

Cardiovascular Systems Inc
 Form 4
 May 17, 2010

FORM 4

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

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 NELSON GLEN D

(Last) (First) (Middle)
 651 CAMPUS DRIVE
 (Street)
 ST. PAUL, MN 55112
 (City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol
 Cardiovascular Systems Inc [CSII]

3. Date of Earliest Transaction (Month/Day/Year)
 05/17/2010

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director 10% Owner
 Officer (give title below) Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price
Common Stock	05/14/2010		P		27,000	A	\$ 4.812 (1)
Common Stock					246,524	I	Held by LLC (2)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

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Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Fair Value of Derivative Security (Instr. 3 and 4)	
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares
Stock Option (right to buy)	\$ 12.37					12/01/2005	11/30/2015	Common Stock	9,705
Stock Option (right to buy)	\$ 9.28					04/21/2010	11/30/2014	Common Stock	6,470
Stock Option (right to buy)	\$ 8.83					12/19/2006	12/18/2016	Common Stock	12,940
Stock Option (right to buy)	\$ 7.9					10/09/2007	10/08/2017	Common Stock	4,322
Stock Option (right to buy)	\$ 11.38					11/13/2007	11/12/2017	Common Stock	15,087
Warrant	\$ 8.78					07/19/2006	07/19/2011	Common Stock	12,131
Warrant	\$ 9.28					09/12/2008	09/12/2013	Common Stock	53,916
Warrant	\$ 8.83					02/25/2009	02/24/2014	Common Stock	56,558
Restricted Stock Units	(3)					(3)	(3)	Common Stock	5,714
	(4)					(4)	(4)		11,628

Restricted
Stock
Units

Common
Stock

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
NELSON GLEN D 651 CAMPUS DRIVE ST. PAUL, MN 55112		X		

Signatures

/s/ John R. Remakel as Attorney-in-Fact for Glen D. Nelson pursuant to Power of Attorney
previously filed.

05/11/2010

__Signature of Reporting Person

Date

Explanation of Responses:

* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) The price reported in Column 4 is a weighted average price. These shares were purchased in multiple transactions at prices ranging from \$4.74 to \$4.92 inclusive. The reporting person undertakes to provide Cardiovascular Systems, Inc., any security holder of Cardiovascular Systems, Inc. or the staff of the Securities and Exchange Commission, upon request, full information regarding the number of shares purchased at each separate price within the range set forth in this footnote.

(2) Shares are held by GDN Holdings, LLC, of which Dr. Nelson is the sole owner.

(3) Each restricted stock unit represents the right to receive a payment from CSI equal in value to the market price per share of CSI common stock on the date of payment and shall be payable in shares of the Company's Common Stock beginning six months following the termination of each director's board membership.

(4) Each restricted stock unit represents the right to receive a payment from CSI equal in value to the market price per share of CSI common stock on the date of payment, and shall be payable in shares of the Company's Common Stock beginning six months following the termination of each director's board membership; provided, however, that the restricted stock units vest in equal quarterly amounts of 2,907 on each of 9/30/2009, 12/31/2009, 3/31/2010 and 6/30/2010.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.