PACKAGING BASICS

PACKAGING FUNCTIONS

The 4 Functions of Packaging – *Containment, Identity, Protection & Utility*

The basic role of any package is to carry and identify the product within. However, other necessary functions, which often add value to the product, are features that allow for easy usage of the product, protection of the product from outside elements, protection of the consumer from the product (hazardous materials), enhanced identity and communication, and re-use of the product/package. As designers and manufacturers of packaging, it is our responsibility to consider all of these functions and to develop optimal packaging solutions; in other words, we need to create packages which have a proper balance of these four functions at an economic cost.

PACKAGING LEVELS

The 4 Levels of Packaging – *Primary, Secondary, Tertiary & Quaternary*

The primary package always comes in direct contact with the product. A secondary package component is often a primary package form that is use to bundle product and/or to assist with display or distribution. Tertiary and quaternary package components are used for shipping and distribution. A corrugated shipper is a common tertiary package, while a group of shipping containers stretch wrapped on a pallet represents a quaternary package.

PACKAGING MATERIALS & FORMS

The 4 Fundamental Materials – *Glass, Metal, Petrochemical & Wood*

GLASS

- BOTTLE
- JAR

METAL

- CAN
- CLOSURE, CAP

PETROCHEMICAL (known as polymers or plastics)
Tooling costs are reasonable ($200 - $1500) for die-cutting, more expensive ($2000 - $10,000) for forming, and quite expensive ($50,000 - $100,000) for molding.

- FORM (blister pack, thermoform, vacuum-form)
- MOLD (injection-molded rigid plastic bottles and tubes)
- ADHESIVE (glue, tape, tack adhesive)
- BAG, POUCH (sealed plastic film)
- CUSHION (bubble-wrap, peanuts, expanded foam)
- FILM (shrink film, stretch film)
- SHEET (poly box, tote, folio)

WOOD (or wood derivative)
Tooling costs are generally reasonable ($200 - $1500) for die-cutting.

- SET-UP (turned-edge, casebound)
- PAPERBOARD (folding carton, folder)
- CORRUGATED (shipping case, display)
- PALLET, CRATE, BOX (*solid wood* - generally nailed, stapled or glued)

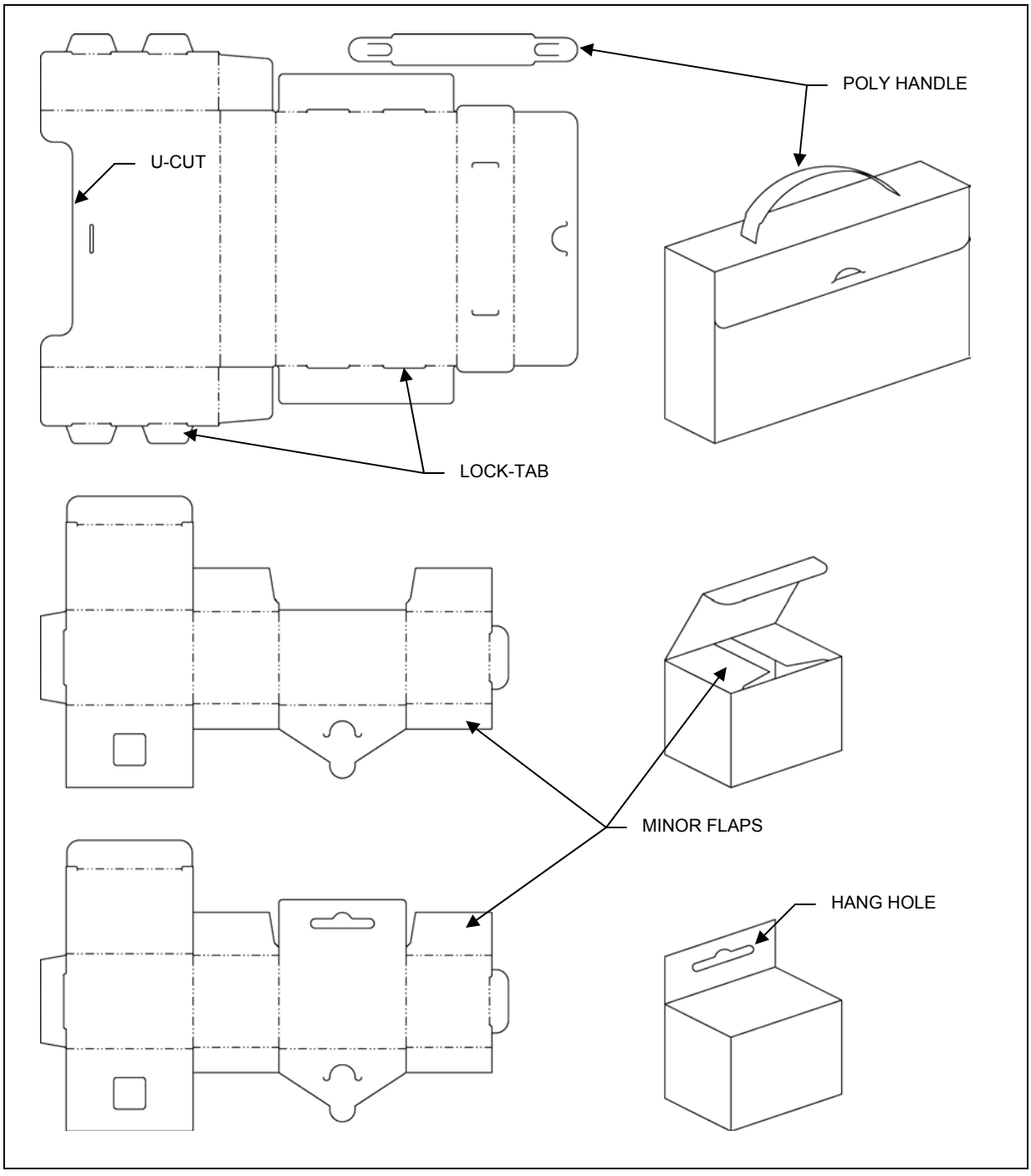
PACKAGING DIMENSIONS

The order of the dimensions is quite important. Dimensions are always given **L**ength x **W**idth x **D**epth. L and W *always* apply to the opening of the package; D (often the **H**eight, H) is how deep or how tall the package is, and it almost always follows the manufactures joint. The binding industry is different; the dimensions are given **B**inding-edge x **W**idth x **C**apacity. This is acceptable for ring binders *only*; otherwise, dimensions of totes, boxes, etc., must follow the L x W x D order.

DESIGN FEATURES

OPTIONS (MISC.)

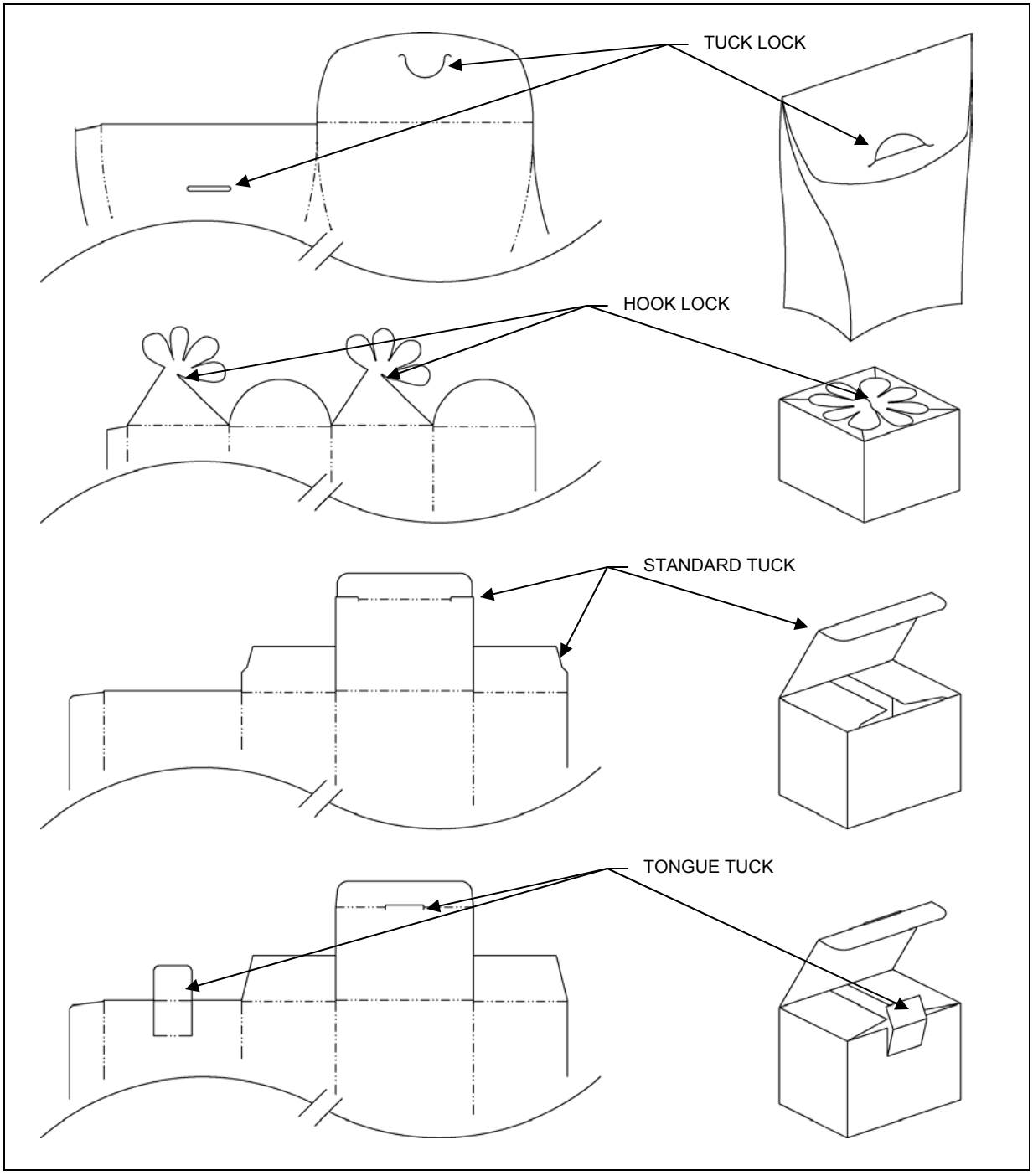
- LOCK-TAB JOINT (VS. WELD JOINT OR GLUE JOINT)
- MINOR FLAPS, DUST FLAPS
- POLY HANDLE (VS. MOLDED HANDLE)
- U-CUT - *for tote boxes*
- HANG HOLE - *for retail packages*



DESIGN FEATURES

TUCK CLOSURES (TOP)

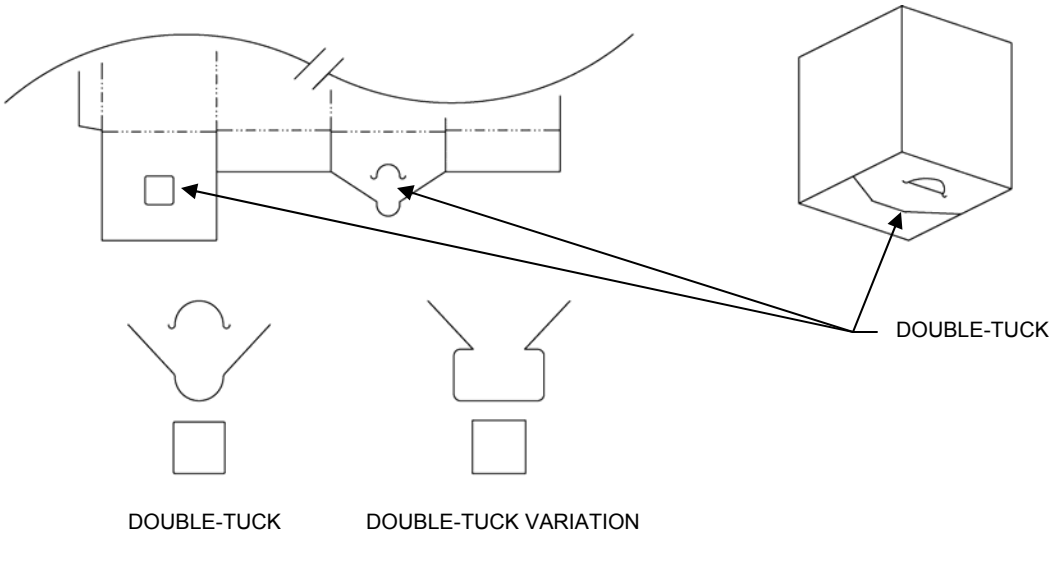
- TUCK LOCK, SMILE TUCK
- HOOK LOCK (SHAPES)
- STANDARD TUCK, INNY
- TONGUE TUCK



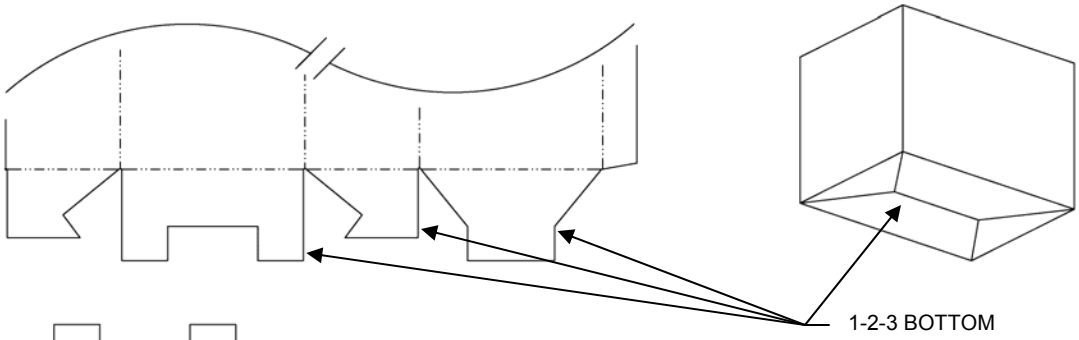
DESIGN FEATURES

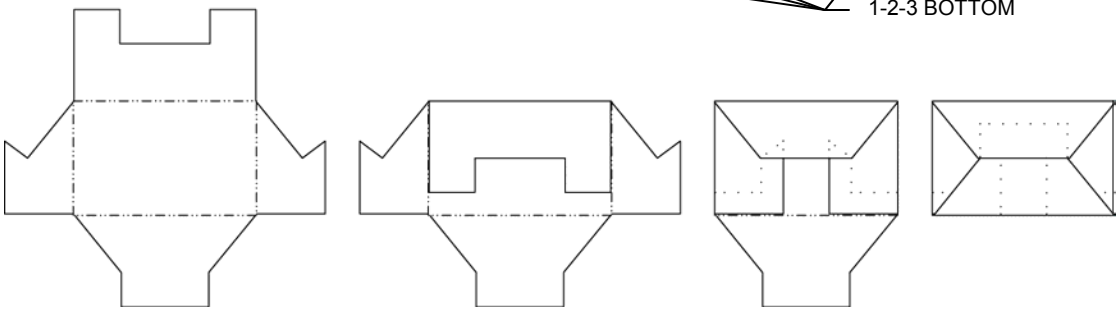
TUCK CLOSURES (BOTTOM)

- DOUBLE-TUCK - *by Greenleaf*
- 1-2-3 BOTTOM - *by Houghland*



DOUBLE-TUCK DOUBLE-TUCK VARIATION





1-2-3 BOTTOM ASSEMBLY GUIDE – *"U" first, sides second, long last*