Title (en)

PISTON UNIT OF A WORKING CYLINDER

Title (de)

KOLBENEINHEIT EINES ARBEITSZYLINDERS

Title (fr)

UNITÉ PISTON D'UN CYLINDRE DE TRAVAIL

Publication

EP 4259942 A1 20231018 (DE)

Application

EP 21844182 A 20211207

Priority

- DE 202020005143 U 20201211
- DE 2021000192 W 20211207

Abstract (en)

[origin: WO2022122063A1] The invention relates to a piston unit (2) of a working cylinder (1), wherein: - a piston rod (3) has an outer thread (5) on a piston-side coupling portion; - a piston (4) has an axial bore which comprises an inner thread (6) and in which the piston rod (3) is received; - the outer thread (5) and the inner thread (6) form a common thread portion (7); - the outer thread (5) and the inner thread (6) have a complementary conicity and a complementary thread geometry; - the conicity has a conicity angle alpha of 0.3 to 5 degrees; - the outer thread (5) and the inner thread (6) abut one another in a coupling end position in the thread portion in a gap and form a sealing plane; - the outer thread (5) and the inner thread (6) have, in the thread portion in the coupling end position, an elastic deformation within the elastic limit of the piston rod (3) and the piston (4); - the elastic deformation is brought about by a surface pressure via a tightening torque; - the piston rod (3) and the piston (4) are radially and axially fixed to one another without play in the coupling end position by means of the elastic deformation, and - the elastic deformation is within the elastic limit both with and without an application of pressure by a pressure medium in the working cylinder (1).

IPC 8 full level

F15B 15/14 (2006.01); **F16J 1/12** (2006.01)

CPC (source: EP US)

F15B 15/1447 (2013.01 - EP US); **F15B 15/1452** (2013.01 - US); **F16J 1/12** (2013.01 - EP US); **F16J 7/00** (2013.01 - EP US)

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

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

DE 202020005143 U1 20220315; CN 116601410 A 20230815; DE 112021006397 A5 20230928; EP 4259942 A1 20231018; US 2024035496 A1 20240201; WO 2022122063 A1 20220616

DOCDB simple family (application)

DE 202020005143 U 20201211; CN 202180083065 A 20211207; DE 112021006397 T 20211207; DE 2021000192 W 20211207; EP 21844182 A 20211207; US 202118256070 A 20211207