

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-8
REGISTRATION STATEMENT

Under
the Securities Act of 1933

CARDIOVASCULAR SYSTEMS, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware <small>(State or Other Jurisdiction of Incorporation or Organization)</small>	41-1698056 <small>(I.R.S. Employer Identification Number)</small>
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1225 Old Highway 8 Northwest
St. Paul, Minnesota 55112-6416
(Address of Principal Executive Office and Zip Code)

Cardiovascular Systems, Inc. 2017 Equity Incentive Plan
(Full Title of the Plan)

Laurence L. Betterley
Chief Financial Officer
Cardiovascular Systems, Inc.
1225 Old Highway 8 Northwest
St. Paul, Minnesota 55112-6416
(651) 259-1600
(Name, Address and Telephone Number, Including Area Code, of Agent for Service)

Copies to:
Amanda K. Lorentz, Esq.
Fredrikson & Byron, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, MN 55402
Fax: (612) 492-7077

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered(1)(2)	Proposed Maximum Offering Price Per Share(3)	Proposed Maximum Aggregate Offering Price(3)	Amount of Registration Fee
Common Stock issuable under the Registrant's 2017 Equity Incentive Plan.	2,550,000	\$23.565	\$60,090,750	\$7,481.30

- (1) Pursuant to Rule 416 under the Securities Act of 1933, there is also being registered hereunder an indeterminate number of additional securities that may become issuable pursuant to antidilution provisions of the Registrant's 2017 Equity Incentive Plan.
- (2) Represents shares that are reserved for issuance under the Registrant's 2017 Equity Incentive Plan.
- (3) Estimated pursuant to Rule 457(h) and Rule 457(c) solely for the purpose of calculating the registration fee and based upon the average of the high and low prices of the Registrant's Common Stock on November 13, 2017, as quoted on the Nasdaq Global Market.

PART I

INFORMATION REQUIRED IN SECTION 10(a) PROSPECTUS

The information specified in Item 1 and Item 2 of Part I of Form S-8 is omitted from this Registration Statement on Form S-8 in accordance with the provisions of Rule 428 under the Securities Act of 1933, as amended (the “Securities Act”), and the introductory note to Part I of Form S-8. In accordance with the rules and regulations of the Securities and Exchange Commission (the “Commission”) and the instructions to Form S-8, such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424. The documents containing the information specified in Part I of Form S-8 will be delivered to the participants in the equity incentive plan covered by this Registration Statement as specified by Rule 428(b)(1) under the Securities Act.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The Registrant hereby incorporates by reference into this Registration Statement the following documents and information previously filed with the Commission:

- The Registrant’s Annual Report on Form 10-K for the fiscal year ended June 30, 2017, filed on August 24, 2017;
- The Registrant’s Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2017, filed on November 3, 2017;
- The Registrant’s Current Reports on Form 8-K filed on July 5, 2017, July 28, 2017, September 6, 2017, September 18, 2017 and November 17, 2017;
- The Registrant’s definitive proxy statement on Schedule 14A filed on October 3, 2017 for the Registrant’s annual meeting of stockholders held on November 15, 2017 (amended on October 26, 2017); and
- The description of the shares of the Registrant’s common stock, \$0.001 par value, set forth in the Registrant’s registration statement on Form 8-A filed on June 26, 2006, including any amendments or reports filed for the purpose of updating such information.

All documents filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934 after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered by this Registration Statement have been sold or that deregisters all securities then remaining unsold will be deemed to be incorporated by reference in this Registration Statement and to be a part of this Registration Statement from the date of filing of such document.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, other than an action by or in the right of the corporation, by reason of the fact that the person is or was a director, officer, employee or agent of the corporation or is or was serving at the corporation’s request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses, including attorneys’ fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with the action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person’s conduct was unlawful. The power to indemnify applies to actions brought by or in the right of the corporation as well, but only to the extent of expenses, including attorneys’ fees but excluding judgments, fines and amounts paid in settlement, actually and reasonably incurred by the person in connection with the defense or settlement of the

action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that a court of competent jurisdiction shall determine that such indemnity is proper.

Section 145(g) of the Delaware General Corporation Law provides that a corporation shall have the power to purchase and maintain insurance on behalf of its officers, directors, employees and agents, against any liability asserted against and incurred by such persons in any such capacity.

Section 102(b)(7) of the General Corporation Law of the State of Delaware provides that a corporation may eliminate or limit the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law of the State of Delaware, or (iv) for any transaction from which the director derived an improper personal benefit. No such provision shall eliminate or limit the liability of a director for any act or omission occurring prior to the date when such provision becomes effective.

Our Amended and Restated Bylaws, as amended, provide that we shall indemnify our directors and officers to the fullest extent permitted by the laws of the State of Delaware or any other applicable law. As permitted by our Amended and Restated Bylaws, we have also entered into indemnification agreements with each of our non-employee directors that provide for indemnification and expense advancement to the fullest extent permitted by the laws of the State of Delaware.

Our Amended and Restated Bylaws provide that we may purchase and maintain insurance policies on behalf of our directors and officers against specified liabilities for actions taken in their capacities as such, including liabilities under the Securities Act. We have obtained directors and officers' liability insurance to cover liabilities our directors and officers may incur in connection with their services to us.

Our Restated Certificate of Incorporation, as amended, provides that the liability of our directors for monetary damages shall be eliminated to the fullest extent under applicable law.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

Exhibit No.	Description
5.1	Opinion of Fredrikson & Byron, P.A.
23.1	Consent of PricewaterhouseCoopers LLP.
23.2	Consent of Fredrikson & Bryon, P.A. (included in Exhibit 5.1).
24.1	Power of Attorney (included on signature page hereof).
99.1	Cardiovascular Systems, Inc. 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed November 17, 2017.
99.2	Form of Board Restricted Stock Award Agreement (in lieu of cash retainer) under 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed November 17, 2017.
99.3	Form of Board RSU Agreement (annual) under 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed November 17, 2017.
99.4	Form of Board RSU Agreement (in lieu of cash retainer) under 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed November 17, 2017.
99.5	Form of Performance Unit Agreement (cash settled) under 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed November 17, 2017.
99.6	Form of Performance-Vest Restricted Stock Award Agreement under 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.6 to the Registrant's Current Report on Form 8-K filed November 17, 2017.
99.7	Form of Time-Vest Restricted Stock Award Agreement under 2017 Equity Incentive Plan, incorporated by reference to Exhibit 10.7 to the Registrant's Current Report on Form 8-K filed November 17, 2017.

Item 9. Undertakings.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in this registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

Provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new Registration Statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(1) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

- (b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (h) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by final adjudication of such issue.
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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of St. Paul, State of Minnesota, on November 17, 2017.

CARDIOVASCULAR SYSTEMS, INC.

By /s/ Laurence L. Betterley

Laurence L. Betterley

Chief Financial Officer

Each of the undersigned constitutes and appoints Scott R. Ward and Laurence L. Betterley his or her true and lawful attorney-in-fact and agent, each acting alone, with full powers of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign the Registration Statement on Form S-8 of Cardiovascular Systems, Inc. relating to the Company's 2017 Equity Incentive Plan and any or all amendments or post-effective amendments to the Registration Statement on Form S-8, and any and all future Registration Statements on Form S-8 filed for the purpose of registering additional shares resulting from share increases under the Company's 2017 Equity Incentive Plan, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, each acting alone, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the date indicated.

Signature	Title	Date
<u>/s/ Scott R. Ward</u> Scott R. Ward	Chairman, President and Chief Executive Officer (principal executive officer)	November 17, 2017
<u>/s/ Laurence L. Betterley</u> Laurence L. Betterley	Chief Financial Officer (principal financial and accounting officer)	November 17, 2017
<u>/s/ Martha Goldberg Aronson</u> Martha Goldberg Aronson	Director	November 17, 2017
<u>/s/ Scott Bartos</u> Scott Bartos	Director	November 17, 2017
<u>/s/ Brent G. Blackey</u> Brent G. Blackey	Director	November 17, 2017
<u>/s/ Edward Brown</u> Edward Brown	Director	November 17, 2017
<u>/s/ William E. Cohn</u> William E. Cohn	Director	November 17, 2017
<u>/s/ Augustine Lawlor</u> Augustine Lawlor	Director	November 17, 2017

FREDRIKSON & BYRON, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, Minnesota 55402
Telephone: (612) 492-7000
Facsimile: (612) 492-7077
November 16, 2017

Cardiovascular Systems, Inc.
1225 Old Highway 8 Northwest
St. Paul, MN 55112

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

We are acting as corporate counsel to Cardiovascular Systems, Inc. (the "Company") in connection with the filing by the Company of a registration statement on Form S-8 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Act") covering 2,550,000 shares (the "Shares") of Common Stock issuable pursuant to the Company's 2017 Equity Incentive Plan (the "Plan").

In acting as such counsel and for the purpose of rendering this opinion, we have reviewed copies of the following, as presented to us by the Company: (i) the Company's Restated Certificate of Incorporation, as amended; (ii) the Company's Amended and Restated Bylaws, as amended; (iii) certain corporate resolutions and minutes adopted by the Board of Directors and stockholders of the Company pertaining to the adoption and approval of the Plan; (iv) the Plan; and (v) the Registration Statement. In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals and the conformity with the original of all documents submitted to us as copies thereof.

Based on, and subject to, the foregoing and upon representations and information provided by the Company or its officers or directors, it is our opinion as of this date that, upon issuance and delivery of the Shares against receipt by the Company of the consideration for the Shares pursuant to the terms of the Plan, the Shares will be validly issued, fully paid and nonassessable.

This opinion is limited to the Delaware General Corporation Law. We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Securities and Exchange Commission.

Very truly yours,

Fredrikson & Byron, P.A.

By: /s/ Amanda K. Lorentz
Amanda K. Lorentz, Vice President

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated August 24, 2017 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in Cardiovascular Systems, Inc.'s Annual Report on Form 10-K for the year ended June 30, 2017.

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP
Minneapolis, Minnesota
November 17, 2017