

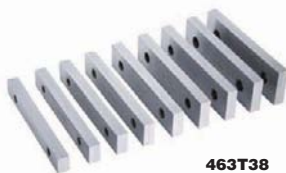
For more information on Precision Measuring Instruments, see page 2210.

Starrett®

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TESA  
TECHNOLOGY

OOS brown &amp; sharpe



463T38

## Precision Steel Parallels & Sets

These precision steel parallel sets are comprised of rectangular blocks with highly parallel, square dimensions within tight tolerances. When a vise is too deep to hold a workpiece, parallels are commonly used to position the workpiece for accurate cutting by creating a parallel and flat base. These parallels offer certainty about the alignment of the workpiece rather than requiring guesswork and constant adjustments with a level, protractor, or indicator.

No. of Pairs	Included Sizes	L	Thickness	Parallelism	Brand	Item No.
1	1 1/2 in, 1 1/4 in, 1 1/8 in, 1 3/4 in, 1 3/8 in, 1 1/2 in, 1 in, 3/4 in, 1/2 in	6 in	1/2 in	100 µin	Starrett	30A621
9	1 1/2 in, 1 1/4 in, 1 1/8 in, 1 3/4 in, 1 3/8 in, 1 1/2 in, 1 in, 3/4 in, 1/2 in	6 in	1/4 in	300 µin	Insizes	463T39
10	1 1/2 in, 1 1/4 in, 1 1/8 in, 1 3/4 in, 1 3/8 in, 1 1/2 in, 1 in, 3/4 in, 1/2 in	6 in	1/8 in	300 µin	Insizes	463T38
10	1 1/2 in, 1 1/4 in, 1 1/8 in, 1 3/4 in, 1 3/8 in, 1 1/2 in, 1 in, 3/4 in, 1/2 in	6 in	1/8 in	—	Tesa Brown & Sharpe	6T2U3

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## Inspection Surface Plates

**Grade B Toolroom Grade** surface plates are made to a precise tolerance of flatness and repeatability suitable for smaller QA and inspection jobs on the shop floor where metrology lab-level sensitivity is not a factor. **Grade A Inspection Grade** surface plates are built to a medium tolerance of flatness and repeatability. They have either four flat edges or ledges on two sides that create an overhang for clamping, supporting, and securing objects. **Grade AA Laboratory Grade** surface plates are made to the best tolerance of flatness and repeatability. These plates are thicker than lesser-grade plates, so they have less deflection and are intended for permanent installation.

	Surface Size	Color	Flatness	Weight (lb.)	Brand	Item No.
Grade B						
Flat Edge Style						
18 in x 24 in; 450 mm x 600 mm	Pink	0.0003 in	165	Starrett	6PCU8	
24 in x 24 in; 600 mm x 600 mm	Pink	0.0003 in	220	Starrett	6PCU9	
24 in x 36 in; 600 mm x 900 mm	Pink	0.0004 in	495	Starrett	6PCV0	
36 in x 48 in; 900 mm x 1200 mm	Pink	0.0008 in	990	Starrett	6PCV3	
36 in x 60 in; 900 mm x 1800 mm	Pink	0.001 in	1,650	Starrett	6PCV4	
48 in x 96 in; 1200 mm x 2400 mm	Pink	0.0020 in	4,400	Starrett	6PCV8	
Two Ledges Edge Style						
24 in x 36 in; 750 mm x 1200 mm	Pink	0.0004 in	460	Starrett	6PCZ2	
48 in x 96 in; 1200 mm x 2400 mm	Pink	0.002 in	4,215	Starrett	6PDA0	
Grade A						
Flat Edge Style						
12 in x 18 in; 300 mm x 450 mm	Gray	0.00012 in/0.0030 mm	93	Insize	463K63	
18 in x 24 in; 450 mm x 600 mm	Gray	0.00012 in/0.0030 mm	181	Insize	463K64	
18 in x 24 in; 450 mm x 600 mm	Pink	0.000150 in/0.0038 mm	248	Starrett	6PCT4	
24 in x 24 in; 600 mm x 600 mm	Pink	0.000150 in/0.0038 mm	330	Starrett	6PCT5	
24 in x 36 in; 600 mm x 900 mm	Gray	0.00012 in/0.0030 mm	441	Insize	463K65	

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## Optical Comparators

■ 10X Magnification lens included

**Horizontal** optical comparator are suitable for shaft parts or heavy workpieces with large volume. The main axis of the comparator is perpendicular to the plane of the projection screen. **Vertical** optical comparators are suitable for flat parts or smaller workpieces. The main axis is parallel to the plane of the screen.

Projector Series	Screen Size	Table Size	Effective Table Working Area	Y-Axis Vertical Focus Travel	X-Axis Table Travel	Image Type	Res.	Brand	Item No.
<b>Horizontal</b>									
Mitutoyo PH-3515F	14 in	17 1/16 in x 5 1/16 in	17 1/16 in x 5 1/16 in	6 in	10 in	Erect Image	0.0001mm	Mitutoyo	54GF40
Mitutoyo PH-3515F with QM Data	14 in	17 4/64 in x 5 4/64 in	17 4/64 in x 5 4/64 in	6 in	10 in	Erect Image	0.0001 in/0.001mm	Mitutoyo	54GF82
Mitutoyo PH-3515F	14 in	17 1/16 in x 5 1/16 in	17 1/16 in x 5 1/16 in	6 in	10 in	Erect Image	0.0001mm	Mitutoyo	54GF39
<b>Vertical</b>									
INSIZE ISP-A	12 in	13 3/8 in x 6 in	13 3/8 in x 6 in	3.54 in	6 in	Erect Image	0.00002 in	Insizes	463D22
	12 in	15 1/8 in x 9 in	15 1/8 in x 9 in	3.94 in	8 in	Erect Image	0.00002 in	Insizes	463D26
	12 in	15 1/8 in x 9 in	15 1/8 in x 9 in	3.93 in	8 in	Erect Image	0.00002 in	Insizes	463D28
INSIZE ISP-Z	12 in	13 3/8 in x 6 in	13 3/8 in x 6 in	3.54 in	6 in	Erect Image	0.00002 in	Insizes	463D31
Mitutoyo PJ-A3000	12.4 in	9 1/8 in x 9 1/8 in	7 1/4 in x 3 1/4 in	3.58 in	4 in	Inverted Image	0.0001 in/0.001mm	Mitutoyo	54GF43

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Mitutoyo

## Single-Function Digital Scale Units with SPC Output

Linear scales with SPC output move along a beam and display the distance traveled on a digital display. They are available in horizontal or vertical designs to measure distances. They measure absolute positioning, zero-setting for relative positioning, and have built-in low battery alarms. The also have direction changeover to reverse the direction of measurement, programmable presets to display a specific value, and data hold. They are commonly used for table positioning, quill positioning, and tool presetting.

Range	Accuracy	Brand	Horizontal Digital Scale Unit Item No.	Vertical Digital Scale Unit Item No.
<b>Not Rated</b>				
0 in to 12 in/0 to 300 mm	±0.0016 in	Insizes	463H27	463H36
0 in to 16 in/0 to 400 mm	±0.002 in	Insizes	463H28	—
0 in to 16 in/0 to 400 mm	±.002 in	Insizes	—	463H37
0 in to 20 in/0 to 500 mm	±.002 in	Insizes	463H29	463H38
<b>IP66 Rated</b>				
0 in to 4 in/0 to 100 mm	±0.001 in/0.03 mm	Mitutoyo	1ARJ9	33RJ82
0 in to 6 in/0 to 150 mm	±0.001 in/0.03 mm	Mitutoyo	1ARR4	4CGX2
0 in to 8 in/0 to 200 mm	±0.001 in/0.03 mm	Mitutoyo	4CGX1	4CGX3



Horizontal 1ARJ9



Vertical 463H36



Grade A 463K66



Grade AA 6PCX2



Grade B Toolroom 6PCU8

Surface Size	Color	Flatness	Weight (lb.)	Brand	Item No.
36 in x 48 in; 900 mm x 1200 mm	Gray	0.00012 in/0.0030 mm	1,268	Insizes	463K66
48 in x 72 in; 1200 mm x 1800 mm	Pink	0.000700 in/0.0177 mm	3,300	Starrett	6PCU3
48 in x 96 in; 1200 mm x 2400 mm	Pink	0.001000 in/0.0254 mm	5,280	Starrett	6PCU4
<b>Flat Edge Style</b>					
12 in x 12 in; 300 mm x 300 mm	Pink	0.000100 in/0.0025 mm	55	Starrett	6PCT1
12 in x 18 in; 300 mm x 450 mm	Pink	0.000100 in/0.0025 mm	85	Starrett	6PCT2
24 in x 36 in; 600 mm x 900 mm	Pink	0.000200 in/0.0050 mm	495	Starrett	6PCT6
<b>Two Ledges Edge Style</b>					
24 in x 36 in; 600 mm x 900 mm	Pink	0.000200 in/0.0050 mm	460	Starrett	6PCX8
<b>Grade AA</b>					
<b>Flat Edge Style</b>					
12 in x 12 in; 300 mm x 300 mm	Pink	0.000050 in/0.0012 mm	55	Starrett	6PCN7
12 in x 18 in; 300 mm x 450 mm	Pink	0.000050 in/0.0012 mm	85	Starrett	6PCN8
18 in x 24 in; 450 mm x 600 mm	Pink	0.000075 in/0.0019 mm	248	Starrett	6PCR0
24 in x 24 in; 600 mm x 600 mm	Pink	0.000075 in/0.0019 mm	330	Starrett	6PCR1
24 in x 36 in; 600 mm x 900 mm	Pink	0.000100 in/0.0025 mm	495	Starrett	6PCR2
36 in x 48 in; 900 mm x 1200 mm	Pink	0.000200 in/0.0050 mm	1,320	Starrett	6PCR5
48 in x 72 in; 1200 mm x 1800 mm	Pink	0.000350 in/0.0088 mm	3,960	Starrett	6PCR9
<b>Two Ledges Edge Style</b>					
48 in x 96 in;	Pink	0.000500 in/0.0127 mm	6,750	Starrett	6PCX2



Horizontal 54GF40



Vertical 463D22