Providing The Proper Workbench, Part 2

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Height Adjustability For Worksurfaces And Shelving

As discussed previously [1], height adjustability is a very important ergonomic factor for most any application. Some bench styles have more adjustability than others. The amount of adjustability required by the end user will vary depending upon the job being performed.

The “pedestal” style workbenches are very limited in regards to worksurface and shelf heights. Without replacing components, these benches are, for all practical purposes, considered to be a true fixed-height system. Worksurface height is dictated by the overall height of the drawer pedestals and shelf height is dictated by the height of the shelf supports (risers). This height can’t be changed without changing out the pedestals or the shelf supports. Standard heights for this bench style will be 30 or 36 inches. If height adjustability is not a major factor for your application, then the pedestal style bench is a great choice. Storage capacity and a solid platform are the major strong points for this style.

Both the cantilever style and 4-leg bench frames offer excellent height adjustable features for worksurfaces, shelves, and hang-on accessories, when used with the slotted columns, as discussed previously. In addition to the bench styles listed above, you can also get the Cadillac of adjustable benches by going to the hand-crank or electric linear actuator style, height adjustable benches.

Shelves are available in both a fixed (straight) style and adjustable angled style. When combined with the vertical positioning capability on the slotted columns, you can position a shelf in many different ways. It’s also important that any additional accessories (power bars, bin bars, LCD Monitor Arms, etc.) can also be located where you need them for maximum efficiency.

Worksurface Options

Selecting the correct worksurface for the application is important. An electronics assembly area will usually require a static dissipative laminate, while a heavy industrial assembly application may prefer something more durable like maple or wood composite. Epoxy resin and phenolic worksurfaces are commonly used in labs where chemical exposure or cleanliness is more of an issue. Each and every application should be reviewed carefully to determine what worksurface best fits the situation.

The worksurface material most commonly used in general assembly applications is plastic laminate (Formica, Nevamar, Wilson Art). Available in a variety of colors and patterns, plastic laminates offer reasonable durability, cosmetic appeal, and a surface that is easy to clean and maintain. For electronic assembly environments,

ESD (Electro-Static Dissipative) laminate provides a safe, static-free field for assembling static sensitive components. ESD laminates are only available in a limited color range, but typically that isn't a major concern for most users.

For those really abusive applications, maple and gardwood worksurfaces fit the bill. Often referred to as "Butcher Block", these hardwood worksurfaces can take a real beating, while providing a very solid, flat surface and higher weight capacities than other materials.

Wood Composites are worksurfaces that typically use a hardwood core with a compressed (and sealed) particle board layer on the top and bottom surface. Often referred to as "shop tops," they are a very economical alternative to other materials and are quite durable. A nice, flat surface along with excellent weight capacity, wood composites should certainly be considered an option for many different industrial applications.

Environments that use harsh chemicals or liquids and require a non-porous surface that can be cleaned and sanitized will often choose the epoxy resin. These worksurfaces are actually a poured/casted material, resulting in a very dense, heavy, flat worksurface. The most common applications for the epoxy resin Are biotech and medical laboratories. Available in a limited range of colors, epoxy resin will meet or exceed most lab requirements for chemical resistance.

Phenolic resins are similar to the epoxy resin except the base material is plastic, not epoxy. Phenolics are also commonly found in the lab environment; however they have a slightly lower resistance to some concentrated acids and alkaline. If the chemicals being used are not terribly harsh, phenolics offer a more economical option when compared to epoxy resin. Multiple colors and patterns are available. In addition, phenolics can be cut and machined very similar to wood or plastic, so custom worksurface configurations are much easier to achieve when compared to epoxy resin.

Medical, cleanroom, and food-service applications make up the bulk of the applications for stainless steel worksurfaces. With a few exceptions, the stainless used in the industrial world are commonly constructed by wrapping 304 or 316 stainless over a wood core. The durability factor is high with stainless, so it's not unusual to see it used in heavy industrial assembly applications where large parts are sliding on the worksurface. Although stainless steel is a rather expensive option, it may save you money in the long run by avoiding the need to replace other worksurface materials due to wear, tear or damage from chemical exposure.

Most workbenches and technical furniture manufactures will offer several options to meet ESD grounding requirements for both the workbench and the technician. Worksurfaces can be equipped with ESD Static Dissipative Laminate or ESD rated mats can be used over conventional laminate. Shelving is also available with ESD laminate or ESD mats. Grounding kits are available to connect the technician's wrist straps to the bench, as well as kits to complete the ground circuit for the worksurface, shelves or mats. Common point grounding systems can be added to the benches to allow for a ground point that may be required for other equipment

present in the work area. By utilizing common point grounding systems, the path to ground is assured for everything.

Can I Reconfigure The Bench When Needed?

Most good quality workbenches are very easy to reconfigure, but some are better than others. Take this into consideration when specifying a particular workbench for your facility. Changes in processes or techniques will have a direct effect on the workstation style and layout you select. Modular systems are far easier to reconfigure or change than the older-style, “built-in casework” that is often associated with many laboratories. This is also a consideration if you are working from rented or leased space, as modular workstations can move with you to new space without leaving damaged walls or floors that would require repair before you vacate.

What Do I Need To Budget To Achieve This Functionality?

When trying to establish a budget for your workbenches or lab furniture, consider the long term as well as short term costs. Good quality furniture that is supported by strong, local factory and distributor personnel will always be more cost effective when compared to low end workstations offered by web based vendors with no “boots on the street.” No matter what your requirements will be, it’s important that you have a strong partner that can help walk you through the process and be available to assist you long after the initial purchase has been completed.

Typically, the pedestal style workbenches will carry a larger initial cost when compared to the other styles. This is primarily due to the drawer pedestals that are used to support the worksurface and other accessories. Drawer pedestals will be more costly than small drawers hung from under the worksurface on cantilever and/or 4-leg bench frames. Most of the other accessories are quite similar in cost, regardless of the bench style selected. Overall quality of the bench selected will be the biggest factor. In this industry, good quality carries a higher initial purchase price. Assuming you have selected a vendor with good “after-the-sale” support, you will quickly recover the cost differences between the quality bench versus the “economy” bench.

Taking the time to detail your requirements with a qualified sales representative and reputable workstation manufacturer will pay dividends from day one. A flexible, modular design with common, interchangeable components will allow your facility to grow and change as your business expands and moves toward new markets.

Links:
[1] http://www.impomag.com/articles/2012/09/providing-proper-workbench-part-1