



Industry



Challenge



Engineering Solution



Outcome

Case study: Bracket for Electric forklift

CONVERSION SOLUTION

11-PCS WELDMENT TO ONE-PIECE INVESTMENT STEEL CASTING

Challenge

Interest for development of a stronger, lighter and more cost-efficient bracket component in alternative to the present 11 pieces welded component.

BEFORE: WELDMENT



Fabrication weight: **6,4 kg/pcs**

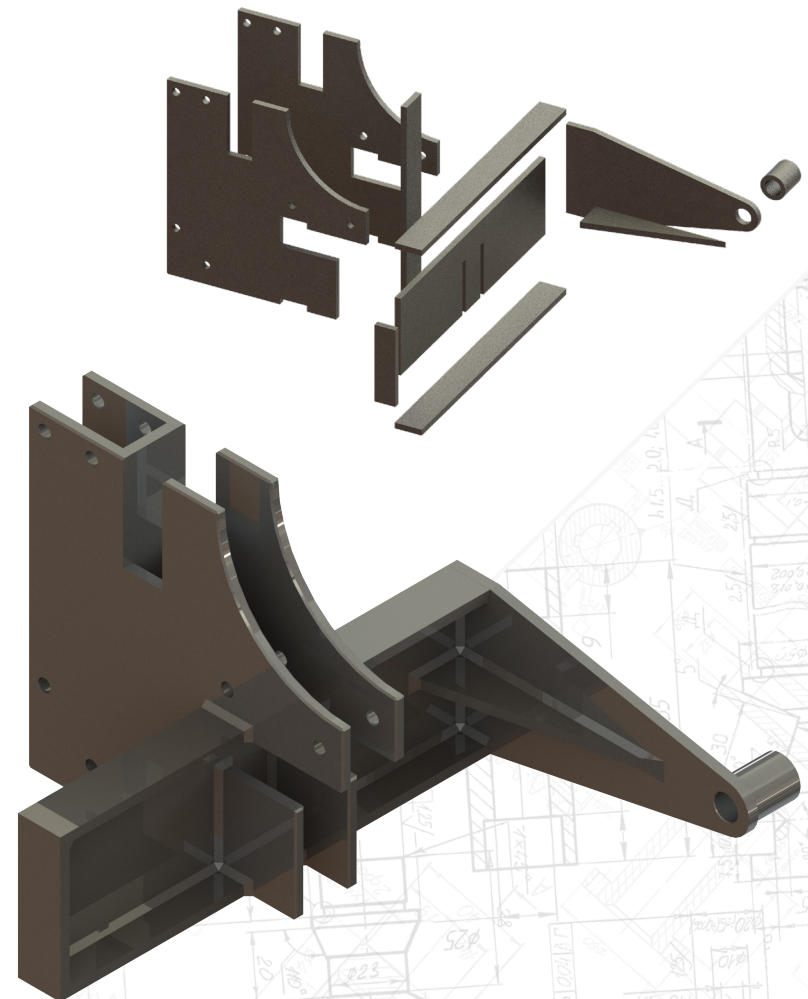
Mechanical Properties for **S 235 J2**

ReH Yield strength (MPa): 235 N/mm²

Rm Tensile strength (MPa): 360 N/mm²

Weldment

Material Alloy Grade: S235J2 acc. to EN 10025-2





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ENGINEERING SOLUTION

CARBON ALLOY STEEL CASTING

AFTER: CASTING



Casting weight: **5,1 kg/pcs**

Mechanical Properties for **G20Mn5 + N**

ReH Yield strength (MPa): 300 N/mm²

Rm Tensile strength (MPa): 480 N/mm²

Castings Alloy

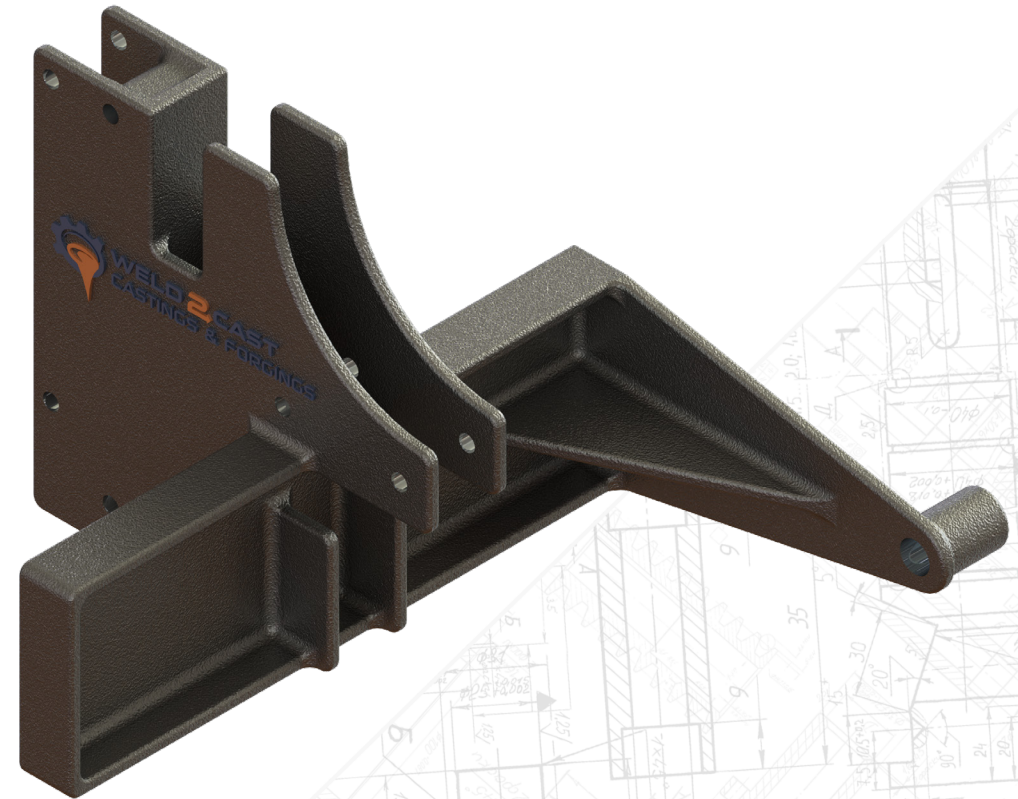
G20Mn5 + N Acc to Steel Casting standard EN 10293

Casting Method

Investment Casting (Water Glass Process)

Add Value

Finish machining





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ENGINEERING OUTCOME

RESULT OF THE CONVERSION



- 20%

Weight Optimization

From 6,4 kg/pcs in Fabrication to 5,1 kg in Low Alloy Casted Steel.



- 29%

Total Cost Reduction

Saving cost by redesign of shape, material & weight.



min. + 21%

Strength Optimization

Improve material strength by changing the Steel Fabrication Alloy S235 JR to Low Alloy Casted Steel G 20Mn5 + N.

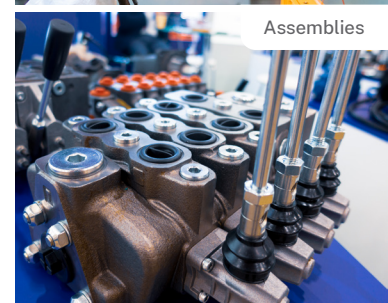
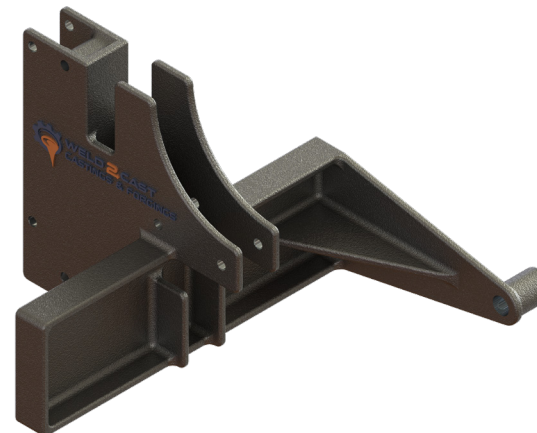


min. + 40%

Product Efficiency

WELD2CAST transformed a 11-pieces part into a one-piece Casting. The redesign simplified the assembly process for our client and reduced internal labour, manufacturing, inventory and overhead cost.

Combine Your Castings & Forgings with Our ADD-VALUE Services



Need assistance...

in determining if your welded part is a good candidate for a conversion to casting?

