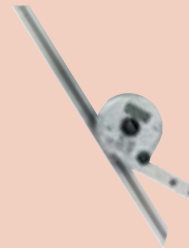


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Angulometers, steel squares



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Precision vices  
and other measuring aids



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Granite Plates



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Levels  
Digital levels



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# Dial Gauge Stand

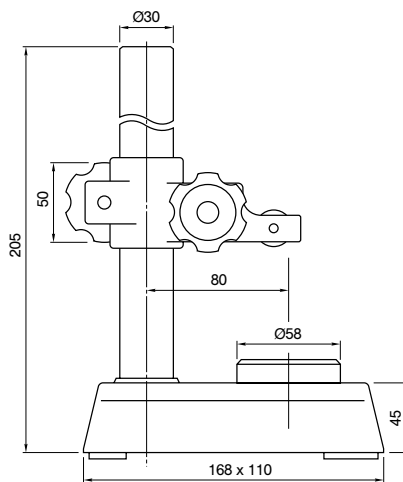
## Series 7

### Standard version

- Stainless chrom plated steel column.
- Three interchangeable measuring tables, flat, convex and with corrugated tothing.



7001 M



No.	Max. Measuring height mm	Measuring table (No.) (Standard accessory)	Mass kg
7001 M	100	Corrugated tothing (101462)	5,2
7002 M	100	flat (101461)	5,2

### Specifications

Column:	Ø 30 mm
Table dimensions:	Ø 58 mm
Base size:	168 x 110 mm
Throat:	65 mm
Bore for dial indicator stem:	Ø 8 mm
Fine adjustment:	1 mm with locking

### Optional accessory

- No. 101463 Measuring table, convex
- No. 101461 Measuring table, flat
- No. 101462 Measuring table, corrugated tothing



101463

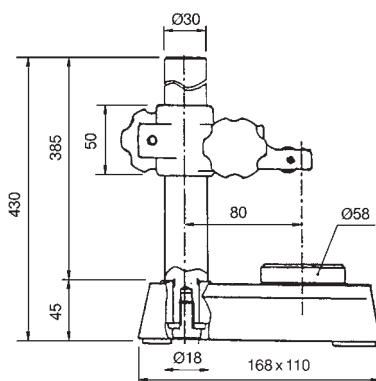


101461

## Series 519



519-109 MM



No.	Max. Measuring height mm	Measuring table (No.) (Standard accessory)	Mass kg
519-109 MM	300	Corrugated tothing (101462)	6,5

### Specifications

Column:	Ø 30 mm
Table dimensions:	Ø 58 mm
Base size:	168 x 110 mm
Throat:	65 mm
Bore for dial indicator stem:	Ø 8 mm
Fine adjustment:	1 mm with locking

### Optional accessory

- No. 101463 Measuring table, convex
- No. 101461 Measuring table, flat
- No. 101462 Measuring table, corrugated tothing



101463



101461

# Dial Gauge Stand

## Specifications

Column:	Ø 30 mm
Table dimensions:	90 x 90 mm
Base size:	168 x 110 mm
Throat:	65 mm
Bore for dial indicator stem:	Ø 8 mm
Fine adjustment:	1 mm

## Series 7

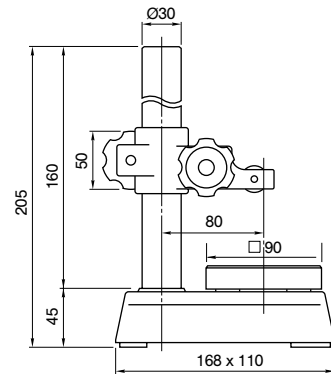
Standard version with large table

- Cast base; measuring table made of hardened steel with lapped surface.



7007 M

No.	Max. Measuring height mm	Mass kg
7007 M	90	5,6



# Comparator Stands

- Simple standard version.
- Ground and lapped table surface.
- Hardened and ground column.

## Series 913



913-101

No.	Max. Measuring height mm	Measuring table mm	Throat mm
913-101	100	Ø 50	50

### Specifications

Column: Ø 22 mm  
 Table dimensions: Ø 50 mm  
 Throat: 50 mm  
 Bore for dial indicator stem: Ø 8 mm

### Optional accessory

No. 913-201 Horizontal measuring bow for comprehensive measuring applications  
 Center distance: max. 45 mm (see below)

## Series 913



913-102

No.	Max. Measuring height mm	Measuring table mm	Throat mm
913-102	100	60 x 70	100

### Specifications

Column: Ø 22 mm  
 Table dimensions: 60 x 70 mm  
 Throat: 100 mm  
 Bore for dial indicator stem: Ø 8 mm

### Optional accessory

No. 913-201 Horizontal measuring bow for comprehensive measuring applications  
 Center distance: max. 45 mm



913-102 with 913-201

# Comparator Stands

## Series 215



215-631

### Specifications

Column:  $\varnothing$  30 mm  
 Throat: 80 mm (215-631)  
 125 mm (215-641)  
 Bore for dial indicator stem:  $\varnothing$  8 mm

### Optional accessory

No. 990029 Measuring table with corrugated tooting 38,1x101,6x38,1 mm  
 No. 990031 Measuring table with convex steel ball  $\varnothing$  30 mm

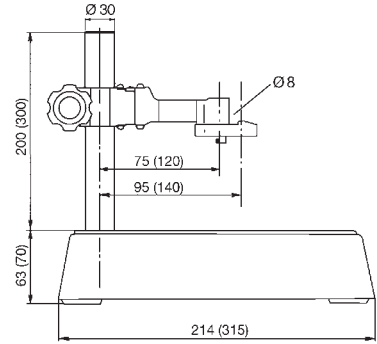
No.	Max. Measuring height mm	Mass kg	consisting of:
215-631	100	8,5	Column 200 mm, $\varnothing$ 30 mm
215-641	200	13,5	Column 300 mm, $\varnothing$ 30 mm



990031



990029



The details in brackets refer to No. 215-641

# Quick Stand

• Quick stand for precision bore gauges, for serial inside measuring of small parts.

## Series 215



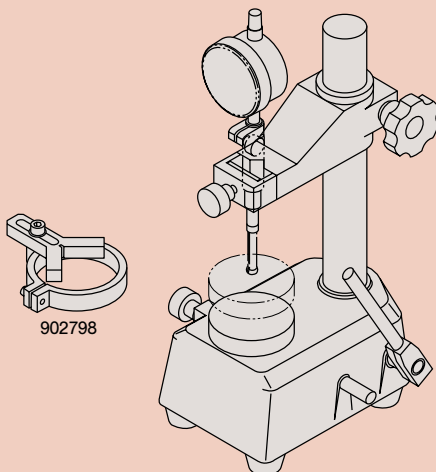
215-120 M

### Specifications

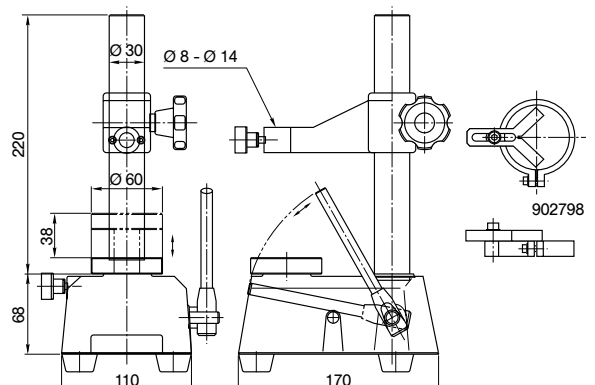
Measuring stroke: max. 38 mm

### Optional accessory

No. 902798 Detachable angle stop for safe and quick workpiece positioning under the measuring instrument, for  $\varnothing$  8-16 mm



902798



No.	Max. Measuring height mm	Measuring table $\varnothing$ mm	Mass kg
215-120 M	110	60	6,5

# Comparator Stand

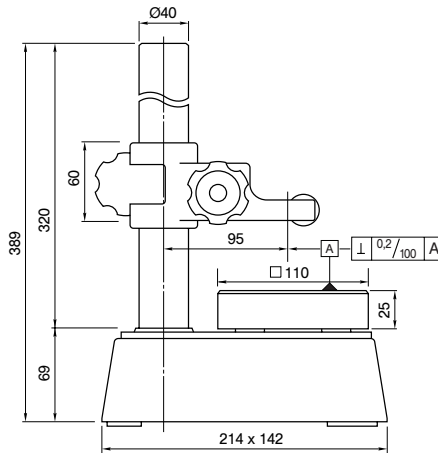
## Series 215

Standard version with large table and high column  
Table surface ground and lapped, column hardened and precision ground



215-405

No.	Max. Measuring height mm	Measuring table mm	Mass kg
215-405	200	110 x 110	12,5



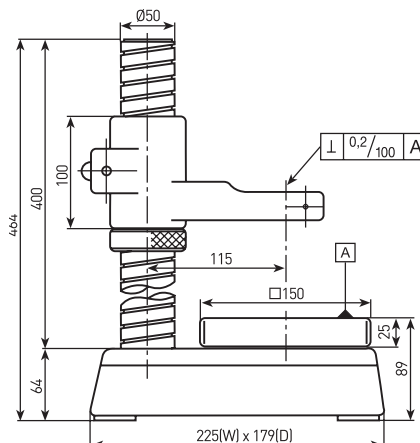
## Series 215

Version with large table and high threaded column



215-505

No.	Max. Measuring height mm	Measuring table mm	Mass kg
215-505	260	150 x 150	23



### Specifications

Column:	Ø 40 mm
Table dimensions:	110 x 110 mm
Base size:	214 x 142 mm
Throat:	75 mm
Bore for dial indicator stem:	Ø 8 mm
Fine adjustment:	1 mm

### Specifications

Column:	Ø 50 mm
Table dimensions:	150 x 150 mm
Base size:	255 x 179 mm
Throat:	90 mm
Bore for dial indicator stem:	Ø 20 mm (Ø 8/Ø 15 mm over bushing)

### Standard accessory

No. 58AAA151 Bushing Ø 8 mm

### Optional accessory

No. 58AAA276 Bushing Ø 15 mm

# Fine Gauge Stand

## Specifications

Column:	Ø 30 mm
Base size:	120 x 180 mm (215-150 M) 150 x 200 mm (215-151 M)
Throat:	65 mm
Bore for dial indicator stem:	Ø 8 mm
Fine adjustment:	1 mm
Table flatness:	3 µm

## Series 215

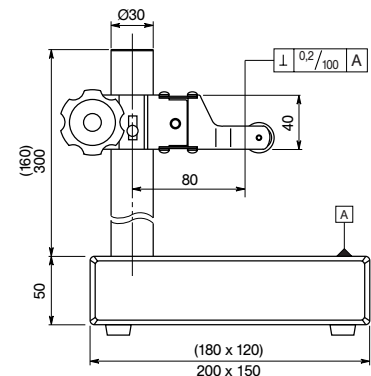
With wear-resistant hard rock table



215-151 M

No.	Max. Measuring height mm	Measuring table mm	Mass kg
215-150 M	120	120 x 180	5,7
215-151 M	260	150 x 200	8,0

The details in brackets relate to No. 215-150 M



## Specifications

Threaded column:	Ø 50 mm
Table dimensions:	300 x 150 mm
Base size:	250 x 300 mm
Throat:	90 mm
Bore for dial indicator stem:	Ø 20 mm (Ø 8/Ø 15 mm over bushing)
Table flatness:	6 µm

## Standard accessory

No. 58AAA151 Bushing Ø 8 mm

## Optional accessory

No. 58AAA276 Bushing Ø 15 mm

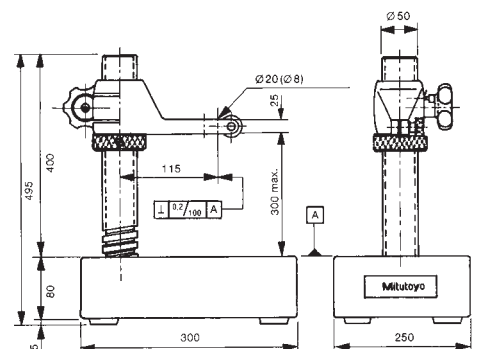
## Series 215

Wear-resistant hard rock table  
With threaded column, without fine adjustment.



215-156

No.	Max. Measuring height mm	Measuring table mm	Mass kg
215-156	300	300 x 250	29,5



# Fine Gauge Stand

## Series 912

Hard rock, fine diamond-lapped measuring table  
Arm with 120 mm projection



912-105

No.	Max. Measuring height mm	Mass kg
912-105	200	9,5

### Specifications

Column:	Ø 35 mm
Usable measuring surface:	200 x 140 mm
Base size:	260 x 140 x 50 mm
Throat:	120 mm
Bore for dial indicator stem:	Ø 8 mm
Fine adjustment:	8 mm
Table flatness:	2 µm

## Series 912

Hard rock base  
With cross arm and fine adjustment



912-101

No.	Max. Measuring height mm	Mass kg
912-101	180	2,8

### Specifications

Column:	Ø 16 mm
Cross arm:	Ø 16 mm
Usable measuring surface:	100 x 100 mm
Base size:	150 x 100 x 40 mm
Throat:	150 mm (adjustable)
Bore for dial indicator stem:	Ø 8 mm
Table flatness:	2 µm

# Joint magnetic stand

## Specifications

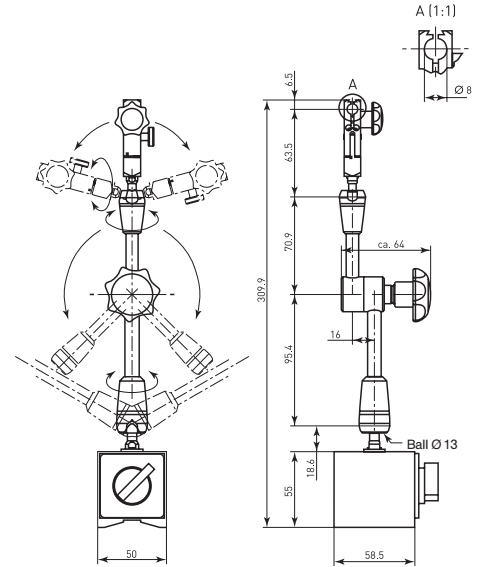
Magnetic force: 750 N vertical retractile force  
 Base size: 60 x 50 x 55 mm  
 Bore for dial indicator stem:  $\varnothing$  8 mm

## Series 7

The dial indicator can be fixed in any position using the clamping



011358



No.	Working radius mm	Total height mm	Mass kg
011358	200	310	1,55

## Specifications

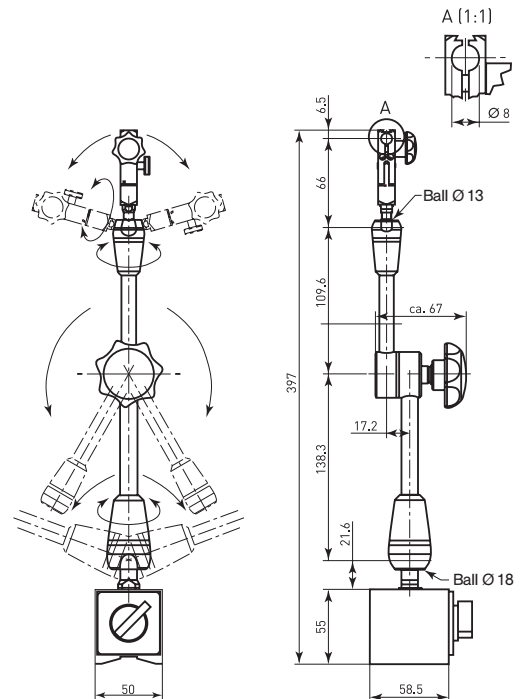
Magnetic force: 750 N vertical retractile force  
 Base size: 60 x 50 x 55 mm  
 Bore for dial indicator stem:  $\varnothing$  8 mm

## Series 7

The dial indicator can be fixed in any position using the clamping



011359

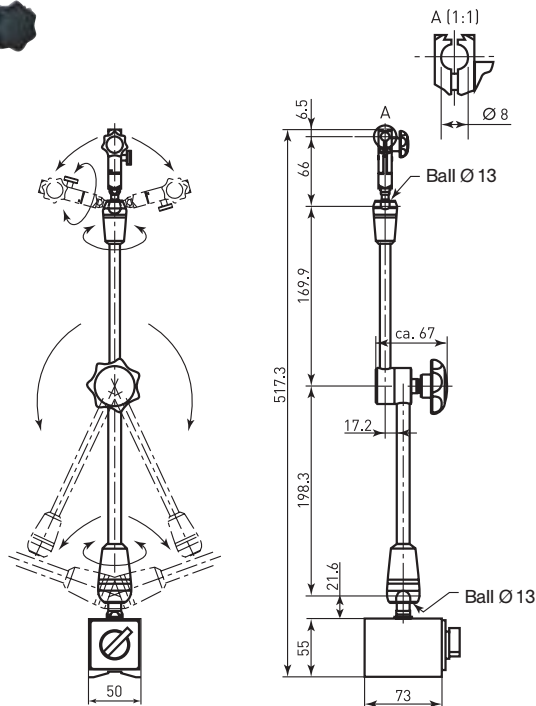


No.	Working radius mm	Total height mm	Mass kg
011359	280	390	1,85

# Joint magnetic stand

## Series 7

The dial indicator can be fixed in any position using the clamping



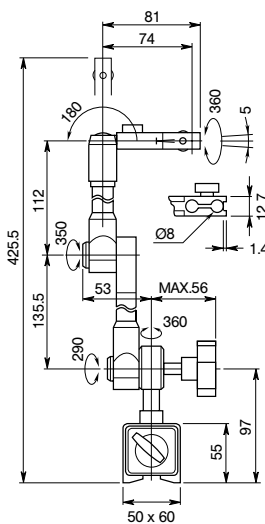
No.	Working radius mm	Total height mm	Mass kg
011360	400	510	2,1

## Series 7

The dial indicator can be fixed in any position by means of the hydraulic clamping



No.	Working radius ca. mm	Total height mm	Fine Adjustment	Mass kg
7019 B	320	420	± 5°	1,75



### Specifications

Magnetic force: 900 N vertical retractile force  
 Base size: 75 x 50 x 55 mm  
 Bore for dial indicator stem: Ø 8 mm

### Specifications

Magnetic force: 600 N vertical retractile force  
 Base size: 50 x 60 x 55 mm  
 Bore for dial indicator stem: Ø 8 mm

# Flexible Jointarm

## Specifications

### No. 076360

Working radius: ca. 320 mm  
Bore for dial indicator stem:  $\varnothing$  8 mm

### No. 011361

Working radius: ca. 200 mm  
Bore for dial indicator stem:  $\varnothing$  8 mm

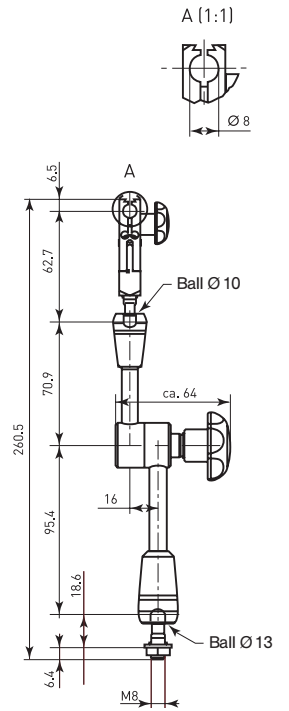
### No. 011362

Working radius: ca. 280 mm  
Bore for dial indicator stem:  $\varnothing$  8 mm

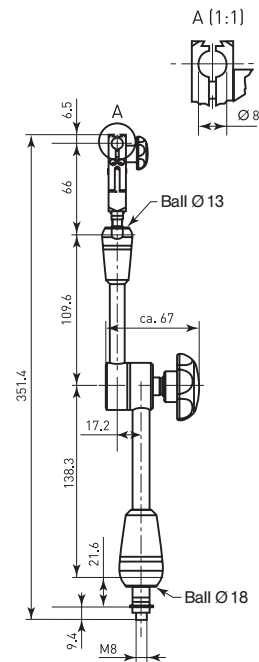
## Hydraulic clamping



## Mechanical clamping



## Mechanical clamping



# Magnetic Base

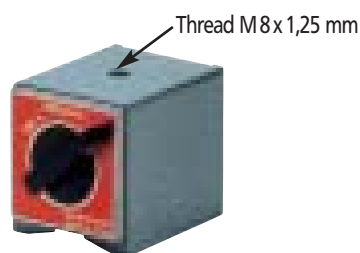
- With measuring V-block

## Series 7

## Specifications

### No. 7013 B

Magnetic force: 600 N vertical retractile force  
Base size: 50 x 60 x 55 mm  
Threaded bore: M 8 (for flexible link stand)  
Mass: 1 kg



7013 B

# Magnetic Stands

## Series 7

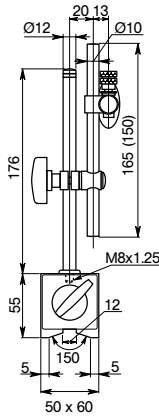
### Universal dial indicator holder

- With measuring V-block



7011 SN

No.	Working radius ca. mm	Total height mm	Mass kg
<b>Without fine adjustment</b>			
7010 SN	150	235	1,25
<b>With fine adjustment</b>			
7011 SN	160	235	1,45



### Specifications

Magnetic force: 600 N vertical retractile force  
 Base size: 50 x 60 x 55 mm  
 Bore for dial indicator stem:  $\varnothing$  9,5 mm

### Standard accessory

No. 206983 Bushing for dial indicators with shaft  $\varnothing$  8 mm

### Optional accessory

No. 206979 300 mm cross arm (for No. 7010 SN only)

## Series 7

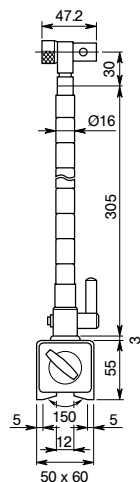
### Universal dial indicator holder

- With measuring V-block and flexible column.



7012

No.	Working radius ca. mm	Total height mm	Mass kg
7012	250	393	1,5



### Specifications

Magnetic force: 750 N vertical retractile force  
 Base size: 50 x 60 x 55 mm  
 Bore for dial indicator stem:  $\varnothing$  9,5 mm

### Standard accessory

No. 206983 Bushing for dial indicators with shaft  $\varnothing$  8 mm

# Dial Gauge Stand

## Specifications

### No. 913-103

Base diameter:	90 mm
Total height:	245 mm
Vertical arm:	200 x Ø 16 mm
Cross arm:	200 x Ø 16 mm
Bore for dial indicator stem:	Ø 8 mm
Mass:	2,3 kg

## Series 913

### Pneumatic stand

- Also adheres on all smooth surfaces such as Granite slabs etc.



913-103

## Specifications

### No. 913-104

Bore for dial indicator stem:	Ø 8 mm
Minimum workpiece diameter:	36 mm

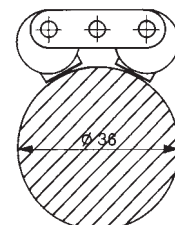
## Series 913

### Magnetic stand

- Specially suited for mounting on cylindrical parts.
- Magnetic base.



913-104



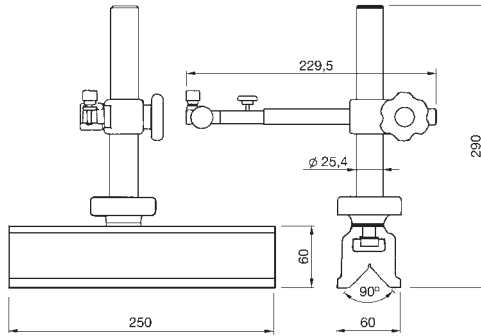
# Universal Dial Gauge Stand

- With prismatically ground base and adjustable column.

## Series 914



914-101 M



No.	Base size mm	Cross arm length mm
914-101 M	250x60	150

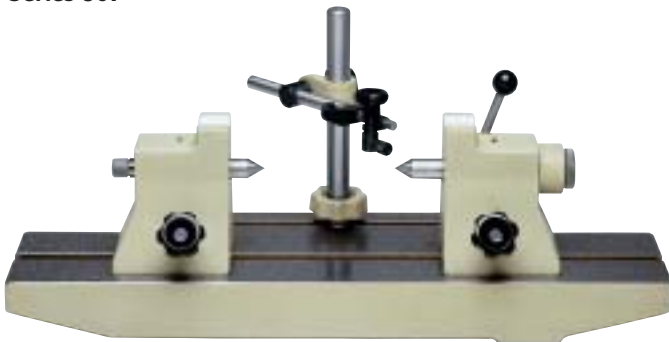
### Specifications

Bore for dial indicator stem:  $\varnothing$  8 mm

# Precision Bench Centers

- Bench centers made of aged special cast.
- Quill and lathe centers made of hardened steel, precision ground and calibrated.
- Center bearing consisting of 1 tailstock with fixed quill and 1 tailstock with axially movable quill, adjustable via manual lever.

## Series 967

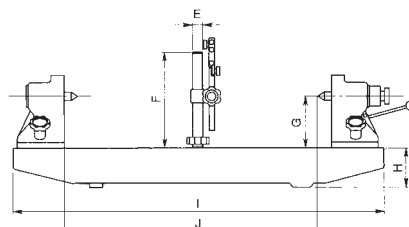
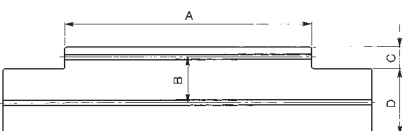


967-101 EM

No.	Stand No.	Max. center distance mm	Center height mm	Dimensions mm	Mass kg	A	B	C	D	E	F	G	H	I	J
967-203 M	068804	150	50	330x120x111	7	178	60	41	70	16	134,5	50	45	310	150
967-201 M	068802	300	75	500x240x115	13	370	60	36	80	16	194,5	75	45	500	300
967-101 EM	063303	350	90	674x209x185	40	400	90	50	140	25	230	90	60	650	350
967-202 M	063303	600	125	900x330x200	70	600	104	50	160	25	230	125	100	900	600

### Specifications

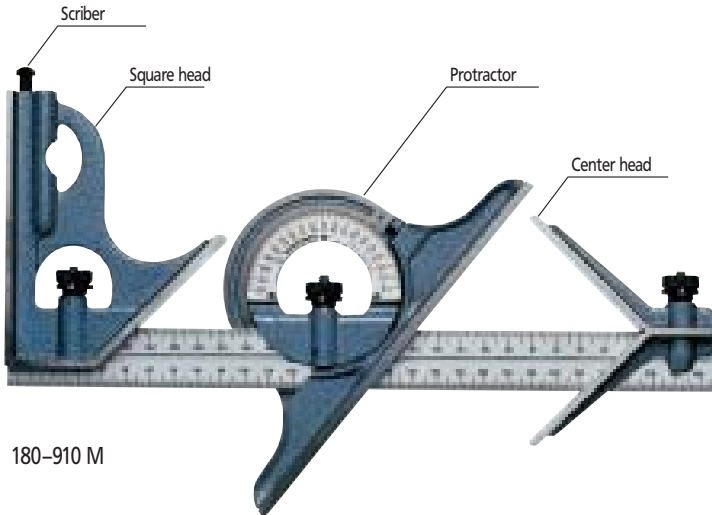
Bore for dial indicator stem:  $\varnothing$  8 mm



# Combination Square Set

- Three accessory components on one rail, hardened, made of stainless steel with 4 graduations, enable various uses.
- Protractor  
Scale satin chrome finished, reversible (front and rear side can be applied).
- Hardened square head, with water level.
- Hardened center head

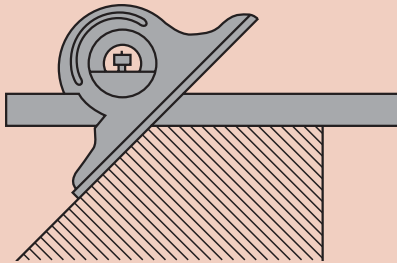
## Series 180



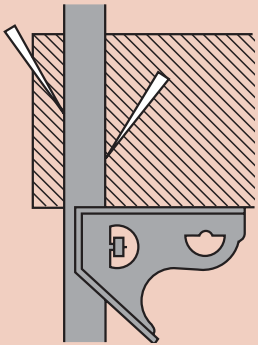
180-910 M

No.	Design
<b>Sets</b>	
180-907 M	Set: 300 mm blade (No. 180-503), protractor, square head and center head
180-910 M	Set: 300 mm blade (No. 180-505), protractor, square head and center head
<b>Individual parts</b>	
180-503	Blade: 300 mm length with 4 graduations of 1 mm, 1/2 mm, 1/32" and 1/64"
180-505	Blade: 300 mm length with 2 graduations of 1 mm and 1/2 mm
180-301 M	Protractor
180-102 M	Square head
180-202 M	Center head

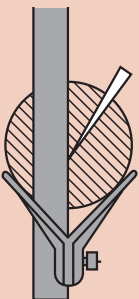
### Accessories



No. 180-301 M Protractor



No. 180-102 M Square head



No. 180-202 M Center head

### Specifications

Graduation: 5'  
Circle division: 4 x 90°  
Including softbox

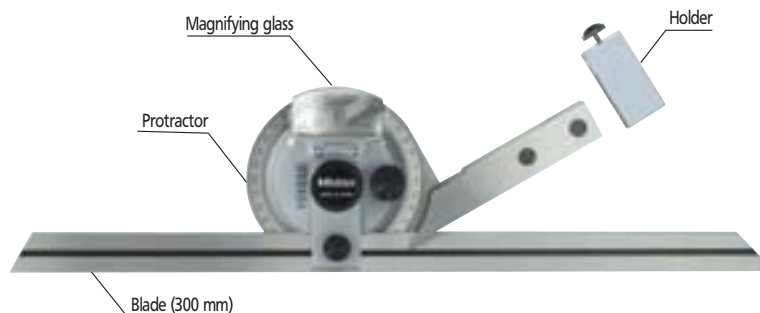
### Optional accessory

- No. 187-105 Additional square
- No. 187-106 Blade 150 mm
- No. 187-107 Blade 300 mm
- No. 950750 Holder for height gauges and tracers

# Universal Bevel Protractor

- With fine adjustment, reading free from parallax.
- Including magnifying glass.
- With connection facility for height gauges and tracers of series 192 via holder.

## Series 187



187-908

No.	Design
187-907	Universal protractor, blade 150 mm (187-106), magnifying glass, holder (950750)
187-908	Universal protractor, blade 300 mm (187-107), magnifying glass, holder (950750)

# "DIGIMATIC" Universal Bevel Protractor

- Digital Universal Bevel Protractor with easy-to-read digital display.
- Automatic turn-off after 10 minutes, fixed reference points for easy adjustment.
- The measuring blade can be slid and clamped over the entire length.
- Fine adjustment for precise adjustment of arbitrary angle dimensions.
- With connection facility for height gauge and tracers of series 192 via holder.

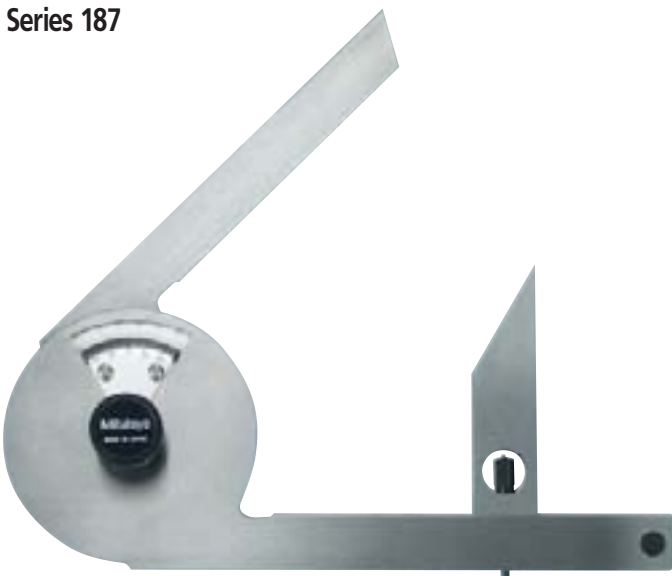
## Series 187 with data output



187-502

No.	Design	Mass
187-501	Universal Bevel Protractor, blade 150 mm	624 g
187-502	Universal Bevel Protractor blade 300 mm	662 g

## Series 187



187-201

No.	Blade length mm	Graduation
187-201	135	5'

Functions	Series 187
PRESET	●
ZERO-setting	●
Switching of the counting direction	●
DATA / HOLD	●
Angle display decimal/sexadecimal	●
Data output	●

### Specifications

Measuring range:  $-360^{\circ}$  to  $+360^{\circ}$

Error limits:  $2'$  ( $0,03^{\circ}$ )

Graduation:  $1'$  ( $0,01^{\circ}$ )

Repeatability:  $1'$  ( $0,01^{\circ}$ )

Battery life: 2000 hours

Delivery in box including battery

### Standard accessory

No. 950750 Holder for height gauges and tracers

### Optional accessory

No. 187-105 Additional angle

No. 187-106 Blade 150 mm

No. 187-107 Blade 300 mm

No. 905338 Signal cable 1 m

No. 905409 Signal cable 2 m

### Consumable Spares

No. 055AA217D Battery CR-2032

### Specifications

Vernier reading: 5'

Circle division:  $4 \times 90^{\circ}$

Fixed blade: 135 mm

Adjustable blade: 150 mm

Including softbox

### Optional accessory

No. 952624 for height measurement and tracers series 192

# Set with straight edge and precision squares

## Series 916

### Contents

- Straight edge: 100 mm
- Precision square: 75 x 50 mm
- Cutting square: 40 x 28 mm
- Cutting square: 25 x 20 mm
- Scriber: 9 x 9 x 60 mm
- Including softbox



916-110

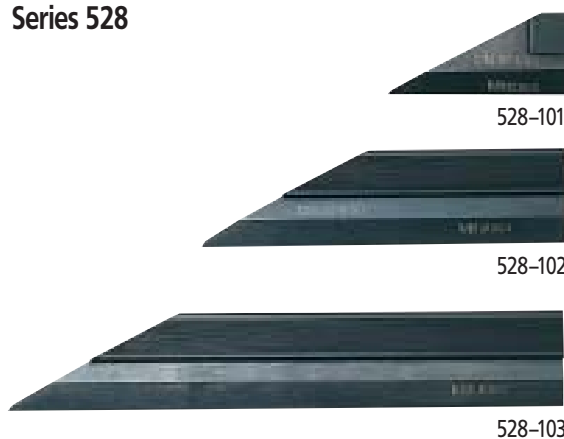
## Straight Edges

- The straight edges are especially suited for testing the flatness of surfaces.
- Hardened, ground and micro lapped measuring edge.
- Made of special steel. With hand guard.

## Series 528

### Specifications

- Wedge shape section: 60°
- Accuracy: according to DIN 874



528-101

528-102

528-103

No.	Length mm	Note
528-100	50	
528-101	75	
528-102	100	
528-110	125	
528-103	150	
528-104	200	
528-105	300	Supplied in a wooden case
528-106	400	Supplied in a wooden case
528-107	500	Supplied in a wooden case

# 90° Steel square / Engineers Square

• Accuracy grade 0.

## Series 916

Shifting square



916-302

Standard steel No.	Stainless steel No.	Leg length mm	Cross section mm
916-300	916-310	50 x 40	15 x 4,0
916-301	916-311	75 x 50	15 x 4,0
916-302	916-312	100 x 70	20 x 4,0
916-303	916-313	150 x 100	25 x 5,5
916-304	916-314	200 x 130	30 x 5,5
916-305	916-315	250 x 165	35 x 8,0
916-306	916-316	300 x 200	40 x 8,0
916-307*	916-317*	400 x 250	45 x 10,0
916-308*	916-318*	500 x 330	50 x 10,0

\* Including wooden case

### Specifications

Accuracy: according to DIN 875

Accuracy grade: 0

## Series 916

Flat square



916-202

Standard steel No.	Stainless steel No.	Leg length mm	Cross section mm
916-211	916-201	50 x 40	15 x 4,0
916-212	916-202	75 x 50	15 x 4,0
916-213	916-203	100 x 70	20 x 4,0
916-214	916-204	150 x 100	25 x 5,5
916-215	916-205	200 x 130	30 x 5,5
916-216	916-206	250 x 165	35 x 8,0
916-217	916-207	300 x 200	40 x 8,0
916-218*	916-208*	400 x 250	45 x 10,0
916-219*	916-209*	500 x 330	50 x 10,0

\* Including wooden case

### Specifications

Accuracy: according to DIN 875

Accuracy grade: 0

# 90° Steel square / Workshop Square

• Accuracy grade 1/2.

## Specifications

**DIN 875:**  
Accuracy: according to DIN 875  
Accuracy grade: 1  
Precision ground edges

**DIN 875:**  
Accuracy: according to DIN 875  
Accuracy grade: 2

## Series 916 Shifting square



916-322

DIN 875-1 No.	DIN 875-2 No.	Leg length mm	Cross section mm
916-320	916-330	50 x 40	15 x 5
916-321	916-331	75 x 50	15 x 5
916-322	916-332	100 x 70	20 x 5
916-323	916-333	150 x 100	25 x 5
916-324	916-334	200 x 130	30 x 6
916-325	916-335	250 x 165	35 x 7
916-326	916-336	300 x 200	40 x 8
916-327*	916-337*	400 x 200	45 x 10
916-328*	916-338*	500 x 250	50 x 10

\* Including wooden case

## Specifications

**DIN 875/1:**  
Accuracy: according to DIN 875  
Accuracy grade: 1  
Precision ground edges

**DIN 875/2:**  
Accuracy: according to DIN 875  
Accuracy grade: 2

## Series 916 Flat square



916-223

DIN 875-1 No.	DIN 875-2 No.	Leg length mm	Cross section mm
916-221	916-231	50 x 40	15 x 5
916-222	916-232	75 x 50	15 x 5
916-223	916-233	100 x 70	20 x 5
916-224	916-234	150 x 100	25 x 5
916-225	916-235	200 x 130	30 x 6
916-226	916-236	250 x 165	35 x 7
916-227	916-237	300 x 200	40 x 8
916-228*	916-238	400 x 200	45 x 10
916-229*	916-239	500 x 250	50 x 10

\* Including wooden case

# 90° Steel square / Precision Square

- Accuracy grade 00.
- Edges and support faces ground and lapped, completely hardened and stress relieved.

## Series 916

Hairline square



916-102

Standard steel No.	Stainless steel No.	Leg length mm	Cross section mm
916-008*	-	25 x 20	6 x 3,0
916-009*	-	40 x 28	8 x 3,0
916-100	916-105	50 x 40	15 x 6,0
916-101	916-106	75 x 50	15 x 6,0
916-102	916-107	100 x 70	20 x 6,0
916-103	916-108	150 x 100	25 x 7,5
916-104	916-109	200 x 130	30 x 9,0

\* Cutting square (for inside measurement only)

### Specifications

Accuracy: according to DIN 875  
Accuracy grade: 00

# Precision Vices

## Series 930

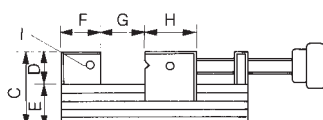
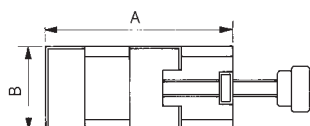
With threaded spindle

- Made of alloyed tool steel, hardened and precision ground.
- With horizontally ground prism in the movable jaws.



930-602

No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Mass kg
930-611	90	60	50	25	25	25	30	30	M 5	1,6
930-601	160	70	62	30	32	33	80	45	M 6	4,0
930-602	210	90	80	40	40	40	120	50	M 6	7,6
930-612	285	120	90	40	50	55	150	70	M 6	17,4



### Specifications

Squareness: 0,005 mm/100 mm  
Parallelism: 0,002 mm/100 mm

# Precision Vices

## Specifications

Squareness: 0,005 mm/100 mm  
Parallelism: 0,002 mm/100 mm

## Series 930

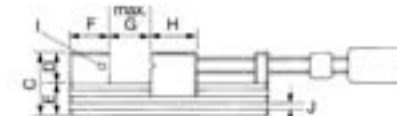
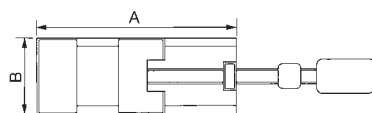
With threaded spindle

- For grinding large workpieces.
- Including one key bar with hydraulic amplification of the clamping force.
- With horizontally ground prism in the movable jaws.



930-616

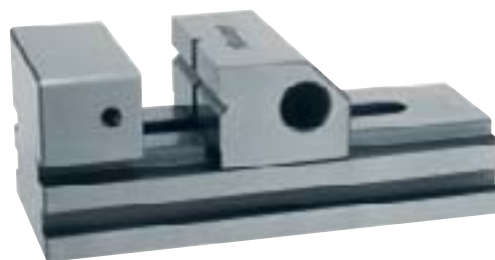
No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	J height x depth mm	Mass kg
930-616	285	120	90	40	50	55	150	70	M6	10x7	17,7



## Series 930

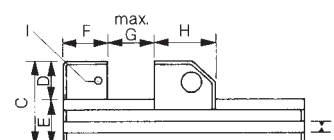
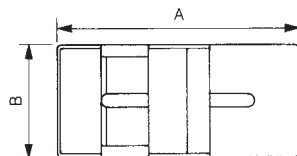
With pull-down system

- High accuracy for precision grinding, milling, measuring and eroding.
- With quick adjustment and vertically and horizontally ground-in prism in the movable jaws.



930-607

No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	J height x depth mm	Mass kg
930-606	160	70	62	30	32	33	80	45	M6	8x7	3,0
930-607	210	90	80	40	40	40	120	50	M6	10x7	5,8



## Precision Vices

- High accuracy for precision grinding, milling, measuring and eroding.
- With horizontally ground prism in the movable jaws.

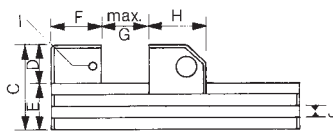
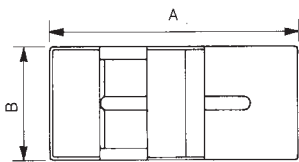
### Series 930

With pull-down system



930-632

No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	J height x depth mm	Mass kg
930-630	70	30	35	15	20	20	25	25	M4	-	0,35
930-631	110	45	45	20	25	25	50	35	M5	8 x 6	1,00
930-632	285	120	90	40	50	60	150	70	M6	12 x 7	13,50
930-633	370	175	95	45	50	60	200	110	M8	12 x 10	28,70



#### Specifications

Squareness: 0,005 mm/100 mm  
Parallelism: 0,002 mm/100 mm

## Precision Sine Vices

- Made of alloyed tool steel, hardened and precision ground.
- Bearing and holding bolt hardened and ground.
- The clamping device can be locked in any angular position.
- Accurate angle adjustment by gauge blocks, max. 46°.

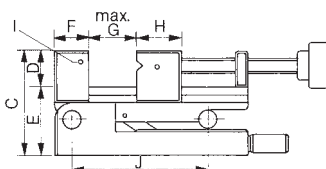
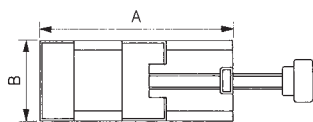
### Series 930

With swivelling front axis



930-621

No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	J height x depth mm	Mass kg
930-620	100	50	75	25	50	25	40	30	M5	50	2,7
930-621	160	70	93	30	63	33	80	45	M5	100	5,3
930-622	210	90	113	40	73	40	120	50	M5	150	11,0



#### Specifications

Angle deviation at 45°: ± 15"  
Squareness: 0,005 mm/100 mm  
Parallelism: 0,002 mm/100 mm

# Precision Sine Vices

- Made of alloyed tool steel, hardened and precision ground.
- Bearing and holding bolt hardened and ground.
- The clamping device can be locked in any angular position.
- Accurate angle adjustment by gauge blocks, max. 46°.

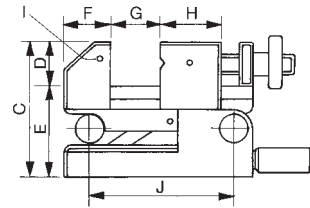
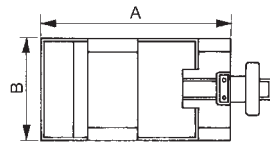
## Series 930

With swivelling rear axis



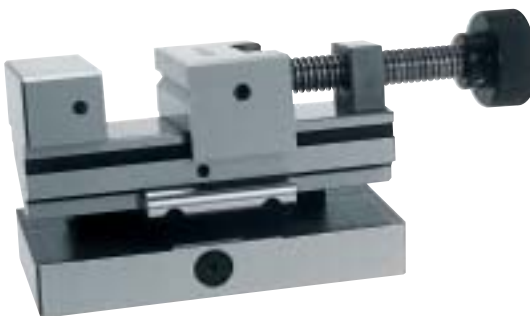
930-623

No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	J mm	Mass kg
930-623	130	70	93	30	63	33	50	40	M5	100	4,5



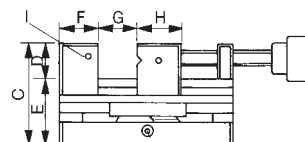
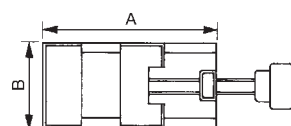
## Series 930

With swivelling longitudinal axis



930-624

No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	Mass kg
930-624	160	75	93	30	63	33	80	45	M5	5,9



### Specifications

Angle deviation at 45°: ± 15"  
 Squareness: 0,005 mm/100 mm  
 Parallelism: 0,002 mm/100 mm

### Specifications

Angle deviation at 45°: ± 15"  
 Squareness: 0,005 mm/100 mm  
 Parallelism: 0,002 mm/100 mm

## Precision Sine Vices

- Made of alloyed tool steel, hardened and precision ground.
- Bearing and holding bolt hardened and ground.
- The clamping device can be locked in any angular position.
- Accurate angle adjustment by gauge blocks, max. 46°.

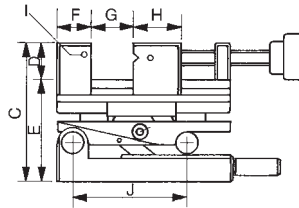
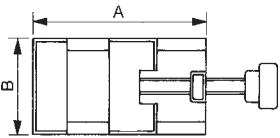
### Series 930

With swivelling longitudinal axis and swivelling front axis



930-625

No.	A mm	B mm	C mm	D mm	E mm	F mm	G max. mm	H mm	I	J mm	Mass kg
930-625	160	75	124	30	94	33	80	45	M5	100	7,4



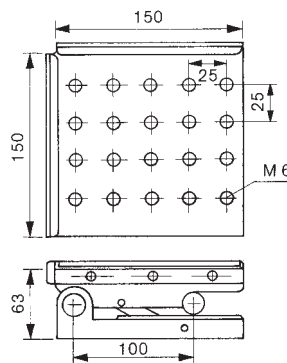
## Precision Sine Plates

- Made of alloyed tool steel, hardened and precision ground.
- Bearing and holding bolt hardened and ground.
- The clamping device can be locked in any angular position.
- Accurate angle adjustment by gauge blocks.

### Series 930



930-626



### Specifications

Angle deviation at 45°: ± 15"  
 Squareness: 0,005 mm/100 mm  
 Parallelism: 0,002 mm/100 mm

### Specifications

Angle deviation at 45°: ± 15"  
 Squareness: 0,005 mm/100 mm  
 Parallelism: 0,002 mm/100 mm  
 Mass: 7,6 kg

## Precision Sine Plates

- Made of alloyed tool steel, hardened and precision ground.
- Bearing and holding bolt hardened and ground.
- The clamping device can be locked in any angular position.
- Accurate angle adjustment by gauge blocks.

### Specifications

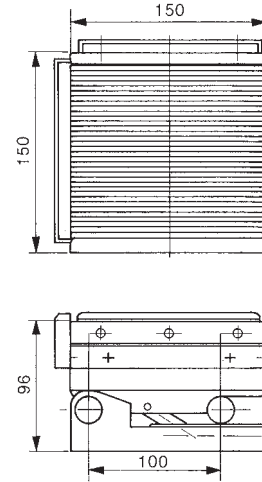
Angle deviation at 45°: ± 15"
Squareness: 0,005 mm/100 mm
Parallelism: 0,002 mm/100 mm
Mass: 16,1 kg

### Series 930

With swivelling front axis  
and magnetic chuck switched-on via a lever



930-627



### Specifications

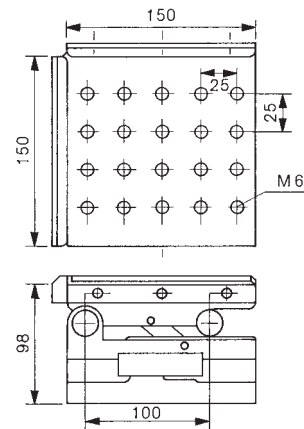
Angle deviation at 45°: ± 15"
Squareness: 0,005 mm/100 mm
Parallelism: 0,002 mm/100 mm
Mass: 11,3 kg

### Series 930

With adjustment in 2 axis



930-628



### Specifications

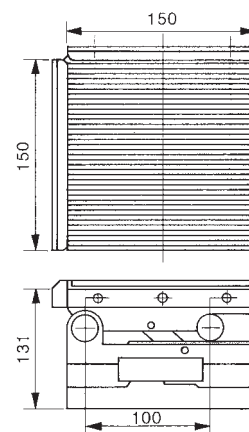
Angle deviation at 45°: ± 15"
Squareness: 0,005 mm/100 mm
Parallelism: 0,002 mm/100 mm
Mass: 20,0 kg

### Series 930

With adjustment in 2 axis and magnetic chuck switched-on via a lever



930-629



## V-Blocks

- Made of dense special cast iron, highly wear resistant.
- The 90° V-block cutting angle is parallel to the base and isometric in pairs.
- For scribing, adjusting and testing cylindrical parts.

### Series 910



910-112

No.	Length mm	Width mm	Height mm	Mass per pair kg	Receiver for workpiece Ø mm
910-111	100	40	30	1,5	6- 40
910-112	150	50	40	3,5	8- 50
910-113	200	70	50	6,5	8- 70
910-114	250	85	60	10,0	12- 85
910-115	300	100	70	15,0	12-100

#### Specifications

Quality class: 1  
 Parallelism: 0,016 mm  
 Hardness according to Brinell: 160-190  
 Supplied in pairs

## Hardened Double V-Blocks

- With 2 supporting surfaces and 2 recesses, angle 90°, as well as a clamping bracket.
- Recesses and supporting surfaces ground and lapped.
- Outer edges ground.

### Series 181

With clamp bracket



181-903 M

No.	Length mm	Width mm	Height mm	Mass per pair kg	Receiver for workpiece Ø mm
181-902 M	41	31,8	31,8	0,6	25
181-903 M	75	58,0	58,0	3,4	50



#### Specifications

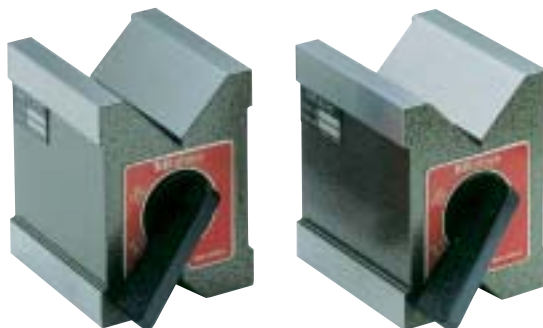
Hardness: HRC 58-62  
 Supplied in pairs

# Magnetic Double V-Blocks

## Specifications

Supplied in pairs

## Series 181



181-946

No.	Length mm	Width mm	Height mm	Mass per pair kg	Max. receiver for workpiece Ø mm
181-946	79	58	64	3,5	50,8
181-947	95	70	95	7,3	50,8

## Four-recess V-block pair

- Parallel pair.
- Made of dense special cast iron, highly wear resistant.
- With 4 recesses in different sizes, angle 90°, worked in pairs, made of special cast, aged and stress relieved.
- The 90° V block angles notches are parallel to the standing surfaces and paired in identical dimensions.
- For scribing, adjusting and testing cylindrical parts.

## Specifications

Quality class: 1

Parallelism: 0,016 mm

Supplied in pairs

## Series 911



911-111

No.	Length mm	Width mm	Height mm	Mass per pair kg	Max. receiver for workpiece Ø mm
911-111	60	120	100	6,5	8- 90
911-112	75	150	130	13,5	8-110
911-113	90	200	170	23,0	8-150

## Adjustable Parallel Supports

- The adjustable parallel supports are suited for various applications in tool making, general machine construction and control.
- They are well suited as adjustable gauges for groove width and distances, as well as base for machine vices and other devices.

### Series 908



908-303



908-305

No.	Adjustable range mm	Length mm
908-301	9,6-12,7	45
908-302	12,7-17,4	54
908-303	17,4-23,8	65
908-304	23,8-33,3	89
908-305	33,3-44,4	110
908-306	44,4-57,0	130
<b>Set with 4 pieces</b>		
908-310	9,6-33,3	-
<b>Set with 6 pieces</b>		
908-312	9,6-57,0	-

### Specifications

Individual version

Set with 4 pieces

Set with 6 pieces

## Hardened Parallel Supports

- For height equalisation when holding workpieces when drilling, grinding, milling, planing, tracing and measuring.
- Particularly suitable for use in mechanical vices or marking plates.

### Specifications

made of steel  
 Hardened and lapped surfaces  
 worked in pairs  
 Tolerance of length and width:  $\pm 0,2$  mm

### Series 908

Complete set in wooden box

14 pairs



908-901

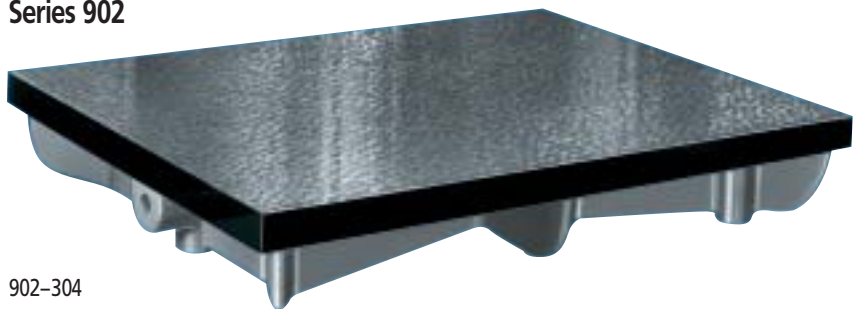
No.	Tolerance mm height parallelism	Number per pair
908-901	$\pm 0,002$	14
908-902	$\pm 0,005$	14

Size	Length mm	Width mm	Height mm	Size	Length mm	Width mm	Height mm
1	150	10	14	8	150	10	28
2	150	10	16	9	150	10	30
3	150	10	18	10	150	10	32
4	150	10	20	11	150	10	36
5	150	10	22	12	150	10	40
6	150	10	24	13	150	10	45
7	150	10	26	14	150	10	50

## Scribing and Marking-Off Plates

- In ripped construction made of special cast, with high degree of wear resistance.
- Measuring surfaces finished to DIN 876. Outside edges milled clean.

### Series 902



902-304

Size	Dimensions (LxW mm)	Accuracy 1 DIN 876 No.	Accuracy 3 DIN 876 No.	Mass kg
1	300x 300	902-301	902-101	15
2	400x 400	902-302	902-102	35
3	500x 400	902-303	902-103	40
4	600x 500	902-304	902-104	65
5	800x 500	902-305	902-105	95
6	1000x 750	902-306	902-106	210
7	1200x 800	902-307	902-107	230
8	1500x 1000	902-308	902-108	490
9	2000x 1000	902-309	902-109	780

### Specifications

Accuracy: according to DIN 876  
 DIN 876: Accuracy grade 1  
 Fine scraped  
 DIN 876: Accuracy grade 3  
 Fine planed

# Angle Plate with Clamping Slots

## Series 906

Angle 90°

- Made from special cast iron with high wear resistance.



906-303

No.	Length mm	Width mm	Height mm	Mass kg ca.
906-301	150	75	100	5
906-302	200	100	150	10
906-303	275	150	200	20
906-304	400	225	300	52
906-305	500	300	400	95

# Measuring Angle 90°

- Measuring Angle made of black natural hard stone, two sides precision ground
- Hard and wear resistant

## Series 972



972-108

No.	Leg length mm	Width mm	Perpendicularity mm	Mass kg
972-106	300 x 200	50	0,002	6,5
972-107	400 x 250	50	0,003	10,0
972-108	500 x 300	60	0,004	17,0
972-109	600 x 400	70	0,005	30,0

### Specifications

Flatness: DIN 876  
Accuracy grade: 1  
Perpendicularity tolerance: DIN 875  
Accuracy grade: 1

### Specifications

Flatness: DIN 876  
Accuracy grade: 00  
Perpendicularity tolerance: DIN 875

## Granite Plates

- These granite plates are made of exquisite and fine grained granite.
- Stress relieved, naturally aged over milleniums.
- Harder than steel.
- Non magnetic and electrically non conducting.
- Stainless, therefore easy maintenance.

### Series 901



Granite plate and stand

#### Specifications

Accuracy: according to DIN 876  
 Vickers hardness: HV 850–900  
 Flexural resistance: 13–22 N/mm<sup>2</sup>  
 Pressure resistance: ca. 280 N/mm<sup>2</sup>  
 Linear co-efficient of expansion: (5 to 7,5) x 10<sup>-6</sup> x K<sup>-1</sup>  
 Supplied with factory certificate

#### Optional accessory

No. 517–660 P Cleaning and care agents for measuring instruments made from natural stone (5 l canister)

Size	Dimensions LxWxH mm	Accuracy 00 No.	Accuracy 0 No.	Accuracy 1 No.	Accuracy 2 No.	Mass kg
1	400 x 250 x 50	901-131	901-121	901-111	901-101	15
2	400 x 400 x 50	901-132	901-122	901-112	901-102	25
3	630 x 400 x 70	901-133	901-123	901-113	901-103	53
4	630 x 630 x 70	901-134	901-124	901-114	901-104	83
5	1000 x 630 x 100	901-135	901-125	901-115	901-105	189
6	1000 x 1000 x 100	901-136	901-126	901-116	901-106	300
7	1200 x 800 x 160	901-137	901-127	901-117	901-107	460
8	1600 x 1000 x 160	901-138	901-128	901-118	901-108	768
9	2000 x 1000 x 220	901-139	901-129	901-119	901-109	1320

Delivery without support but with steel ball inserts

## Accessory for granite plates

### Series 901

Individual supports mounting (4 pieces)  
 Appropriate for slab sizes 8 and 9



901-921

Size	No.	Mass Support kg
8/9	901-921	20

# Accessory for granite plates

## Series 901

Profiled steel underframe



901-935 (illustrated with granite slab)

Size	Plate dimensions LxWxH mm	No.	Mass kg
3	630 x 400 x 70	<b>901-931</b>	22
4	630 x 630 x 70	<b>901-932</b>	25
5	1000 x 630 x 100	<b>901-933</b>	28
6	1000 x 1000 x 100	<b>901-934</b>	30
7	1200 x 800 x 160	<b>901-935</b>	30
8	1600 x 1000 x 160	<b>901-936</b>	35
9	2000 x 1000 x 220	<b>901-937</b>	40

## Series 901

Tool cabinets



901-941 (illustrated with granite slab)

Size	Plate dimensions LxWxH mm	No.	Number of doors	Number of drawers	Mass kg
3	630 x 400 x 70	<b>901-941</b>	1	1	50
4	630 x 630 x 70	<b>901-942</b>	1	1	55



901-945 (illustrated with granite slab)

Size	Plate dimensions LxWxH mm	No.	Number of doors	Number of drawers	Mass kg
5	1000 x 630 x 100	<b>901-943</b>	2	1	75
6	1000 x 1000 x 100	<b>901-944</b>	2	1	82
7	1200 x 800 x 160	<b>901-945</b>	2	1	82
8	1600 x 1000 x 160	<b>901-946</b>	2	1	100



901-947 (illustrated with granite slab)

Size	Plate dimensions LxWxH mm	No.	Number of doors	Number of drawers	Mass kg
9	2000 x 1000 x 220	<b>901-947</b>	3	2	130

Design

1 door  
1 drawer

Design

2 doors  
1 drawer

Design

3 doors  
2 drawers

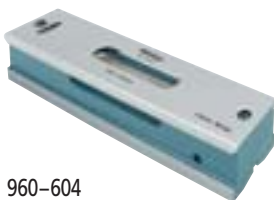
### Specifications

Accuracy: Factory specification  
 Support angle of prism: 140°  
 Length: 200 mm  
 Supplied in a wooden case

## Levels

- For adjusting and testing of flat and cylindrical surfaces on precision machines.
- Prismatic and flat supporting faces, precision ground.
- Longitudinal and transverse bubble level.
- With graduation adjustable.

### Series 960



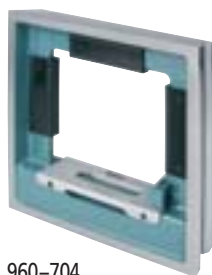
960-604

No.	Graduation / Sensivity mm/m	Mass kg	Error Limits mm/m
960-604	0,10	1,45	0,050
960-605	0,05	1,45	0,025
960-606	0,02	1,45	0,010

## Frame Level

- For adjusting horizontal and vertical surfaces on precision machines.
- 2 prismatic and 2 flat supporting surfaces, precision ground.
- Divided longitudinal and transverse bubble level.
- With graduation adjustable.

### Series 960



960-704

No.	Graduation / Sensivity mm/m	Mass kg	Error Limits mm/m
960-704	0,10	4,0	0,050
960-705	0,05	4,0	0,025
960-706	0,02	4,0	0,015

### Specifications

Accuracy: Factory specification  
 Support angle of prism: 140°  
 Dimensions: 200x200x44 mm  
 Supplied in a wooden case

## Digital Protractor

- Newly developed instrument for measurement of flatness, squareness and angularity.
- Precision support surface in aluminium frame, high rigidity and low weight.

### Series 950



950-317

### Specifications

Accuracy: Factory specification  
 Power supply: Standard battery (9 V)  
 Operation temperature: -5 °C to 50 °C  
 Dimensions: 153 x 49 x 31 mm  
 Mass: 300 g  
 Including box

### Optional accessory

No. 64PPP794 Magnetic V block for securing to magnetic workpieces

No.	Model	Measuring range	Resolution / Sensivity	Error Limits	Repeatability
950-317	Pro 360	360° (4 x 90°)	0,1°	horizontal 0,1° vertical 0,2°	± 0,1°
950-318	Pro 3600	360° (4 x 90°)	0,01° (0° to 9,99°) 0,1° (10° to 90°)	0,05° (0° to 10°) 0,1° (80° to 90°) 0,2° (10° to 80°)	± 0,05°