



When Quality And Precision Matter...



**High Performance
Precision Tools
FOR MICROSCOPY**
INSPECTION & ASSEMBLY
In Industrial, Scientific
& Research Applications

...Look at What's Inside

How stereo microscopes are built affects how well they work and for how long





Seeing Is Believing

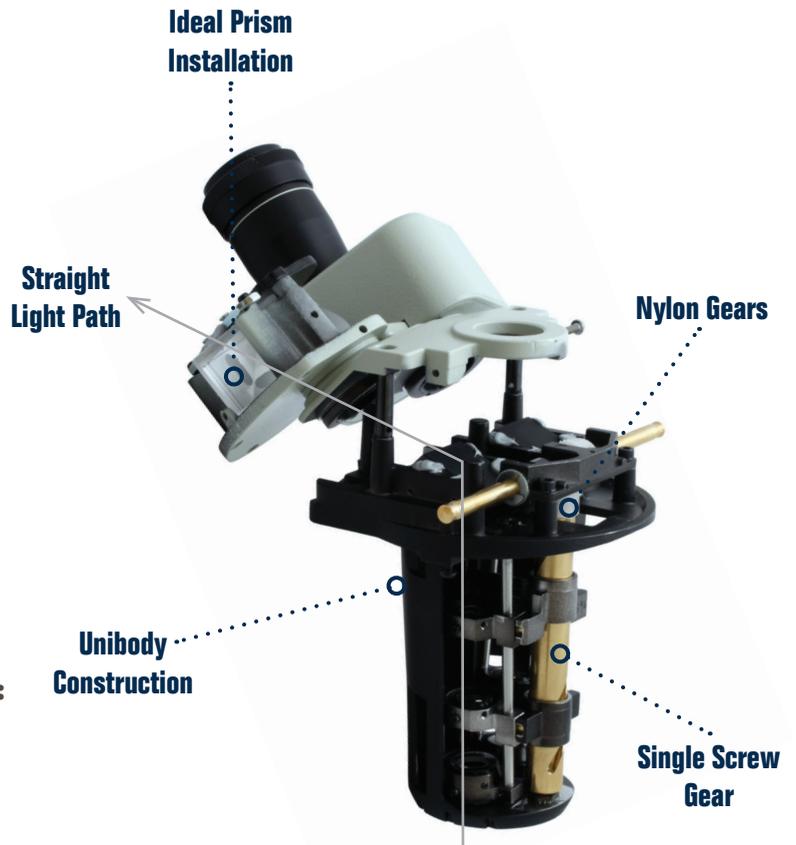
Binocular and trinocular stereo microscope brands look similar on a website, at a trade event or in a video. They may even perform alike, more or less, during a presentation or tryout.

Examining the parts and assembly methods, however, reveals significant differences that are critical.

We did what you wouldn't try: Aven took apart comparable models for a reverse engineering reality check on what distinguishes our professional Aven-Carton brand scopes engineered and designed in Japan since 1951, from lower-cost models assembled elsewhere in Asia.

Once you see the differences, consider the impact on:

- Image quality
- Reliability (maintenance and repairs)
- Lifespan in active daily use



Unibody Construction

Aven Advantage

Single lead screw assembly built on a single frame assures the two objective lenses sit on a common axis. Prisms align correctly and always will.



Cut-Rate Disadvantage



Stock parts from various plants often are assembled in three or more pieces, risking misalignment as lenses and prisms move independently in separate barrels.

Side-by-side photos show you get what you pay for.



Single Screw Gear Objective Lens Movement

Aven Advantage

By traveling on a single-screw mechanism, the objective lens stays aligned for the life of the microscope. Rust-resistant brass screws are used.



Cut-Rate Disadvantage

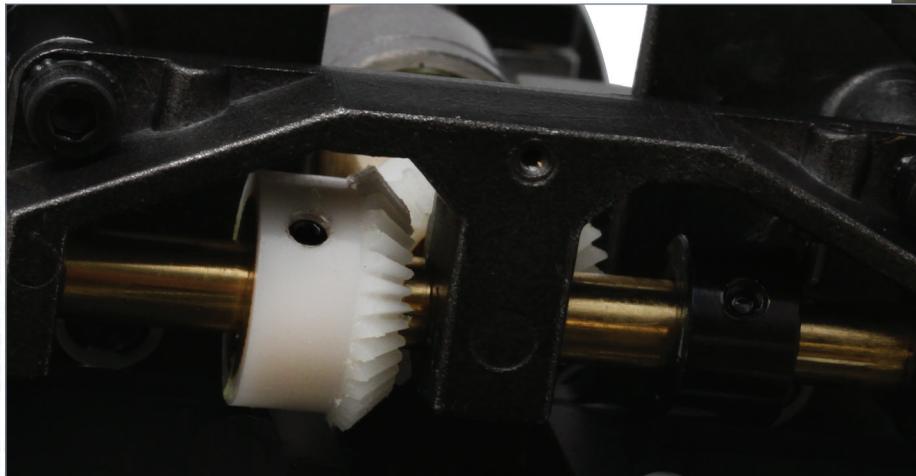


Dual lens gear assemblies and loose manufacturing tolerances let the objective lens become misaligned. Result: "double vision," which can't be fixed cost-effectively. Also, steel assembly screws can rust.

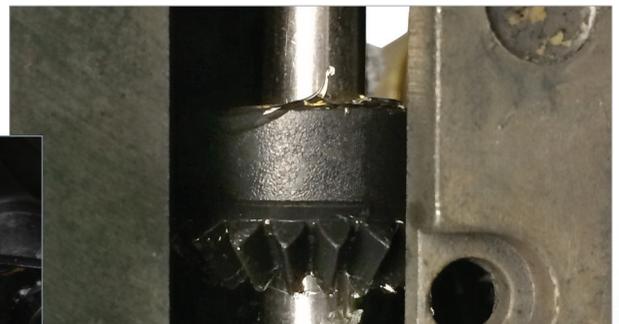
Greaseless Nylon Gears

Aven Advantage

Industrial-strength gears with tight tolerances operate smoothly with virtually no grease or oil. This is a best-practice standard for clean rooms and a non-slip benefit for all users.



Cut-Rate Disadvantage



Lower-grade material (such as plastic) and relaxed fitting tolerances require grease for smooth movement initially. As the lubricant degrades, so does gear alignment. Slippage occurs when focusing the objective lens.

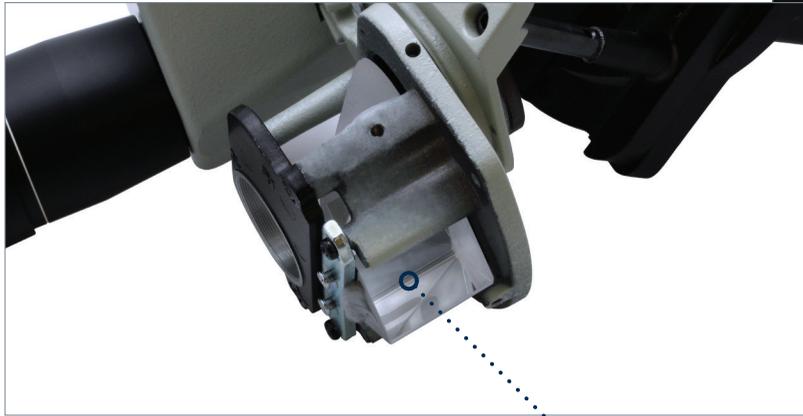
A "bargain" could be next year's disposable microscope.



Ideal Prism Installation

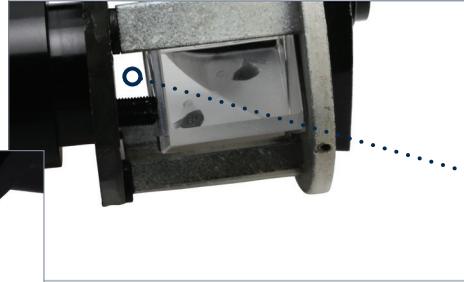
Aven Advantage

Dual prisms are made specifically for Aven-Carton brand scopes and fit snugly into each housing without springs.



Precise Fit

Cut-Rate Disadvantage



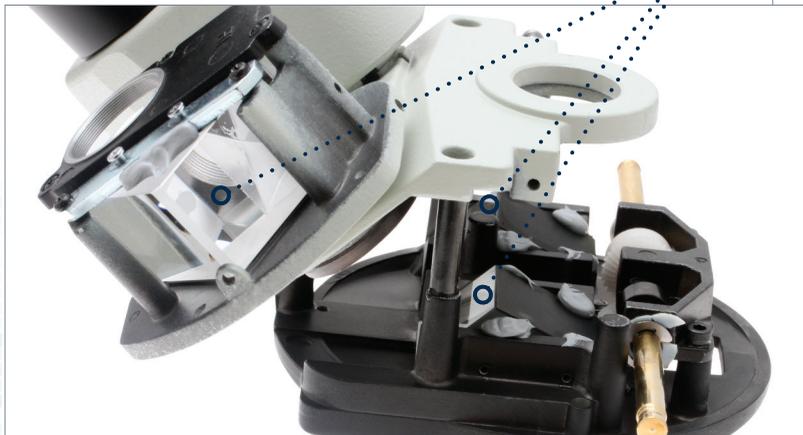
Imprecise Fit

Standard stock prisms often fit imprecisely and must be held in place by springs and screws. They loosen, leaving gaps for dirt and dust contamination.

Straight Light Path

Aven Advantage

Aven's dual prism design features a direct light path with one bend through its dual prisms. This prevents distortion from multiple light bends.



Prisms

Cut-Rate Disadvantage



Mirrors

Prism

To cut costs, some manufacturers use lower-quality mirrors, rather than a second set of glass prisms, to bring the image up to the eyepieces. To achieve this, the light must be bent three or more times, which results in higher distortion.

Impact

Now you see clear evidence of the Aven advantage when selecting stereo or stereo zoom microscopes for electronics and medical device fabrication, other precision assembly, QC inspection, R&D and laboratory processes.

Long-range value beats short-term "savings"