

Title (en)

Method of apparatus for expanding and sealing a sleeve into a surrounding tube.

Title (de)

Einrichtung zum Expandieren und Abdichten einer Hülse in einem Ummantelungsrohr.

Title (fr)

Dispositif pour l'expansion et l'obturation d'une douille dans un tube entourant.

Publication

EP 0516179 A2 19921202 (EN)

Application

EP 92111095 A 19880722

Priority

- EP 88306743 A 19880722
- US 10065487 A 19870924
- US 10069087 A 19870924

Abstract (en)

A pressurizable tool for locating a sleeve within a surrounding tube and pressure-tightly sealing the sleeve within the tube to repair leaks in the tube. The tool includes a housing containing an axially movable piston and a forward reduced diameter portion and having an elastic expander unit for inserting into the sleeve and tube in a tubesheet. The expander unit consists of at least two elastic rings composed of an elastomer material and each having a chamfer provided at the outer edge of the unit forward and rear faces. By pressurizing a port at the housing front end, the piston is moved rearwardly to axially compress and expand the expander rings radially outwardly sufficiently to expand the sleeve firmly into the tube and provide a pressure-tight seal therebetween. Following such expansion of the sleeve, the piston is pressurized and moved forward to release the compression on the expander unit rings, so that the tool can be easily withdrawn from the expanded sleeve and tube and inserted into another sleeve and tube for repeated usage.

IPC 1-7

B21D 39/04; B21D 39/06; B21D 39/08; B21D 39/20; B23P 19/02

IPC 8 full level

B21D 39/04 (2006.01); **B21D 39/06** (2006.01); **B21D 39/20** (2006.01); **F16L 55/16** (2006.01); **F28F 11/06** (2006.01)

CPC (source: EP)

B21D 39/04 (2013.01); **B21D 39/06** (2013.01); **B21D 39/20** (2013.01); **B21D 39/203** (2013.01); **B21D 39/206** (2013.01)

Cited by

US2010132823A1; US8747105B2

Designated contracting state (EPC)

ES GB IT

DOCDB simple family (publication)

EP 0309078 A2 19890329; EP 0309078 A3 19901024; AU 2025688 A 19890406; AU 620814 B2 19920227; CA 1326128 C 19940118; EP 0516179 A2 19921202; EP 0516179 A3 19930407; EP 0516179 B1 19950419; ES 2071387 T3 19950616; JP H01118323 A 19890510; JP H0470098 B2 19921110

DOCDB simple family (application)

EP 88306743 A 19880722; AU 2025688 A 19880801; CA 572597 A 19880720; EP 92111095 A 19880722; ES 92111095 T 19880722; JP 23387388 A 19880920