EJOT duoHARDtip®

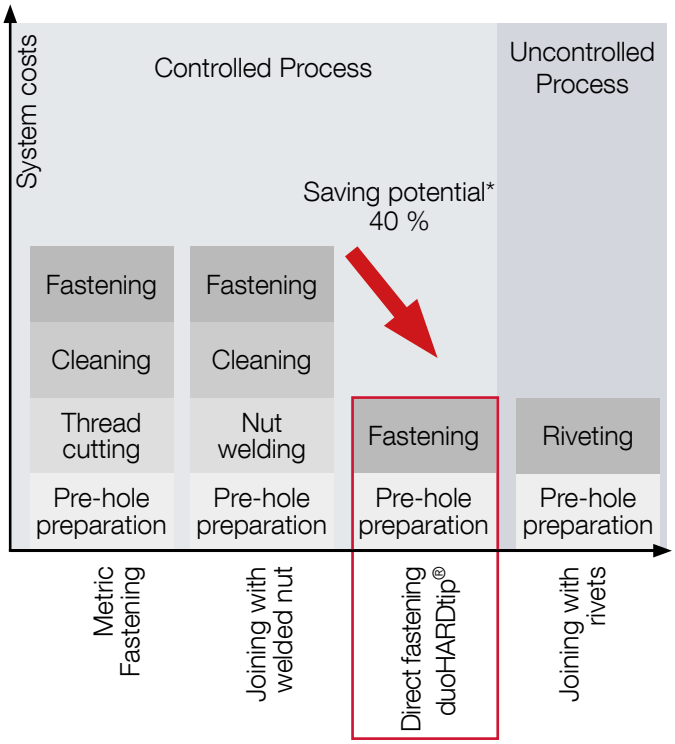
Direct fastening solution for advanced high-strength materials

With the application oriented combination of two material conditions, EJOT duoHARDtip® offers both - a conventionally hardened shaft and an extremely high-strength tip. The resulting application range is exceptionally broad.

The duoHARDtip® screw not only complies with the high corrosion requirements, it also prevents hydrogen caused brittle fractures, especially for those applications where case hardened screws are not permitted.

A process comparison between different fastening solutions for advanced high-strength materials shows, that direct fastening with EJOT duoHARDtip® screws not only offers savings potential of up to 40 %, but it also provides the advantage of a controlled process (see the diagram „savings potential - a process comparison“ on the right).

Savings potential - a process comparison



* compared to metric fastening

Hardened and tempered shaft, hardness category 8.8 or 10.9

Extremely high strength tip

Hardness zones of a duoHARDtip® Spiralform

Thread geometries of EJOT duoHARDtip® screws

EJOT duoHARDtip® screws can be delivered with nearly all EJOT specific threadforming geometries. Preferred threads are EJOT Spiralform® and SHEETtracs®. In special cases, FDS® or ALtracs® Plus threads can also be produced.

Steel sheets

Material*	Thickness [mm]	Tensile strength [mPa]
S700	1,5	750-900
CP-W 800	1,5	800-980
HSD 600	1,5	1000
MS-W 1200	1,5	1200-1450
MS-W 1200	3,0	1200-1450

Spiralform® M5x16 duoHARDtip after directly fastened into 1.6 mm MSW 1200

Application example: steel sheets in seat frames

Material concepts for seat structures are manifold and range from plastics to magnesium and common steels up to advanced high-strength steel sheets.

When fastening a plastic seat trim to the side of a seat frame made of S700MC the advantages of using a Spiralform® duoHARDtip are clear: a strong and safe joint through direct fastening even in advanced high-strength materials, also resulting in a reduction of process steps and costs.

Die cast materials

Material*	Hardness [HB]
GJL	150 - 260
GJS	205

Fastening of components to engine blocks made of cast steel using duoHARDtip® screws

Application example: in powertrains made of die cast steel

Major cost benefits can also be achieved by using duoHARDtip® screws in the field of cast materials, while still maintaining the same quality of the joint compared to metric screws. Areas of applications can be found in the automotive power train as well as pumps, compressors, electric engines and much more. The installation is done directly into the drilling hole without any further mechanical finishing.

**Tested with stamped, lasered respectively drilled pre-holes*

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