



359 Series Precision Universal Bevel Vernier Protractors with fine adjustment

Graduations in degrees thru 360°

These tools are designed for precision measuring and for laying out angles. The protractor is one of the most valuable and useful tools for the kit of every good toolmaker, inspector or machinist.

Readability Features

- Satin chrome finish on all reading surfaces – eliminates glare and resists rust
- Sharp, machine-divided graduations

Ease-of-Handling Features

- Available with hardened 7" (175mm) or 12" (300mm) blades which can be rotated to the desired angle and adjusted to the desired length
- Both the dial and the blade can be locked independently
- An acute angle attachment is available
- Flush surfaces on the base permits use on height gages
- One side of the tool is flat so it can be laid on paper or on the work

Accuracy Features

- Machine-divided graduations read to 5 minutes (1/12 of a degree) and accuracy is finer than can be read
- The most convenient, ultra-sensitive fine adjustment for precision setting



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Blade Size	Graduation	In Case Catalog No.	EDP
7"	5 min. or 1/12 degree	C359BZ	51394
12"		C359DZ	51396
7" & 12"		C359FZ	51398
		C359FZ W/SLC*	66929

Accessories for 359 Precision Universal Bevel Vernier Protractors

Description	Catalog No.	EDP
7" Blade Only	PT04780	70538
12" Blade Only	PT04781	70539
Acute Angle Attachment Only	PT99329	51392

* Includes redemption card for Standard Letter of Certification (SLC).

How to Read a Vernier on Universal Bevel Protractors

Starrett Universal Bevel Protractors with Vernier can be accurately read to 5 minutes (5') or 1/12 of a degree. The dial of the protractor is graduated both to the right and left of zero up to 90 degrees. The Vernier scale is also graduated to the right and left of zero up to 60 minutes (60'), each of the 12 Vernier graduations representing 5 minutes. Any angle can be measured, and remember that the Vernier reading must be read in the same direction from zero as the protractor, either left or right.

Since 12 graduations on the Vernier scale occupy the same space as 23 graduations or 23 degrees on the protractor dial, each Vernier graduation is 1/12 degree or 5 minutes shorter than 2 graduations on the protractor dial. Therefore, if the zero graduation on the Vernier scale coincides with a graduation on the protractor dial, the reading is in exact degrees, but if some other graduation on the Vernier scale coincides with a protractor graduation, the number of Vernier graduations multiplied by 5 minutes must be added to the number of degrees read between the zeros on the protractor dial and Vernier scale.

Example:

★ In the illustration below, the zero on the Vernier scale lies between the "50" and "51" on the protractor dial to the left of the zero, indicating 50 whole degrees. Also reading to the left, the 4th line on the Vernier scale coincides with a graduation on the protractor dial as indicated by the asterisks (*) and therefore 4 x 5 minutes or 20 minutes are to be added to the number of degrees. The reading of the protractor therefore, is 50 degrees and 20 minutes (50° 20').

