

Optical Bench Parts

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Basic idea for the system is to have a Standard Base of specific size (20mm W x 40mm L x 10mm H), with provision for 3 N52 magnets imbedded in the base, a standard opening in the top for mounting specific components with a locking screw to hold the component in place and a side groove that allows the use of an alignment rod/angle/square to align multiple bases. In use multiple Standard Bases, with there attached components, are placed on a steel plate at the appropriate locations for the design. The steel plate can be made from a flat Melamine shelf with a galvanized steel sheeting contact cemented to its top providing a flat working magnetic surface.

By design the optical axis is located at 50mm above the surface. Ten mm of this is the Standard Base height. The difference in height between the Standard Base and the optical axis of 40mm is to allow a wide variety of components to be used.

Standard Base

The magnets for the base are N52 10mm in diameter and 2mm thick. The holes have been made slightly deeper so that the base bottom is the height reference. The magnets are super glued into the base. The locking screw is a M3-.05 x 10mm which engages a M3-0.5 nut pressed into the slot in the base top.

The standard opening in the base for component mounting is 14mm x 6mm x 7mm deep. The mating component part should have shoulders such that the mating component does NOT bottom out in the opening rather sits on the top of the Standard Base.

Representative 30mm lens component holder

This is a holder for a 30mm lens and shows how the mating component might work.