

# Starrett®

Precision, **Quality**, Innovation

## PRECISION SHOP TOOLS

**Band Saw** Blades

Force **Measurement**

Jobsite & **Workshop Tools**

**Laser** Measurement

**Metrology** Equipment

Precision **Granite**

**Precision Ground** Solutions

**Precision Measuring** Tools

PTA & **Hand Tools**

Roundness **Measurement**

Service

**Webber Gage** Blocks



Catalog 74E



# PRECISION, QUALITY, INNOVATION

For more than 132 years, manufacturers, builders and craftsmen worldwide have depended upon precision tools and saws from The L.S. Starrett Company to ensure the consistent quality of their work.

They know that the Starrett name on a saw blade, hand tool or measuring tool ensures exceptional quality, innovative products and expert technical assistance.

With strict quality control, state-of-the-art equipment and an ongoing commitment to producing superior tools, the thousands of products in today's Starrett line continue to be the most accurate, robust and durable tools available. This catalog features those tools most widely used on a jobsite or in a workshop environment.





## PUNCHES

More than 10 models between automatic center punches with adjustable stroke, center punches with round shanks, with square shanks, for prick punches, square head nail sets, drive pin punches and brass drive pin punches.

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## MACHINISTS' LEVELS

Starrett offers a wide variety of levels, many for jobsite and workshop applications. This section has a different type of level – precisely made metal tools with ground surfaces designed specifically for machine shop and toolroom use. Products include our Master Precision Level, machinists' levels with ground and graduated vials, precision bench levels with double plumbs available at up the 24", cross test levels, bench levels and a nickel plated pocket level.

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## SHOP TOOLS

A wide variety of gages and precision hand tools designed for delicate shop work of machinists and toolmakers. These tools are the best in the business for accurately scribing lines, transferring measurements and for probing surfaces in inspection and production work.

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# PRECISION SHOP TOOLS



## RULES AND SQUARES

Our rules and squares are made from fine quality materials and produced to the highest precision standards, making them the most accurate and readable rules on the market. Offered in a practical variety of styles to suit the needs of the individual, whether it be a toolmaker, mechanic, carpenter, or a do-it-yourself homeowner.

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## PLUMB BOBS

Steel, solid steel and solid brass for top accuracy in all layout work to provide a low center of gravity and great weight in proportion to their short length and small diameter.

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## PROTRACTORS

The ProSite® Protractor takes error-prone calculations out of the process of miter cuts. The tool is ideal for carpenters, plumbers and all building trades that require the measuring and transferring of angles.

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**PUNCHES**



# AUTOMATIC PUNCHES

## 18 WITH ADJUSTABLE STROKE

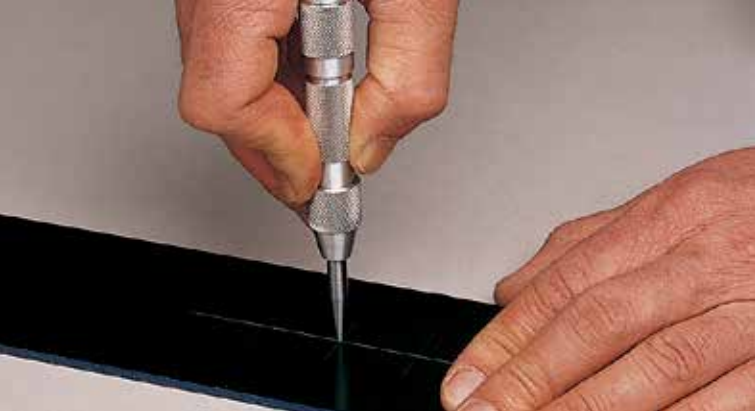
This automatic center punch features a lightweight, knurled steel handle for a positive grip and easy handling.

### FEATURES

- Rugged automatic punches with all-steel handles and parts
- Internal mechanism strikes a blow when downward pressure is applied
- Spring tension is constant so marks made by the point are uniform in depth and size
- The point can be easily removed for regrinding or replacement
- Adjustable cap regulates the stroke

Cat. No.	Length		Diameter		Description	EDP
	Inch	mm	Inch	mm		
18AA	4"	100mm	7/16"	11mm	Punch	50119
18A	5"	125mm	9/16"	14mm		50120
18C	5-1/4"	130mm	11/16"	17mm		Punch, Heavy-Duty





## AUTOMATIC PUNCHES

### 818 WITH ADJUSTABLE STROKE

This automatic center punch is lightweight with knurled aluminum handle for a positive grip and easy handling.

#### FEATURES

- All working internal parts made of properly hardened tool steel
- Works on metal, plastics, wood and other machinable materials
- Adjustable cap regulates the stroke

Cat. No.	Length		Diameter		EDP
	Inch	mm	Inch	mm	
818	5"	125mm	5/8"	16mm	53048

### 819 WITH ADJUSTABLE STROKE

Hinge-locating automatic center punch with adjustable stroke, combines all the features of our 818 lightweight aluminum punch with an exclusive self-centering sleeve that automatically centers starter holes for screws.

#### FEATURES

- Adjustable cap regulates the stroke
- Eliminates the risk of drilling off center

Cat. No.	Length		Diameter		EDP
	Inch	mm	Inch	mm	
819	5"	125mm	5/8"	16mm	53049



# CENTER PUNCHES

## 117 WITH ROUND SHANKS

Made of specially selected steel, hardened and properly tempered. They are well proportioned, nicely finished and have a knurled finger grip. The points are ground at the proper angle to give maximum service, and the tips are accurately centered.

### FEATURES

- Precision centered tips for accuracy
- Knurled grip for secure holding
- The points are ground at the proper angle to give maximum service
- Hardened and tempered
- Made of specially selected steel

Cat. No.	Length		Dia. at Top of Tapered Point		EDP
	Inch	mm	Inch	mm	
117AA	3"	75mm	1/16"	1.5mm	50482
117A			5/64"	2mm	50483
117B	4"	100mm	3/32"	2.5mm	50484
117C			1/8"	3mm	50485
117D			5/32"	4mm	50486
117E	5"	125mm	1/4"	6.5mm	50487
S117PC	Set of 5, 117AA, A, B, C, D in Plastic Case				50488



## 264 WITH SQUARE SHANK

Center punch has a square knurled handle and will not roll when laid down. They are hardened and properly tempered. The tips are accurately centered and ground at the proper angle to give maximum service.

### FEATURES

- Accurately centered tips for accuracy
- Knurled grip for secure holding
- Shape prevents rolling
- The points are ground at the proper angle to give maximum service
- Hardened and tempered
- Made of specially selected steel

Cat. No.	Length		Dia. at Top of Tapered Point		Square Thickness		EDP
	Inch	mm	Inch	mm	Inch	mm	
264A	3"	75mm	1/16"	1.5mm			51278
264B	3-1/2"	88mm	5/64"	2mm			51279
264C	3-3/4"	95mm	3/32"	2.5mm	3/8"	9.5mm	51280
264D	4"	100mm	1/8"	3mm			51281
264E	4-1/4"	108mm	5/32"	4mm			51282
264F	4-1/2"	114mm	3/16"	5mm	7/16"	11mm	51283
264G	5"	125mm	1/4"	6mm			51284
S264WB	Set of 7, 264A, B, C, D, E, F, G in Round Red Plastic Box						51285





# PRICK PUNCHES

## 816

The perfect punches to use when precise positioning of a point or an intersection of lines is required. The points are carefully ground to the correct taper, which is sharper than the normal center punch. This allows exact placement of the point, providing sharp impressions.

### FEATURES

- Precision centered tips for accuracy
- Knurled grip for secure holding
- Points are carefully ground to the correct taper, which is sharper than the normal center punch
- Hardened and tempered
- Made of specially selected steel

Cat. No.	Length		Dia. at Top of Tapered Point		EDP
	Inch	mm	Inch	mm	
816A			5/64"	2mm	53043
816B	4"	100mm	1/8"	3mm	53044
816D			5/32"	4mm	53046
S816PC	Combination Punch Set in Plastic Case. One Each 816A, B, D Prick Punches, and Two Center Punches 117AA, B				57078



# SQUARE PUNCHES

## 800

Nail set has a square head that provides a large striking surface and prevents the tool from rolling.

### FEATURES

- Knurled grip for secure holding
- Square head provides a large striking surface
- Beveled end prevents breakage
- Cupped punch surface to follow nail without sliding off
- Hardened and tempered
- Made of specially selected steel
- Punch diameter clearly marked on the head

Cat. No.	Length		Punch Diameter		EDP
	Inch	mm	Inch	mm	
800A			1/32"	0.8mm	53029
800B			1/16"	1.5mm	53030
800C	4"	100mm	3/32"	2.5mm	53031
800D			1/8"	3mm	53032
800E			5/32"	4mm	53033
S800PC	Set of 5 in Protective Plastic Case. One Each of 800A, B, C, D, E				64131



# DRIVE PIN PUNCHES

## 565

Drive pin punch is well proportioned, hardened, properly tempered, nicely finished, and has a knurled finger grip. Each punch has the size stamped on the head.

### FEATURES

- Knurled grip for secure holding
- Hardened and tempered
- Punch diameter clearly marked on the head

Cat. No.	Length		Diameter Punch		EDP
	Inch	mm	Inch	mm	
565A			1/16"	1.5mm	52578
565B			3/32"	2.5mm	52579
565C			1/8"	3mm	52580
565D	4"	100mm	5/32"	4mm	52581
565E			3/16"	5mm	52582
565F			7/32"	5.5mm	52583
565G			1/4"	6mm	52584
565H			5/16"	8mm	52585
S565WB	Set of 8 Punches (1 of Each Size) in Round Red Plastic Box				52586
S565PC	Set of 8 Punches (1 of Each Size) in Protective Vinyl Case				52587





# BRASS DRIVE PIN PUNCHES

## B565

Drive pin punch is well proportioned, nicely finished, and has a knurled finger grip. Each punch has the size stamped on the head. The softer brass will not damage softer materials and delicate work surfaces. Available in eight individual sizes from 1/16" to 5/16" and as a full set of eight in an attractive pouch.

### FEATURES

- Knurled grip for secure holding
- Will not damage softer materials
- Non-sparking
- Punch diameter clearly marked on the head

Cat. No.	Length		Diameter Punch		EDP		
	Inch	mm	Inch	mm			
B565A			1/16"	1.5mm	12465		
B565B			3/32"	2.5mm	12466		
B565C			1/8"	3mm	12467		
B565D	4"	100mm	5/32"	4mm	12468		
B565E			3/16"	5mm	12469		
B565F			7/32"	5.5mm	12470		
B565G			1/4"	6mm	12471		
B565H			5/16"	8mm	12472		
SB565Z			Set of 8 Punches (1 of Each Size) in Fabric Pouch				12473



# DRIVE PIN PUNCHES

## 248

### FOR MACHINE SHOP AND MOTOR SERVICE WORK

Drive pin punch is intended for machine shop and motor service work, extra long in size, measuring 8", with 4-1/2" bodies and 3-1/2" drive pin section.

#### FEATURES

- Knurled grip for secure holding
- Designed to withstand hard use
- For machine shop and motor service work
- Hardened and tempered
- Punch diameter clearly marked on the head
- Diameter of punches is slightly less than listed
- Extra-long, measuring 8" (200mm) total length

Cat. No.	Length		Diameter Punch		
	Inch	mm	Inch	mm	EDP
248A			1/8"	3mm	51181
248B			3/16"	5mm	51182
248C	8"	200mm	1/4"	6mm	51183
248D			5/16"	8mm	51184
248E			3/8"	9.5mm	51185
S248PC	Set of 5 Punches (1 of Each Size) in Protective Vinyl Case				51186
S248	Set of 5 Punches (1 of Each Size) in Plain Box				51187



# BRASS DRIVE PIN PUNCHES

## B248

### FOR MACHINE SHOP AND MOTOR SERVICE WORK

Brass drive pin punch for machine shop and motor service work. Available in eight individual sizes from 3/16" to 3/8" and as a full set of four in an attractive pouch.

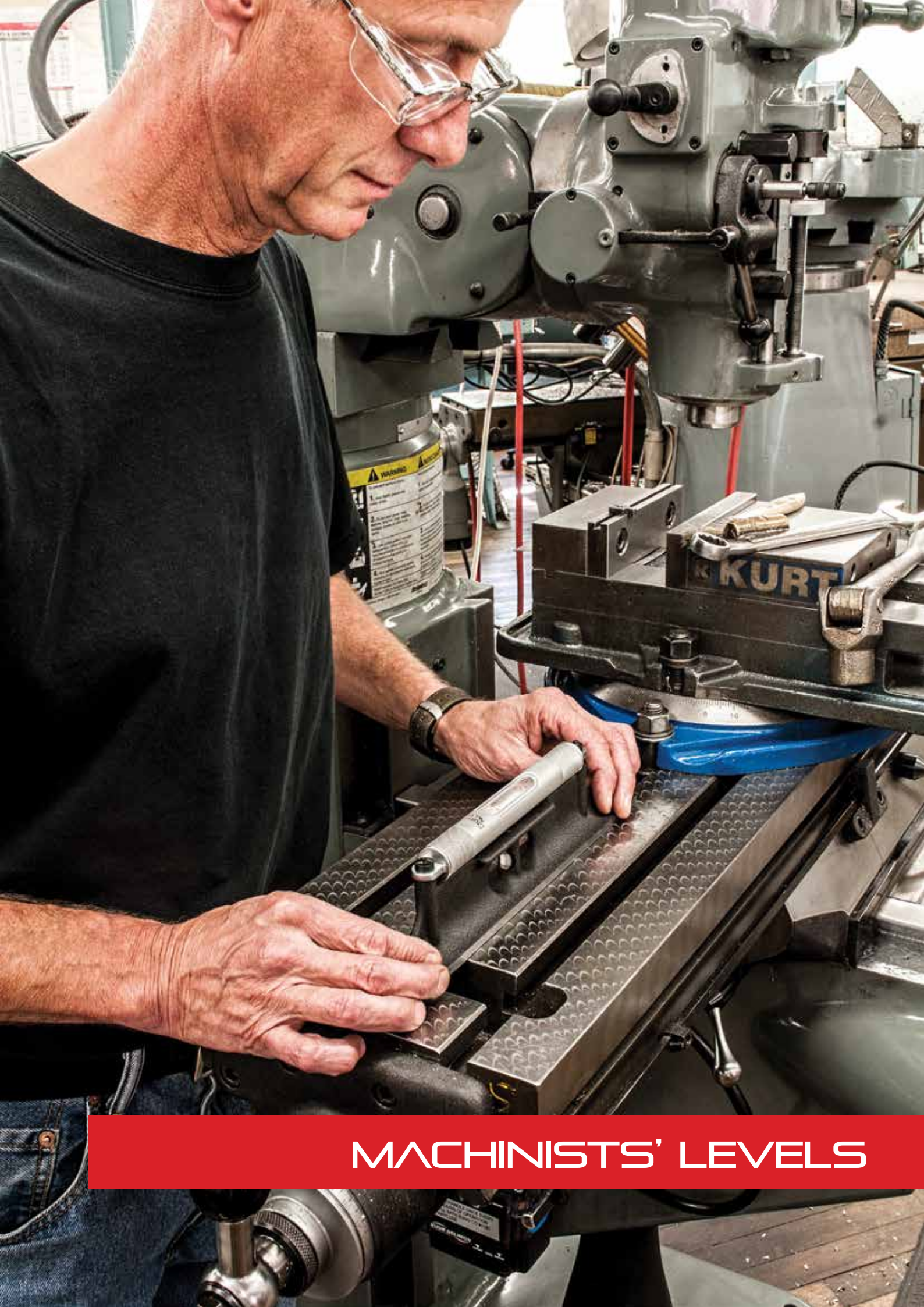
#### FEATURES

- Knurled grip for secure holding
- Will not damage softer materials
- Non-sparking
- For machine shop and motor service work
- Punch diameter clearly marked on the head
- Diameter of punches is slightly less than listed
- Extra-long, measuring 8" (200mm) total length

Cat. No.	Length		Diameter Punch		
	Inch	mm	Inch	mm	EDP
B248B			3/16"	5mm	12460
B248C	8"	200mm	1/4"	6mm	12461
B248D			5/16"	8mm	12462
B248E			3/8"	9.5mm	12463
SB248Z	Set of 4 Brass Punches (1 of Each Size) in Fabric Pouch				12464







**MACHINISTS' LEVELS**



## 199, 98 AND 132 PRECISION MACHINISTS' LEVELS

These are the finest levels available, used for precision work that is typically required in industry. They all have these features:

All level bases are made from the finest quality seasoned cast iron and are precision-machined on the reference surface

Non-machined surfaces have an attractive, black wrinkle finish

All models except the 199 have an involute longitudinal groove between the bearing flats for accurate seating on round work. This groove has a special involute design, permitting better centering and greater capacity to handle larger rounds

Groove and bearing flats are machined together for maximum accuracy



# MACHINISTS' LEVELS

## LEVEL VIAL INFORMATION

The accuracy of a level is dependent on the proper machining of the working surface, the straightness, and rigidity of the construction and the sensitivity of the level vial. Accuracies are very often specified in parts of degrees such as 10-second accuracy or 43-minute accuracy. Technically, we are referring to the sensitivity of the level vial, but many interchange these terms. Since this means little to most people, we use the more practical definition of inches per foot of elevation. For instance, a 10-second vial accuracy means if the level is on an incline that is .0005" per foot, then the bubble on the vial will move .100" (slightly less than 1/8").

There are three general types of level vials. Ground vials are generally used in precision levels; bent glass and plastic vials are used in most other levels.

Most level vials have just two lines spanning the length of the bubble because most users just want to know if something is level or not.

The more precise levels have vials with a number of reading lines on each side of the bubble. All Inch reading vial graduations are .100" apart. This will show the machinist in a very precise manner how level the equipment is.

Metric reading levels have vial graduations 2mm apart and accuracies are usually described as millimeters per meter. This is an easy conversion to make, so we converted our Inch specifications to an understandable metric reading. Machinists only need to know how far they are out of level if the bubble moves to the next line.

## LEVEL USE

To get a correct reading with a level, both ends of the bubble should be viewed. If the gaps between the ends of the bubble and the lines are unequal at any time, then they should be averaged out. The reason for this is temperature, which affects the size of the bubble. As a level is warmed the liquid expands, thereby reducing the size of the bubble so that at true-level there will be gaps at both ends between the bubble and the reading lines. Conversely, if the temperature is very cold, the bubble could expand and overlap the reading lines.

Excessive hand heat on the center of the level for an extended period of time could expand the center, causing the working surface to become slightly convex and also create a tendency to spin on flat surfaces. This is more noticeable on very precise levels.

Any level can be checked for accuracy on any flat surface regardless of whether it is level or not. Simply put the level on the surface and note the position of the bubble. Then reverse the level in the same spot. If the level is true, the bubble will be in the same relative position both ways.

Some models, like our 98 Series machinist levels with an adjustable system, have an adjustment that can be made on the job.



# MACHINISTS' LEVELS

## 199 MASTER

### PRECISION LEVEL

#### 15"/380MM

The efficiency of modern, high speed machinery depends to a large degree upon the levelness of the machine set-up.

- Specially designed to set up, check and test machinery of all types
- At-a-glance reading of the exact variation of machinery levelness
- Ground and graduated main vial of 10-second accuracy; one division equals 1/2 thousandth (0.0005) of an inch per foot, or 0.04mm per meter
- Main vials have seven graduations on each side of the bubble
- Auxiliary level vial shows lateral position and assists in horizontal setting
- Level vials are positioned so breakage is reduced to a minimum
- Fool-proof adjustment
- Special alloy iron used to obtain freedom from thermal effects
- Seasoned, machined castings
- Scraped reference surface
- Nonconductive top plate and black wrinkle finish on nonmachined surfaces
- Finished wood case

#### 199 MASTER PRECISION LEVEL

Length Base		Width Base		Height Level		Cat. No.	EDP
Inch	mm	Inch	mm	Inch	mm		
15"	380mm	1-5/8"	40mm	3"	75mm	199Z	50719





## MACHINISTS' LEVELS

### 98 MACHINISTS' LEVELS WITH GROUND AND GRADUATED VIALS 4-18"/100-450MM

These levels have ground and graduated main vials. All sizes have a cross test vial except the 4" (100mm) model.

The 12" (300mm) model also has a plumb vial and the 18" (450mm) size has a double plumb vial.

These vials are adjustable to a positive setting and are housed in a satin chrome finished brass tube with a friction-fit closing cover to prevent breakage.

The base of the levels features an involute groove running the length of the base, which provides a reliable seat for round work such as pipes or shafting.

With the cross test vial, it is possible to simultaneously level in both directions. This prevents inaccuracies in the main vial reading caused by canting the level sidewise on round work.

The 6" through 18" (150-450mm) main level vials have graduations that are approximately 80-90 seconds or .005" per foot (0.42mm per meter). There are five, six, or seven lines on each side of the bubble, depending on the base length.



End view showing involute groove



#### 98 MACHINISTS' LEVELS WITH GROUND AND GRADUATED VIALS

#### TUBE AND PLUG ASSEMBLIES

Size		Description	Without Case		In Finished Wood Case		Part No.	EDP
Inch	mm		Cat. No.	EDP	Cat. No.	EDP		
4"	100mm	Without Cross Test Vial	98-4	50440				
6"	150mm	With Cross Test Vial	98-6	50441			PT99430	64497
8"	200mm	With Cross Test Vial	98-8	50442			PT99431	64498
12"	300mm	With Single Plumb Vial and Cross Test Vial	98-12	50443	98Z-12	50444	PT99432	64499
18"	450mm	With Double Plumb Vial and Cross Test Vial	98-18	50445	98Z-18	50446		

To guarantee extreme accuracy, the length of your level should not be longer than the work you are leveling.



# MACHINISTS' LEVELS

## 132 PRECISION BENCH LEVELS WITH DOUBLE PLUMBS

6-24"/150-600MM

These are moderately priced levels designed for the all-around use of machinists, maintenance and set-up mechanics and carpenters. They are available in a wide range of sizes to suit every requirement.

- The attractive filigree design of these levels provides a lighter weight, and the curved design evenly dissipates excess heat
- The base of the levels has an involute groove running the full length, which provides a reliable seat for round work
- All sizes have a main vial and double plumb vials. Each vial has two graduated lines
- The main vials have approximately 19-minute sensitivity, meaning if the bubble moves 1/8" off the graduated lines, the out-of-level is approximately .080" per foot. If the bubble is off 2mm, then the out-of-level is approximately 4.4mm per meter



End view showing involute groove

132-12

### 132 PRECISION BENCH LEVELS

Size		Description	Cat. No.	EDP
Inch	mm			
6"	150mm	With Main Vial and Double Plumb Vial	132-6	50562
9"	225mm		132-9	50563
12"	300mm		132-12	50564
24"	600mm		132-24	50566

To guarantee extreme accuracy, the length of your level should not be longer than the work you are leveling.

# MACHINISTS' LEVELS

## 134 CROSS TEST LEVEL AND PLUMB

### 2 X 3"/50 X 75MM

This is an especially useful little level, invaluable for plumbing, approximate squaring and leveling work. Made from brass with nickel finish, all working surfaces are flat and true. The level has two vials at right angles for cross test leveling without moving the tool and a plumb level at the top for checking squareness. An accurate, well-made and reliable tool, it is also very light and compact and can be easily carried in the pocket.

### 134 CROSS TEST LEVELS

Size				
Inch	mm	Description	Cat. No.	EDP
2 x 3"	50 x 75mm	With Cross Test Vials and Plumb Vial	134	50569



## 136 CROSS TEST LEVEL

### 2-3/4 X 2-3/4"/70 X 70MM

Similar to our 134 level, the 136 has two vials at right angles which permit leveling in both directions without moving the level from the work. The level is light and compact, with an attractive black wrinkle finish and a ground reference surface. Made from cast iron.

### 136 CROSS TEST LEVELS

Size				
Inch	mm	Description	Cat. No.	EDP
2-3/4 x 2-3/4"	70 x 70mm	With Cross Test Vials	136	50572



## 130 BENCH LEVEL

### 3-3/8"/85MM

This is a very handy, compact bench level with a sensitive and accurate single vial. The body is made of seasoned cast iron with black wrinkle finish and an accurately machined base leveling surface.

### 130 BENCH LEVEL

Size				
Inch	mm	Description	Cat. No.	EDP
3-3/8"	85mm	With Main Vial	130	50560



## 135 POCKET LEVELS WITH SATIN NICKEL-PLATED FINISH

### 2-1/2 AND 3-1/2"/63 AND 88MM

Another extremely useful Starrett level that fits handily in the pocket with no sharp edges. Made from hexagonal stock with convex ends and satin nickel-plated finish.

### 135 POCKET LEVELS WITH SATIN NICKEL-PLATED FINISH

Size				
Inch	mm	Description	Cat. No.	EDP
2-1/2"	63mm	With Main Vial	135A	50570
3-1/2"	88mm		135B	50571







SHOP TOOLS

# SCRIBERS

## 70 SERIES POCKET SCRIBERS

Steel handle is knurled and nickel plated. The scriber point is finely tapered for precise positioning. The scriber is held firmly and is unlocked by the chuck. The hexagon-shaped head prevents rolling.

### FEATURES

- The handle is made of steel, knurled, and nickel plated
- The scriber point is finely tapered for precise positioning
- The scriber is held firmly in the handle by a knurled chuck and when not in use can be reversed, telescoped into the handle, and locked by the chuck
- The hexagon-shaped head prevents rolling

Cat. No.	Point	Point Length		Handle Diameter		EDP
		Inch	mm	Inch	mm	
70A	Steel	2-3/8"	60mm	1/4"	6.4mm	50323
70B		2-7/8"	72mm	3/8"	9.5mm	50324
70AX	Carbide	2-3/8"	60mm	1/4"	6.4mm	50327
70BX		2-7/8"	72mm	3/8"	9.5mm	56092



# SHOP TOOLS

## 1 ADJUSTABLE JAW CUT NIPPERS

Adjustable jaw cut nippers feature a special design that provides powerful leverage for efficient and clean cutting and is recommended for all applications involving wire cutting. These tools can be adjusted for wider jaw openings to easily cut tile and mosaics.

### FEATURES

- Heat-treated steel frames for strength
- Vinyl coated handles for a firm, comfortable grip
- Jaws can be detached, resharpened or replaced
- Jaws can be adjusted on the frames
- Each jaw has an allowance of about 1/4" to cut tile or to adjust after resharpening
- Stud and stop screw on the handle can be adjusted, preventing damage from excess pressure on the jaws



Cat. No.	Size		Capacity (Max. Wire Dia.)		Jaw Width		Jaws	EDP
	Inch	mm	Inch	mm	Inch	mm		
1X-5 1/2	5-1/2"	138mm	.050"	1.3mm	21/32"	16.5mm	Carbide	50004
1X-7	7"	175mm	.080"	2mm	13/16"	21mm	Tipped	50005



# SCREWDRIVERS

## 555 JEWELERS

Watch and clockmakers, jewelers, opticians, toolmakers and others will find these screwdrivers especially adaptable for fine, delicate work. The swivel knobs are concave to fit the finger and are hexagonal in shape to prevent rolling. Screwdrivers are available individually or in sets.

### FEATURES

- For relatively small and very delicate work
- Bodies are made from knurled, nickel-plated steel

Cat. No.	Blade Width		Phillips Blade No.	EDP
	Inch	mm		
555AA	.025"	0.6mm	-	52549
555A	.040"	1mm	-	52550
555B	.055"	1.4mm	-	52551
555C	.070"	1.8mm	-	52552
555D	.080"	2mm	-	52553
555E	.100"	2.5mm	-	52554
555F	-	-	#0	52561
555Z-6	Set of 6 Screwdrivers – 555AA, A, B, C, D, E – In Case			52564
555Z-7	Set of 7 Screwdrivers – 555AA, A, B, C, D, E, F – In Case			52566



## 551 PRECISION

Screwdrivers with soft-touch handle are lightweight and have a very ergonomic design, making them easy to work with while remaining a rugged product. The blade/contacts are made of chrome-vanadium, molybdenum steel, hardened and chrome-plated, allowing them to hold up well in the toughest applications.

### FEATURES

- Precision-machined tips for top quality and exact fit
- Vapor-chromed non-slip tips
- Hardened for maximum durability
- Tapered handles are proportioned to blade and allow rapid rotation
- Spin-free finger control cap for precise turning and control

Cat. No.	Blade Width		Phillips Blade No.	EDP
	Inch	mm		
551A	.060"	1.5mm	-	67195
551B	.080"	2.0mm	-	67196
551C	.100"	2.5mm	-	67197
551D	.120"	3.0mm	-	67198
551E	-	-	#00	67199
551F	-	-	#0	67200
551G	-	-	#1	67201
551Z-7	Set of 7 Screwdrivers With Case – 551A, B, C, D, E, F, G			67203



# DEPTH GAGES

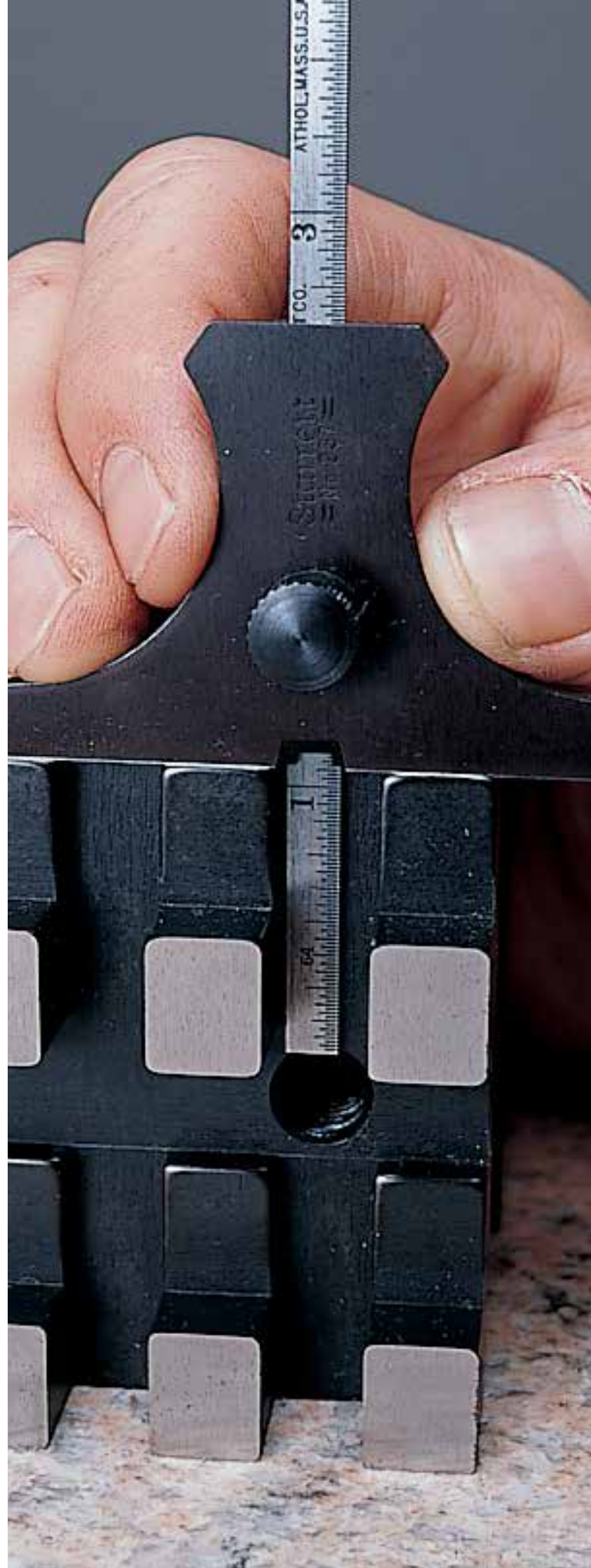
## 237M RULE DEPTH GAGE

This depth gage is very handy and can be used to quickly obtain measurements in 64th of an inch by simply adjusting the rule to the required depth.

### FEATURES

- Nicely finished, hardened steel head
- 6" photo engraved, tempered steel rule
- Gage adjusts and locks into position by a knurled nut
- Base is cut out on one side permitting easier readings
- 6" hook rule also available

Cat. No.	Graduation	Head Length x Width	EDP
237M	mm, 1/2mm	66 x 3mm	51081







# RULES AND SQUARES



# RULES

## STRAIGHT EDGE ALUMINUM RULE AMSE SERIES

Straight edge aluminum rules are parallel, made of anodized aluminum with smooth, square and straight edges. Inch or centimeter and millimeter graduation readings on either edge.

### FEATURES

- Ideal for schools and shops, wood-workers, tinsmiths, metal workers, and bench applications
- They lie flat, resist bending and feature large, easy to read graduations and numbers that are heavier than conventional machine graduated scales
- Rules are 2" (50mm) wide with centimeter and millimeter graduations reading on either edge
- Accurate and flexible

Cat. No.	Length	Thickness	EDP
AMSE-500	500mm	2mm	36097
AMSE-1000	1000mm		36098
AMSE-1500	1500mm	3mm	36099
AMSE-2000	2000mm		36100



## ALUMINUM METERSTICK MS-2

Aluminum meterstick is parallel, accurate and flexible.

### FEATURES

- This rule lies flat and features large, easy to read numbers
- Anodized aluminum

Cat. No.	Length	Thickness	Description	Graduation	EDP
MS-2	1m (39.37")	1.9mm (.075")	Ruled 2 Sides	English and Metric	36107







## UNIVERSAL BEVEL

### 15 UNIVERSAL BEVEL

8" stainless steel blade and plastic handle with one spirit level vial.

#### FEATURES

- Blade lock for transferring angles
- Handle is ABS plastic for a comfortable grip

Cat. No.	Dimension	EDP
K15-N	8"	00151



# COMBINATION SQUARES

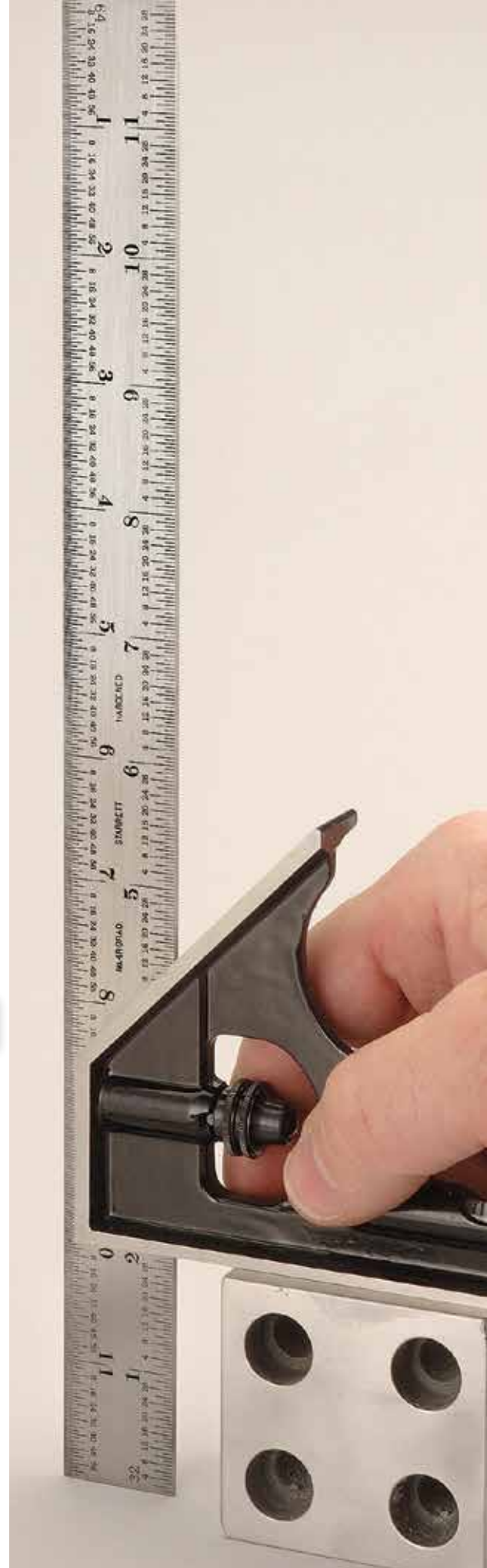
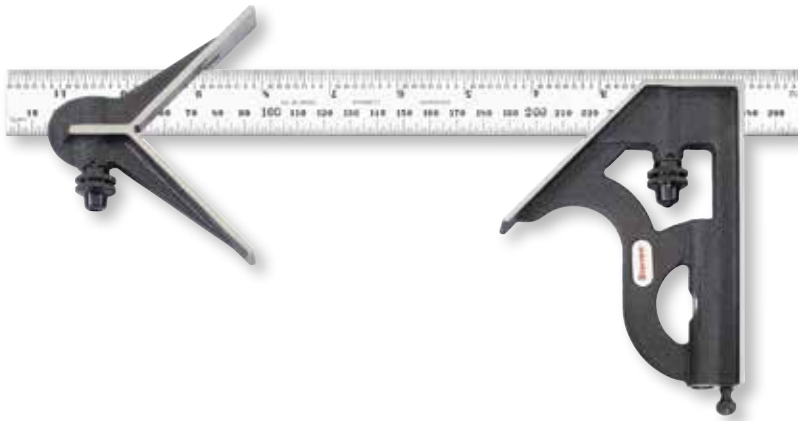
## 11MH, 11MEH, 11MHC CAST IRON HEADS

Combination square with square head includes a reversible lock bolt, scriber, spirit level (except 4"), and hardened steel, photo-engraved blade with regular or satin chrome finish. These combination squares include a cast iron head with black wrinkle finish.

### FEATURES

- Reversible lock bolt, scriber, spirit level (except 4")
- Hardened steel, photo-engraved blade
- Cast iron heads with black wrinkle finish

Cat. No.	Size	Graduation	Blade	EDP
C11MEH-300	300mm (11-3/4")	1/2mm and 32nds one side; mm and 64ths reverse side	Satin Chrome	56386
C11MEH-600	600mm (23-1/2")			56388
C11MEHC-300	300mm (11-3/4")	1/2mm and 32nds one side; mm and 64ths reverse side	Satin Chrome	56387
C11MEHC-600	600mm (23-1/2")			56389
C11MH-150	150mm			56380
C11MH-300	300mm	mm and 1/2mm both sides	Satin Chrome	56382
C11MH-600	600mm			56384
C11MHC-150	150mm			56381
C11MHC-300	300mm	mm and 1/2mm both sides	Satin Chrome	56383
C11MHC-600	600mm			56385







## COMBINATION SQUARES

### C33MEH, MEHC, MH, MHC C435M FORGED AND HARDENED STEEL CAST IRON HEADS

Combination square with square head has the same features as the 11 Series except that the square heads are forged hardened steel with smooth, black enamel finish.

Combination set with square, center and reversible protractor head and blade includes a reversible lock bolt, scribe, spirit level in both square head and protractor head. Cast iron head with black wrinkle finish.

#### FEATURES

- Direct reading double 180° protractor scale
- Hardened steel, photo-engraved blade
- Cast iron heads with black wrinkle finish

Cat. No.	Size	Graduation	Blade	EDP
C33MEH-300	300mm (11-3/4")	1/2mm and 32nds one side; mm and 64ths reverse side	Satin Chrome	56416
C33MEH-600	600mm (23-1/2")			56418
C33MEHC-300	300mm (11-3/4")	1/2mm and 32nds one side; mm and 64ths reverse side	Satin Chrome	56417
C33MEHC-600	600mm (23-1/2")			56419
C33MH-150	150mm			56410
C33MH-300	300mm	mm and 1/2mm both sides	Satin Chrome	56412
C33MH-600	600mm			56414
C33-MHC-150	150mm			56411
C33MHC-300	300mm	mm and 1/2mm both sides	Satin Chrome	56413
C33MHC-600	600mm			56415

Cat. No.	Size	Graduation	Blade	EDP
C435M-300	300mm	mm and 1/2mm both sides	Satin Chrome	61918





## COMBINATION SQUARES

### C434M SERIES

FORGED AND HARDENED STEEL AND CAST IRON HEADS

Combination set with square, center and reversible protractor head and blade. The square heads and center heads are forged, hardened.

#### FEATURES

- Reversible lock bolts, scriber, spirit level in both square head and protractor head
- Direct reading double 180° protractor scale
- Hardened steel, photo-engraved blade
- Forged and hardened steel square and center heads
- Cast iron protractor head
- Smooth black enamel finish

### 9M SERIES

CAST IRON HEADS. USES NO. 11 SERIES HEADS

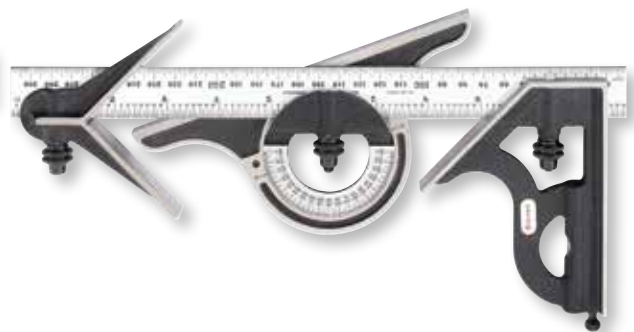
This combination set with square includes a reversible lock bolt, scriber, spirit level in both square head and protractor head, direct reading double 180° protractor scale, and hardened steel, photo-engraved blade. Cast iron heads with black wrinkle finish. Also available with satin chrome blade and protractor head.

#### FEATURES

- Reversible lock bolts, scriber, spirit level in both square head and protractor head
- Direct reading double 180° protractor scale
- Non-reversible protractor head
- Hardened steel, photo-engraved blade
- Cast iron heads with black wrinkle finish

Cat. No.	Size	Graduation	Blade	EDP
C434M-300	300mm	mm and 1/2mm both sides	Satin Chrome	56420
C434M-600	600mm			56421
C434ME-300	300mm (11-3/4")	1/2mm and 32nds one side; mm and 64ths reverse side	Satin Chrome	56422
C343ME-600	600mm (23-1/2")			56423

Cat. No.	Size	Graduation	Blade	EDP
9M-300	300mm	mm and 1/2mm both sides	Regular	56253
9M-600	600mm			56254
9ME-300	300mm (11-3/4")	1/2mm and 32nds one side; mm and 64ths reverse side	Regular	50047
9ME-600	600mm (23-1/2")			50048





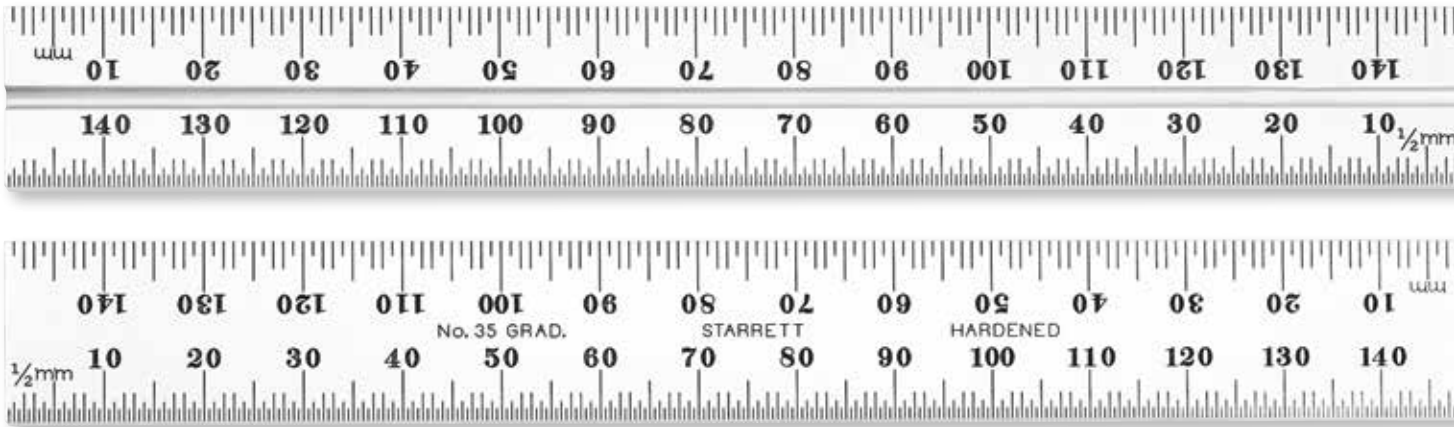
# COMBINATION SQUARES

## BLADES FOR COMBINATION SQUARES, SETS AND BEVEL PROTRACTORS

### MILLIMETER, AND INCH/MILLIMETER

The blades listed below fit any head according to the sizes noted in the charts on all combination squares, combination sets and bevel protractors. The 12", 18", 24" and 36" and 300mm and 600mm sizes are interchangeable.

Cat. No.	Size	Approx. Width x Thickness	Graduation	Finish	EDP
CB150-35	150mm	19mm x 2mm	35 - mm and 1/2mm both sides		55988
CB300-35	300mm				55989
CB300-36	300mm (11-3/4")	25mm x 2.4mm	36 - mm and 32nds one side; mm and 64ths reverse side	Satin Chrome	55993
CB600-35	600mm		35 - mm and 1/2mm both sides		55990
CB600-36	600mm (23-1/2")		36 - mm and 32nds one side; mm and 64ths reverse side		55994



# CALIPERS, DIVIDERS AND TRAMMELS

## 92 CARPENTERS' DIVIDERS

These dividers combine rigidity, light weight and easy handling. The legs are forged steel, well-shaped, properly tempered and highly polished. The adjustable point may be quickly removed and a common pencil inserted in its place.

### FEATURES

- Sturdy construction of the joint eliminates side deflection of the legs
- Quadrant adjusting nut allows fine-adjustments for close measurements
- Check nut located between the legs locks the legs in place

Cat. No.	Size*		EDP
	Inch	mm	
92-6	6"	150mm	50423
92-9	9"	225mm	50426

\* Actual capacity is one-third greater than the listed size.



## 85 EXTENSION DIVIDERS WITH CALIPER LEGS

Exceptionally rigid although light in weight and easy to handle. The head is made of forged steel.

### FEATURES

- The hardened points are bent slightly so they can be rotated and brought closer together if desired
- Sturdy construction of the joint eliminates side deflection of the legs
- Quadrant adjusting nut allows fine-adjustments for close measurements

With Divider Legs Only		Complete with Divider Legs, Inside and Outside Legs		Size*	
Cat. No.	EDP	Cat. No.	EDP	Inch	mm
85A	50398	85C	50400	7"	175mm
85B	50399	85D	50401	9"	225mm
85E	50402	85F	50403	12"	300mm

\* Actual capacity is one-third greater than the listed size.





# CALIPERS, DIVIDERS AND TRAMMELS

## 50

### IMPROVED TRAMMEL HEADS

These tools are used to measure the distance between points that are too great to be reached with dividers. The heads are die cast with black wrinkle finish and have hardened, forged steel divider points. The points screw into the heads, and the pencil socket accompanying each set of trammel heads can be used in place of either point.

#### FEATURES

- The points screw into the heads
- The heads are die cast with black wrinkle finish and have hardened, forged steel divider points
- Has an adjustable point

Cat. No.	Point Size		Description	EDP
	Inch	mm		
50A	3" 2-1/2"	75mm 63mm	(Adjustable) Includes 2 Heads, 2 Points, Pencil Socket	50268
50B	3"	75mm	Includes 2 Heads, 2 Points, Pencil Socket	50269



# PRECISION STEEL RULES

## C330, C331, C334, C335, C635 STEEL RULES WITH MILLIMETER AND INCH GRADUATIONS

All rules are full millimeter lengths, except where noted. Additional sizes and variations available on special order.

### FEATURES

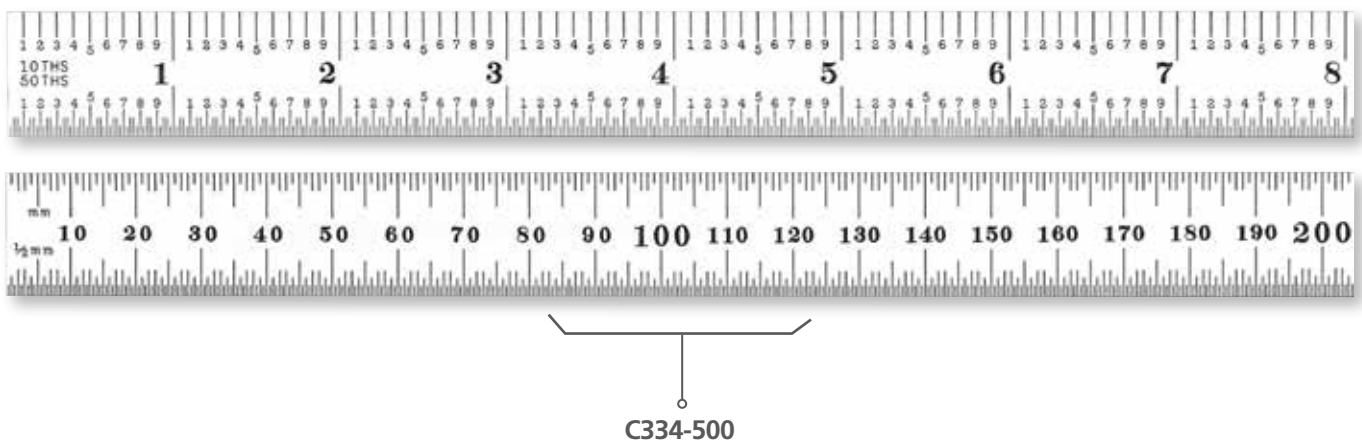
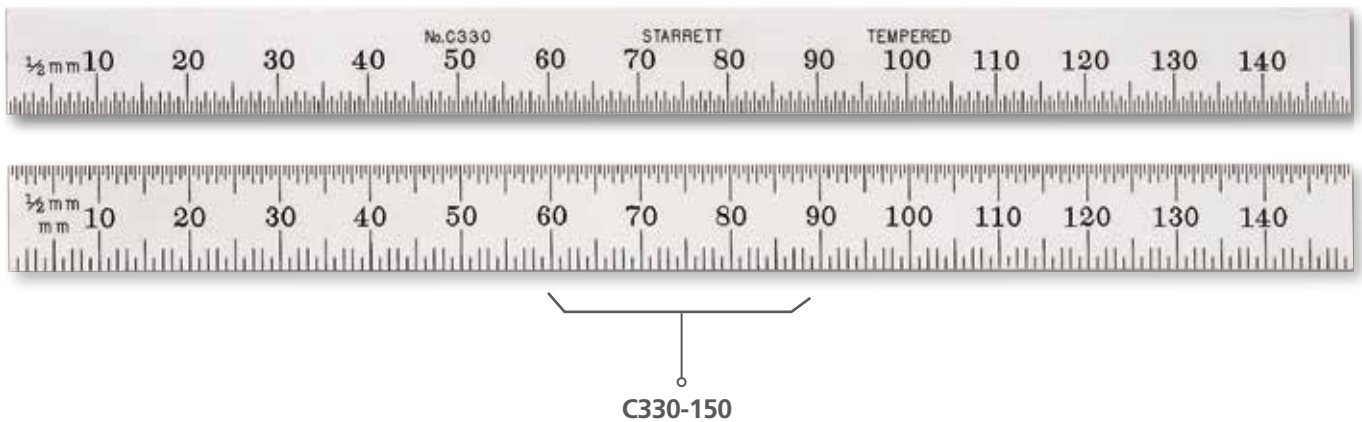
- Full-Flexible
- Semi-Flexible
- Spring-tempered
- Heavy Spring-Tempered

### CATALOG NUMBER LEGEND

Prefixes	
C	Satin Chrome Finish
Suffixes	
E	End Graduations
N	Narrow-Type Rule
S	Semi-Flexible

Cat. No.	Length	Width x Thickness	Graduation	EDP
C330-150*	150mm	12.7 x 0.4mm	30 - 1/2mm one side; mm and 1/2mm on reverse	51329
C330-300*	300mm			51330
C331-150	150mm	12 x 0.4mm	31 - 32nds and 64ths on one side mm and 1/2mm on reverse; All four edges graduated from same end	51331
C331-300	300mm	12.7 x 0.4mm		51332
C334-150	5-3/4"	12 x 0.4mm	34 - mm and 1/2mm on one side; Quick-Reading 10ths (.10) and Aircraft Quick-Reading 50ths (.02) on reverse	56262
C334-300	11-3/4"	12.7 x 0.4mm		56696
C334-500	500mm (19-1/2")	19 x 0.5mm		56697
C335S-300	300mm	25.4 x 0.5mm	35 - mm and 1/2mm both sides	56048
C635-1000	1000mm	32 x 1.2mm		52633

\* Includes rules with single row of millimeter figures (all rules under 25mm width). Rules without asterisk have double row of millimeter figures, and each represents the bottom edge reading left to right (rules 25mm and wider).





# PRECISION STEEL RULES

## C635, C636, C637

### STEEL RULES WITH MILLIMETER AND INCH GRADUATIONS

All rules are full millimeter lengths, except where noted. Additional sizes and variations available on special order.

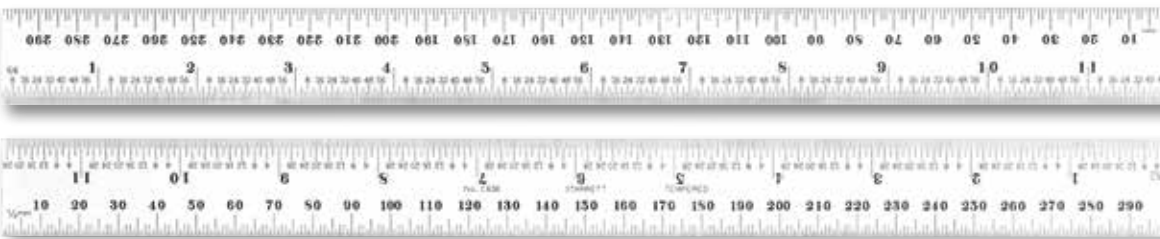
#### FEATURES

- Full-Flexible
- Semi-Flexible
- Spring-tempered
- Heavy Spring-Tempered

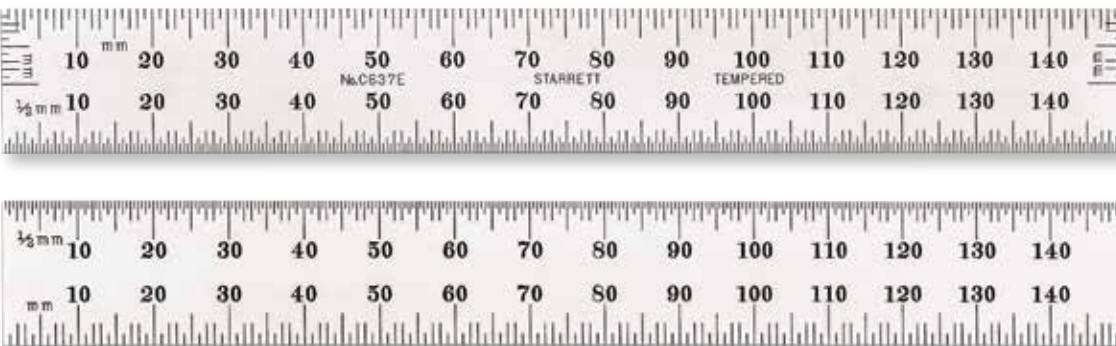
#### CATALOG NUMBER LEGEND

Prefixes	
C	Satin Chrome Finish
Suffixes	
E	End Graduations
N	Narrow-Type Rule
S	Semi-Flexible
EM	English/Metric
ME	Metric/English

Cat. No.	Length	Width x Thickness	Graduation	Feature Remarks	EDP
C635-150	150mm	19 x 1.2mm			52630
C635-1800MM	1800mm	38 x 2.5mm			64299
C635-300	300mm	25.4 x 1.2mm		35 - mm and 1/2mm both sides	52631
C635-500	500mm	29 x 1.2mm			52632
C365E-150	150mm	19 x 1.2mm		35E - mm and 1/2mm both sides; mm on both ends one side	55968
C636-1000	1000mm (39-1/4")	32 x 1.2mm			52637
C636-300	300mm (11-3/4")	25.4 x 1.2mm			52635
C636-500	500mm (19-1/2")	29 x 1.2mm		36 - 32nds and 1/2mm on one side; 64ths and mm on reverse	52636
C636EM-6	150mm (6")	19 x 1.2mm		Full 6" with millimeter reading to 150mm; plus a blank end	57064
C636ME-150	150mm (5-3/4")				52634
C637-150				37 - mm and 1/2mm both sides	56049
C637E-150	150mm	19 x 1.2mm		37E - mm and 1/2mm both sides; mm on both ends one side	55969



C636-300



C637E-150

# PRECISION STRAIGHT EDGES

## 380 STEEL, NOT BEVELED, NOT GRADUATED

Steel straight edge is precision ground and finished to rigid Starrett standards. It is unexcelled for drawing or scribing straight lines and checking surfaces. 36" and longer are marked with arrows at two suspension points. If the straight edges are used on edge, they should be suspended at these two points to minimize deflection. Most jobs involve the use of straight edges.

### FEATURES

- Precision ground and nicely finished to rigid Starrett standards
- Unexcelled for drawing or scribing straight lines and checking surface for straightness
- Not beveled or graduated
- Thickness and design permit shape retention and accuracy while portable and easy-to-handle

Cat. No.	Length	Width x Thickness	EDP
380-24	24" - 600mm	1-13/32" x 11/64" - 36 x 4.4mm	51440
380-36	36" - 900mm	2-13/32" x 7/32" - 60 x 5.5mm	51441





# SQUARES

## 13M

### DOUBLE SQUARES WITH HARDENED BLADES

Popular with machinists, toolmakers, and patternmakers. The sliding blade is adjustable, making it practical for a wide variety of uses. The faces of the head are ground square.

#### FEATURES

- With graduated and bevel blades

Cat. No.	Size	EDP
13MA	100mm	56278



# STAIR GAGES

## 111 LONG STAIR ATTACHMENTS

Attachments clamp to a framing or rafter square. Forms a handy gage for laying out stair stringers, hip, valley and many other unusual cuts.

### FEATURES

- Furnished in left and right pairs
- Nickel plated cast iron
- Ends are machined square for true work contact
- Brass clamp screw to prevent marring the blade

## 470 SHORT STAIR ATTACHMENTS

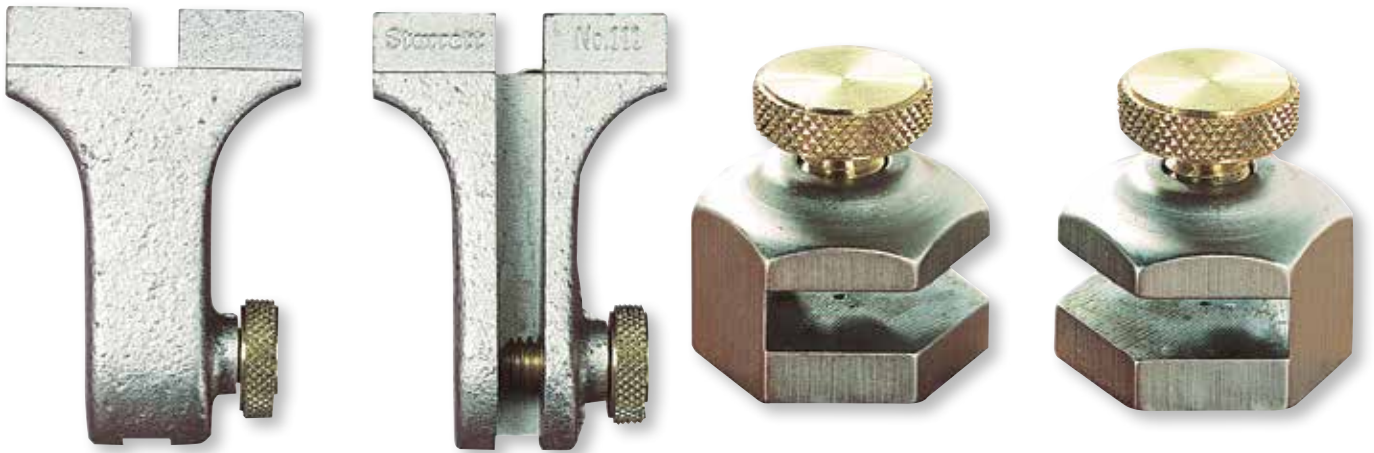
Attachments clamp to a framing or rafter square. Forms a handy gage for laying out stair stringers, hip, valley, and many other unusual cuts. Fixtures have a smaller area that contacts the square blade.

### FEATURES

- Furnished in left and right pairs
- Nickel plated hexagonal steel
- Brass clamp screw to prevent marring the blade
- Slotted to keep two opposite hexagonal faces at right angles to the edge of the square

Cat. No.	Length	Slot Width	EDP
111	1-7/8"	3/16"	50476

Cat. No.	Length	Slot Width	EDP
470	3/4"	3/16"	52482







**PLUMB BOBS**

# PLUMB BOBS

## SOLID STEEL PB SERIES

PB solid steel plumb bob features a rugged, nickel-plated steel construction for durability.



### FEATURES

- One-piece hexagonal body design will not roll
- Head has easy-thread feature for fast string insertion (String not included)

Cat. No.	Weight		EDP
	Oz.	Grams	
PB-6	6 oz.	170g	36112
PB-8	8 oz.	230g	36113
PB-12	12 oz.	340g	36114
PB-16	16 oz.	450g	36115

## SOLID BRASS PBB

Polished solid brass plumb bob with replaceable, hardened steel points.



### FEATURES

- Reliable accuracy and corrosion resistance
- Easy, self-centering line assembly with screw cap design
- Points easily replaced if worn or broken
- 10' of nylon cord included

Cat. No.	Weight		EDP
	Oz.	Grams	
PBB-8	8 oz.	230g	36270
PBB-16	16 oz.	450g	36271

## STEEL 177

Solid steel construction provides a low center of gravity and great weight in proportion to their short length and small diameter.



### FEATURES

- Hexagonal shaped head prevents rolling
- Hardened and ground removable point for greater accuracy, longer life
- Sure grip knurling on polished steel body for easy handling
- Furnished with a strong, braided 8' nylon line that can be conveniently wound around a recess at the top of the bob

Cat. No.	Weight		EDP
	Oz.	Grams	
177A	2-3/4 oz.	78g	50660
177B	5 oz.	140g	50661
177C	8-1/2 oz.	240g	50662
177D	14-1/2 oz.	400g	50663







PROTRACTORS



# COMBINATION PROTRACTOR

## 505A-12 AND 505A-7 ALUMINUM MITER

The popular ProSite 505 protractor family consists of two 12" combination protractors, a 12" miter protractor and two 7" miter protractors. The combination protractors take the guesswork out of these functions: miter cuts, single cuts, compound miter cuts, included conversion table, protractor and roof pitches. While the miter protractors are ideal for carpenters, plumbers and all building trades that require the measuring and transferring of angles.

### FEATURES

- ProSite protractors take error-prone calculations out of the process of miter cuts
- This easy-to-use tool has two laser engraved scales
- Miter cut scale transfers readings directly to the miter saw for miter joints
- Single cut scale transfers readings directly to the miter saw
- Made from durable 1/4" aluminum with Teflon® "O" ring for smooth and precise operation
- Protractor saves time and reduces waste

Cat. No.	Description	EDP
505A-12	12" Miter Protractor	67752
505A-7	7" Miter Protractor	11677



505A-7



505A-12

## CP505A-12 ALUMINUM COMBINATION

A 12" aluminum combination protractor, that is part of the popular ProSite 505 protractor family. This protractor is a 5-in-1 functional tool that performs: miter cut, single cut, compound cut conversion table, protractor, and roof pitches.

### FEATURES

- 5-in-1 Protractor performs functions of the other ProSite miter protractors and more
- Miter and single cut readings can be transferred directly to the miter saw
- The compound conversion table is specifically for the compound miter saw and can be used for cutting crown molding
- Easily finds roof pitches

Cat. No.	Description	EDP
CP505A-12	12" Combination Protractor	12256





# COMBINATION PROTRACTOR

## 505P-7 PLASTIC MITER

Our 7" hardened plastic miter protractor offers the same functionality as the 505A-7 protractor.

Cat. No.	Description	EDP
505P-7	7" Plastic Miter Protractor	12255



## CP505E-12 ALUMINUM ELECTRONIC COMBINATION FEATURES

- Provides direct readings for setting a saw for miter and straight cuts
- Full protractor function
- Choice of output and a full 360° swing, horizontal and vertical levels and a step by step guide including all calculations for crown molding work
- Has a knob to lock in measurements



Cat. No.	Description	EDP
CP505E-12	12" Electronic Combination Protractor	20939

## 970 PROTRACTOR HOLSTER

Cat. No.	Description	EDP
970	Leather Holster for CP505A-12 & 505A-12	68838



# PROTRACTORS

## C19 STEEL

0-180°

This steel protractor is a highly useful and accurate tool for setting levels, transferring angles, small squaring tasks, checking cutter clearances within certain limits, and the direct reading of angles and supplementary angles.

### FEATURES

- The back of the tool is flat for ease of use
- The blade can be locked firmly at any angle by the lock nut
- Double graduations from 0-180° in opposite directions permitting the direct reading of angles and supplementary angles
- 6" satin chrome blade for ease of reading and resistance to rust
- Round head

Cat. No.	Blade Length	Range	EDP
C19	6"	0-180°	50127

## C183 STEEL

0-180°

The same features as the C19, except that it has a rectangular head, thus providing four convenient working edges.

Cat. No.	Blade Length	Range	EDP
C183	6"	0-180°	50672

## C182 STEEL

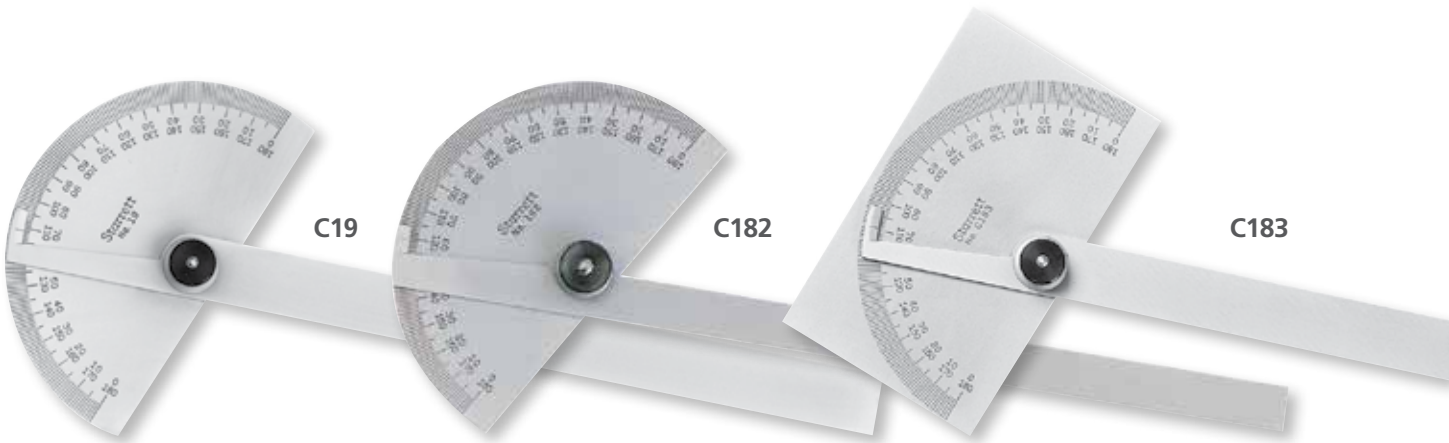
0-180°

Weighs 3 ounces and features a satin chrome finish. Furnished with one needle point and one cone point.

### FEATURES

- Will allow the drawing of any number of radial lines at any angle through a common center
- The fulcrum point can be drawn back into the hub and frictionally held in a safe position
- Satin chrome finish for ease of reading and resistance to rust

Cat. No.	Blade Length	Range	EDP
C182	6"	0-180°	64361





## BEVEL

### 47 UNIVERSAL 6" / 150MM

This has been improved with both offset and straight slots in the blade, with straight slots in the stock, allowing a wide variety of adjustment and angle settings that are impossible to obtain with many ordinary bevels.

Cat. No.	Blade Length	EDP
47	6" (150mm)	50266





# PRECISION SHOP TOOLS

**Starrett**<sup>®</sup>

**Precision Shop Tools Catalog**

Catalog 74E

PDF 10/13

The L.S. Starrett Company

Specifications subject to change.

**The L.S. Starrett Company**

121 Crescent Street

Athol, MA 01331

Tel: 978-249-3551

[starrett.com](http://starrett.com)