



Ergonomic Instrument Design by BRAND

BrandTech® Scientific offers an array of pipetting instruments that have been designed from first principles for their ergonomic objectives. But what do we mean by "ergonomics"? Ergonomics does not just mean lower force operation. It means a grip design that reduces static strain; that reduces overall instrument weight; that redistributes forces to appropriate muscle groups to reduce fatigue; and that make operation simple and intuitive to minimize training and user error.

Reduction of Static Strain

Repetitive motion disorders are aggravated when the hand and arm are in a constant state of tension. BRAND designs its instruments to minimize static strain. The macro™ pipette controller, for example, virtually eliminates the clenched grip associated with pipette bulbs. The simple lever actuation is not only simple for novices, but also relaxed for prolonged operations. The mechanical Transferpette® pipettes accomplish the same effect with a hook-shaped handle that allows the user to operate the pipette while it suspends from a relaxed hand. Eliminating the effort of a constant grip on a barrel shaped instrument is an important part of a low-strain operation.

Low instrument weight

In days gone by, a heavy instrument was seen as rugged. Now, we realize that it's just...heavy. BRAND is a world-class plastics manufacturer, and uses just the right combination of plastic, metal and borosilicate glass components to create light weight pipettes that remain world-class in precision and accuracy. The low weight of the pipettes and the new accu-jet® pro motorized pipette controller, means that less arm strength is needed during sustained use. The instruments are carefully balanced, as well, to ensure that effort is devoted almost exclusively to pipette control, not to support.

Force redistribution

When substantial or repetitive force must be applied by small, relatively weak muscles, the risk of repetitive motion disorders is accentuated. Conventional pipette

grips aggravate the static strain by requiring actuation by isolated thumb muscles while the thumb is in a position of considerable strain. Merely reducing forces applied by these muscles does not address the root of the problem. Different muscles must be used. The BRAND Transferpette® pipettes, for example, employ a side-mounted pipetting key that not only relaxes the grip, as described above, but also permits the thumb to remain in a near-neutral position and use the muscles of the arm instead of the thumb. Electronic pipette operation further reduces these forces, of course, by replacing mechanical movement with touch actuation. The HandyStep® electronic repeating pipette actually eliminates thumb strain by using an index-finger touch instead of the thumb for actuation.

Simple, intuitive operation

Besides the attention to force reduction and redeployment, BRAND instruments take into account the human factors of simple operation. The accu-jet® pro is an excellent example. Push-button speed control means that the user can continuously vary operating speed just by adjusting pressure on the control button. At the same time, critical operations may call for extra protection for a sample, so the accu-jet® pro add a speed limiter to ensure the momentary inattentiveness does not lead to over-aspiration or excess speed in the dispensing step. Electronic pipettes are also designed with a user-friendly interface (recognized by an OSHA-certified testing lab) that most users find obvious without a manual. This provides the comfort of an electronic instrument without the complexity that is often associated with electronic control.

BRAND's attention to these four design factors, as well as force reduction, results in a line of ergonomically designed pipettes, repeating pipettes and pipettecontrollers that respect the welfare of the users in the prolonged operations typical of a research lab.



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