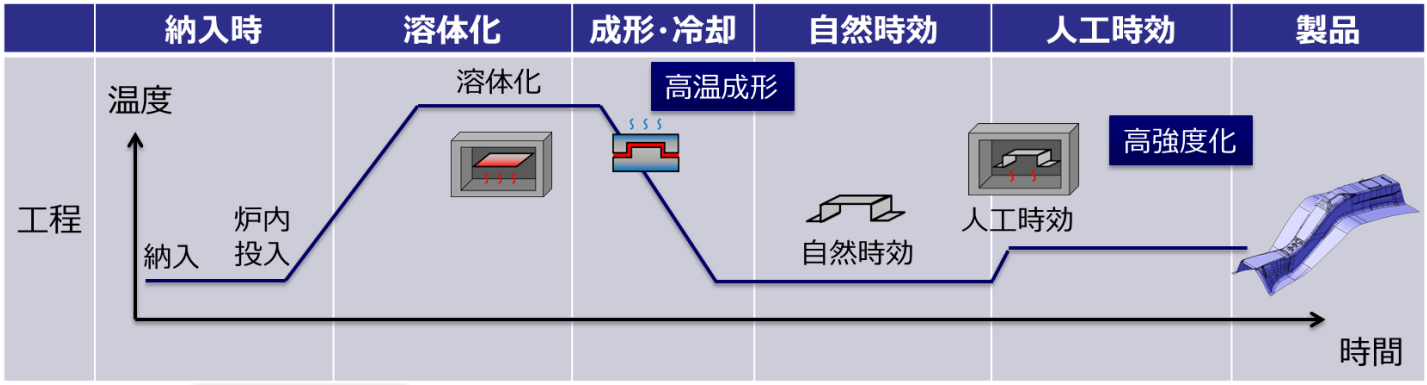
アルミ熱間加工技術の構築

《技術概要》 Al合金の熱間成形・高強度化プロセスの構築

◇ アルミ熱間加工のプロセス

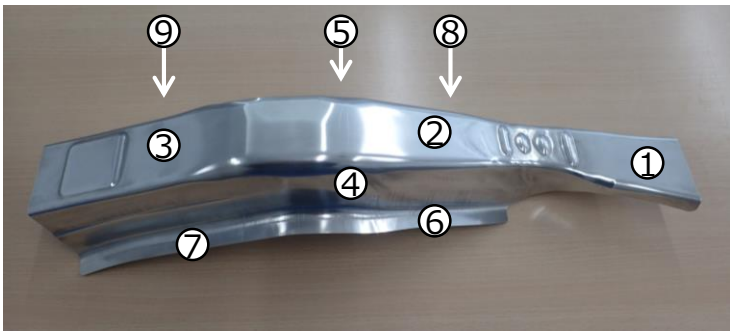


狙い

①高温成形による成形性の向上
②時効処理による自在な強度設計

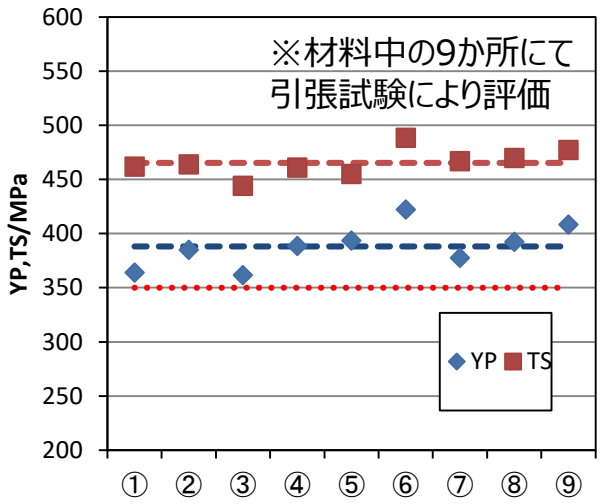
●冷間成形品（割れ発生）

●弊社技術成形品



加工条件の見極めにより、
不良（割れ）なく成形可能に

●人工時効後の材料強度



◆980材と耐荷重同等となる板厚

材質	板厚	重量比
980材	1.0mm	–
ｱﾙﾐ 未時効材	5.0mm	50%
ｱﾙﾐ 熱間成形	2.1mm	▲30%

耐力350MPa以上を達成することにより
980材に対して30%以上の軽量化効果

軽量化効果試算：▲30%（980MPa級鋼板比）

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Construction of aluminum hot working technology

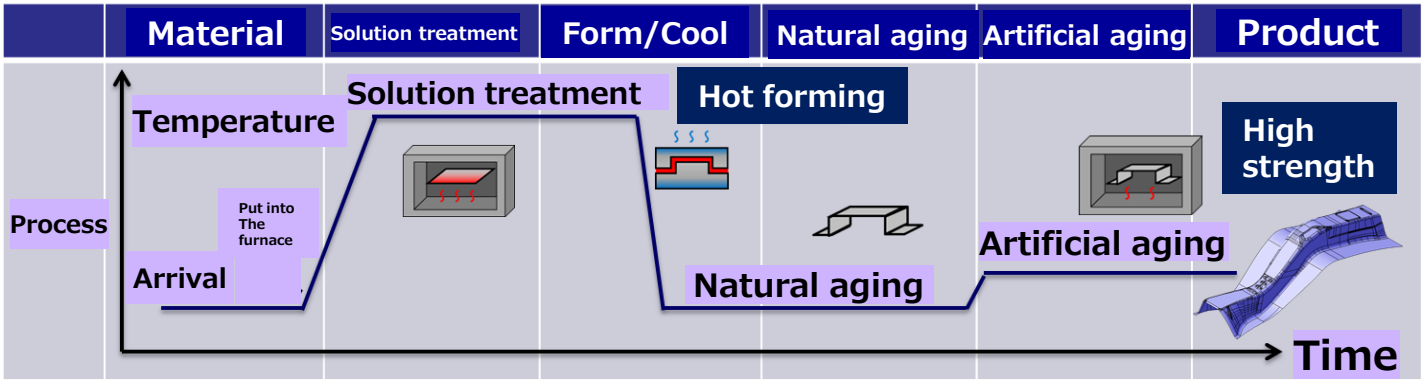
Exceed expectations

BE A VALUE CREATOR

《Technical overview》

Hot forming of Al alloy and construction of high strength process.

◇ Aluminum hot working process

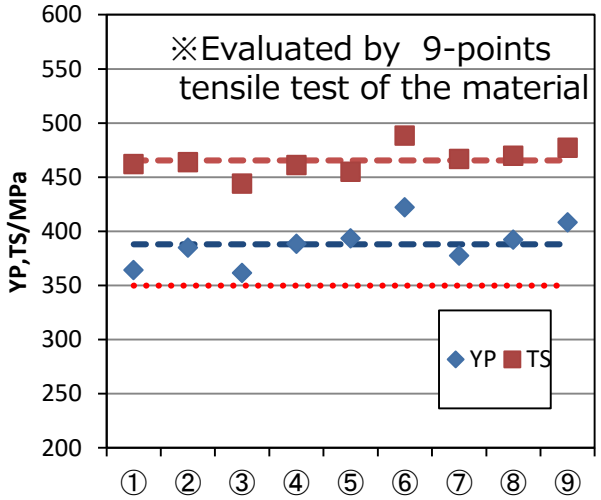


Target

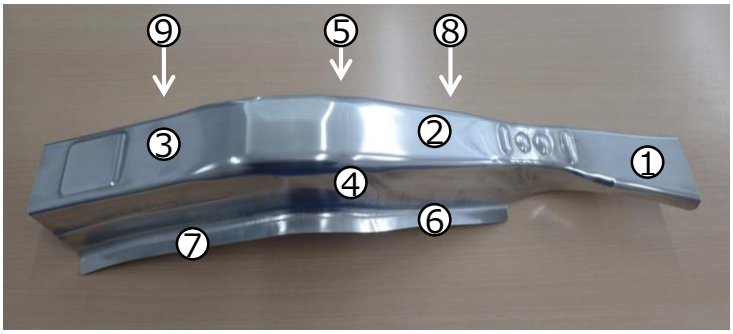
①Improved moldability by high-temperature molding.
②Flexible strength design by aging treatment.

● Cold form product (crack)

● Material strength after artificial aging



● Product adopted our technology



◆Plate thickness equivalent to 980MPa steel at load capacity.

Material	Thickness	Weight ratio
980MPa	1.0mm	–
Al unaged	5.0mm	50%
Al hot form	2.1mm	▲30%

By determining the processing conditions, molding without defects (cracks) is possible.

By achieving proof stress of 350MPa or more, it exhibits weight reduction effect of 30% or more compared to 980MPa steel.

Trial calculation of weight saving : ▲30%
(Compared to 980MPa grade steel)

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