

Title (en)

OPTIMIZED EFFICIENCY ACTUATING UNIT OF THE ARTICULATED LEVER TYPE

Title (de)

GELENKHEBELANTRIEB MIT OPTIMIERTEM WIRKUNGSGRAD

Title (fr)

UNITÉ D'ACTIONNEMENT D'EFFICACITÉ OPTIMISÉE DU TYPE DE LEVIER ARTICULÉ

Publication

EP 3130809 A1 20170215 (EN)

Application

EP 16182930 A 20160805

Priority

IT UB20153120 A 20150813

Abstract (en)

The present invention relates to an articulated lever actuation unit, comprising a body (11), inside which a control piston (12) is slidably associated to the body (11) along a sliding axis (A), the control piston (12) being connected or coupled to actuation means (15) able to exert a thrust force (P) on the control piston (12), where the control piston (12) is operatively coupled to a pivotable arm (14) by interposition of an articulated lever mechanism (13) in order to induce a rotational movement to the pivotable arm (14) about an axis of rotation (B) perpendicular to the sliding axis (A) following a sliding movement of the control piston (12), the pivotable arm (14) being moved between an open or non-operating position and a closed or operating position; the articulated lever mechanism (13) comprises a first (13a) and a second (13b) rod, the first rod (13a) being pivoted to a rod (12a) of the control piston (12) and to the second rod (13b), respectively, and the second rod (13b) being pivoted to the body (11) and setting the pivotable arm (14) in rotation; for each position of the pivotable arm other than the closed position, the thrust force (P) excited by the control piston (12) determines a variable clamping moment (M) at the axis of rotation (B) according to law $M = k \cdot P \cdot AO$ where AO is the length of the second rod and k is a proportionality factor, and is characterized in that the length of the second rod (AO) is less than or equal to 32.8 mm and the proportionality factor (k) is comprised between 6.8 and 10.0 for a clamping moment comprised between 180 N m and 230 N m; or, the length of the second rod (AO) is less than or equal to 35.5 mm and the proportionality factor is comprised between 8.0 and 12.2 for a clamping moment comprised between 375 N m and 425 N m; or the length of the second rod (AO) is less than or equal to 30.5 mm and the proportionality factor (k) is comprised between 8.0 and 13.8 for a clamping moment comprised between 115 N m and 145 N m; or, the length of the second rod (AO) is less than or equal to 56.5 mm and the proportionality factor is comprised between 6.8 and 11.4 for a clamping moment comprised between 830 N m and 880 N m.

IPC 8 full level

F15B 15/06 (2006.01); **B25B 5/12** (2006.01)

CPC (source: EP)

B25B 5/122 (2013.01); **F15B 15/06** (2013.01)

Citation (applicant)

EP 2016290 A1 20090121 - TUENKERS MASCHINENBAU GMBH [DE]

Citation (search report)

- [I] EP 2177320 A1 20100421 - UNIVER SPA [IT]
- [A] EP 0894573 A2 19990203 - BENTELER WERKE AG [DE]
- [A] EP 1310332 A2 20030514 - MIGLIORI LUCIANO [IT]

Citation (third parties)

Third party : Olaf und Andre Tunkers Gbr.

- DE 102014014857 B3 20151112 - OLAF UND ANDRÉ TÜNKERS GBR VERTRETUNGSBERECHTIGTER GESELLSCHAFTER DIPL ING OLAF TÜNKERS [DE]
- DE 202015004786 U1 20150814 - OLAF UND ANDRÉ TÜNKERS GBR VERTRETUNGSBERECHTIGTER GESELLSCHAFTER DIPL ING OLAF TÜNKERS [DE]

Third party : Rudi Beyer

- EP 0993932 A2 20000419 - STRIP S D O O PODJETJE ZA SVET [SI]
- DE 102014014857 B3 20151112 - OLAF UND ANDRÉ TÜNKERS GBR VERTRETUNGSBERECHTIGTER GESELLSCHAFTER DIPL ING OLAF TÜNKERS [DE]
- DE 202015004786 U1 20150814 - OLAF UND ANDRÉ TÜNKERS GBR VERTRETUNGSBERECHTIGTER GESELLSCHAFTER DIPL ING OLAF TÜNKERS [DE]
- WO 2016055138 A1 20160414 - OLAF UND ANDRE TÜNKERS GBR [DE]
- EP 0341155 A1 19891108 - GENUS INT [FR], et al
- US 6416045 B1 20020709 - MORRONEY WAYNE [US]
- EP 2055430 B1 20090610 - UNIVER SPA [IT]
- EP 1262285 A2 20021204 - BTM CORP [US]
- EP 1149665 A2 20011031 - SMC KK [JP]
- EP 1849559 A1 20071031 - UNIVER SPA [IT]
- EP 1878539 B1 20090415 - UNIVER SPA [IT]
- EP 1088623 A2 20010404 - SMC KK [JP]
- EP 1179394 A2 20020213 - NORGREN AUTOMOTIVE INC [US], et al
- DE 29811331 U1 19981008 - GENUS TECHNOLOGIES [FR]
- DE 10136057 C1 20021002 - TUENKERS MASCHINENBAU GMBH [DE]
- DE 102004007346 B3 20050421 - TUENKERS MASCHINENBAU GMBH [DE]
- TUNKERS®: "Universalspanner U/U2 63, 80 BR5 A40", DATENBLATT, 26 June 2020 (2020-06-26), XP055961325
- ANONYMOUS: "Serrages Pneumatiques CNOMO, Serie CP-01", GENUSTECH BROCHURE, 1 July 2006 (2006-07-01), pages 1 - 20, XP055961338
- ANONYMOUS: "Catalogue General", GENUSTECH BROCHURE, 1 June 2000 (2000-06-01), pages 109pp, XP055961341
- ANONYMOUS: "Dispositifs de serrage", UNIVER BROCHURE, 28 June 2011 (2011-06-28), pages 14pp, XP055961468

Cited by

IT202000003805A1; IT202000003784A1; CN108857966A; WO2021171189A1

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

DOCDB simple family (publication)

EP 3130809 A1 20170215; EP 3130809 B1 20230802; IT UB20153120 A1 20170213

DOCDB simple family (application)

EP 16182930 A 20160805; IT UB20153120 A 20150813