UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-8 REGISTRATION STATEMENT

UNDER
THE SECURITIES ACT OF 1933

INFUSYSTEM HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 20-3341405 (I.R.S. Employer Identification No.)

31700 Research Park Drive Madison Heights, Michigan 48071 (Address of principal executive offices and zip code)

InfuSystem Holdings, Inc. Employee Stock Purchase Plan (Full title of plan)

Eric Steen
Chief Executive Officer
InfuSystem Holdings, Inc.
31700 Research Park Drive
Madison Heights, Michigan 48071
(248) 291-1210
(Name and address of agent for service)

(248) 291-1210 (Telephone number, including area code, of agent for service)

With a copies of communications to:

B. Scott Gootee Scot Hill Stinson Leonard Street LLP 1201 Walnut Street, Suite 2900 Kansas City, Missouri 64106 (816) 691-3263

company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company Exchange Act.	in Rule 12b-2 of the	
Large accelerated filer □	Accelerated filer	
Non-accelerated filer	Smaller reporting company	\boxtimes

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee(3)
Common Stock, par value \$.0001 per share	350,000 shares	\$2.19	\$766,500	\$88.84

- (1) In the event of a stock split, stock dividend or similar transaction involving the Registrant's Common Stock, in order to prevent dilution, the number of shares of Common Stock registered hereby shall be automatically increased to cover the additional shares of Common Stock in accordance with Rule 416 under the Securities Act of 1933, as amended (the "Securities Act").
- (2) Calculated pursuant to Rules 457(h)(1) and 457(c) under the Securities Act based on the average of the high and low prices reported for the Registrant's Common Stock on March 27, 2017, on the NYSE MKT. Estimated solely for calculating the registration fee in accordance with Rule 457 under the Securities Act.
- (3) Calculated pursuant to General Instruction E to Form S-8.

EXPLANATORY NOTE

This Registration Statement on Form S-8 is being filed by InfuSystem Holdings, Inc. (the "Registrant") for the purpose of registering an additional 350,000 shares of the Registrant's Common Stock reserved for issuance under the InfuSystem Holdings, Inc. Employee Stock Purchase Plan (as amended on September 7, 2016), as approved by the Registrant's stockholders at the Registrant's 2016 annual meeting of stockholders.

Pursuant to General Instruction E to Form S-8, this Registration Statement on Form S-8 incorporates by reference the contents of the Registration Statement on Form S-8 (File No. 333-195930) filed by the Registrant with the Securities and Exchange Commission (the "Commission) on May 13, 2014.

PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 8. Exhibits.

Exhibit Number	Description of Exhibit
4.1	Amended and Restated Certificate of Incorporation, as amended (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-35020) as filed with the Commission on May 12, 2014).
4.2	Amended and Restated By-Laws (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-35020) as filed with the Commission on May 31, 2012).
5.1*	Opinion of Stinson Leonard Street LLP regarding legality.
23.1*	Consent of BDO USA, LLP.
23.2*	Consent of Stinson Leonard Street LLP (contained in Exhibit 5.1 hereto).
24.1*	Powers of Attorney (contained in the signature page hereto).
99.1	Composite Copy of InfuSystem Holdings, Inc. Employee Stock Purchase Plan, as amended (incorporated by reference to Exhibit 10.24 to the Registrant's Annual Report on Form 10-K (File No. 001-35020) as filed with the Commission on March 22, 2017).

^{*} Filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Act, 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 Madison Heights, State of Michigan, on the 31st day of March, 2017.

INFUSYSTEM HOLDINGS, INC.

By: /s/ Eric K. Steen

Eric K. Steen President, Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Eric K. Steen, Christopher Downs or Trent N. Smith, and each of them, severally, his true and lawful attorneys-in-fact and agents, with full power of substitution and re-substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments and any registration statement filed pursuant to Rule 462(b) under the Securities Act) to this Registration Statement, 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 full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

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

Signatures	<u>Title</u>	Date
/s/ Eric K. Steen Eric K. Steen	President, Chief Executive Officer (Principal Executive Officer) and Director	March 31, 2017
/s/ Christopher Downs Christopher Downs	Chief Financial Officer (Interim) (Principal Financial Officer)	March 31, 2017
/s/ Trent N. Smith Trent N. Smith	Chief Accounting Officer (Principal Accounting Officer)	March 31, 2017
/s/ Gregg Lehman Gregg Lehman	Chairman of the Board and Director	March 31, 2017
/s/ David Dreyer David Dreyer	Director	March 31, 2017
/s/ Ryan Morris Ryan Morris	Director	March 31, 2017
/s/ Scott Shuda Scott Shuda	Director	March 31, 2017
/s/ Joseph Whitters Joseph Whitters	Director	March 31, 2017

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^{*} Filed herewith.



March 31, 2017

InfuSystem Holdings, Inc. 31700 Research Park Drive Madison Heights, Michigan 48071

Re: Issuance of Securities Covered by Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to InfuSystem Holdings, Inc., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-8 (the "Registration Statement") filed with the Securities and Exchange Commission (the "Commission") by the Company on or about the date hereof under the Securities Act of 1933, as amended (the "Act"). The Registration Statement relates to up to 350,000 additional shares (the "Shares") of the Company's common stock, \$0.0001 par value per share (the "Common Stock"), to be issued pursuant to the InfuSystem Holdings, Inc. Employee Stock Purchase Plan, as amended (the "Employee Stock Purchase Plan"). The Registration Statement also relates to such additional shares of Common Stock as may become issuable pursuant to the anti-dilution provisions of the Employee Stock Purchase Plan (collectively with the Shares, the "Securities").

In connection with this opinion, we have examined the Registration Statement and originals or copies, certified or otherwise identified to our satisfaction, of such records, agreements and instruments of the Company, certificates of public officials and of officers of the Company and such other documents and records, and such matters of law, as we have deemed necessary as a basis for the opinions hereinafter expressed, including the Company's Amended and Restated Certificate of Incorporation, as amended (the "Charter"), and the Company's Amended and Restated Bylaws (the "Bylaws").

For purposes of this opinion, we have assumed the authenticity of all documents submitted to us as originals, the conformity to the originals of all documents submitted to us as copies. We have also assumed the genuineness of the signatures of persons signing all documents in connection with which this opinion is rendered, the authority of such persons signing on behalf of the parties thereto other than the Company and the due authorization, execution, delivery and binding effect of all documents by the parties thereto other than the Company. As to any facts material to the opinion expressed herein which we have not independently established or verified, we have relied upon the statements and representations of officers and other representatives of the Company and others. This opinion assumes that the provisions of the Charter and the Bylaws will not be amended after the date hereof. This opinion further assumes compliance both in the past and in the future with the terms of the Employee Stock Purchase Plan by the Company and its employees, officers, board of directors and any committee and/or trustee appointed to administer the Employee Stock Purchase Plan.

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We express no opinion as to matters under or involving the laws of any jurisdiction other than the federal laws of the United States of America and the laws of the State of Delaware. We advise you that the issues addressed by this opinion may be governed in whole or in part by other laws, and we express no opinion as to whether any relevant difference exists between the laws upon which our opinion is based and any other laws that may actually govern.

Based upon and subject to the foregoing, and having regard for such legal considerations as we have deemed relevant, upon the issuance and sale of said Securities for the consideration and upon the terms and conditions set forth in the Employee Stock Purchase Plan, said Securities will be legally issued, fully paid and non-assessable.

This opinion is limited to the specific issues addressed herein, and no opinion may be inferred or implied beyond that expressly stated herein. This opinion is rendered on the date hereof and we have no continuing obligation hereunder to inform you of changes of law, including judicial interpretations of law, or of facts of which we become aware after the date hereof.

We consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules of the Commission.

Very truly yours,

Stinson Leonard Street LLP

/s/ Stinson Leonard Street LLP

Consent of Independent Registered Public Accounting Firm

InfuSystem Holdings, Inc. Madison Heights, Michigan

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 of InfuSystem Holdings, Inc. and subsidiaries, of our report dated March 22, 2017, relating to the consolidated financial statements of InfuSystem Holdings, Inc. and subsidiaries appearing in the Company's Annual Report on Form 10-K for the year ended December 31, 2016.

/s/ BDO USA, LLP

Troy, Michigan March 31, 2017

BDO USA, LLP, a Delaware limited liability partnership, is the U.S. member of BDO International Limited, a UK company limited by guarantee, and forms part of the international BDO network of independent member firms.

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