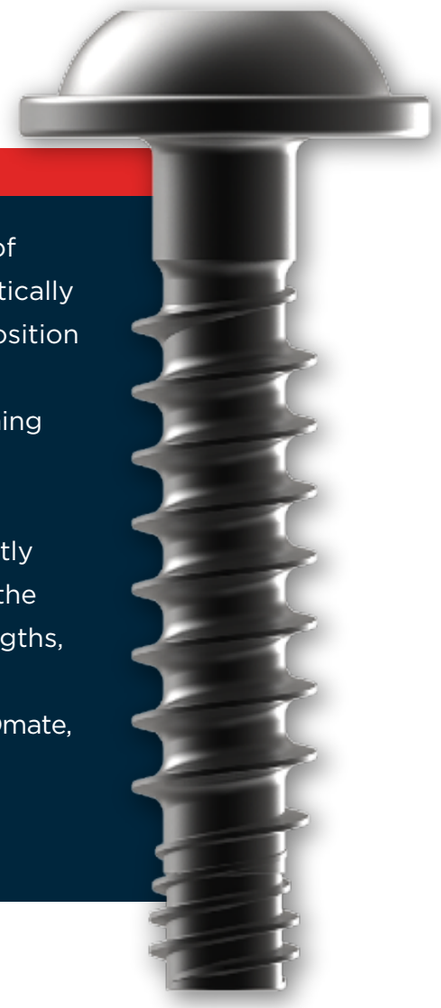
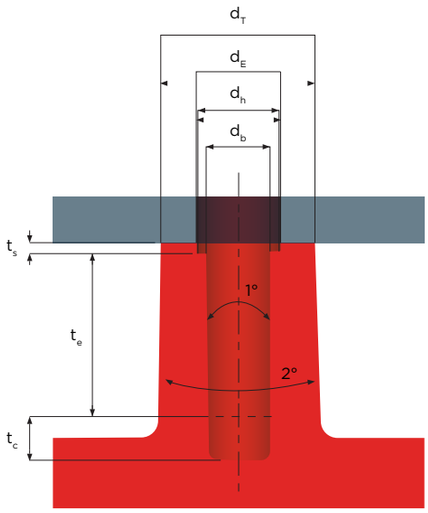
Experience the EVOlution in Self-Tapping Screws for Plastics

EVOmate

Introducing **EVOmate**, the innovative solution for secure and efficient fastening into thermoplastics.



- **Enhanced Fastening Quality and Repeatability:** The unique features of EVOmate distributes the load evenly across the thread flanks, automatically centering the screw during installation for an effortless and straight position with the screw hole.
- **Boost Efficiency and Reduce Complexity:** EVOmate's innovative forming thread virtually creates a torque-independent installation process, regardless of depth. This translates to:
    - **Reduced Part Variety:** The thread-forming zone creates a slightly oversized thread turn, allowing subsequent turns to penetrate the plastic smoothly. This eliminates the need for various screw lengths, simplifying your inventory and assembly process.
    - **Standardized Screw Lengths and Tightening Torques:** With EVOmate, you can leverage standardized components, streamlining your assembly process and maximizing efficiency.



Nominal diameter of the screw: d_1
Counterbore diameter:
$d_E = d_1 \times 1.05$
Hole diameter:
$d_b = 0.85 \times d_1 \pm 0.05$ mm
Installation depth:
$t_e = 2 \times d_1$ or deeper

d_T = external boss Ø
d_n = clearance hole Ø
d_E = counterbore Ø
d_o = hole Ø
t_s = counterbore depth = $0.1 \times d_1$
t_e = installation depth
t_c = hole depth allowance

KEBA FASTENINGS

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Simple Guide to Using EVOmate Screws

Consistent Torque for Simplified Assembly

The innovative forming thread of the **EVOmate** generates a nearly constant torque regardless of the installation depth within the recommended range. This eliminates the need to adjust counterbore depths based on varying clamping part thicknesses, simplifying the design and assembly process.

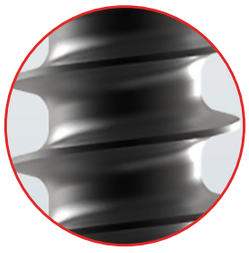
Pre-Hole Recommendations:

- **Pre-Drilled Holes:** We recommend using pre-drilled holes for optimal performance.
- **Draft Angle:** Since injection-molded parts typically have a draft angle of 1°, the pre-hole diameter will be measured at the top of the hole.
- **Pre-Hole Diameter:** The recommended pre-hole diameter is 0.85 times the nominal screw diameter (d_1) measured at the top of the pre-hole (db = 0.85 x d_1). This simplifies measurement and ensures proper thread formation.

EVOmate Screw Characteristics and Features

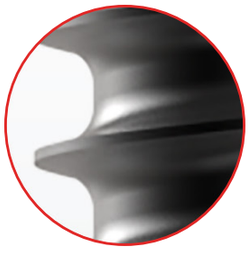
EVOmate Screw: Unmatched Performance and Efficiency

The **EVOmate** screw redefines plastic fastening with its innovative design inspired by nature (Bio-Inspired Form) and advanced engineering. Here's a breakdown of its key characteristics and features:



Bio-Inspired Form:

- **Enhanced Strength:** Mimicking natural structures, this Bio-Inspired Form provides superior:
  - **Fatigue Strength:** Withstands repeated stress for longer component life.
  - **Breaking Torque:** Delivers exceptional resistance to twisting forces.
  - **Tensile Breaking Stress:** Handles high pulling forces without breaking.



Thread Forming Zone:

- **Reduced Friction, Consistent Performance:**
  - The thread-forming zone minimizes friction during installation.
  - Virtually Depth-Independent Torque: Installation torque remains consistent regardless of screw depth within the recommended range.
  - Standardized Tightening: Use one screw length and torque per assembly group, simplifying processes and reducing part variety.
  - Uniform Tube Design: Enables carry-over part strategies for increased efficiency.

- **Large Torque Window:**
  - Low installation torque translates to:
    - High installation reliability.
    - Increased plant uptime.
    - Accommodation for process variations.

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25° Flank Angle:

- **Optimal Plastic Forming:** This precise angle ensures excellent thread formation in various thermoplastics.
  - **Reduced Radial Load:** Minimizes stress on the plastic component.

Lead-In Thread:

- **Automatic Centering Ensures:**
  - Stable initial screw placement.
  - Consistent, automated assembly.
  - Low-stress surface connection for optimal performance.

Compact Design:

- **Reduced Counterbore Depth:** Requires less installation space, allowing for:
  - Use of pre-existing purchased parts without modification.
  - More efficient space utilization.

Error Correction:

- **Axial Misalignment Compensation:** Automatically adjusts for slight misalignments between screw and hole, tolerating component variations.

BENEFITS

- **Reduced Design Complexity:** Forget complex calculations and adjustments based on clamping part thickness. EVOmate simplifies the design process with a standardized pre-hole size, making assembly a breeze.
- **Superior Strength and Durability:** Experience unmatched performance with EVOmate. This innovative screw boasts superior strength and durability, ensuring long-lasting and reliable fastening in diverse applications.
- **Simplified and Streamlined Assembly:** Standardized pre-hole size eliminates the need for multiple screw lengths and complex calculations, significantly streamlining the assembly process.
- **Cost-Effectiveness through Part Reduction:** With a standardized pre-hole size, the EVOmate allows you to reduce part variety, minimizing inventory costs and simplifying logistics.
- **Increased Design Flexibility:** Say goodbye to design limitations. EVOmate offers increased design flexibility, allowing you to focus on creating innovative products with confidence.

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