Record Nr. UNINA9910457989503321 Autore Messler Robert W. <1942-> Titolo Integral mechanical attachment [[electronic resource]]: a resurgence of the oldest method of joining / / Robert W. Messler, Jr Amsterdam;; Boston,: Butterworth-Heinemann, c2006 Pubbl/distr/stampa **ISBN** 1-280-64267-X 9786610642670 0-08-046141-7 Descrizione fisica 1 online resource (427 p.) Disciplina 621.88 Soggetti Joints (Engineering) Adhesive joints Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index.

Nota di contenuto Front cover; Title page; Copyright; Table of contents; Front matter;

> Preface; 1 Introduction to Integral Mechanical Attachment; 1.1 The Oldest Method of Joining: Using Natural Shapes and Forms; 1.2 The Process Evolves, But Not Much!; 1.3 Integral Attachment: A Form of Mechanical Joining; 1.4 Integral Mechanical Attachment vs. Mechanical Fastening and Fasteners: 1.5 Advantages of Integral Mechanical Attachment: 1.6 Potential Shortcomings of Integral Attachment: 1.7 Summary; References; 2 Classification and Characterization of Integral Mechanical Attachments: 2.1 Why Classify Things at All?

2.2 Integral Attachment's Place Within the Taxonomy of Joining Processes and Methods2.3 A Classification Scheme for Integral Attachments Based on Feature Character or Operation; 2.4 An

Alternative Classification Scheme Based on Method of Feature or Joint Creation; 2.6 Forces and Motions for Assembly of Rigid and Elastic Interlocks; 2.7 Plastic Attachment Methods; 2.8 Attachment Methods Versus Materials: Is It That Simple?; 2.9 Summary; References; 3 Rigid Integral Mechanical Attachments or Interlocks; 3.1 How Rigid Interlocks

Work; 3.2 Sub-Classification Schemes for Rigid Interlocks

3.3 Completely Rigid Interlocking Joint Elements or Completely Rigid

Features: 3.6 Embedded Rigid Fasteners: 3.7 Rigid Couplings and Connectors; 3.8 Rigid Locating Features (or Locators) for Elastic Snap-Fit Assembly; 3.9 Joint and Attachment Feature Permanency; 3.10 Summary; References; 4 Elastic Integral Mechanical Attachments or Interlocks; 4.1 How Elastic Interlocks Work; 4.2 Sub-Classification of Elastic Interlocks; 4.3 Elastic Integral Snap-Fits Used in Assembly of Plastic Parts; 4.4 Design Analysis for Snap-Fits 4.5 Combining Assembly Motions for Snap-Fit Assembly Security4.6 Snap-Fit Feature Enhancements; 4.7 Hook-and-Loop Attachments; 4.8 Other Elastic Attachment Methods; References; 5 Plastic (Formed-In) Integral Mechanical Attachments or Interlocks; 5.1 How Plastic (Formed-In) Interlocks Work; 5.2 Sub-Classification of Plastic (Formed-In) Interlocks; 5.3 Setting and Staking; 5.4 Metal Stitching and Metal Clinching; 5.6 Crimping and Hemming; 5.7 Thermal Staking; 5.9 Summary; References; 6 Integral Mechanical Attachment Classification Revisited

Joints 3.4 Integral Rigid Locking Features; 3.5 Integral Rigid Attachment

6.1 Comparison of Methods: Relative Advantages and Disadvantages6.2 Classification of Integral Mechanical Attachment Methods; 6.3 Correlations Between Joint Materials and Attachment Methods; 6.4 Summary; 7 Metal Attachment Schemes and Attachments; 7.1 Properties of Metals That Facilitate Integral Mechanical Attachment; 7.2 Sheet-Metal Attachment Schemes and Attachments; 7.3 Casting Attachment Schemes and Attachments; 7.4 Extrusion Attachment Schemes and Attachments; 7.5 Forging Attachment Schemes and Attachments; 7.6 Machined Attachments; 7.7 Summary; References; Bibliography

8 Polymer Attachment Schemes and Attachments

## Sommario/riassunto

Integral Mechanical Attachment, highlights on one of the world's oldest technologies and makes it new again. Think of buttons and toggles updated to innovative snaps, hooks, and interlocking industrial parts. Mechanical fasteners have been around as long as mankind, but manufacturers of late have been re-discovering their quick, efficient and fail proof advantages when using them as interlocking individual components as compared with such traditional means of joining materials like welding, soldering, gluing and using nuts bolts, rivets and other similar devices. For many years, it