

New Update of an Old Standard

Nancy Bartels

Machinery's *Handbook 25* by Erik Oberg, Franklin D. Jones, Holbrook L. Horton & Henry H. Ryffel. Robert E. Green, ed., Industrial Press Inc., New York, NY, 1996 ISBN 0-8311-2424-5, \$75.00 (Large Print Version, \$95.00).

By the time a book gets to its twenty-fifth edition, you have to figure someone is doing something right. In the case of *Machinery's Handbook*, the collective work of various authors and editors have made the volume a standard reference in engineering offices, job shops, libraries and on factory floors, and with good reason. The basic formulas, equations, definitions, charts, tables, and diagrams needed to address almost any manufacturing design or engineering problem are incorporated in one squat volume. If an engineer had to choose only one reference manual to be trapped on a desert island with, this might be the one.

Coming out with a new edition of such an old standby is not without its problems. As the editors suggest in their preface, "Reference works . . . cannot carry the same information [in every edition] if they are to justify the claim that new or updated material is always presented." They must be aware of "what subjects have less and what have more usefulness to the majority of users. At the same time, material that is of proven worth must continue to be included . . ."

In an attempt to walk this tightrope, the editors have both added much new material and rethought some earlier editorial decisions. Tables of logarithms and trig functions have been included in this edition after being omitted from earlier ones, and some new material on these subjects has been added. Material on straight-sided splines,

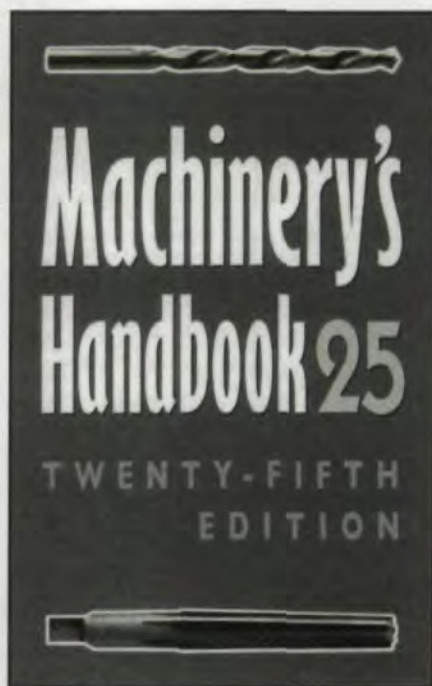
British Whitworth, Fine, Association and other threads has also been restored.

More material also has been added on numerical control and CAD/CAM, and there is updated information on speeds, feeds, depths of cut and tool life for a wide range of materials. Other new or updated sections of the *Handbook* include: methods of joining, including several kinds of welding; principles and applications of lasers for cutting, welding, drilling, heat treatment and marking of metals; EDM; motion control; quality; circles in rectangles; and drill sizes for tapping Acme threads; break-even analysis aimed at assisting investment in plant and equipment; the properties of woods, ceramics, plastics and alloys used in investment casting and powder metallurgy; ISO 9000 standards; CNC tapping and milling machine indexing; and flat belts, O-rings, adhesives and sealants.

The bad news (at least for those of us interested in gear applications) is that part of the price paid for the addition of this material is a significant reduction in the amount of material included on gearing. In the 24th edition of the *Handbook*, 305 pages were devoted to gear subjects. The 25th edition uses only 184. The editors cite the recent development in the use of computer programs in gear design to explain their omissions, and while there is certainly something to be said for that point of view, many gear engineers will miss some of this material.

Perhaps the most significant loss will be in the sections on bevel and worm gearing. Both of these were gutted. All the detailed material on the Gleason bevel gear system is gone, and worm gearing gets only four pages compared to the 23 devoted to it the 24th edition.

Still, there is much to be said for 25th edition. The book is thumb-indexed as a



matter of course, making it much more convenient to use. Another nice editorial touch is the detailed list of the subjects covered printed at the beginning of each section. Finally, the editors have addressed the issue of the print size in a book that attempts to cover the mechanical engineering world in 2,500 pages. A new large print version of the *Handbook* is available for the first time.

As for the issue of the missing gear material, perhaps the best solution until the editors rethink that section for the 26th edition is to keep your older version as a supplement to the 25th. That way you can have the best of both worlds. ☉

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