

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT7427990

SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	THORATEC LLC	11/14/2016
RECEIVING PARTY DATA		
Name:	TC1 LLC	
Street Address:	ONE ST. JUDE MEDICAL DRIVE	
City:	ST. PAUL	
State/Country:	MINNESOTA	
Postal Code:	55117	
PROPERTY NUMBERS Total: 1		
Property Type	Number	
Application Number:	17135425	
CORRESPONDENCE DATA		
Fax Number:	(650)326-2422	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>		
Phone:	650-326-2400	
Email:	knguyen@kilpatricktownsend.com	
Correspondent Name:	NENA BAINS	
Address Line 1:	KILPATRICK TOWNSEND AND STOCKTON LLP	
Address Line 2:	1100 PEACHTREE STREET, SUITE 2800	
Address Line 4:	ATLANTA, GEORGIA 30309	
ATTORNEY DOCKET NUMBER:	096206-007830US-1219970	
NAME OF SUBMITTER:	KAREN NGUYEN	
SIGNATURE:	/Karen Nguyen/	
DATE SIGNED:	07/12/2022	
Total Attachments: 15		
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CONFIRMATORY ASSIGNMENT

WHEREAS, Thoratec Corporation was converted to Thoratec LLC pursuant to the Articles of Organization -- Conversion, filed on November 12, 2015,

WHEREAS, Thoratec LLC, a Limited Liability Company of California, having its principal place of business at 6035 Stoneridge Drive, Pleasanton, California 94588 ("Assignor"), has heretofore sold, transferred, and/or conveyed to TC1 LLC, a Limited Liability Company having a principal place of business at 6035 Stoneridge Drive, Pleasanton, California 94588 ("Assignee"), all of its right, title, and interest, in and to certain inventions, patents, and patent applications as set forth in Exhibit A attached hereto, as part of an assignment agreement dated November 16, 2015.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is acknowledged, Assignor hereby confirms that Assignor did sell, transfer, and convey unto Assignee all right, title, and interest in and to the following:

- (a) all intellectual property (including, without limitation, any innovation, information, invention, discovery, product, process, work or design) disclosed, embodied, shown, or claimed in the below-referenced patent applications in Exhibit A, implicitly or explicitly;
- (b) the below-referenced patent applications in Exhibit A, the right to claim priority to the below-referenced patent applications in Exhibit A, all applications based in whole or in part upon the below-referenced patent applications in Exhibit A, including, without limitation, all applications that are a provisional, non-provisional, design, divisional, continuation, continuation-in-part, registration, utility model, industrial design, reissue, renewal, substitute, extension, reexamination, post-grant review, inter partes review, supplemental examination or non-U.S. patent applications or application for other rights based in whole or in part on the below-referenced patent applications in Exhibit A;
- (c) all patents (including, without limitation, all U.S. and non-U.S. patents, registrations, utility models, industrial designs, design patents, counterparts, continuations, continuations-in-part, divisionals, reissues, renewals, substitutes, extensions, reexaminations, post-grant reviews, inter partes reviews and supplemental examinations) that are granted or issued upon, or that claim priority to, any and all applications described in (b) of this paragraph or that disclose or claim intellectual property described in (a) of this paragraph, in whole or in part; and
- (d) all claims for damages by reason of past infringement of any rights under the applications or patents described in (a), (b) or (c) of this paragraph (including provisional rights to reasonable royalties pursuant to 35 U.S.C. §154(d)) and the right to sue for and collect such damages and royalties for Assignee's own use.

Assignor hereby authorizes and requests the U.S. Patent and Trademark Office or any other U.S. or non-U.S. agency to issue to the Assignee any and all patent(s), or other rights or documents, resulting from the intellectual property, patent application(s) and patents described in this Confirmatory Assignment.

Assignor hereby agrees to sign all papers and documents, including without limitation, applications, declarations, oaths and petitions, and, at the Assignee's expense, perform any other acts that

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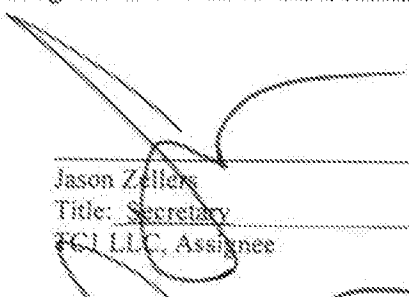
are necessary in connection with prosecution of patent application(s) or intellectual property described in this Confirmatory Assignment and the enforcement of patent(s) or other rights resulting from such patent application(s) or intellectual property.

Assignor hereby agrees that the terms, covenants, and conditions of this Confirmatory Assignment shall be binding upon and inure to the benefit of the Assignee, its successors, assigns and other legal representative.

Assignor hereby promises and affirms that Assignor has not entered, and will not enter, into any assignment, contract, or understanding that conflicts with this Confirmatory Assignment.

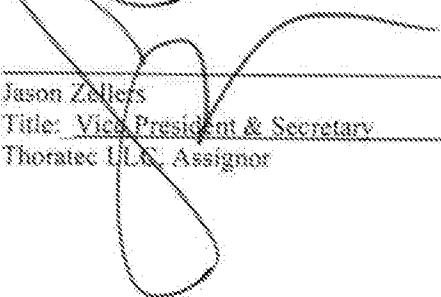
In Witness Whereof, Assignor and Assignee have executed this Confirmatory Assignment on the dates indicated below.

Dated: 11/14/2016



Jason Zellers
Title: Secretary
FGI LLC, Assignee

Dated: 11/14/2016



Jason Zellers
Title: Vice President & Secretary
Thoratec LLC, Assignor

Exhibit A

<u>KTS Ref. No.</u>	<u>Thoratec Ref. No.</u>	<u>Country</u>	<u>Title</u>	<u>Application /Patent No.</u>	<u>Filing/Issue Date</u>
096206-0890674	THOR-P06003	U.S.	CENTRIFUGAL LIQUID PUMP DEVICE	6,840,735	Jan 11, 2005
096206-0890679	THOR-P06004	U.S.	CENTRIFUGAL LIQUID-PUMPING SYSTEM	7,033,147	Apr 25, 2006
096206-0890690	THOR-P06005	U.S.	BLOOD PUMP	7,160,242	Jan 9, 2007
096206-0890720	THOR-P06013	U.S.	METHOD AND SYSTEM FOR CONTROLLING BLOOD PUMP FLOW	7,160,243	Jan 9, 2007
096206-0890714	THOR-P06011	U.S.	ADJUSTABLE COUPLING MECHANISM FOR THE CONDUIT ON A VENTRICULAR ASSIST DEVICE	7,172,550	Feb 6, 2007
096206-0890694	THOR-P06006	U.S.	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	7,470,246	Dec 30, 2008
096206-0890707	THOR-P06009	U.S.	EXTERNAL BATTERY PACK FOR ARTIFICIAL HEART AND BATTERY CHARGER WITH DATA COLLECTION FUNCTION UTILIZING THE SAME	7,563,225	Jul 21, 2009
096206-0890732	THOR-P06014	U.S.	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	7,748,964	Jul 6, 2010
096206-0890756	THOR-P06023	U.S.	DUAL COMMUNICATION INTERFACE FOR ARTIFICIAL HEART SYSTEM	7,794,584	Sep 14, 2010
096206-0890753	THOR-P06022	U.S.	ARTIFICIAL HEART BLOOD PUMP SYSTEM AND DEVICE MONITORING SYSTEM	7,819,916	Oct 26, 2010
096206-0890746	THOR-P06020	U.S.	BLOOD PUMP DEVICE	8,043,074	Oct 25, 2011
096206-0890709	THOR-P06009C	U.S.	EXTERNAL BATTERY PACK FOR ARTIFICIAL	8,157,721	Apr 17, 2012

			HEART AND BATTERY CHARGER WITH DATA COLLECTION FUNCTION UTILIZING THE SAME		
096206-0890750	THOR-P06021	U.S.	SENSORLESS MAGNETIC BEARING TYPE BLOOD PUMP APPARATUS	8,226,373	Jul 24, 2012
096206-0890733	THOR-P06014D	U.S.	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	8,430,652	Apr 30, 2013
096206-0890737	THOR-P06038	U.S.	APICAL RING FOR VENTRICULAR ASSIST DEVICE	8,579,790	Nov 12, 2013
096206-0890728	THOR-P06037	U.S.	NON-INVASIVE DIAGNOSTICS FOR VENTRICLE ASSIST DEVICE	8,613,696	Dec 24, 2013
096206-0890763	THOR-P06044	U.S.	STERILIZABLE CABLE SYSTEM FOR IMPLANTABLE BLOOD PUMP	8,652,024	Feb 18, 2014
096206-0890689	THOR-P06029	U.S.	CENTRIFUGAL PUMP APPARATUS	8,770,945	Jul 8, 2014
096206-0890699	THOR-P06030	U.S.	ROTATION DRIVE DEVICE AND CENTRIFUGAL PUMP APPARATUS USING THE SAME	8,821,365	Sep 2, 2014
096206-0890769	THOR-P06026	U.S.	BLOOD PUMP APPARATUS	8,827,661	Sep 9, 2014
096206-0890765	THOR-P06045	U.S.	BACKFLOW DETECTION FOR CENTRIFUGAL BLOOD PUMP	8,834,345	Sep 16, 2014
096206-0890752	THOR-P06041	U.S.	FAULT MONITOR FOR FAULT TOLERANT IMPLANTABLE PUMP	8,837,096	Sep 16, 2014
096206-0891727	THOR-P06038C1	U.S.	APICAL RING FOR VENTRICULAR ASSIST DEVICE	8,840,538	Sep 23, 2014
096206-0890747	THOR-P06040	U.S.	QUICK-CONNECT OUTFLOW TUBE FOR VENTRICULAR ASSIST DEVICE	8,882,744	Nov 11, 2014
096206-0890760	THOR-P06043	U.S.	MOTOR FAULT MONITOR FOR IMPLANTABLE BLOOD	8,968,174	Mar 3, 2015

			PUMP		
096206-0890781	THOR-P06054	U.S.	MANUFACTURING METHOD FOR MEDICAL EQUIPMENT FOR REDUCING PLATELET ADHESION ON A SURFACE IN CONTACT WITH BLOOD	8,997,349	Apr 7, 2015
096206-0890734	THOR-P06037D	U.S.	NON-INVASIVE DIAGNOSTICS FOR VENTRICLE ASSIST DEVICE	9,056,159	Jun 16, 2015
096206-0890766	THOR-P06027	U.S.	CENTRIFUGAL PUMP APPARATUS	9,067,005	Jun 30, 2015
096206-0890715	THOR-P06033	U.S.	CENTRIFUGAL PUMP APPARATUS	9,068,572	Jun 30, 2015
096206-0916262	THOR-P06026C	U.S.	BLOOD PUMP APPARATUS	9,109,601	Aug 18, 2015
096206-0890772	THOR-P06050	U.S.	VERIFICATION OF MAGNETIC BALANCE FOR MAGNETICALLY LEVITATED IMPELLER	9,127,680	Sep 8, 2015
096206-0890704	THOR-P06031	U.S.	CENTRIFUGAL PUMP APPARATUS	9,132,215	Sep 15, 2015
096206-0890710	THOR-P06032	U.S.	CENTRIFUGAL BLOOD PUMP DEVICE	9,133,854	Sep 15, 2015
096206-0890773	THOR-P06051	U.S.	PERCUTANEOUS CABLE WITH REDUNDANT CONDUCTORS FOR IMPLANTABLE BLOOD PUMP	9,192,705	Nov 24, 2015
096206-0913793	THOR-P06039US	U.S.	CENTRIFUGAL PUMP DEVICE	9,366,261	Jun 14, 2016
096206-0890761	THOR-P06060	U.S.	IMPELLER POSITION COMPENSATION USING FIELD ORIENTED CONTROL	9,371,826	Jun 21, 2016
096206-0890680	THOR-P06028	U.S.	CENTRIFUGAL PUMP APPARATUS	9,381,285	Jul 5, 2016
096206-0890719	THOR-P06034	U.S.	CENTRIFUGAL PUMP APPARATUS	9,382,908	Jul 5, 2016
096206-0906356	THOR-P06029C	U.S.	CENTRIFUGAL PUMP APPARATUS	9,410,549	Aug 9, 2016
096206-0890755	THOR-P06042	U.S.	INTEGRATED CONTROLLER FOR VENTRICULAR ASSIST DEVICE	13/602,788	Sep 4, 2012

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096206-0890767	THOR-P06046A	U.S.	PUMP CABLE DISCONNECTION PREVENTION SYSTEM	61/755,497	Jan 23, 2013
096206-0890768	THOR-P06047	U.S.	PROGRAMMING OF BACKUP CONTROL UNIT FOR CARDIAC ASSIST SYSTEM	13/775,622	Feb 25, 2013
096206-0890770	THOR-P06048	U.S.	STARTUP SEQUENCE FOR CENTRIFUGAL PUMP WITH LEVITATED IMPELLER	13/778,411	Feb 27, 2013
096206-0890771	THOR-P06049	U.S.	CENTRIFUGAL BLOOD PUMP WITH PARTITIONED IMPLANTABLE DEVICE	13/804,144	Mar 14, 2013
096206-0890774	THOR-P06052	U.S.	ROTARY PUMP WITH LEVITATED IMPELLER HAVING THRUST BEARING FOR IMPROVED STARTUP	13/860,569	Apr 11, 2013
096206-0890776	THOR-P06053	U.S.	CARDIAC PUMP WITH SPEED ADAPTED FOR VENTRICLE UNLOADING	13/873,551	Apr 30, 2013
096206-0890726	THOR-P06036US	U.S.	ROTATION DRIVE DEVICE AND CENTRIFUGAL PUMP APPARATUS EMPLOYING SAME	14/034,730	Sep 24, 2013
096206-0917081	THOR-P06061A	U.S.	BLOOD PUMP AND METHOD OF SUCTION DETECTION	62/041,910	Aug 26, 2014
096206-0917082	THOR-P06062A	U.S.	BLOOD PUMP AND METHOD OF SUCTION DETECTION	62/041,917	Aug 26, 2014
096206-0917129	THOR-P06038C2	U.S.	APICAL RING FOR VENTRICULAR ASSIST DEVICE	14/484,498	Sep 12, 2014
096206-0934440	THOR-P06065A	U.S.	INFLOW FOR CENTRIFUGAL BLOOD PUMP	62/114,448	Feb 10, 2015
096206-0934443	THOR-P06064A	U.S.	HEART BEAT IDENTIFICATION AND PUMP SPEED SYNCHRONIZATION	62/114,886	Feb 11, 2015
096206-0935803	THOR-06066A	U.S.	ALTERNATING PUMP	62/115,318	Feb 12, 2015

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			GAPS		
096206-0935802	THOR-P06067A	U.S.	SYSTEM AND METHOD FOR CONTROLLING THE POSITION OF A LEVITATED ROTOR	62/115,324	Feb 12, 2015
096206-0935981	THOR-P06067A2	U.S.	SYSTEM AND METHOD FOR CONTROLLING THE POSITION OF A LEVITATED ROTOR	62/115,603	Feb 12, 2015
096206-0934441	THOR-P06063A	U.S.	IMPELLER SUSPENSION MECHANISM FOR HEART PUMP	62/115,741	Feb 13, 2015
096206-0950210	THOR-P06046US	U.S.	CABLE SYSTEM FOR IMPLANTABLE BLOOD PUMP WITH ACCIDENTAL DISCONNECTION PREVENTION	14/761,092	Jul 15, 2015
096206-0954676	THOR-P06061US	U.S.	BLOOD PUMP AND METHOD OF SUCTION DETECTION	14/834,757	Aug 25, 2015
096206-0954675	THOR-P06062US	U.S.	BLOOD PUMP AND METHOD OF SUCTION DETECTION	14/834,771	Aug 25, 2015
096206-0946606	THOR-P06059US	U.S.	HEART INNER WALL CHECKING TOOL AND DEVICE FOR CHECKING HEART INNER WALL	14/761,146	Nov 4, 2015
096206-0959891	THOR-P06068A	U.S.	PRESSURE/FLOW CHARACTERISTIC MODIFICATION OF A CENTRIFUGAL PUMP IN A VENTRICULAR ASSIST DEVICE	62/255,774	Nov 16, 2015
096206-0969956	THOR-P06064	U.S.	HEART BEAT IDENTIFICATION AND PUMP SPEED SYNCHRONIZATION	15/041,716	Feb 11, 2016
096206-0969958	THOR-P06066	U.S.	ALTERNATING PUMP GAPS	15/041,987	Feb 11, 2016
096206-0969961	THOR-P06063	U.S.	IMPELLER SUSPENSION MECHANISM FOR HEART PUMP	15/042,685	Feb 12, 2016

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096206-0971739	THOR-P06067	U.S.	SYSTEM AND METHOD FOR CONTROLLING THE POSITION OF A LEVITATED ROTOR	15/042,431	Feb 12, 2016
096206-1010512	THOR-P06060D	U.S.	IMPELLER POSITION COMPENSATION USING FIELD ORIENTED CONTROL	15/172,760	Jun 3, 2016
096206-1010513	THOR-P06034D	U.S.	CENTRIFUGAL PUMP APPARATUS	15/174,639	Jun 6, 2016
096206-0890673	THOR-P06027CN	China	CENTRIFUGAL PUMP DEVICE	ZL 200980150158.4	Mar 4, 2015
096206-0890691	THOR-P06029CN	China	CENTRIFUGAL PUMP DEVICE	ZL 201080011422.9	Dec 10, 2014
096206-0890677	THOR-P06004EP	European Patent Office	CENTRIFUGAL LIQUID-PUMPING SYSTEM	1331017	Aug 14, 2013
096206-0894241	THOR-P06005EP	European Patent Office	BLOOD PUMP	1402907	Feb 25, 2009
096206-0890683	THOR-P06005EP2	European Patent Office	BLOOD PUMP SYSTEM	2030641	Feb 25, 2015
096206-0890780	THOR-P06027EP	European Patent Office	CENTRIFUGAL PUMP DEVICE	2372160	Jul 30, 2014
096206-0890678	THOR-P06028EP	European Patent Office	CENTRIFUGAL PUMP DEVICE	2405141	Apr 9, 2014
096206-0890672	THOR-P06003FR	France	CENTRIFUGAL LIQUID PUMP DEVICE	1327455	Jan 3, 2007
096206-0893288	THOR-P06004FR	France	CENTRIFUGAL LIQUID-PUMPING SYSTEM	1331017	Aug 14, 2013
096206-0890688	THOR-P06005FR	France	BLOOD PUMP	1402907	Feb 25, 2009
096206-0927119	THOR-P06005FR2	France	BLOOD PUMP SYSTEM	2030641	Feb 25, 2015
096206-0890705	THOR-P06009FR	France	EXTERNAL BATTERY PACK FOR ARTIFICIAL HEART AND BATTERY CHARGER WITH DATA COLLECTION FUNCTION UTILIZING THE SAME	1486217	May 12, 2010
096206-0908849	THOR-P06027FR	France	CENTRIFUGAL PUMP	2372160	Jul 30, 2014

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			DEVICE		
096206-0908087	THOR-P06028FR	France	CENTRIFUGAL PUMP DEVICE	2405141	Apr 9, 2014
096206-1012920	THOR-P06029FR	France	CENTRIFUGAL PUMP DEVICE	2405140	Oct 19, 2016
096206-890731	THOR-P06014FR	France	BLOOD PUMP WITH HYDRODYNAMIC BEARING	1598087	Feb 3, 2010
096206-0890669	THOR-P06003DE	German y	CENTRIFUGAL FLUID PUMP WITH FAILURE CORRECTION	60310778	Jan 3, 2007
096206-0893287	THOR-P06004DE	German y	CENTRIFUGAL LIQUID-PUMPING SYSTEM	603 44 698.1	Aug 14, 2013
096206-0890684	THOR-P06005DE	German y	BLOOD PUMP	60347360.1	Feb 25, 2009
096206-0927118	THOR- P06005DE2	German y	BLOOD PUMP SYSTEM	60347360.1	Feb 25, 2015
096206-0890701	THOR-P06009DE	German y	BATTERY PACK FOR ARTIFICIAL HEART AND BATTERY CHARGER WITH DATA COLLECTION FUNCTION UTILIZING THE SAME	6020040271 03.9-08	May 12, 2010
096206-0890729	THOR-P06014DE	German y	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	6020050192 19	Feb 3, 2010
096206-0908847	THOR-P06027DE	German y	CENTRIFUGAL PUMP DEVICE	2372160	Jul 30, 2014
096206-0908088	THOR-P06028DE	German y	CENTRIFUGAL PUMP DEVICE	2405141	Apr 9, 2014
096206-1012919	THOR-P06029DE	German y	CENTRIFUGAL PUMP DEVICE	2405140	Oct 19, 2016
096206-0890667	THOR-P06001JP	Japan	CONTINUOUS FLOW TYPE ARTIFICIAL HEART SYSTEM	4391680	Oct 16, 2009
096206-0890668	THOR-P06002JP	Japan	INSULATION TYPE POWER TRANSMISSION CONNECTOR AND MEDICAL EQUIPMENT HAVING THE SAME	4584484	Sep 10, 2010
096206-0890676	THOR-P06004JP	Japan	CENTRIFUGAL LIQUID-PUMPING SYSTEM	4004296	Aug 31, 2007
096206-0890681	THOR-P06005JP	Japan	BLOOD PUMP	4041376	Nov 16, 2007
096206-0890692	THOR-P06006JP	Japan	CENTRIFUGAL TYPE	4456857	Feb 12, 2010

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			BLOOD PUMP APPARATUS		
096206-0890695	THOR-P06007JP	Japan	LIQUID PUMP DEVICE	4004401	Aug 31, 2007
096206-0890696	THOR-P06008JP	Japan	ARTIFICIAL HEART PUMP SYSTEM AND ARTIFICIAL HEART USERS' INTERFACE UNIT USED FOR THE SAME	4076478	Feb 8, 2008
096206-0890698	THOR-P06009JP	Japan	EXTERNAL BATTERY PACK FOR ARTIFICIAL HEART AND BATTERY CHARGER WITH DATA COLLECTION FUNCTION UTILIZING THE SAME	4076479	Feb 8, 2008
096206-0890711	THOR-P06010JP	Japan	LIQUID PUMP DEVICE	4004440	Aug 31, 2007
096206-0890717	THOR-P06012JP	Japan	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	4233475	Dec 19, 2008
096206-0890723	THOR-P06014JP1	Japan	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	4340178	Jul 10, 2009
096206-0890727	THOR-P06014JP2	Japan	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	4340182	Jul 10, 2009
096206-0890725	THOR-P06055JP	Japan	BLOOD PUMP SYSTEM	5015985	Jun 15, 2012
096206-0890736	THOR-P06015JP	Japan	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	4340183	Jul 10, 2009
096206-0890738	THOR-P06016JP	Japan	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	4759261	Jun 10, 2011
096206-0890739	THOR-P06017JP	Japan	BLOOD PUMP APPARATUS	4787526	Jul 22, 2011
096206-0890741	THOR-P06018JP	Japan	CENTRIFUGAL BLOOD PUMP APPARATUS	4472610	Mar 12, 2010
096206-0890743	THOR-P06019JP	Japan	CENTRIFUGAL BLOOD PUMP APPARATUS	4472612	Mar 12, 2010
096206-0890745	THOR-P06020JP	Japan	BLOOD PUMP DEVICE	4898319	Jan 6, 2012
096206-0890748	THOR-P06021JP	Japan	SENSORLESS MAGNETIC BEARING TYPE BLOOD PUMP APPARATUS	4787726	Jul 22, 2011
096206-0890751	THOR-P06022JP	Japan	ARTIFICIAL HEART BLOOD PUMP SYSTEM AND DEVICE	5201887	Feb 22, 2013

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			MONITORING SYSTEM		
096206-0890758	THOR-P06024JP	Japan	BLOOD PUMP SYSTEM	5170751	Jan 11, 2013
096206-0890759	THOR-P06025JP	Japan	BLOOD PUMP	5249646	Apr 19, 2013
096206-0890762	THOR-P06026JP	Japan	BLOOD PUMP APPARATUS	5171953	Jan 11, 2013
096206-0890670	THOR-P06027JP	Japan	CENTRIFUGAL PUMP DEVICE	5577503	Jul 18, 2014
096206-0890775	THOR-P06056JP	Japan	CENTRIFUGAL TYPE PUMP APPARATUS	5693812	Feb 13, 2015
096206-0891495	THOR-P06057JP	Japan	CENTRIFUGAL TYPE PUMP APPARATUS	5347171	Aug 30, 2013
096206-0890675	THOR-P06028JP	Japan	CENTRIFUGAL PUMP DEVICE	5378010	Oct 4, 2013
096206-0890682	THOR-P06029JP	Japan	CENTRIFUGAL PUMP DEVICE	5378012	Oct 4, 2013
096206-0890685	THOR-P06058JP	Japan	CENTRIFUGAL PUMP DEVICE	5378060	Oct 4, 2013
096206-0890693	THOR-P06030JP	Japan	ROTATION DRIVE DEVICE AND CENTRIFUGAL PUMP DEVICE	5656835	Dec 5, 2014
096206-0890700	THOR-P06031JP	Japan	CENTRIFUGAL PUMP DEVICE	5443197	Dec 27, 2013
096206-0890706	THOR-P06032JP	Japan	CENTRIFUGAL-TYPE BLOOD PUMP DEVICE	5572832	Jul 11, 2014
096206-0890712	THOR-P06033JP	Japan	CENTRIFUGAL PUMP DEVICE	5681403	Jan 16, 2015
096206-0890716	THOR-P06034JP	Japan	CENTRIFUGAL PUMP DEVICE	5577506	Jul 18, 2014
096206-0893039	P06036JP2	Japan	ROTATION AND DRIVE DEVICE AND CENTRIFUGAL PUMP DEVICE USING SAME	5969979	Jul 15, 2016
096206-0890671	THOR-P06003GB	United Kingdom	CENTRIFUGAL LIQUID PUMP DEVICE	1327455	Jan 3, 2007
096206-0893289	THOR-P06004GB	United Kingdom	CENTRIFUGAL LIQUID-PUMPING SYSTEM	1331017	Aug 14, 2013
096206-0890686	THOR-P06005GB	United Kingdom	BLOOD PUMP	1402907	Feb 25, 2009
096206-0927120	THOR-P06005GB2	United Kingdom	BLOOD PUMP SYSTEM	2030641	Feb 25, 2015
096206-0890703	THOR-P06009GB	United Kingdom	EXTERNAL BATTERY PACK FOR ARTIFICIAL	1486217	May 12, 2010

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		m	HEART AND BATTERY CHARGER WITH DATA COLLECTION FUNCTION UTILIZING THE SAME		
096206-0890730	THOR-P06014GB	United Kingdom	CENTRIFUGAL TYPE BLOOD PUMP APPARATUS	1598087	Feb 3, 2010
096206-0908848	THOR-P06027GB	United Kingdom	CENTRIFUGAL PUMP DEVICE	2372160	Jul 30, 2014
096206-0908086	THOR-P06028GB	United Kingdom	CENTRIFUGAL PUMP DEVICE	2405141	Apr 9, 2014
096206-1012921	THOR-P06029GB	United Kingdom	CENTRIFUGAL PUMP DEVICE	2405140	Oct 19, 2016
096206-0890764	THOR-P06026EP	European Patent Office	BLOOD PUMP APPARATUS	09770118.9	Jun 22, 2009
096206-0890687	THOR-P06029EP	European Patent Office	CENTRIFUGAL PUMP DEVICE	10748702.7	Mar 1, 2010
096206-0890697	THOR-P06030EP	European Patent Office	ROTATION DRIVE DEVICE AND CENTRIFUGAL PUMP DEVICE	10804230.0	Jul 6, 2010
096206-0890702	THOR-P06031EP	European Patent Office	CENTRIFUGAL PUMP DEVICE	11744465.3	Jan 20, 2011
096206-0890708	THOR-P06032EP	European Patent Office	CENTRIFUGAL BLOOD PUMP DEVICE	11759133.9	Feb 24, 2011
096206-0890713	THOR-P06033EP	European Patent Office	CENTRIFUGAL PUMP DEVICE	11806627.3	Jun 28, 2011
096206-0890718	THOR-P06034EP	European Patent Office	CENTRIFUGAL PUMP DEVICE	11825062.0	Sep 8, 2011
096206-0890724	THOR-P06036EP	European Patent Office	ROTARY DRIVE DEVICE AND CENTRIFUGAL PUMP DEVICE USING THE SAME	12764433.4	Mar 12, 2012
096206-0950192	THOR-P06043EP	European Patent Office	MOTOR FAULT MONITOR FOR IMPLANTABLE BLOOD PUMP	14 741174.8	Jan 16, 2014

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096206-0950195	THOR-P06060EP	European Patent Office	IMPELLER POSITION COMPENSATION USING FIELD ORIENTED CONTROL	14743371.8	Jan 22, 2014
096206-0950193	THOR-P06045EP	European Patent Office	BACKFLOW DETECTION FOR CENTRIFUGAL BLOOD PUMP	14 741 083.1	Jan 16, 2014
096206-0950196	THOR-P06048EP	European Patent Office	STARTUP SEQUENCE FOR CENTRIFUGAL PUMP WITH LEVITATED IMPELLER	14756822.4	Feb 24, 2014
096206-0950197	THOR-P06053EP	European Patent Office	CARDIAC PUMP WITH SPEED ADAPTED FOR VENTRICLE UNLOADING	14792355.1	Apr 29, 2014
096206-0890779	THOR-P06034EP	European Patent Office	MANUFACTURING METHOD FOR MEDICAL EQUIPMENT FOR REDUCING PLATELET ADHESION OF A SURFACE IN CONTACT WITH BLOOD	11825238.6	Sep 15, 2011
096206-1016765	THOR-P06031FR	France	CENTRIFUGAL PUMP DEVICE	11744465.3	Jan 20, 2011
096206-1016763	THOR-P06031DE	Germany	CENTRIFUGAL PUMP DEVICE	11744465.3	Jan 20, 2011
096206-0890666	THOR-P06000JP	Japan	AUXILIARY ARTIFICIAL HEART AND ITS CONTROL	10-302864	Oct 23, 1998
096206-0890721	THOR-P06035JP	Japan	ROTARY DRIVE DEVICE AND CENTRIFUGAL PUMP DEVICE USING THE SAME	2011-065876	Mar 24, 2011
096206-0890742	THOR-P06039JP	Japan	CENTRIFUGAL PUMP DEVICE	2012-007845	Jan 18, 2012
096206-0891496	THOR-P06054JP	Japan	MANUFACTURING METHOD FOR MEDICAL EQUIPMENT FOR REDUCING PLATELET ADHESION OF A SURFACE IN CONTACT WITH BLOOD	2012-534051	Sep 15, 2011
096206-0890722	THOR-P06036WO	PCT	ROTATION AND DRIVE DEVICE AND CENTRIFUGAL PUMP	PCT/JP2012/056244	Mar 12, 2012

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			DEVICE USING SAME		
096206-0890735	THOR-P06037WO	PCT	NON-INVASIVE DIAGNOSTICS FOR VENTRICAL ASSIST DEVICE	PCT/US201 2/046589	Jul 13, 2012
096206-0890740	THOR-P06038WO	PCT	APICAL RING FOR VENTRICULAR ASSIST DEVICE	PCT/US201 2/068921	Dec 11, 2012
096206-0890744	THOR-P06039WO	PCT	CENTRIFUGAL PUMP DEVICE	PCT/JP2013 /050187	Jan 9, 2013
096206-0890749	THOR-P06040WO	PCT	QUICK-CONNECT OUTFLOW TUBE FOR VENTRICULAR ASSIST DEVICE	PCT/US201 3/025703	Feb 12, 2013
096206-0890754	THOR-P06041WO	PCT	FAULT MONITOR FOR FAULT TOLERANT IMPLANTABLE PUMP	PCT/US201 3/025701	Feb 12, 2013
096206-0890757	THOR-P06059WO	PCT	HEART INNER WALL CHECKING TOOL AND DEVICE FOR CHECKING HEART INNER WALL	PCT/JP2013 /050941	Jan 18, 2013
096206-0898035	THOR-P06043WO	PCT	MOTOR FAULT MONITOR FOR IMPLANTABLE BLOOD PUMP	PCT/US201 4/011786	Jan 16, 2014
096206-0898165	THOR-P06060- WO	PCT	IMPELLER POSITION COMPENSATION USING FIELD ORIENTED CONTROL	PCT/US201 4/012511	Jan 22, 2014
096206-0898167	THOR-P06044- WO	PCT	STERILIZABLE CABLE SYSTEM FOR IMPLANTABLE BLOOD PUMP	PCT/US201 4/012448	Jan 22, 2014
096206-0898028	THOR-P06045WO	PCT	BACKFLOW DETECTION FOR CENTRIFUGAL BLOOD PUMP	PCT/US201 4/011789	Jan 16, 2014
096206-0898166	THOR-P06046- WO	PCT	CABLE SYSTEM FOR IMPLANTABLE BLOOD PUMP WITH ACCIDENTAL DISCONNECTION PREVENTION	PCT/US201 4/012502	Jan 22, 2014
096206-0900065	THOR-P06049WO	PCT	PROGRAMMING OF BACKUP CONTROL UNIT FOR CARDIAC ASSIST SYSTEM	PCT/US201 4/017804	Feb 21, 2014

096206-0900064	THOR-P06048WO	PCT	STARTUP SEQUENCE FOR CENTRIFUGAL PUMP WITH LEVITATED IMPELLER	PCT/US2014/017932	Feb 24, 2014
096206-0900063	THOR-P06050WO	PCT	VERIFICATION OF MAGNETIC BALANCE FOR MAGNETICALLY LEVITATED IMPELLER	PCT/US2014/033178	Apr 7, 2014
096206-0902295	THOR-P06051WO	PCT	PERCUTANEOUS CABLE WITH REDUNDANT CONDUCTORS FOR IMPLANTABLE BLOOD PUMP	PCT/US2014/031415	Mar 21, 2014
096206-0900061	THOR-P06053WO	PCT	CARDIAC PUMP WITH SPEED ADAPTED FOR VENTRICLE UNLOADING	PCT/US2014/035798	Apr 29, 2014
096206-0956365	THOR-P06061-PCT	PCT	BLOOD PUMP AND METHOD OF SUCTION DETECTION	PCT/US2015/046846	Aug 26, 2015
096206-0956364	THOR-P06062-PCT	PCT	BLOOD PUMP AND METHOD OF SUCTION DETECTION	PCT/US2015/046844	Aug 26, 2015
096206-0970328	P06063WO	PCT	IMPELLER SUSPENSION MECHANISM FOR HEART PUMP	PCT/US2016/017864	Feb 12, 2016
096206-0970329	P06064WO	PCT	HEART BEAT IDENTIFICATION AND PUMP SPEED SYNCHRONIZATION	PCT/US2016/017611	Feb 11, 2016
096206-0970330	P06066WO	PCT	ALTERNATING PUMP GAPS	PCT/US2016/017812	Feb 12, 2016
096206-0970327	P06067WO	PCT	SYSTEM AND METHOD FOR CONTROLLING THE POSITION OF A LEVITATED ROTOR	PCT/US2016/017791	Feb 12, 2016
096206-1016764	THOR-P06031GB	United Kingdom	CENTRIFUGAL PUMP DEVICE	11744465.3	Jan 20, 2011