

Title (en)
Hydroforming method

Title (de)
Verfahren zur Innenhochdruckumformung

Title (fr)
Procédé d'hydroformage

Publication
EP 2272601 B1 20110831 (DE)

Application
EP 10004775 A 20100506

Priority
DE 102009030089 A 20090622

Abstract (en)
[origin: US2010319428A1] A method for hydroforming hollow metal workpieces includes submerging the same in a reservoir of hydraulic fluid. A press is provided having a hydroforming station located within the reservoir and includes a forming cavity configured to receive the fluid filled workpiece and create a fluid cushion spaced between the outside of the workpiece and the inside of the forming cavity. Sealing mandrels supply high-pressure hydraulic fluid to the interior of the workpiece which hydroform the same to the shape of the final part. The outward flow of fluid from the fluid cushion space is controlled, along with the associated pressure, to maintain the fluid cushion at least until such time as the mandrel pushing step concludes, thereby alleviating friction and adhesion between the formed part and the forming cavity.

IPC 8 full level
B21D 26/02 (2011.01); **B21D 26/033** (2011.01); **B21D 26/041** (2011.01); **B21D 26/043** (2011.01)

CPC (source: EP US)
B21D 26/033 (2013.01 - EP US); **B21D 26/041** (2013.01 - EP US); **B21D 26/043** (2013.01 - EP US)

Cited by
CN103846332A; WO2016198396A1; US10981206B2

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)
DE 102009030089 B3 20101111; AT E522295 T1 20110915; EP 2272601 A1 20110112; EP 2272601 B1 20110831; US 2010319428 A1 20101223

DOCDB simple family (application)
DE 102009030089 A 20090622; AT 10004775 T 20100506; EP 10004775 A 20100506; US 81933810 A 20100621