

Title (en)  
ROBOTIC SURGICAL ASSEMBLIES AND INSTRUMENT DRIVE UNITS THEREOF

Title (de)  
ROBOTISCHE CHIRURGISCHE ANORDNUNGEN UND INSTRUMENTENANTRIEBSEINHEITEN DAFÜR

Title (fr)  
ENSEMBLES CHIRURGICAUX ROBOTISÉS ET UNITÉS D'ENTRAÎNEMENT D'INSTRUMENT ASSOCIÉS

Publication  
**EP 3463152 A4 20200122 (EN)**

Application  
**EP 17807542 A 20170602**

Priority  
• US 201662345041 P 20160603  
• US 2017035607 W 20170602

Abstract (en)  
[origin: WO2017210516A1] An instrument drive unit includes a housing configured to be coupled to a surgical robotic arm, a motor assembly, and a flex spool assembly. The motor assembly is rotatably disposed within the housing. The flex spool assembly includes a first printed circuit board mounted to the housing, a second printed circuit board configured to be non-rotatably coupled to and electrically connected to the motor assembly, and a first flex circuit. The first flex circuit has a first end portion connected to the first printed circuit board, a second end portion connected to the second printed circuit board, and an intermediate portion coiled about the second printed circuit board such that rotation of the motor assembly relative to the housing effects movement of the second end portion of the first flex circuit along an annular path.

IPC 8 full level  
**A61B 34/00** (2016.01); **A61B 34/30** (2016.01); **B25J 18/00** (2006.01)

CPC (source: EP US)  
**A61B 34/00** (2016.02 - EP US); **A61B 34/30** (2016.02 - EP US); **H01R 35/025** (2013.01 - US); **A61B 2017/00398** (2013.01 - US);  
**A61B 2017/00477** (2013.01 - EP US); **A61B 2017/00907** (2013.01 - US); **A61B 2090/0807** (2016.02 - EP US); **A61B 2090/0811** (2016.02 - US)

Citation (search report)  
• [YA] US 9326767 B2 20160503 - KOCH JR ROBERT L [US], et al  
• [YA] EP 2218409 A1 20100818 - TYCO HEALTHCARE [US]  
• [A] CN 104175311 A 20141203 - BEIJING INST TECHNOLOGY  
• [YA] EP 2814143 A2 20141217 - HAMILTON SUNDSTRAND CORP [US]  
• [YA] WO 2014163787 A1 20141009 - ETHICON ENDO SURGERY INC [US]  
• See references of WO 2017210516A1

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)  
**WO 2017210516 A1 20171207**; AU 2017275648 A1 20181115; CA 3023280 A1 20171207; CN 109310472 A 20190205;  
CN 109310472 B 20211015; EP 3463152 A1 20190410; EP 3463152 A4 20200122; JP 2019518531 A 20190704; JP 6955518 B2 20211027

DOCDB simple family (application)  
**US 2017035607 W 20170602**; AU 2017275648 A 20170602; CA 3023280 A 20170602; CN 201780037425 A 20170602;  
EP 17807542 A 20170602; JP 2018561050 A 20170602