

Title (en)  
METHOD AND SET OF COMPONENTS FOR PRODUCING A TUBULAR STRUCTURAL PART, IN PARTICULAR A BUILT-UP CAMSHAFT

Title (de)  
VERFAHREN UND KOMPONENTENSATZ ZUR HERSTELLUNG EINES ROHRFÖRMIGEN BAUTEILS, INSBESONDERE EINER GEBAUTEN NOCKENWELLE

Title (fr)  
PROCÉDÉ ET GROUPE D'ÉLÉMENTS DESTINÉS À LA FABRICATION D'UN ÉLÉMENT TUBULAIRE, EN PARTICULIER D'UN ARBRE À CAMES ASSEMBLÉ

Publication  
**EP 2640535 A1 20130925 (DE)**

Application  
**EP 11782645 A 20111117**

Priority  
• DE 102010060686 A 20101119  
• EP 2011070397 W 20111117

Abstract (en)  
[origin: WO2012066099A1] The invention relates to a method for producing a tubular structural part by means of hydroforming. An assigned end of a supporting tube (1) is inserted into an opening in an end piece (2) and then widened by a pressurized fluid being applied to it and is connected to the end piece (2) with a press fit. The opening (9) has a first portion (10a) with a first inner cross section, which is greater than the outer cross section of the assigned end of the supporting tube (1). According to the invention, the first portion (10a) is adjoined by a second portion (10b), in a step-shaped manner so as to form an edge (11). The inner cross section of the second portion (10b) is smaller than the outer cross section of the assigned end of the supporting tube (1). In the method according to the invention, the supporting tube (1) is first inserted with its corresponding end into the first portion (10a), before the edge (11) cuts into the material of the supporting tube (1) in a further pushing-in movement.

IPC 8 full level  
**B21D 53/84** (2006.01); **B21D 26/045** (2011.01); **B21D 39/06** (2006.01); **F01L 1/047** (2006.01)

CPC (source: EP US)  
**B21D 26/045** (2013.01 - EP US); **B21D 39/06** (2013.01 - EP US); **B21D 53/845** (2013.01 - EP US); **F01L 1/047** (2013.01 - US); **F01L 1/053** (2013.01 - EP US); **F01L 2001/0471** (2013.01 - EP US); **F01L 2303/00** (2020.05 - EP US); **F01L 2303/01** (2020.05 - EP US); **Y10T 29/49293** (2015.01 - EP US); **Y10T 29/53996** (2015.01 - EP US)

Citation (search report)  
See references of WO 2012066099A1

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

DOCDB simple family (publication)  
**DE 102010060686 A1 20120524**; **DE 102010060686 B4 20150226**; CN 103442822 A 20131211; CN 103442822 B 20160113; EP 2640535 A1 20130925; EP 2640535 B1 20150318; US 2013305532 A1 20131121; US 9284858 B2 20160315; WO 2012066099 A1 20120524

DOCDB simple family (application)  
**DE 102010060686 A 20101119**; CN 201180055370 A 20111117; EP 11782645 A 20111117; EP 2011070397 W 20111117; US 201113880262 A 20111117