

PRECISION DATUM BAR & MODULAR SUPPORT SYSTEM



Reference Assembly for Length-Change / Shrinkage Measurement

A rigid laboratory reference assembly designed to provide a stable and repeatable dimensional reference for length-change measurement systems. The datum bars provide a controlled reference length, while the dedicated support stands position the bars securely and help minimize movement during measurement or calibration. The modular construction allows the system to be assembled, disassembled, transported and reconfigured to suit the laboratory's measurement arrangement.

• TECHNICAL SPECIFICATIONS

Product Name	Precision Datum Bar & Modular Support System	Product Type	Laboratory Reference / Datum Assembly
Primary Function	Stable Dimensional Reference	Typical Application	Length-Change / Shrinkage Measurement
Main Reference Components	2 × Precision Datum Bars	Modular Components	System Rods
Support System	Dedicated Support Stands	Datum Bar Construction	Rigid Cylindrical Precision Member
End Construction	Machined Collar / Socket Type	Locking System	Radial Set-Screw Clamping
Support Type	Dedicated Floor / Table Support	Base	Circular Machined Base Plates
Configuration	Modular / Customizable	Surface	Precision Machined / Protective Finish
Material	Steel, Stainless Steel or Low-Expansion Material (TBS)	Reference Accuracy	To Be Established by Calibration
Dimensional Tolerance	To Be Specified by Engineering Drawing	Calibration	Recommended
Application Environment	Controlled Laboratory	Use	Reference, Verification and Comparator Setup

• COMPONENT IDENTIFICATION

- **Precision Datum Bar – Unit 1:** Rigid cylindrical reference member with machined end collars, central mounting socket, radial locking screws and provision for modular assembly.
- **Precision Datum Bar – Unit 2:** A second datum bar supplied alongside Unit 1, allowing independent or parallel reference positions and comparative dimensional checks. Exact function of each unit to be defined on the engineering drawing.
- **Modular System Rods:** Short cylindrical connecting/extension members used to link components, extend the reference arrangement and adapt the system to a particular laboratory setup. Connection geometry to be confirmed before manufacturing.
- **Dedicated Support Stands:** Triangular assemblies with two inclined legs, circular base plates, a central cylindrical receiving socket and a locking screw, providing stable three-point support for the datum bars above the laboratory surface.

• PRODUCT SCOPE

- **Standard:** Precision Datum Bar System — 2 × Precision Datum Bars
- Modular system rods
- Dedicated support stands
- Locking screws and assembly hardware
- **Optional:** Calibration certificate with traceable dimensional calibration, protective storage case, spare modular rods/locking screws, additional support stands, stainless-steel construction, low-expansion reference material, identification/serial-number engraving

• MATERIAL & CALIBRATION NOTES

- **Option 1:** Mild Steel — robust, economical, easy to machine; requires corrosion protection.
- **Option 2:** Stainless Steel — corrosion resistant, durable, good dimensional stability, low maintenance.
- **Option 3:** Low-Thermal-Expansion Material — recommended where the assembly serves as a metrological reference rather than a mechanical support only.
- The reference dimension of each datum bar should be established through calibration (nominal length, measured length, uncertainty, temperature, equipment, date and traceability) rather than assumed from machining alone. Each bar should carry a permanent identification (e.g. DB-001, DB-002) matching its calibration certificate.

Important: This specification is based on a conceptual/product-rendered assembly rather than a dimensioned engineering drawing. Bar length, diameter, stand height, rod diameter, reference accuracy, dimensional tolerance and weight are not yet confirmed and should be finalized and verified with the manufacturer—and established by calibration where applicable—before procurement, manufacture or use as a metrology reference.
