**PATENT ASSIGNMENT COVER SHEET**

**SUBMISSION TYPE:** NEW ASSIGNMENT  
**NATURE OF CONVEYANCE:** ASSIGNMENT

### CONVEYING PARTY DATA

<table>
<thead>
<tr>
<th>Name</th>
<th>Execution Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOSEPH P. HIGGINS</td>
<td>01/15/2015</td>
</tr>
<tr>
<td>VICTOR L. SCHOENLE</td>
<td>01/16/2015</td>
</tr>
<tr>
<td>MICHAEL J. GRACE</td>
<td>01/16/2015</td>
</tr>
<tr>
<td>MATTHEW D. CAMBRONNE</td>
<td>01/22/2015</td>
</tr>
<tr>
<td>ROBERT E. KOHLER</td>
<td>01/20/2015</td>
</tr>
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</table>

### RECEIVING PARTY DATA

<table>
<thead>
<tr>
<th>Name</th>
<th>CARDIOVASCULAR SYSTEMS, INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Address</td>
<td>651 CAMPUS DRIVE</td>
</tr>
<tr>
<td>City</td>
<td>ST. PAUL</td>
</tr>
<tr>
<td>State/Country</td>
<td>MINNESOTA</td>
</tr>
<tr>
<td>Postal Code</td>
<td>55112</td>
</tr>
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**PROPERTY NUMBERS** Total: 1

<table>
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<tr>
<th>Property Type</th>
<th>Number</th>
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<tbody>
<tr>
<td>Application Number</td>
<td>14597932</td>
</tr>
</tbody>
</table>

### CORRESPONDENCE DATA

<table>
<thead>
<tr>
<th>Fax Number</th>
<th>(612)604-6914</th>
</tr>
</thead>
</table>

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.

<table>
<thead>
<tr>
<th>Phone</th>
<th>612-604-6400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:mjohnston@winthrop.com">mjohnston@winthrop.com</a></td>
</tr>
<tr>
<td>Correspondent Name</td>
<td>JEFFREY R. STONE, WINTHROP &amp; WEINSTINE</td>
</tr>
<tr>
<td>Address Line 1</td>
<td>225 S 6 ST</td>
</tr>
<tr>
<td>Address Line 2</td>
<td>CAPELLA TOWER, SUITE 3500</td>
</tr>
<tr>
<td>Address Line 4</td>
<td>MINNEAPOLIS, MINNESOTA 55402</td>
</tr>
</tbody>
</table>

**ATTORNEY DOCKET NUMBER:** 15801.960.304.US.U2  
**NAME OF SUBMITTER:** JEFFREY R. STONE  
**SIGNATURE:** /Jeffrey R. Stone/  
**DATE SIGNED:** 02/12/2015  
**Total Attachments:** 5
PATENT ASSIGNMENT TO CORPORATION WORLDWIDE

WHEREAS, Joseph P. Higgins, a citizen of the United States, residing in Minnetonka, Minnesota;

hereafter referred to as "THE UNDERSIGNED", has made an invention entitled SPIN-TO-OPEN ATERECTOMY DEVICE WITH ELECTRIC MOTOR CONTROL filed January 1, 2015 and assigned application serial number 14/597932;

AND, WHEREAS, Cardiovascular Systems, Inc., hereafter referred to as ASSIGNEE, a corporation organized under the laws of Delaware and whose place of business and business address is 651 Campus Drive, St. Paul, Minnesota 55112, is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE in consideration of the sum of One Dollar, the receipt whereof is acknowledged, and other good and valuable consideration, THE UNDERSIGNED hereby sells, assigns and transfers unto ASSIGNEE the full and exclusive right to the said invention in the United States and the entire right, title and interest in and to all divisionals, continuations in part, reissues, reexaminations or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extension of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said invention including an assignment of all rights under the provision of international conventions and all Letters Patent of foreign countries which may be granted therefrom; the UNDERSIGNED hereby authorizes the Commissioner of Patents to issue any and all United States Letters Patent for the aforesaid invention to ASSIGNEE of the entire right, title and interest in and to the same, for the use of the ASSIGNEE, its successors and assigns.

THE UNDERSIGNED, hereby agrees that THE UNDERSIGNED, his/her executors and legal representatives will make, execute and deliver (without charge but at the expense of the ASSIGNEE) any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said ASSIGNEE, its successors and representatives all facts known to THE UNDERSIGNED relating to said invention and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable to vest the ASSIGNEE, its successors or assigns the entire right, title and interest in and to the said invention, applications, Letters Patent, rights, titles and benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

THE UNDERSIGNED represents and agrees with said Assignee its successors and assignees, that no assignment grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by THE UNDERSIGNED, and that full right to convey the same as herein expressed is possessed by THE UNDERSIGNED.

IN TESTIMONY WHEREOF, THE UNDERSIGNED has hereunto set his/her hand on the date indicated below.

Joseph P. Higgins

Date 01/15/15

No Legalization Required

9911256vl
PATENT ASSIGNMENT TO CORPORATION WORLDWIDE

WHEREAS, Victor L. Schoenle, a citizen of the United States, residing in Greenfield, Minnesota;

hereafter referred to as "THE UNDERSIGNED", has made an invention entitled SPIN-TO-OPEN
ATHERECTOMY DEVICE WITH ELECTRIC MOTOR CONTROL filed January 1, 2015 and
assigned application serial number 14/597932;

AND, WHEREAS, Cardiovascular Systems, Inc., hereafter referred to as ASSIGNEE, a
 corporation organized under the laws of Delaware and whose place of business and business
 address is 651 Campus Drive, St. Paul, Minnesota 55112, is desirous of acquiring the entire
 right, title and interest in the same;

NOW, THEREFORE in consideration of the sum of One Dollar, the receipt whereof is
acknowledged, and other good and valuable consideration, THE UNDERSIGNED hereby sells,
assigns and transfers unto ASSIGNEE the full and exclusive right to the said invention in the
United States and the entire right, title and interest in and to all divisionals, continuations,
continuations in part, reissues, reexaminations or renewals thereof, all Letters Patent which may
be granted therefrom, and all reissues or extension of such patents, and in and to any and all
applications which have been or shall be filed in any foreign countries for Letters Patent on the
said invention including an assignment of all rights under the provision of international
conventions and all Letters Patent of foreign countries which may be granted therefrom; the
UNDERSIGNED hereby authorizes the Commissioner of Patents to issue any and all United
States Letters Patent for the aforesaid invention to ASSIGNEE of the entire right, title and
interest in and to the same, for the use of the ASSIGNEE, its successors and assigns.

THE UNDERSIGNED, hereby agrees that THE UNDERSIGNED, his/her executors and legal
representatives will make, execute and deliver (without charge but at the expense of the
ASSIGNEE) any and all other instruments in writing including any and all further application
papers, affidavits, assignments and other documents, and will communicate to said ASSIGNEE,
its successors and representatives all facts known to THE UNDERSIGNED relating to said
invention and the history thereof and will testify in all legal proceedings and generally do all
things which may be necessary or desirable to vest the ASSIGNEE, its successors or assigns
the entire right, title and interest in and to the said invention, applications, Letters Patent, rights,
titles and benefits, privileges and advantages hereby sold, assigned and conveyed, or intended
so to be.

THE UNDERSIGNED represents and agrees with said Assignee its successors and assignees,
that no assignment grant, mortgage, license or other agreement affecting the rights and
property herein conveyed has been or will be made to others by THE UNDERSIGNED, and that
full right to convey the same as herein expressed is possessed by THE UNDERSIGNED.

IN TESTIMONY WHEREOF, THE UNDERSIGNED has hereunto set his/her hand on the date
indicated below.

Victor L. Schoenle  1-16-2015

Date

No Legalization Required

9911264v1
PATENT ASSIGNMENT TO CORPORATION WORLDWIDE

WHEREAS, Michael J. Grace, a citizen of the United States, residing in Brooklyn Park, Minnesota;

hereafter referred to as "THE UNDERSIGNED", has made an invention entitled SPIN-TO-OPEN Atherectomy Device With Electric Motor Control filed January 1, 2015 and assigned application serial number 14/597932;

AND, WHEREAS, Cardiovascular Systems, Inc., hereafter referred to as ASSIGNEE, a corporation organized under the laws of Delaware and whose place of business and business address is 651 Campus Drive, St. Paul, Minnesota 55112, is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE in consideration of the sum of One Dollar, the receipt whereof is acknowledged, and other good and valuable consideration, THE UNDERSIGNED hereby sells, assigns and transfers unto ASSIGNEE the full and exclusive right to the said invention in the United States and the entire right, title and interest in and to all divisionals, continuations in part, reissues, reexaminations or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extension of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said invention including an assignment of all rights under the provision of international conventions and all Letters Patent of foreign countries which may be granted therefrom; the UNDERSIGNED hereby authorizes the Commissioner of Patents to issue any and all United States Letters Patent for the aforesaid invention to ASSIGNEE of the entire right, title and interest in and to the same, for the use of the ASSIGNEE, its successors and assigns.

THE UNDERSIGNED, hereby agrees that THE UNDERSIGNED, his/her executors and legal representatives will make, execute and deliver (without charge but at the expense of the ASSIGNEE) any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said ASSIGNEE, its successors and representatives all facts known to THE UNDERSIGNED relating to said invention and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable to vest the ASSIGNEE, its successors or assigns the entire right, title and interest in and to the said invention, applications, Letters Patent, rights, titles and benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

THE UNDERSIGNED represents and agrees with said Assignee its successors and assignees, that no assignment grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by THE UNDERSIGNED, and that full right to convey the same as herein expressed is possessed by THE UNDERSIGNED.

IN TESTIMONY WHEREOF, THE UNDERSIGNED has hereunto set his/her hand on the date indicated below.

[Signature]
Michael J. Grace

Date
16 JAN 15

No Legalization Required

9911269v1
PATENT ASSIGNMENT TO CORPORATION WORLDWIDE

WHEREAS, Matthew D. Cambronne, a citizen of the United States, residing in St. Anthony, Minnesota;

hereafter referred to as "THE UNDERSIGNED", has made an invention entitled SPIN-TO-OPEN ATHERECTOMY DEVICE WITH ELECTRIC MOTOR CONTROL filed January 1, 2015 and assigned application serial number 14/597932;

AND, WHEREAS, Cardiovascular Systems, Inc., hereafter referred to as ASSIGNEE, a corporation organized under the laws of Delaware and whose place of business and business address is 651 Campus Drive, St. Paul, Minnesota 55112, is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE in consideration of the sum of One Dollar, the receipt whereof is acknowledged, and other good and valuable consideration, THE UNDERSIGNED hereby sells, assigns and transfers unto ASSIGNEE the full and exclusive right to the said invention in the United States and the entire right, title and interest in and to all divisionals, continuations in part, reissues, reexaminations or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extension of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said invention including an assignment of all rights under the provision of international conventions and all Letters Patent of foreign countries which may be granted therefrom; the UNDERSIGNED hereby authorizes the Commissioner of Patents to issue any and all United States Letters Patent for the aforesaid invention to ASSIGNEE of the entire right, title and interest in and to the same, for the use of the ASSIGNEE, its successors and assigns.

THE UNDERSIGNED, hereby agrees that THE UNDERSIGNED, his/her executors and legal representatives will make, execute and deliver (without charge but at the expense of the ASSIGNEE) any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said ASSIGNEE, its successors and representatives all facts known to THE UNDERSIGNED relating to said invention and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable to vest the ASSIGNEE, its successors or assigns the entire right, title and interest in and to the said invention, applications, Letters Patent, rights, titles and benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

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IN TESTIMONY WHEREOF, THE UNDERSIGNED has hereunto set his/her hand on the date indicated below.

Matthew D. Cambronne

Date

No Legalization Required

9911276v1
PATENT ASSIGNMENT TO CORPORATION WORLDWIDE

WHEREAS, Robert E. Kohler, a citizen of the United States, residing in Lake Elmo, Minnesota;

hereafter referred to as "THE UNDERSIGNED", has made an invention entitled SPIN-TO-OPEN ATERECTOMY DEVICE WITH ELECTRIC MOTOR CONTROL filed January 1, 2015 and assigned application serial number 14/597932;

AND, WHEREAS, Cardiovascular Systems, Inc., hereafter referred to as ASSIGNEE, a corporation organized under the laws of Delaware and whose place of business and business address is 651 Campus Drive, St. Paul, Minnesota 55112, is desirous of acquiring the entire right, title and interest in the same;

NOW, THEREFORE in consideration of the sum of One Dollar, the receipt whereof is acknowledged, and other good and valuable consideration, THE UNDERSIGNED hereby sells, assigns and transfers unto ASSIGNEE the full and exclusive right to the said invention in the United States and the entire right, title and interest in and to all divisionals, continuations, continuations in part, reissues, reexaminations or renewals thereof, all Letters Patent which may be granted therefrom, and all reissues or extension of such patents, and in and to any and all applications which have been or shall be filed in any foreign countries for Letters Patent on the said invention including an assignment of all rights under the provision of international conventions and all Letters Patent of foreign countries which may be granted therefrom; the UNDERSIGNED hereby authorizes the Commissioner of Patents to issue any and all United States Letters Patent for the aforesaid invention to ASSIGNEE of the entire right, title and interest in and to the same, for the use of the ASSIGNEE, its successors and assigns.

THE UNDERSIGNED, hereby agrees that THE UNDERSIGNED, his/her executors and legal representatives will make, execute and deliver (without charge but at the expense of the ASSIGNEE) any and all other instruments in writing including any and all further application papers, affidavits, assignments and other documents, and will communicate to said ASSIGNEE, its successors and representatives all facts known to THE UNDERSIGNED relating to said invention and the history thereof and will testify in all legal proceedings and generally do all things which may be necessary or desirable to vest the ASSIGNEE, its successors or assigns the entire right, title and interest in and to the said invention, applications, Letters Patent, rights, titles and benefits, privileges and advantages hereby sold, assigned and conveyed, or intended so to be.

THE UNDERSIGNED represents and agrees with said Assignee its successors and assignees, that no assignment grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by THE UNDERSIGNED, and that full right to convey the same as herein expressed is possessed by THE UNDERSIGNED.

IN TESTIMONY WHEREOF, THE UNDERSIGNED has hereunto set his/her hand on the date indicated below.

Robert E. Kohler

Date

1/26/2015

No Legalization Required

9911279v1

RECORDER: 02/12/2015

PATENT

REEL: 034948 FRAME: 0114