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As filed with the Securities and Exchange Commission on June 20, 2017

Registration No. 333-

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM S-3
REGISTRATION STATEMENT
Under
The Securities Act of 1933

KVH Industries, Inc.

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

05-0420589
(I.R.S. Employer
Identification Number)

**50 Enterprise Center
Middletown, Rhode Island 02842
(401) 847-3327**

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**Martin A. Kits van Heyningen
President and Chief Executive Officer
KVH Industries, Inc.
50 Enterprise Center
Middletown, Rhode Island 02842
(401) 847-3327**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**John D. Hancock, Esq.
Foley Hoag LLP
Seaport West
155 Seaport Boulevard
Boston, Massachusetts 02210
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**Approximate date of commencement of proposed sale to the public:
From time to time after the effective date of this Registration Statement.**

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the SEC pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer
(Do not check if a
smaller reporting company)

Smaller reporting company
Emerging growth company

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 Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)(2)	Proposed Maximum Offering Price Per Unit(2)	Proposed Maximum Aggregate Offering Price(3)	Amount of Registration Fee
Common Stock, par value \$0.01 per share				
Preferred Stock, par value \$0.01 per share				
Debt Securities				
Warrants				
Rights				
Units(4)				
Total			\$100,000,000	\$11,590

- (1) We are registering an indeterminate amount or number of the securities of each identified class as we may from time to time issue at indeterminate prices, including securities issuable upon conversion, exercise, exchange, redemption, repurchase or settlement of other securities. Pursuant to Rule 416 under the Securities Act, this Registration Statement shall also cover any additional securities issuable by reason of any stock split, stock dividend or similar transaction, including anti-dilution provisions.
- (2) Omitted pursuant to General Instruction II.D. of Form S-3.
- (3) Calculated pursuant to Rule 457(o) under the Securities Act. Subject to Rule 462(b) under the Securities Act, in no event will the aggregate offering price of all securities issued from time to time pursuant to this Registration Statement exceed \$100,000,000, or the equivalent thereof in one or more foreign currencies, foreign currency units or composite currencies.
- (4) Each unit will represent an interest in two or more other securities, which may or may not be separable from one another.
-

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission acting pursuant to said Section 8(a) may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, Dated June 20, 2017

PROSPECTUS

KVH Industries, Inc.

Common Stock
Preferred Stock
Debt Securities
Warrants
Rights
Units

\$100,000,000

We may, from time to time in one or more offerings, offer and sell up to \$100,000,000 in the aggregate of our common stock, preferred stock, debt securities, warrants to purchase securities offered hereby, rights to purchase securities offered hereby, or any combination of the foregoing, either individually or as units comprised of two or more other securities.

This prospectus provides a general description of the securities we may offer. We will provide the specific terms of the securities offered in one or more prospectus supplements or by other means. We may authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference, before you invest in any of our securities. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement or a free writing prospectus.

Our common stock is listed on The NASDAQ Global Select Market under the symbol "KVHI." On June 15, 2017, the last reported sale price of our common stock on The NASDAQ Global Select Market was \$9.70 per share. There is currently no market for the other securities we may offer.

Investing in our securities involves a high degree of risk. Please carefully read the information under the headings "Risk Factors" beginning on page 7 and "Cautionary Note Regarding Forward-Looking Statements" on page 7 of this prospectus before you invest in our securities. This information may also be included in any prospectus supplement, any related free writing prospectus and/or any other future filings we make with the Securities and Exchange Commission that are incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

We may offer and sell these securities to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis. If we use underwriters, dealers or agents to sell the securities, we will name them and describe their compensation in a prospectus supplement as required. For any sale, we will provide the price to the public and the net proceeds in a prospectus supplement or free writing prospectus.

The date of this prospectus is _____, 2017.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a "shelf" registration process. Under this shelf process, we may, from time to time, offer or sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$100,000,000 on a delayed or continuous basis.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide specific information about the terms of that offering through a prospectus supplement or other means. We may authorize one or more free writing prospectuses (including any pricing supplement or term sheet) to be provided to you that may contain material information about the terms of that offering. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add to, update or change information contained in the prospectus or in any documents that we have incorporated by reference into this prospectus, and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement or the related free writing prospectus. If any statement in one of these incorporated documents, prospectus supplements or free writing prospectuses is inconsistent with a statement in another such document having a later date, the statement in the later-dated document modifies or supersedes the earlier statement.

You should rely only on the information contained or incorporated by reference in this prospectus and any prospectus supplement or any related free writing prospectus. We have not authorized any other person to provide you with different information. You should read the entire prospectus, any prospectus supplement, any related issuer free writing prospectus, and the documents incorporated by reference into this prospectus or any prospectus supplement (including, but not limited to, the information described below under the headings "Where You Can Find More Information" and "Information Incorporated by Reference"), before making an investment decision. The prospectus and the accompanying prospectus supplement, if any, and any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus, any accompanying prospectus supplement or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should assume that the information in this prospectus, any prospectus supplement and any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of the document or any sale of a security. We do not imply or represent by delivering this prospectus, any prospectus supplement or any related free writing prospectus that any aspect of our business, financial condition or results of operations is unchanged after the date on the front of such document or that the information in such document is correct as any time after such date.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus or incorporated herein by reference. This summary is not complete and does not contain all of the information that you should consider before deciding to invest in our securities. We urge you to read this entire prospectus and the information incorporated by reference herein carefully, including the "Risk Factors" section. We carry on our business directly and through our subsidiaries. In this prospectus, unless the context indicates or implies otherwise, the terms "company," "we," "us," and "our" refer to KVH Industries, Inc. and its subsidiaries.

KVH Industries, Inc.

Overview

We are a leading manufacturer of solutions that provide global high-speed Internet, television, and voice services via satellite to mobile users at sea and on land. We are also a leading provider of commercially licensed entertainment, including news, sports, music, and movies, to commercial and leisure customers in the maritime, hotel, and retail markets. In addition, we develop and distribute training films and e-Learning computer-based training courses to commercial maritime customers. We are also a premier manufacturer of high-performance navigational sensors and integrated inertial systems for defense and commercial inertial navigation applications. Our reporting segments are as follows:

- the mobile connectivity segment and
- the inertial navigation segment.

Through these segments, we manufacture and sell our solutions in a number of major geographic areas, including internationally. We generate revenues from various international locations, primarily consisting of Canada, Europe (both inside and outside the European Union), Africa, Asia/Pacific, and the Middle East.

We are headquartered in Middletown, Rhode Island, with active operations in Denmark, Hong Kong, the State of Illinois, Japan, Norway, Singapore, and the United Kingdom.

Corporate Information

We were organized in Rhode Island in 1978 and were reincorporated in Delaware on August 16, 1985. We completed our initial public offering in April 1996. Our executive offices are located at 50 Enterprise Center, Middletown, Rhode Island 02842, and our telephone number is (401) 847-3327. We maintain an Internet website at www.kvh.com, which provides additional information about us. Information contained on our web site is not incorporated into this prospectus, any related prospectus supplement or any related free writing prospectus.

RATIO OF EARNINGS TO FIXED CHARGES

The following table provides, for the periods presented, our ratio of earnings to fixed charges and our ratio of earnings to combined fixed charges and preferred stock dividends. You should read these ratios in connection with our consolidated financial statements, including the notes to those statements, incorporated by reference in this prospectus.

	Three Months Ended March 31, 2017(1)	Year Ended December 31,				
		2016(2)	2015	2014	2013	2012
Ratio of earnings to fixed charges	(10.9)	(0.3)	2.7	1.9	10.0	19.2
Ratio of earnings to combined fixed charges and preferred stock dividends	(10.9)	(0.3)	2.7	1.9	10.0	19.2

(1) Earnings for the three months ended March 31, 2017 were insufficient to cover fixed charges by approximately \$4.7 million.

(2) Earnings for the year ended December 31, 2016 were insufficient to cover fixed charges by approximately \$2.0 million.

The ratio of earnings to fixed charges was computed by dividing earnings by fixed charges. For purposes of calculating the ratio of earnings to fixed charges, earnings consist of income (loss) from operations before taxes, plus fixed charges. Fixed charges include interest expense, amortization of capitalized expenses related to indebtedness and an estimate of the interest within rental expense.

As of the date of this prospectus, we have no shares of preferred stock outstanding, and we were not required to pay, and we have not declared or paid, any preferred stock dividends for the periods set forth above. Accordingly, our ratio of earnings to combined fixed charges and preferred stock dividends did not differ from the ratios presented above during any of these periods.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus, any related prospectus supplement or any related free writing prospectus involves risks. You should carefully consider the risk factors incorporated by reference to our most recent annual report on Form 10-K, any subsequent quarterly reports on Form 10-Q and any current reports on Form 8-K filed subsequent to the end of the year covered by such annual report, together with any amendments or supplements thereto, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the risk factors (if any) and other information contained in any applicable prospectus supplement or free writing prospectus, before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities. Please also refer to the section below entitled "Cautionary Note Regarding Forward-Looking Statements." Additional risks not known to us or that we believe are immaterial may also significantly impair our business operations and could result in a loss of all or part of your investment in the offered securities.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any related prospectus supplement or free writing prospectus, and the documents that are incorporated by reference into this prospectus contain or incorporate by reference "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. You can generally identify these forward-looking statements by forward-looking words such as "anticipate," "believe," "confident," "could," "estimate," "expect," "forecast," "hope," "intend," "likely," "may," "plan," "possible," "predict," "project," "should," "strategy," "will," "would," and other variations of such words or other similar expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements.

Actual results or events could differ materially from the forward-looking statements we make for a number of reasons. Factors that could cause actual results to differ materially from our forward-looking statements include, but are not limited to, the "Risk Factors" described in this prospectus, the factors discussed under "Item 1A. Risk Factors," "Management's Discussion and Analysis of Financial Conditions and Results of Operations" and "Notes to Consolidated Financial Statements" in our most recent annual report on Form 10-K, and any updates to the foregoing in reports that we have filed with the SEC or file with the SEC after the date of this prospectus. We also will include or incorporate by reference in each prospectus supplement or free writing prospectus important factors that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. You should consider these factors and the other cautionary statements made in this prospectus, any prospectus supplement, any free writing prospectus or the documents we incorporate by reference in this prospectus as being applicable to all related forward-looking statements wherever they appear in this prospectus, any prospectus supplement, any free writing prospectus or the documents incorporated by reference.

These forward-looking statements include, but are not limited to:

- our beliefs with respect to future demand for mobile access to television, voice services and the Internet;
- our beliefs regarding the continuation or renewal of weapons programs or other procurement programs for our inertial navigation products and services;

- our expectations regarding the markets for our products and acceptance of our products (including new products, if introduced), in the marketplace;
- our beliefs regarding future enhancements to the mini-VSAT Broadband service and related products;
- our expectations regarding revenue growth from our mobile connectivity products and services and inertial navigation products and services;
- our beliefs with respect to our competitive advantages in branding in certain product lines and in certain markets;
- our estimates regarding our future revenues, research and development expenses, sales and marketing expenses, other expenses, payments to third parties and changes in staffing levels;
- our estimates regarding our abilities to collect existing accounts receivable;
- our estimates regarding certain deferred tax assets;
- our ability to attract and retain skilled personnel;
- our estimates regarding how long our existing cash, cash equivalents and short-term investments will be sufficient to finance our operations;
- our beliefs with respect to our ability to mitigate interest rate and currency exchange risk; and
- the impact of competitive products, product development, commercialization and technological difficulties.

All forward-looking statements contained herein are expressly qualified in their entirety by this cautionary statement and the risk factors incorporated by reference into this prospectus. These forward-looking statements speak only as of the date of this prospectus. Except to the extent required by applicable laws and regulations, we undertake no obligation to update these forward-looking statements to reflect new information, events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events. In light of these risks and uncertainties, or other known or unknown risks or uncertainties that may materialize, the forward-looking events and circumstances described in this prospectus may not occur, and actual results could differ materially from those anticipated or implied in the forward-looking statements. Accordingly, you are cautioned not to place undue reliance on these forward-looking statements.

USE OF PROCEEDS

Unless we indicate otherwise in the applicable prospectus supplement or free writing prospectus, we currently intend to use our net proceeds from the sale of securities for working capital and other general corporate purposes, which may include acquisitions of businesses, assets and technologies that are complementary to our business, repayment or refinancing of debt, capital expenditures and repurchases of securities. As of the date of this prospectus, we cannot specify with certainty the particular uses for the net proceeds we will receive from any issuances of securities, nor have we identified any specific businesses, assets or technologies we may acquire. Accordingly, our management will have broad discretion in the application of our net proceeds, if any. Pending these uses, we intend to invest our net proceeds in investment-grade, short-term, interest-bearing instruments. We cannot predict whether the proceeds invested will yield a favorable return.

The intended uses of the proceeds we receive from the sale of our securities will be described in the applicable prospectus supplement or free writing prospectus.

DESCRIPTION OF CAPITAL STOCK

The following description of our common stock and preferred stock, together with any additional information we include in any applicable prospectus supplement, information incorporated by reference or any related free writing prospectus, summarizes the material terms and provisions of our common stock and preferred stock that we may offer under this prospectus. While the terms we have summarized below will apply generally to any common stock or preferred stock that we may offer, we will describe the particular terms of any class or series of these securities in more detail in the applicable prospectus supplement, information incorporated by reference or a related free writing prospectus. For the complete terms of our common stock and preferred stock, please refer to our certificate of incorporation and by-laws that are incorporated by reference into the registration statement of which this prospectus is a part or may be incorporated by reference in this prospectus or any applicable prospectus supplement. The following summary and that contained in any applicable prospectus supplement, information incorporated by reference or any related free writing prospectus are qualified in their entirety by reference to our certificate of incorporation and by-laws, as in effect at the time of any offering of securities under this prospectus.

Common Stock

We are authorized to issue 30,000,000 shares of common stock, par value \$0.01 per share, of which 17,063,996 shares were issued and outstanding as of June 15, 2017.

Voting. Holders of our common stock are entitled to one vote per share held of record on all matters to be voted upon by our stockholders. Our common stock does not have cumulative voting rights. As a result, subject to the voting rights of any outstanding shares of our preferred stock, persons who hold a majority of the outstanding common stock entitled to vote on the election of directors can elect all of the directors who are eligible for election in a particular year.

Dividends. Subject to preferences that may be applicable to the holders of any outstanding shares of our preferred stock, the holders of our common stock are entitled to receive such lawful dividends as may be declared by our board of directors out of funds legally available for this purpose. As a Delaware corporation, we are subject to statutory limitations on the declaration and payment of dividends. We have never declared or paid cash dividends on our capital stock, and we have no plan to pay any cash dividends in the foreseeable future.

Liquidation and Dissolution. In the event of our liquidation, dissolution or winding up, and subject to the rights of the holders of any outstanding shares of our preferred stock, the holders of shares of our common stock will be entitled to receive pro rata all of our remaining assets available for distribution to our stockholders.

Other Rights and Restrictions. Holders of our common stock do not have preemptive, subscription, redemption or conversion rights. All outstanding shares are fully paid and nonassessable.

Listing. Our common stock is quoted on The NASDAQ Global Select Market under the trading symbol "KVHI."

The rights of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Our certificate of incorporation allows us to issue, without stockholder approval, preferred stock having rights senior to those of our common stock. Our board of directors is authorized to issue up to 1,000,000 shares of preferred stock, par value \$0.01 per share, of which no shares are issued and

outstanding as of the date of this prospectus, in one or more series and to fix and designate the powers, designations, preferences and relative, participating, optional or other special rights of each class of preferred stock or series thereof and the qualifications, limitations or restrictions, if any, of such preferred stock. Our board of directors may fix the number of shares constituting any series of preferred stock and the designations of the series.

We will fix the powers, designations, preferences, rights, qualifications, limitations, restrictions and other terms of the preferred stock of each series by filing a certificate of designations relating to each series. When preferred stock is offered, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the terms of any preferred stock offered, including:

- the maximum number of shares in the series and the distinctive designation;
- the terms on which dividends will be paid, if any;
- the terms on which the shares may be redeemed, if at all;
- the liquidation preference, if any;
- the terms of any retirement or sinking fund for the purchase or redemption of the shares of the series, including any restrictions on repurchase or redemption during any arrearage in the payment of dividends or sinking fund installments;
- the terms and conditions, if any, on which the shares of the series will be convertible into, or exchangeable for, shares of any other class or classes of capital stock;
- the voting rights, if any, of the shares of the series (provided that different series of preferred stock shall not be construed to constitute different classes of shares for the purposes of voting by classes unless so provided by our certificate of incorporation or by law);
- whether the rights of the holders of shares of the series may be modified otherwise than by a vote of a majority of the shares outstanding, voting as a class, and if so, under what circumstances;
- pre-emptive rights, if any;
- transfer restrictions, if any; and
- any or all other preferences and relative, participating, optional or other special rights or qualifications, limitations or restrictions of the shares, to the extent now or hereafter permitted by the General Corporation Law of Delaware.

We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the certificate of designations that describes the terms of any series of preferred stock we offer under this prospectus before the issuance of shares of that series of preferred stock. You should read any prospectus supplement, information incorporated by reference and any free writing prospectus that we may authorize to be provided to you related to the series of preferred stock being offered, as well as the certificate of designations that contains the terms of the applicable series of preferred stock.

Restrictions on Sales of Certain Securities

Our by-laws provide that, unless approved by the affirmative vote of the holders of a majority of our capital stock present and entitled to vote at a meeting of stockholders, we may not:

- sell or issue any security convertible into or exercisable or exchangeable for shares of common stock, for a conversion, exercise or exchange price per share which is subject to adjustment

based on the market price of the common stock at the time of conversion, exercise or exchange of such security into common stock; or

- enter into any equity line or similar agreement or arrangement, or any agreement to sell common stock at a price which is fixed after the date of the agreement, whether or not based on any predetermined price-setting formula or calculation method.

Anti-Takeover Effect of Unissued Shares of Capital Stock

Common Stock. Except as described under the heading "Description of Capital Stock—Restrictions on Sales of Certain Securities," our shares of authorized and unissued common stock are available for future issuance without additional stockholder approval. While these additional shares are not designed to deter or prevent a change of control, under some circumstances we could use the additional shares to create voting impediments or to frustrate persons seeking to effect a takeover or otherwise gain control by, for example, issuing those shares in private placements to purchasers who might side with our board of directors in opposing a hostile takeover bid.

Preferred Stock. Except as described under the heading "Description of Capital Stock—Restrictions on Sales of Certain Securities," our certificate of incorporation grants our board of directors the authority, without additional stockholder approval, to issue preferred stock in one or more series and to fix the number of shares constituting any such series and the powers, designations, preferences and relative, participating, optional or other special rights of each class of preferred stock or series thereof and the qualifications, limitations or restrictions, if any, of the shares constituting any series of preferred stock. The existence of authorized but unissued preferred stock could reduce our attractiveness as a target for an unsolicited takeover bid since we could, for example, issue shares of preferred stock to parties who might oppose such a takeover bid or shares that contain terms the potential acquirer may find unattractive. This may have the effect of delaying or preventing a change in control, may discourage bids for any of our securities at a premium over the market price of such securities, and may adversely affect the market price of, and the voting and other rights of the holders of, such securities.

Certain Anti-Takeover Provisions of Delaware Law, our Certificate of Incorporation and our By-laws

Certain provisions of Delaware law, our certificate of incorporation and our by-laws could make it more difficult to acquire us by means of a tender offer, a proxy contest or otherwise and to remove our incumbent directors and officers. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and to encourage persons seeking to acquire control of us to first negotiate with us. We believe that the benefits of increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging takeover or acquisition proposals because, among other things, negotiation of these proposals could result in an improvement of their terms. These measures may, however, deter hostile takeovers or delay changes in control of the company, which could depress the market price of our securities and which could deprive stockholders of opportunities to realize a premium on securities held by them.

Section 203 of the Delaware General Corporation Law. We are subject to Section 203 of the General Corporation Law of the State of Delaware, or Section 203, which is applicable to certain takeovers of Delaware corporations. This law prohibits a publicly held Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the time that the stockholder became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned by persons who are directors and also officers and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to such time the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines "business combination" to include:

- generally, any merger or consolidation between the corporation or its majority-owned subsidiaries and the interested stockholder;
- any sale, lease, exchange, mortgage, pledge, transfer or disposition to or with the interested stockholder of assets having an aggregate market value equal to 10% or more of the consolidated assets or outstanding stock of the corporation;
- in general, any transaction that results in the issuance or transfer of stock of the corporation or any of its majority-owned subsidiaries to the interested stockholder;
- any transaction involving the corporation or one of its majority-owned subsidiaries that has the effect of increasing the proportionate share of capital stock or convertible securities owned by the interested stockholder; or
- any receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation or its majority-owned subsidiaries.

In general, Section 203 defines an "interested stockholder" as any person or entity that is the owner of 15% or more of the outstanding voting stock of a corporation or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within the 3-year period immediately prior to the relevant date, together with the affiliates and associates of such person or entity.

Staggered Board; Removal of Directors. Our certificate of incorporation and by-laws provide:

- for the division of the board of directors into three classes as nearly equal in size as possible with staggered three-year terms;
- that directors may be removed only for cause by the affirmative vote of the holders of two-thirds of our shares of capital stock entitled to vote; and
- that any vacancy on the board of directors, however occurring, including a vacancy resulting from an enlargement of the board, may be filled only by the vote of a majority of the directors then in office.

The limitations on the removal of directors and the filling of vacancies could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from acquiring, control of us. Our certificate of incorporation and by-laws require the affirmative vote of the holders of at least 75% of our shares of capital stock issued and outstanding and entitled to vote to amend or repeal any of these provisions.

Stockholder Action; Special Meeting of Stockholders. Our certificate of incorporation and by-laws provide that:

- any action required or permitted to be taken by our stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before the meeting;
- stockholder action may not be taken by written action in lieu of a meeting; and
- special meetings of the stockholders may only be called by our president or by our board of directors.

The foregoing provisions could have the effect of delaying until the next stockholders' meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage another person or entity from making a tender offer for our common stock, because that person or entity, even if it acquired a majority of our outstanding voting securities, would be able to take action as a stockholder only at a duly called stockholders' meeting, and not by written consent. Our certificate of incorporation and by-laws require the affirmative vote of the holders of at least 75% of our shares of capital stock issued and outstanding and entitled to vote to amend or repeal any of these provisions.

Advance Notice Requirements for Stockholder Proposals and Director Nominations. Our by-laws provide that nominations for election to the board of directors may be made either by the board or by a stockholder who complies with specified advance notice provisions. Our by-laws contain similar advance notice provisions for stockholder proposals for action at a stockholders' meeting. These provisions prevent stockholders from making nominations for directors and proposals from the floor at any stockholders' meeting and require any stockholder making a nomination or proposal to give us advance notice of the names of the nominees or the stockholder proposal, together with specified information about the nominee or any stockholder proposal, before the meeting at which directors are to be elected or action is to be taken. Our secretary must generally receive the notice at least 60 days before the date of the meeting. The notice must contain, among other things, a description of the business the stockholder desires to bring before the meeting, its reasons for doing so, the name and address of the stockholder, any material interest the stockholder may have in the business and the stockholder's beneficial ownership of our securities.

These provisions may have the effect of delaying stockholder action. Our certificate of incorporation and by-laws require the affirmative vote of the holders of at least 75% of our shares of capital stock issued and outstanding and entitled to vote to amend or repeal these provisions.

Limitation of Liability and Indemnification. Our certificate of incorporation and by-laws contain provisions to limit the liability of our directors and officers to the maximum extent permitted by Delaware law. As a result, our directors will not be personally liable for monetary damages for breach of their fiduciary duties as a director except for liability:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- for unlawful payments of dividends or unlawful stock repurchases or redemptions as provided under Section 174 of the Delaware General Corporation Law; or
- for any transaction from which the director derived an improper personal benefit.

Our certificate of incorporation generally provides for the indemnification of our directors and officers to the extent they: (a) act in good faith and in a manner they reasonably believe to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, have no reasonable cause to believe that their conduct is unlawful; or (b) are successful on the merits in

defense of an action, suit or proceeding in accordance with Delaware law. In certain circumstances relating to suits by or in our right, we may provide indemnification despite an adjudication of liability if such indemnified person is fairly and reasonably entitled to indemnity, to the extent the Court of Chancery of Delaware or the court in which such action or suit was brought determines appropriate. In certain circumstances, our certificate of incorporation requires us to advance expenses incurred by an indemnified person in connection with the defense of any action or proceeding arising out of the person's status or service as our director, officer, employee or other agent upon an undertaking by the person to repay those advances if it is ultimately determined that the person is not entitled to indemnification. We believe that these provisions will assist us in attracting and retaining qualified individuals to serve as directors and officers.

Transfer Agent

The transfer agent for our common stock is Computershare, Inc.

DESCRIPTION OF THE DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement, information incorporated by reference or free writing prospectus, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer any particular series of debt securities, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the terms of those debt securities, which may differ from and will modify or replace the terms described below. We urge you to read the applicable prospectus supplement, information incorporated by reference and any related free writing prospectus, as they will indicate the general terms and provisions that apply to a particular series of debt securities.

We may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a prospectus supplement, information incorporated by reference or free writing prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and a trustee. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement of which this prospectus is a part, and you should read the indenture for provisions that may be important to you. In the summary below, we have included references to the section numbers of the indenture so that you can easily locate these provisions.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in a resolution of our board of directors, in an officer's certificate or by a supplemental indenture. (Section 2.02) The particular terms of each series of debt securities will be described in a prospectus supplement, information incorporated by reference or free writing prospectus relating to such series.

We can issue an unlimited amount of debt securities under the indenture, and those securities may be in one or more series with the same or various maturities, at par, at a premium, or at a discount. (Section 2.01) With respect to any series of debt securities we offer, we will set forth in a prospectus

supplement, information incorporated by reference or free writing prospectus, the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title and ranking of the debt securities (including the terms of any subordination provisions);
- the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;
- any limit on the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the securities of the series is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;
- the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;
- any obligation we may have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder or holders of debt securities and the period or periods within which, the price or prices at which and the terms and conditions upon which securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
- whether the debt securities will be issued in the form of certificates issued in definitive form or as one or more global securities representing the entire issuance, as described under "Forms of Securities," below;
- the portion of the principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- the currency of denomination of the debt securities, which may be United States Dollars or any foreign currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
- the designation of the currency, currencies or currency units in which payment of principal of, premium (if any) and interest on the debt securities will be made;
- if payments of principal of, premium (if any) or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;

- the manner in which the amounts of payment of principal of, premium (if any) or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies other than that in which the debt securities are denominated or designated to be payable or by reference to a commodity, commodity index, stock exchange index or financial index;
- any provisions relating to any security provided for the debt securities;
- any addition to, deletion of or change in the Events of Default described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to, deletion of or change in the covenants described in this prospectus or in the indenture with respect to the debt securities;
- any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;
- the provisions, if any, relating to conversion or exchange of any securities of such series, including if applicable, the conversion or exchange price and period, provisions as to whether conversion or exchange will be mandatory, the events requiring an adjustment of the conversion or exchange price and provisions affecting conversion or exchange;
- United States federal income tax consequences related to the debt securities;
- any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and
- whether any of our subsidiaries will guarantee the debt securities, including the terms of subordination, if any, of such guarantees. (Section 2.02)

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information regarding any special considerations applicable to any of these debt securities in the applicable prospectus supplement, information incorporated by reference or free writing prospectus.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium (if any) and interest on any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement, information incorporated by reference or free writing prospectus.

Transfer and Exchange; Global Securities

Each debt security may be represented by either a certificate issued in definitive form to a particular purchaser or by one or more global securities representing the entire issuance of debt securities, as described below under "Forms of Securities" and in Section 2.14 of the form of indenture.

If we issue certificated debt securities, you may transfer or exchange such certificates at any office we maintain for this purpose in accordance with the terms of the indenture. (Section 2.04) No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange. (Section 2.07) You may effect the transfer of certificated debt securities and the

right to receive the principal of, and premium (if any) and interest on, certificated debt securities only by surrendering the certificate representing those certificated debt securities and either the reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Payment and Paying Agents

Unless otherwise indicated in a prospectus supplement, information incorporated by reference or free writing prospectus, the provisions described in this paragraph will apply to the debt securities. Payment of interest on a debt security on any interest payment date will be made to the person in whose name the debt security is registered at the close of business on the record date for the applicable payment. Payment on debt securities of a particular series will be payable at the office of a paying agent or paying agents designated by us. However, at our option, we may pay interest by mailing a check to the record holder. The trustee will be designated as our initial paying agent.

We may also add, replace or terminate paying agents from time to time, or change the office of any paying agent, as set forth in a prospectus supplement, information incorporated by reference or free writing prospectus. However, we will be required to maintain a paying agent in each place of payment for the debt securities of a particular series.

All moneys paid by us to a paying agent for payment on any debt security that remain unclaimed for a period of two years after such payment was due will be repaid to us. Thereafter, the holder may look only to us for such payment. (Section 8.05)

Covenants

We will set forth in the applicable prospectus supplement, information incorporated by reference or free writing prospectus any restrictive covenants applicable to any issue of debt securities. (Article IV)

No Protection In the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a "successor person") unless:

- we are the surviving corporation or the successor person is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes our obligations on any debt securities and under the related indenture; and
- immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties and assets to us. (Section 5.01)

Events of Default

"Event of Default" means with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee or we and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of our company; or
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement, information incorporated by reference or free writing prospectus. (Section 6.01)

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. (Section 6.01) The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiaries outstanding from time to time.

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. (Section 6.02) We refer you to the prospectus supplement, information incorporated by reference or free writing prospectus relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee will be under no obligation to exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in exercising such right of power. (Section 7.01(e)) Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding

debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series. (Section 6.12)

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered reasonable indemnity or security, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days. (Section 6.07)

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment. (Section 6.08)

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. (Section 4.03) If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall send to each Securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities. (Section 7.05)

Modification and Waiver

We and the trustee may modify and amend the indenture or the debt securities of any series without the consent of any holder of any debt security:

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture as described above under "Description of the Debt Securities—Consolidation, Merger and Sale of Assets";
- to provide for uncertificated securities in addition to or in place of certificated securities;
- to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;
- to add covenants or events of default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depositary;
- to make any change that does not adversely affect the rights of any holder of debt securities;

- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee; or
- to comply with requirements of the Commission in order to effect or maintain the qualification of the indenture under the Trust Indenture Act of 1939. (Section 9.01)

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of or interest on any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security. (Section 9.03)

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. (Section 9.02) The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration. (Section 6.13)

Satisfaction and Discharge of Indenture; Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Satisfaction and Discharge. The indenture provides that we may be discharged from our obligations under the indenture with respect to a series of debt securities (subject to certain exceptions)

when, among other things, all of the debt securities of that series have been delivered to the trustee for cancellation and we have paid or caused to be paid all other sums payable under the indenture with respect to such debt securities, or, alternatively, when the following conditions (among others) are met:

- all of the debt securities of that series that have not been delivered for cancellation have become due and payable, or will become due and payable within one year, or have been called for redemption or are to be called for redemption within one year under arrangements satisfactory to the trustee;
- we have deposited with the trustee, in trust, funds in an amount sufficient to pay and discharge each installment of principal (including mandatory sinking fund or analogous payments) of and interest on all the securities of such series on the dates such installments of principal or interest are due; and
- we have paid or caused to be paid all other sums payable under the indenture with respect to such debt securities.

Legal Defeasance. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series (subject to certain exceptions). We will be so discharged upon the deposit with the trustee, in trust, of money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amount and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred. (Section 8.03)

Defeasance of Certain Covenants. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

- we may omit to comply with the covenant described above under "Description of the Debt Securities—Consolidation, Merger and Sale of Assets" and certain other covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement, information incorporated by reference or free writing prospectus; and
- any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series (a "covenant defeasance").

The conditions include:

- depositing with the trustee money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient

in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal (including any mandatory sinking fund or analogous payments) of and interest on the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities; and

- delivering to the trustee an opinion of counsel to the effect that the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amount and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred. (Section 8.04)

Covenant Defeasance and Events of Default. In the event we exercise our option to effect covenant defeasance with respect to any series of debt securities and the debt securities of that series are declared due and payable because of the occurrence of any Event of Default, the amount of money and/or U.S. government obligations or foreign government obligations on deposit with the trustee may not be sufficient to pay amounts due on the debt securities of that series at the time of the acceleration resulting from the Event of Default. However, we shall remain liable for those payments. (Section 8.04)

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the securities, will be governed by the laws of the State of New York without regard to conflict of law principles that would result in the application of any law other than the laws of the State of New York. (Section 10.10)

DESCRIPTION OF THE WARRANTS

We may issue warrants for the purchase of shares of our common stock, preferred stock, debt securities or any combination of the foregoing, either individually or as units comprised of two or more other securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. Any warrant agent will act solely as our agent in connection with the warrants of such series and will not assume any obligation or relationship of agency for or with holders or beneficial owners of warrants. We may also add, replace, or terminate warrant agents from time to time.

The following summary of material provisions of the warrants and warrant agreements is subject to, and qualified in its entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants. When warrants are offered, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the terms of any warrants offered, which may differ from and will modify or replace the terms described below. We urge you to read the applicable prospectus supplement, information incorporated by reference and any related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement, information incorporated by reference or free writing prospectus relating to the issue. Those terms may include:

- the title and number of warrants;
- the price or prices at which the warrants will be issued and may be exercised, including provisions for the exercise of the warrants without payment of cash, if any;

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;
- the designation, stated value, number and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants;
- the number of units purchasable upon exercise of warrants to purchase units, the securities comprising such units and their terms, and the exercise price for the warrants;
- any provisions for adjustment in the number, type or amount of securities purchasable upon exercise of the warrants or the exercise price of the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- whether the warrants will be issued in registered or bearer form;
- whether registered warrants will be issued in the form of a certificate issued in definitive form or as one or more global securities representing the entire issuance of warrants, as described under "Forms of Securities," below;
- if applicable, the minimum or maximum amount of warrants that may be exercised at any one time;
- if applicable, the date on and after which the warrants and the related underlying securities will be separately transferable;
- United States federal income tax consequences applicable to the warrants;
- the identity of the warrant agent, if any; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of common stock or preferred stock warrants will not be entitled to:

- vote, consent or receive dividends or other distributions (including upon any liquidation, dissolution or winding up of the company);
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders.

Prior to the exercise of their warrants, holders of warrants exercisable for debt securities will not have any of the rights of holders of the debt securities purchasable upon such exercise and will therefore not be entitled to payments of principal (or premium, if any) or interest, if any, and may not enforce covenants in any applicable indenture.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock or units at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement, information incorporated by reference or free writing prospectus. Unless we otherwise specify in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the

applicable prospectus supplement, information incorporated by reference or free writing prospectus. After such specified time on the expiration date, unexercised warrants will become void. Warrants may be redeemed as set forth in the applicable prospectus supplement, information incorporated by reference or free writing prospectus.

If less than all of the warrants represented by a warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants. Upon receipt of payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable offering material, we will forward, as soon as practicable, the securities purchasable upon such exercise.

As described under "Description of Capital Stock—Restrictions on Sales of Certain Securities," we may not issue certain warrants or other securities without stockholder approval.

DESCRIPTION OF THE RIGHTS

We may issue rights for the purchase of shares of our common stock, preferred stock, debt securities, warrants or any combination of the foregoing, either individually or as units comprised of two or more other securities. We may issue rights independently or together with other securities, and the rights may or may not be transferable by the stockholder receiving the rights in such offering. In connection with any offering of such rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering. Each series of rights will be issued under a separate rights agreement which we will enter into with a rights agent, all of which will be set forth in the relevant prospectus supplement, information incorporated by reference or free writing prospectus. The rights agent will act solely as our agent in connection with the certificates relating to the rights and will not assume any obligation or relationship of agency or trust with any holders or beneficial owners of rights. We may also add, replace, or terminate rights agents from time to time.

The following summary of material provisions of the rights and rights agreements is subject to, and qualified in its entirety by reference to, all the provisions of the rights agreement and rights certificate applicable to a particular series of rights. When rights are offered, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the terms of any rights offered, which may differ from and will modify or replace the terms described below. We urge you to read the applicable prospectus supplement, information incorporated by reference and any related free writing prospectus, as well as the complete rights agreements and rights certificates that contain the terms of the rights.

The particular terms of any issue of rights will be described in the prospectus supplement, information incorporated by reference or free writing prospectus relating to the issue. Those terms may include:

- the price, if any, for the rights;
- in the case of a distribution of rights to our stockholders, the date of determining the stockholders entitled to the rights distribution;
- in the case of a distribution of rights to our stockholders, the number of rights issued or to be issued to each stockholder;
- the exercise price payable for, and the number and terms of, the underlying common stock, preferred stock, debt securities, warrants or other securities or units purchasable upon the exercise of the rights;

- any provisions for adjustment in the number, type or amount of securities purchasable upon exercise of the rights or the exercise price of the rights;
- the extent to which the rights are transferable;
- the date on which the holder's ability to exercise the rights shall commence, and the date on which the rights shall expire;
- whether the rights will be issued in the form of a certificate issued in definitive form or as one or more global securities representing the entire issuance of rights, as described under "Forms of Securities," below;
- the extent to which the rights may include an over-subscription privilege with respect to unsubscribed securities;
- if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of such rights;
- United States federal income tax consequences applicable to the rights; and
- any other terms of the rights, including, but not limited to, the terms, procedures conditions and limitations relating to the exchange and exercise of the rights.

Holders of common stock or preferred stock rights will not be entitled to:

- vote, consent or receive dividends or other distributions (including upon any liquidation, dissolution or winding up of the company);
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders.

Prior to the exercise of their rights, holders of rights exercisable for debt securities will not have any of the rights of holders of the debt securities purchasable upon such exercise and will therefore not be entitled to payments of principal (or premium, if any) or interest, if any, and may not enforce covenants in any applicable indenture.

Each right will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock or units at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement, information incorporated by reference or free writing prospectus. Unless we otherwise specify in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, holders of the rights may exercise the rights at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement, information incorporated by reference or free writing prospectus. After such specified time on the expiration date, unexercised rights will become void.

As described under "Description of Capital Stock—Restrictions on Sales of Certain Securities," we may not issue certain rights or other securities without stockholder approval.

DESCRIPTION OF THE UNITS

We may issue units consisting of our common stock, preferred stock, debt securities, warrants and/or rights to purchase any of these securities in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We will issue each unit so that the holder of the unit is also the holder of each security included in the unit. As a result, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We may enter into unit agreements with a unit agent. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units, information incorporated by reference or a related free writing prospectus. Each unit agent will act solely as our agent in connection with the certificates relating to the units and will not assume any obligation or relationship of agency or trust with any holders of unit certificates or beneficial owners of units. We may also add, replace, or terminate unit agents from time to time.

The following description, together with the additional information included in any applicable prospectus supplement, information incorporated by reference or free writing prospectus, summarizes the general features of the units that we may offer under this prospectus. When units are offered, a prospectus supplement, information incorporated by reference or a free writing prospectus, as applicable, will explain the terms of any units offered, which may differ from and will modify or replace the terms described below. We urge you to read the applicable prospectus supplement, information incorporated by reference and any related free writing prospectus, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

The particular terms of any issue of units will be described in the prospectus supplement, information incorporated by reference or free writing prospectus relating to the issue. Those terms may include:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or the securities composing the units;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- whether the units will be issued in the form of a certificate issued in definitive form or as one or more global securities representing the entire issuance of units, as described under "Forms of Securities," below;
- United States federal income tax consequences applicable to the units; and
- any other terms of the units and their constituent securities.

As described under "Description of Capital Stock—Restrictions on Sales of Certain Securities," we may not issue certain securities without stockholder approval.

FORMS OF SECURITIES

General

Each debt security, warrant, right and unit will be represented either by a certificate issued in definitive form to a particular purchaser or by one or more global securities representing the entire issuance of securities. Unless the applicable prospectus supplement, information incorporated by reference or free writing prospectus provides otherwise, certificated securities in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the

securities to the trustee, registrar, paying agent or other agent, as applicable. Global securities name a depository or its nominee as the owner of the debt securities, warrants, rights or units represented by these global securities. The depository maintains a computerized system that will reflect each purchaser's beneficial ownership of the securities through an account maintained by the purchaser with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Registered Global Securities

We may issue the registered debt securities, warrants, rights or units in the form of one or more fully registered global securities, bearing all applicable legends, to be deposited with and registered in the name of a depository or its nominee identified in the applicable prospectus supplement, information incorporated by reference or free writing prospectus. In those cases, one or more registered global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by registered global securities. Unless and until it is exchanged in whole for certificated securities in definitive registered form, a registered global security may not be transferred except as a whole by and among the depository for the registered global security, the nominees of the depository or any successors of the depository or those nominees.

If not described below, any specific terms of the depository arrangement with respect to any securities to be represented by a registered global security will be described in the prospectus supplement, information incorporated by reference or free writing prospectus relating to those securities. We anticipate that the following provisions will apply to all depository arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depository or persons that may hold interests through participants. Upon the issuance of a registered global security, the depository will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a registered global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depository, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some jurisdictions may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair such purchasers' abilities to own, transfer or pledge beneficial interests in registered global securities.

So long as the depository, or its nominee, is the registered owner of a registered global security, that depository or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the registered global security for all purposes under the applicable indenture, warrant agreement, rights agreement or unit agreement. Except as described below, owners of beneficial interests in a registered global security will not be entitled to have the securities represented by the registered global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the applicable indenture, warrant agreement, rights agreement or unit agreement. Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depository for that registered global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the applicable indenture, warrant agreement, rights agreement or unit agreement. These procedures may change from time to time. We understand that, under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the applicable indenture, warrant agreement, rights agreement or unit agreement, the depository for the registered

global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Principal, premium, if any, on and interest payments on debt securities, and any payments to holders with respect to warrants, rights or units, represented by a registered global security registered in the name of a depository or its nominee will be made to the depository or its nominee, as the case may be, as the registered owner of the registered global security. None of us, the trustees, the warrant agents, the rights agents, the unit agents or any other agent of ours, agent of the trustees or agent of the warrant agents, the rights agents or the unit agents will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depository for any of the securities represented by a registered global security, upon receipt of any payment of principal, premium, interest or other distribution of underlying securities or other property to holders on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that registered global security as shown on the records of the depository. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers or registered in "street name," and will be the responsibility of those participants.

If the depository for any of the securities represented by a registered global security is at any time unwilling or unable to continue as depository or ceases to be qualified to serve as a depository, and a qualified successor depository is not appointed by us within 90 days, we will issue certificated securities in definitive form in exchange for the registered global security that had been held by the depository. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depository gives to the relevant trustee, warrant agent, rights agent or unit agent or other relevant agent of ours or theirs. It is expected that the depository's instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depository.

PLAN OF DISTRIBUTION

We may sell the securities offered through this prospectus to or through underwriters or dealers, directly to purchasers, through agents, through rights offerings or through a combination of any these methods. We may distribute the securities in one or more transactions, include block transactions, at a fixed price or prices, which may be changed, market prices prevailing at the time of sale, prices related to the prevailing market prices, negotiated prices or prices determined by competitive bids. The prospectus supplement, information incorporated by reference or a related free writing prospectus will include the following information, to the extent applicable:

- the terms of the offering, including any over-allotment option;
- the names of any underwriters or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price of the securities;
- the net proceeds from the sale of the securities;
- any delayed delivery arrangements;

- any underwriting discounts, commissions or agency fees and other items constituting underwriters' or agents' compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers;
- any commissions paid to agents; and
- any exchange on which the securities will be listed.

We may engage in at-the-market offerings into an existing trading market in accordance with Rule 415(a)(4). Any at-the-market offering will be through an underwriter or underwriters acting as principal or agent for us. We may engage in block transactions on any stock exchange or other market where the securities may be traded.

We may issue to our shareholders, on a pro rata basis for no consideration, subscription rights to purchase our securities. These subscription rights may or may not be transferable by shareholders. The applicable prospectus supplement, information incorporated by reference or free writing prospectus will describe the specific terms of any offering of our securities through the issuance of subscription rights, including the terms of the subscription rights offering, the terms, procedures and limitations relating to the exchange and exercise of the subscription rights and, if applicable, the material terms of any standby underwriting or purchase arrangement entered into by us in connection with the offering of securities through the issuance of subscription rights.

Sale Through Underwriters or Dealers

If underwriters are used in the sale, the underwriters will acquire the securities for their own account, including through underwriting, purchase, security lending or repurchase agreements with us. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions. Underwriters may sell the securities in order to facilitate transactions in any of our other securities (described in this prospectus or otherwise), including other public or private transactions and short sales. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless otherwise indicated in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers. Underwriters may be deemed to have received compensation from us in the form of underwriting discounts or commissions and may also receive commissions from purchasers for whom they may act as agent.

Underwriters may sell our securities to or through dealers. These dealers may receive compensation in the form of discounts, commissions or concessions from the underwriters and/or commissions from the purchasers for whom they may act as agent. Any initial offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time.

If dealers are used in the sale of securities offered through this prospectus, we may sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. Dealers engaged by us may allow other dealers to participate in resales. The applicable prospectus supplement, information incorporated by reference or free writing prospectus will include the names of the dealers and the terms of the transaction.

In connection with offerings made through underwriters or agents, we may enter into agreements with such underwriters or agents pursuant to which we receive our outstanding securities in

consideration for the securities being offered to the public for cash. In connection with these arrangements, the underwriters or agents may also sell securities covered by this prospectus to hedge their positions in these outstanding securities, including in short sale transactions. If so, the underwriters or agents may use the securities received from us under these arrangements to close out any related open borrowings of securities.

Underwriters, dealers and agents that participate in the distribution of our securities may be deemed to be underwriters as defined in the Securities Act, and any discounts or commissions they receive from us, as well as any profit on their resale of our securities, may be treated as underwriting compensation under the Securities Act.

Under the securities laws of some states, the securities offered by this prospectus may be sold in those states only through registered or licensed brokers or dealers.

Direct Sales and Sales Through Agents

We may sell the securities offered through this prospectus directly. In this case, no underwriters or agents would be involved. Such securities may also be sold through agents designated from time to time. The applicable prospectus supplement information, incorporated by reference or free writing prospectus will name any agent involved in the offer or sale of the offered securities and will describe any commissions payable to the agent. Unless otherwise indicated in the applicable prospectus supplement, information incorporated by reference or free writing prospectus, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. The terms of any such sales will be described in the prospectus supplement, information incorporated by reference or free writing prospectus.

Delayed Delivery Contracts

If the prospectus supplement, information incorporated by reference or free writing prospectus indicates, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement, information incorporated by reference or free writing prospectus. The applicable prospectus supplement, information incorporated by reference or free writing prospectus will describe the commission payable for solicitation of those contracts.

Market Making, Stabilization and Other Transactions

Unless the applicable prospectus supplement, information incorporated by reference or free writing prospectus states otherwise, each series of offered securities will be a new issue and will have no established trading market. We may elect to list any series of offered securities on an exchange. Any underwriters that we use in the sale of offered securities may make a market in such securities, but may discontinue such market making at any time without notice. Therefore, we cannot assure you that the securities will have a liquid trading market.

In connection with an offering, an underwriter may purchase and sell securities in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of securities than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional securities from us, if any, in

the offering. If the underwriters have an over-allotment option to purchase additional securities from us, the underwriters may close out any covered short position by either exercising their over-allotment option or purchasing securities in the open market. In determining the source of securities to close out the covered short position, the underwriters may consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the over-allotment option. "Naked" short sales are any sales in excess of such option or where the underwriters do not have an over-allotment option. The underwriters must close out any naked short position by purchasing securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the securities in the open market after pricing that could adversely affect investors who purchase in the offering.

Accordingly, to cover these short sales positions or to otherwise stabilize or maintain the price of the securities, the underwriters may bid for or purchase securities in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to syndicate members or other broker-dealers participating in the offering are reclaimed if securities previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. The impositions of a penalty bid may also affect the price of the securities to the extent that it discourages resale of the securities. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on The Nasdaq Global Select Market or otherwise and, if commenced, may be discontinued at any time.

Derivative Transactions and Hedging

We, the underwriters or other agents may engage in derivative transactions involving the securities. These derivatives may consist of short sale transactions and other hedging activities. The underwriters or agents may acquire a long or short position in the securities, hold or resell securities acquired and purchase options or futures on the securities and other derivative instruments with returns linked to or related to changes in the price of the securities. In order to facilitate these derivative transactions, we may enter into security lending or repurchase agreements with the underwriters or agents. The underwriters or agents may effect the derivative transactions through sales of the securities to the public, including short sales, or by lending the securities in order to facilitate short sale transactions by others. The underwriters or agents may also use the securities purchased or borrowed from us or others (or, in the case of derivatives, securities received from us in settlement of those derivatives) to directly or indirectly settle sales of the securities or close out any related open borrowings of the securities.

Passive Market Making

Any underwriters who are qualified market makers on The Nasdaq Global Select Market may engage in passive market-making transactions in our securities on The Nasdaq Global Select Market in accordance with Rule 103 of Regulation M before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

Electronic Auctions

We may also make sales through the Internet or through other electronic means. Since we may from time to time elect to offer securities directly to the public, with or without the involvement of agents, underwriters or dealers, utilizing the Internet or other forms of electronic bidding or ordering systems for the pricing and allocation of such securities, you will want to pay particular attention to the description of that system we will provide in a prospectus supplement, information incorporated by reference or free writing prospectus.

Such electronic system may allow bidders to directly participate, through electronic access to an auction site, by submitting conditional offers to buy that are subject to acceptance by us, and which may directly affect the price or other terms and conditions at which such securities are sold. These bidding or ordering systems may present to each bidder, on a so-called "real-time" basis, relevant information to assist in making a bid, such as the clearing spread at which the offering would be sold, based on the bids submitted, and whether a bidder's individual bids would be accepted, prorated or rejected. For example, in the case of debt security, the clearing spread could be indicated as a number of "basis points" above an index treasury note. Of course, many pricing methods can and may also be used.

Upon completion of such an electronic auction process, securities will be allocated based on prices bid, terms of bid or other factors. The final offering price at which securities would be sold and the allocation of securities among bidders would be based in whole or in part on the results of the Internet or other electronic bidding process or auction.

General Information

We may agree to indemnify underwriters, dealers and agents against civil liabilities arising out of this prospectus and any applicable prospectus supplement, information incorporated by reference or free writing prospectus, including liabilities under the Securities Act, and to contribute to payments which the underwriters, dealers and agents may be required to make relating to those liabilities.

Our underwriters, dealers and agents, or their affiliates, may be customers of, engage in transactions with or perform services for us, in the ordinary course of business.

LEGAL MATTERS

Certain legal matters relating to the issuance and sale of the securities will be passed upon for us by Foley Hoag LLP, Boston, Massachusetts. Additional legal matters may be passed on for us, or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement, information incorporated by reference or free writing prospectus.

EXPERTS

The consolidated financial statements of KVH Industries, Inc. and subsidiaries included in our Annual Report on Form 10-K for the year ended December 31, 2016, as of December 31, 2016 and 2015 and for each of the three years in the period ended December 31, 2016, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2016, have been incorporated by reference herein and in the registration statement in reliance upon the reports of Grant Thornton LLP, our independent registered public accounting firm for such periods, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room.

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, and current reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge on our website at <http://www.kvh.com> under the "Investors" caption. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information contained on our website is not part of this prospectus.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus. In addition, some information that we file with the SEC after the date of this prospectus will automatically update, and in some cases supersede, the information in this prospectus or otherwise incorporated by reference in this prospectus, including in each case information in a prospectus supplement or free writing prospectus. We incorporate by reference the following information or documents that we have filed with the SEC (excluding those portions of any Form 8-K that are not deemed "filed" pursuant to the General Instructions of Form 8-K):

- our annual report on Form 10-K for the year ended December 31, 2016, filed with the SEC on March 9, 2017;
- our proxy statement dated as of April 28, 2017, filed with the SEC on April 25, 2017;
- our quarterly report on Form 10-Q for the three months ended March 31, 2017, filed with the SEC on May 9, 2017;
- our current reports on Form 8-K filed with the SEC on March 9, 2017, May 26, 2017 and June 8, 2017; and

- the description of our common stock contained in our registration statement on Form 8-A filed with the SEC on March 27, 1996, as amended in our current report on Form 8-K filed with the SEC on January 29, 2004.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, are also incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

Any statement contained in any document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any prospectus supplement or free writing prospectus modifies or supersedes such statement. If any statement in an incorporated document, prospectus supplement or free writing prospectus is inconsistent with a statement in another such document having a later date, the statement in the later-dated document modifies or supersedes the earlier statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any or all documents that are incorporated by reference into this prospectus, but not delivered with the prospectus, other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates. You should direct written requests to: KVH Industries, Inc., 50 Enterprise Center, Middletown, Rhode Island 02842, or you may call us at (401) 847-3327.

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 14. Other Expenses of Issuance and Distribution**

The following table provides the various costs and expenses (other than the underwriting discounts and commissions) anticipated to be payable by us in connection with a distribution of the securities registered hereby. All amounts are estimates except the SEC registration fee.

	<u>Amount to be Paid</u>
SEC registration fee	\$ 11,590
Legal fees and expenses	*
Accounting fees and expenses	*
Printing expenses	*
Transfer agent and trustee fees and expenses	*
Miscellaneous expenses	*
Total	<u>\$ *</u>

* These fees and expenses are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers

Section 102(b)(7) of the Delaware General Corporation Law allows us to include a provision in our certification of incorporation eliminating or limiting the personal liability of directors to us or our stockholders for breach of fiduciary duty as directors, but the provision may not eliminate or limit the liability of directors for (a) any breach of the director's duty of loyalty to us or our stockholders, (b) any acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) unlawful payments of dividends or unlawful stock repurchases or redemptions as provided under Section 174 of the Delaware General Corporation Law or (d) any transaction from which the director derived an improper personal benefit. Article Seventh of our certificate of incorporation provides that none of our directors shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. Article Seventh also provides that no amendment to or repeal of Article Seventh shall apply to or have any effect on the liability or the alleged liability of any director with respect to any acts or omissions of such director occurring prior to such amendment. A principal effect of Article Seventh is to eliminate or limit the potential liability of our directors for monetary damages arising from breaches of their duty of care, unless the breach involves one of the four exceptions described in (a) through (d) above.

Article Sixth of our certificate of incorporation and Section 10 of our by-laws provide that we will indemnify our directors and officers to the fullest extent we are permitted or required to do so under the Delaware General Corporation Law. Section 145 of the Delaware General Corporation Law provides, among other things, that we 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 (other than an action by us or in our right) by reason of the fact that the person is or was one of our directors, officers, agents or employees or is or was serving at our request as a director, officer, agent, or employee 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 such action, suit or proceeding. The power to indemnify applies to those indemnitees that (a) act in good faith and in a manner they reasonably believe to be

in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, have no reasonable cause to believe that their conduct is unlawful; or (b) are successful on the merits in defense of an action, suit or proceeding in accordance with Delaware law. The power to indemnify also applies to actions brought by us or in our right but only to the extent of expenses (including attorneys' fees but excluding amounts paid in settlement) actually and reasonably incurred and not to any satisfaction of judgment or settlement of the claim itself, and with the further limitation that in such actions no indemnification shall be made in respect of any claim, issue or matter for which such person shall have been adjudged to be liable to us, unless and only to the extent that the court determines, in light of all the circumstances of the case, that indemnification for such expenses is proper. Our certificate of incorporation provides that no amendment, termination or repeal of Article Sixth will affect or diminish the rights of an indemnitee with respect to any action, suit or proceeding arising out of any actions, transactions or facts occurring prior to the amendment, termination or repeal.

The effect of these provisions would be to permit indemnification by us for, among other liabilities, liabilities arising out of the Securities Act of 1933, as amended (the "Securities Act").

Section 145 of the Delaware General Corporation Law also allows us to obtain insurance on behalf of our directors and officers against liabilities incurred by them while serving as a director or officer or while serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, whether or not we would have the power to indemnify them against those liabilities. We have procured a directors' and officers' liability and company reimbursement liability insurance policy that (a) insures our directors and officers against losses (above a deductible amount) arising from certain claims made against them by reason of certain acts done or attempted by them and (b) insures us against losses (above a deductible amount) arising from any such claims, subject in each case to limitations stated in the policy.

Item 16. Exhibits

(a) *Exhibits.* The following exhibits are filed herewith or incorporated herein by reference:

<u>Exhibit No.</u>	<u>Description</u>	<u>Filed with this Form S-3</u>	<u>Incorporated by Reference</u>		
			<u>Form</u>	<u>Filing Date</u>	<u>Exhibit No.</u>
*1.1	Form of Underwriting Agreement				
4.1	Amended and Restated Certificate of Incorporation, as amended		10-Q	August 6, 2010	3.1
4.2	Amended and Restated Bylaws		8-K	April 30, 2014	3.1
4.3	Specimen certificate for the common stock		S-1/A	March 22, 1996	4.1
*4.4	Form of certificate of designations of preferred stock				
*4.5	Specimen certificate for preferred stock				
4.6	Form of indenture	X			
*4.7	Form of note				
*4.8	Form of warrant agreement (including form of warrant certificate)				

Exhibit No.	Description	Filed with this Form S-3	Incorporated by Reference		
			Form	Filing Date	Exhibit No.
*4.9	Form of rights agreement (including form of rights certificate)				
*4.10	Form of unit agreement (including form of unit certificate)				
5.1	Opinion of Foley Hoag LLP	X			
12.1	Computation of ratio of earnings to fixed charges	X			
23.1	Consent of Grant Thornton LLP, independent registered public accounting firm	X			
23.2	Consent of Foley Hoag LLP (included in Exhibit 5.1)	X			
24.1	Power of attorney (contained on signature page)	X			
*25.1	Form T-1 Statement of Eligibility of Trustee for Indenture under the Trust Indenture Act of 1939				

* To be filed by amendment or as an exhibit to a report filed pursuant to Section 13(a) or 15(d) of the Exchange Act and incorporated herein by reference.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(a) 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;

(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 SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective 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)(i), (a)(ii) and (a)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(b) That, for the purpose of determining any liability under the Securities Act, each 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.

(c) 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.

(d) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; *provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(e) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(f) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d)

of the Exchange Act) 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.

(g) In the event the undersigned registrant offers the registered securities to existing security holders pursuant to warrants or rights and any securities not taken are to be reoffered to the public, to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

(h) In the event the undersigned registrant offers the registered securities at competitive bidding: (i) to use its best efforts to distribute prior to the opening of bids, to prospective bidders, underwriters, and dealers, a reasonable number of copies of a prospectus which at that time meets the requirements of section 10(a) of the Securities Act, and relating to the securities offered at competitive bidding, as contained in the registration statement, together with any supplements thereto, and (ii) to file an amendment to the registration statement reflecting the results of bidding, the terms of the reoffering and related matters to the extent required by the applicable form, not later than the first use, authorized by the issuer after the opening of bids, of a prospectus relating to the securities offered at competitive bidding, unless no further public offering of such securities by the issuer and no reoffering of such securities by the purchasers is proposed to be made.

(i) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the indemnification provisions described herein, 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 Securities 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 Securities Act and will be governed by the final adjudication of such issue.

(j) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.

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-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Middletown, Rhode Island, on June 20, 2017.

KVH INDUSTRIES, INC.

By: /s/ MARTIN A. KITS VAN HEYNINGEN

Martin A. Kits van Heyningen
President, Chief Executive Officer and Chairman of the Board

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each person whose signature appears below hereby constitutes and appoints each of Martin A. Kits van Heyningen, Donald W. Reilly and Felise B. Feingold as such person's true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (or any registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended), and to file the same, with all exhibits thereto, and all documents in connection therewith, with the SEC, granting unto each said attorney-in-fact and agent 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 such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, 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 dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<hr/> /s/ MARTIN A. KITS VAN HEYNINGEN Martin A. Kits van Heyningen	President, Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	June 20, 2017
<hr/> /s/ DONALD W. REILLY Donald W. Reilly	Chief Financial Officer (Principal Financial Officer)	June 20, 2017
<hr/> /s/ JENNIFER L. BAKER Jennifer L. Baker	Chief Accounting Officer (Principal Accounting Officer)	June 20, 2017

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ MARK S. AIN</u> Mark S. Ain	Director	June 20, 2017
<u>/s/ JAMES S. DODEZ</u> James S. Dodez	Director	June 20, 2017
<u>/s/ STANLEY K. HONEY</u> Stanley K. Honey	Director	June 20, 2017
<u>/s/ BRUCE J. RYAN</u> Bruce J. Ryan	Director	June 20, 2017
<u>/s/ CHARLES R. TRIMBLE</u> Charles R. Trimble	Director	June 20, 2017

EXHIBIT INDEX

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23.2	Consent of Foley Hoag LLP (included in Exhibit 5.1)	X			
24.1	Power of attorney (contained on signature page)	X			
*25.1	Form T-1 Statement of Eligibility of Trustee for Indenture under the Trust Indenture Act of 1939				

* To be filed by amendment or as an exhibit to a report filed pursuant to Section 13(a) or 15(d) of the Exchange Act and incorporated herein by reference.

KVH INDUSTRIES, INC.

INDENTURE

Dated as of _____, 20

[]

Trustee

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KVH INDUSTRIES, INC.

Reconciliation and tie between Trust Indenture Act of 1939 and

Indenture, dated as of , 20

(a)(2)	7.10
(a)(3)	Not Applicable
(a)(4)	Not Applicable
(a)(5)	7.10
(b)	7.10
§ 311(a)	7.11
(b)	7.11
(c)	Not Applicable
§ 312(a)	2.6
(b)	10.3
(c)	10.3
§ 313(a)	7.6
(b)	7.6
(c)	7.6
(d)	7.6
§ 314(a)	4.2, 10.5
(b)	Not Applicable
(c)(1)	10.4
(c)(2)	10.4
(c)(3)	Not Applicable
(d)	Not Applicable

(e)	10.5
(f)	Not Applicable
§ 315(a)	7.1
(b)	7.5
(c)	7.1
(d)	7.1
(e)	6.14
§ 316(a)	2.10
(a)(1)(A)	6.12
(a)(1)(B)	6.13
(a)(2)	Not Applicable
(b)	6.8
§ 317(a)(1)	6.3
(a)(2)	6.4
(b)	2.5

Note: This reconciliation and tie shall not, for any purpose, be deemed to be part of the Indenture.

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INDENTURE

Indenture dated as of _____, 20____ between KVH Industries, Inc., a Delaware corporation (the “**Company**”), and [_____] (the “**Trustee**”). Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Securities issued under this Indenture.

ARTICLE I DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.01 Definitions.

“**Additional Amounts**” means any additional amounts which are required hereby or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes imposed on Holders specified herein or therein and which are owing to such Holders.

“**Affiliate**” of any specified person means any other person directly or indirectly controlling or controlled by or under common control with such specified person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”), as used with respect to any person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such person, whether through the ownership of voting securities or by agreement or otherwise.

“**Agent**” means any Registrar, Paying Agent or Notice Agent.

“**Board of Directors**” means the board of directors of the Company or any duly authorized committee thereof.

“**Board Resolution**” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been adopted by the Board of Directors or pursuant to authorization by the Board of Directors and to be in full force and effect on the date of the certificate and delivered to the Trustee.

“**Business Day**” means, unless otherwise provided by Board Resolution, Officer’s Certificate or supplemental indenture hereto for a particular Series, any day except a Saturday, Sunday or a legal holiday in The City of New York, New York (or in connection with any payment, the place of payment) on which banking institutions are authorized or required by law, regulation or executive order to close.

“**Capital Stock**” means any and all shares, interests, participations, rights or other equivalents (however designated) of corporate stock.

“**Company**” means the party named as such above until a successor replaces it and thereafter means the successor.

1

“**Company Order**” means a written order signed in the name of the Company by an Officer.

“**Corporate Trust Office**” means the office of the Trustee at which at any particular time its corporate trust business related to this Indenture shall be principally administered.

“**Default**” means any event which is, or after notice or passage of time or both would be, an Event of Default.

“**Depository**” means, with respect to the Securities of any Series issuable or issued in whole or in part in the form of one or more Global Securities, the person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act; and if at any time there is more than one such person, “Depository” as used with respect to the Securities of any Series shall mean the Depository with respect to the Securities of such Series.

“**Discount Security**” means any Security that provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02.

“**Dollars**” and “**\$**” means the currency of The United States of America.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended.

“**Foreign Currency**” means any currency or currency unit issued by a government other than the government of The United States of America.

“**Foreign Government Obligations**” means, with respect to Securities of any Series that are denominated in a Foreign Currency, direct obligations of, or obligations guaranteed by, the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged and which are not callable or redeemable at the option of the issuer thereof.

“**GAAP**” means accounting principles generally accepted in the United States of America set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession, which are in effect as of the date of determination, unless otherwise provided for in a particular Series of Securities by a Board Resolution, a supplemental indenture hereto or an Officer’s Certificate.

“**Global Security**” or “**Global Securities**” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.02 evidencing all or part of a Series of Securities, issued to the Depositary for such Series or its nominee, and registered in the name of such Depositary or nominee.

“**Holder**” or “**Securityholder**” means a person in whose name a Security is registered.

2

“**Indenture**” means this Indenture as amended or supplemented from time to time and shall include the form and terms of particular Series of Securities established as contemplated hereunder.

“**interest**” with respect to any Discount Security which by its terms bears interest only after Maturity, means interest payable after Maturity.

“**Maturity**,” when used with respect to any Security, means the date on which the principal of such Security becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“**Officer**” means the Chief Executive Officer, President, the Chief Financial Officer, any Vice President, the Treasurer or any Assistant Treasurer, the Secretary or any Assistant Secretary of the Company.

“**Officer’s Certificate**” means a certificate signed by any Officer.

“**Opinion of Counsel**” means a written opinion of legal counsel who is reasonably acceptable to the Trustee, which opinion may be subject to customary limitations, conditions and exceptions. The counsel may be an employee of or counsel to the Company.

“**person**” means any individual, corporation, partnership, joint venture, association, limited liability company, joint-stock company, trust, unincorporated organization or government or any agency or political subdivision thereof, or other entity of any kind.

“**principal**” of a Security means the principal of the Security plus, when appropriate, the premium, if any, on, and any Additional Amounts in respect of, the Security.

“**Responsible Officer**” means any officer of the Trustee in its Corporate Trust Office having responsibility for administration of this Indenture and also means, with respect to a particular corporate trust matter, any other officer to whom any corporate trust matter is referred because of his or her knowledge of and familiarity with a particular subject.

“**SEC**” means the Securities and Exchange Commission.

“**Securities**” means the debentures, notes or other debt instruments of the Company of any Series authenticated and delivered under this Indenture.

“**Series**” or “**Series of Securities**” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.01 and 2.02 hereof.

“**Stated Maturity**” when used with respect to any Security, means the date specified in such Security as the fixed date on which the principal of such Security or interest is due and payable.

“**Subsidiary**” of any specified person means any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Stock entitled (without regard to the occurrence of any contingency) to vote in the election of directors,

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managers or trustees thereof is at the time owned or controlled, directly or indirectly, by such person or one or more of the other Subsidiaries of that person or a combination thereof.

“**TIA**” means the Trust Indenture Act of 1939 (15 U.S. Code §§ 77aaa-77bbb) as in effect on the date of this Indenture; *provided, however*, that in the event the Trust Indenture Act of 1939 is amended after such date, “TIA” means, to the extent required by any such amendment, the Trust Indenture Act as so amended.

“**Trustee**” means the person named as the “Trustee” in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Trustee” shall mean or include each person who is then a Trustee hereunder, and if at any time there is more than one such person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“**U.S. Government Obligations**” means securities which are direct obligations of, or guaranteed by, The United States of America for the payment of which its full faith and credit is pledged and which are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such U.S. Government Obligation or a specific payment of interest on or principal of any such U.S. Government Obligation held by such custodian for the account of the holder of a depository receipt, *provided that* (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the U.S. Government Obligation evidenced by such depository receipt.

Section 1.02 Other Definitions.

“Bankruptcy Law”	6.01
“Custodian”	6.01
“Event of Default”	6.01
“Judgment Currency”	10.16
“Legal Holiday”	10.07
“mandatory sinking fund payment”	11.01
“New York Banking Day”	10.16
“Notice Agent”	2.04
“optional sinking fund payment”	11.01
“Paying Agent”	2.04
“Registrar”	2.04
“Required Currency”	10.16
“successor person”	5.01

Section 1.03 Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“**Commission**” means the SEC.

“**indenture securities**” means the Securities.

“**indenture security holder**” means a Securityholder.

“**indenture to be qualified**” means this Indenture.

“**indenture trustee**” or “**institutional trustee**” means the Trustee.

“**obligor**” on the indenture securities means the Company and any successor obligor upon the Securities.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein are used herein as so defined.

Section 1.04 Rules of Construction.

Unless the context otherwise requires:

- (a) a term has the meaning assigned to it;
- (b) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP;
- (c) “**or**” is not exclusive;
- (d) words in the singular include the plural, and in the plural include the singular;
- (e) provisions apply to successive events and transactions;
- (f) all references in this Indenture to “Articles,” “Sections” and other subdivisions are to the designated Articles, Sections and provisions of this Indenture, unless otherwise indicated;
- (g) “herein,” “hereof” and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision; and
- (h) the words “including,” “includes” and similar words shall not be limiting and shall be deemed to be followed by “without limitation.”

ARTICLE II
THE SECURITIES

Section 2.01 Issuable in Series.

The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth or determined in the manner provided in a Board Resolution, supplemental indenture or Officer’s Certificate detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officer’s Certificate or supplemental indenture detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution may provide for the method by which specified terms (such as interest rate, maturity

date, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, *provided* that all Series of Securities shall be equally and ratably entitled to the benefits of the Indenture.

Section 2.02 Establishment of Terms of Series of Securities.

At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection (a) and either as to such Securities within the Series or as to the Series generally in the case of Subsections (b) through(w)) by or pursuant to a Board Resolution, and set forth or determined in the manner provided in a Board Resolution, supplemental indenture hereto or Officer's Certificate:

- (a) the title (which shall distinguish the Securities of that particular Series from the Securities of any other Series) and ranking (including the terms of any subordination provisions) of the Series;
- (b) the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be issued;
- (c) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Section 2.07, 2.08, 2.11, 3.06 or 9.06);
- (d) the date or dates on which the principal of the Securities of the Series is payable;
- (e) the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any interest payment date;
- (f) the place or places where the principal of and interest, if any, on the Securities of the Series shall be payable, where the Securities of such Series may be surrendered for

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registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be delivered, and the method of such payment, if by wire transfer, mail or other means;

- (g) if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;
- (h) the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- (i) the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof and other detailed terms and provisions of such repurchase obligations;
- (j) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;
- (k) the forms of the Securities of the Series and whether the Securities will be issuable as Global Securities;
- (l) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02;
- (m) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
- (n) the designation of the currency, currencies or currency units in which payment of the principal of and interest, if any, on the Securities of the Series will be made;
- (o) if payments of principal of or interest, if any, on the Securities of the Series are to be made in one or more currencies or currency units other than that or those in which such Securities are denominated, the manner in which the exchange rate with respect to such payments will be determined;
- (p) the manner in which the amounts of payment of principal of or interest, if any, on the Securities of the Series will be determined, if such amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;
- (q) the provisions, if any, relating to any security provided for the Securities of the Series;

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(r) any addition to, deletion of or change in the Events of Default which applies to any Securities of the Series and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.02;

(s) any addition to, deletion of or change in the covenants set forth in Articles IV or V which applies to Securities of the Series;

(t) any Depositories, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein;

(u) the provisions, if any, relating to conversion or exchange of any Securities of such Series, including if applicable, the conversion or exchange price, the conversion or exchange period, provisions as to whether conversion or exchange will be mandatory, at the option of the Holders thereof or at the option of the Company, the events requiring an adjustment of the conversion price or exchange price and provisions affecting conversion or exchange if such Series of Securities are redeemed;

(v) any other terms of the Series (which may supplement, modify or delete any provision of this Indenture insofar as it applies to such Series), including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of Securities of that Series; and

(w) whether any of the Company's direct or indirect Subsidiaries will guarantee the Securities of that Series, including the terms of subordination, if any, of such guarantees.

All Securities of any one Series need not be issued at the same time and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture hereto or Officer's Certificate referred to above.

Section 2.03 Execution and Authentication.

An Officer shall sign the Securities for the Company by manual or facsimile signature.

If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall nevertheless be valid.

A Security shall not be valid until authenticated by the manual or facsimile signature of the Trustee or an authenticating agent. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture.

The Trustee shall at any time, and from time to time, authenticate Securities for original issue in the principal amount provided in the Board Resolution, supplemental indenture hereto or Officer's Certificate, upon receipt by the Trustee of a Company Order. Each Security shall be dated the date of its authentication, unless otherwise provided by a Board Resolution, a supplemental indenture hereto or an Officer's Certificate.

The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board

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Resolution, supplemental indenture hereto or Officer's Certificate delivered pursuant to Section 2.02, except as provided in Section 2.08.

Prior to the issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.02) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officer's Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officer's Certificate complying with Section 10.04, and (c) an Opinion of Counsel complying with Section 10.04.

The Trustee shall have the right to decline to authenticate and deliver any Securities of such Series: (a) if the Trustee, being advised by counsel, determines that such action may not be taken lawfully; or (b) if the Trustee in good faith by its board of directors or trustees, executive committee or a trust committee of directors and/or vice-presidents or a committee of Responsible Officers shall determine that such action would expose the Trustee to personal liability to Holders of any then outstanding Series of Securities.

The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

Section 2.04 Registrar, Paying Agent and Notice Agent.

The Company shall maintain, with respect to each Series of Securities, at the place or places specified with respect to such Series pursuant to Section 2.02, an office or agency where Securities of such Series may be presented or surrendered for payment ("**Paying Agent**"), where Securities of such Series may be surrendered for registration of transfer or exchange ("**Registrar**") and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be delivered ("**Notice Agent**"). The Registrar shall keep a register with respect to each Series of Securities and to their transfer and exchange. The Company will give prompt written notice to the Trustee of the name and address, and any change in the name or address, of each Registrar, Paying Agent or Notice Agent. If at any time the Company shall fail to maintain any such required Registrar, Paying Agent or Notice Agent or shall fail to furnish the Trustee with the name and address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices and demands; provided, however, that any appointment of the Trustee or any office of the Trustee as the Notice Agent shall exclude the appointment of the Trustee or any office of the Trustee as an agent to receive service of legal process on the Company.

The Company may also from time to time designate one or more co-registrars, additional paying agents or additional notice agents and may from time to time rescind such designations; *provided, however*, that no such designation or rescission shall in any manner relieve the Company of its obligations to maintain a Registrar, Paying Agent and Notice Agent in each place

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so specified pursuant to Section 2.02 for Securities of any Series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the name or address of any such co-registrar, additional paying agent or additional notice agent. The term "Registrar" includes any co-registrar; the term "Paying Agent" includes any additional paying agent; and the term "Notice Agent" includes any additional notice agent. The Company or any of its Affiliates may serve as Registrar or Paying Agent.

The Company hereby appoints the Trustee the initial Registrar, Paying Agent and Notice Agent for each Series unless another Registrar, Paying Agent or Notice Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued.

Section 2.05 Paying Agent to Hold Money in Trust.

The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust, for the benefit of Securityholders of any Series of Securities, or the Trustee, all money held by the Paying Agent for the payment of principal of or interest on the Series of Securities, and will notify the Trustee in writing of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of Securityholders of any Series of Securities all money held by it as Paying Agent. Upon any bankruptcy, reorganization or similar proceeding with respect to the Company, the Trustee shall serve as Paying Agent for the Securities.

Section 2.06 Securityholder Lists.

The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Securityholders of each Series of Securities and shall otherwise comply with TIA § 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least ten (10) days before each interest payment date and at such other times as the Trustee may request in writing a list, in such form and as of such date as the Trustee may reasonably require, of the names and addresses of Securityholders of each Series of Securities.

Section 2.07 Transfer and Exchange.

Subject to Section 2.14, where Securities of a Series are presented to the Registrar or a co-registrar with a request to register a transfer or to exchange them for an equal principal amount of Securities of the same Series, the Registrar shall register the transfer or make the exchange if its requirements for such transactions are met. To permit registrations of transfers and exchanges, the Trustee shall authenticate Securities at the Registrar's request. No service charge shall be made for any registration of transfer or exchange (except as otherwise expressly permitted herein), but the Company may require payment of a sum sufficient to cover any transfer tax or similar governmental charge payable in connection therewith (other than any such

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transfer tax or similar governmental charge payable upon exchanges pursuant to Sections 2.11, 3.06 or 9.06).

Neither the Company nor the Registrar shall be required (a) to issue, register the transfer of, or exchange Securities of any Series for the period beginning at the opening of business fifteen (15) days immediately preceding the sending of a notice of redemption of Securities of that Series selected for redemption and ending at the close of business on the day such notice is sent, or (b) to register the transfer of or exchange Securities of any Series selected, called or being called for redemption as a whole or the portion being redeemed of any such Securities selected, called or being called for redemption in part.

Section 2.08 Mutilated, Destroyed, Lost and Stolen Securities.

If any mutilated Security is surrendered to the Trustee, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding.

If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity bond as may be required by each of them to hold itself and any of its agents harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a bona fide purchaser, the Company shall execute and upon receipt of a Company Order the Trustee shall authenticate and make available for delivery, in lieu of any such destroyed, lost or stolen Security, a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding.

In case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith.

Every new Security of any Series issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

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Section 2.09 Outstanding Securities.

The Securities outstanding at any time are all the Securities authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation, those reductions in the interest on a Global Security effected by the Trustee in accordance with the provisions hereof and those described in this

Section as not outstanding.

If a Security is replaced pursuant to Section 2.08, it ceases to be outstanding until the Trustee receives proof satisfactory to it that the replaced Security is held by a bona fide purchaser.

If the Paying Agent (other than the Company, a Subsidiary of the Company or an Affiliate of the Company) holds on the Maturity of Securities of a Series money sufficient to pay such Securities payable on that date, then on and after that date such Securities of the Series cease to be outstanding and interest on them ceases to accrue.

The Company may purchase or otherwise acquire the Securities, whether by open market purchases, negotiated transactions or otherwise. A Security does not cease to be outstanding because the Company or an Affiliate of the Company holds the Security (but see Section 2.10 below).

In determining whether the Holders of the requisite principal amount of outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of a Discount Security that shall be deemed to be outstanding for such purposes shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon a declaration of acceleration of the Maturity thereof pursuant to Section 6.02.

Section 2.10 Treasury Securities.

In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any request, demand, authorization, direction, notice, consent or waiver, Securities of a Series owned by the Company or any Affiliate of the Company shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such request, demand, authorization, direction, notice, consent or waiver only Securities of a Series that a Responsible Officer of the Trustee knows are so owned shall be so disregarded.

Section 2.11 Temporary Securities.

Until definitive Securities are ready for delivery, the Company may prepare and the Trustee shall authenticate temporary Securities upon a Company Order. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and the Trustee upon receipt of a Company Order shall authenticate definitive Securities of the same Series and date of maturity in exchange for temporary Securities. Until so exchanged, temporary securities shall have the same rights under this Indenture as the definitive Securities.

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Section 2.12 Cancellation.

The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange or payment. The Trustee shall cancel all Securities surrendered for transfer, exchange, payment, replacement or cancellation and shall destroy such canceled Securities (subject to the record retention requirements of the Exchange Act and the Trustee) and deliver a certificate of such cancellation to the Company upon written request of the Company. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

Section 2.13 Defaulted Interest.

If the Company defaults in a payment of interest on a Series of Securities, it shall pay the defaulted interest, plus, to the extent permitted by law, any interest payable on the defaulted interest, to the persons who are Securityholders of the Series on a subsequent special record date. The Company shall fix the record date and payment date. At least ten (10) days before the special record date, the Company shall send to the Trustee and to each Securityholder of the Series a notice that states the special record date, the payment date and the amount of interest to be paid. The Company may pay defaulted interest in any other lawful manner.

Section 2.14 Global Securities.

(a) Terms of Securities. A Board Resolution, a supplemental indenture hereto or an Officer's Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities and the Depositary for such Global Security or Securities.

(b) Transfer and Exchange. Notwithstanding any provisions to the contrary contained in Section 2.07 of the Indenture and in addition thereto, any Global Security shall be exchangeable pursuant to Section 2.07 of the Indenture for Securities registered in the names of Holders other than the Depositary for such Security or its nominee only if (i) such Depositary notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or if at any time such Depositary ceases to be a clearing agency registered under the Exchange Act, and, in either case, the Company fails to appoint a successor Depositary registered as a clearing agency under the Exchange Act within ninety (90) days of such event or (ii) the Company executes and delivers to the Trustee an Officer's Certificate to the effect that such Global Security shall be so exchangeable. Any Global Security that is exchangeable pursuant to the preceding sentence shall be exchangeable for Securities registered in such names as the Depositary shall direct in writing in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms.

Except as provided in this Section (b), a Global Security may not be transferred except as a whole by the Depositary with respect to such Global Security to a nominee of such Depositary, by a nominee of such Depositary to such Depositary or another nominee of such Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.

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(c) Legend. Any Global Security issued hereunder shall bear a legend in substantially the following form:

“This Security is a Global Security within the meaning of the Indenture hereinafter referred to and is registered in the name of the Depository or a nominee of the Depository. This Security is exchangeable for Securities registered in the name of a person other than the Depository or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depository to a nominee of the Depository, by a nominee of the Depository to the Depository or another nominee of the Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository.”

(d) Acts of Holders. The Depository, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(e) Payments. Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.02, payment of the principal of and interest, if any, on any Global Security shall be made to the Holder thereof.

(f) Consents, Declaration and Directions. The Company, the Trustee and any Agent shall treat a person as the Holder of such principal amount of outstanding Securities of such Series represented by a Global Security as shall be specified in a written statement of the Depository or by the applicable procedures of such Depository with respect to such Global Security, for purposes of obtaining any consents, declarations, waivers or directions required to be given by the Holders pursuant to this Indenture.

Section 2.15 CUSIP Numbers.

The Company in issuing the Securities may use “CUSIP” numbers (if then generally in use), and, if so, the Trustee shall use “CUSIP” numbers in notices of redemption as a convenience to Holders; *provided* that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other elements of identification printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers.

ARTICLE III
REDEMPTION

Section 3.01 Notice to Trustee.

The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities or may covenant to redeem and pay the Series of Securities or any part thereof prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities. If a Series of Securities is redeemable and the Company wants or is obligated to redeem prior to the Stated Maturity thereof all or part of the Series of Securities pursuant to the terms of such Securities, it shall notify the Trustee in writing of the redemption

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date and the principal amount of Series of Securities to be redeemed. The Company shall give the notice at least fifteen (15) days before the redemption date.

Section 3.02 Selection of Securities to be Redeemed.

Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture hereto or an Officer’s Certificate, if less than all the Securities of a Series are to be redeemed, the Trustee shall select the Securities of the Series to be redeemed in any manner that the Trustee deems fair and appropriate, including by lot or other method, unless otherwise required by law or applicable stock exchange requirements, subject, in the case of Global Securities, to the applicable rules and procedures of the Depository. The Trustee shall make the selection from Securities of the Series outstanding not previously called for redemption. The Trustee may select for redemption portions of the principal of Securities of the Series that have denominations larger than \$1,000. Securities of the Series and portions of them it selects shall be in amounts of \$1,000 or whole multiples of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.02(j), the minimum principal denomination for each Series and the authorized integral multiples thereof. Provisions of this Indenture that apply to Securities of a Series called for redemption also apply to portions of Securities of that Series called for redemption.

Section 3.03 Notice of Redemption.

Unless otherwise indicated for a particular Series by Board Resolution, a supplemental indenture hereto or an Officer’s Certificate, at least fifteen (15) days but not more than sixty (60) days before a redemption date, the Company shall send or cause to be sent by first-class mail or electronically, in accordance with the procedures of the Depository, a notice of redemption to each Holder whose Securities are to be redeemed (except that a notice issued in connection with a redemption referred to in Article VIII may be issued more than sixty (60) days before a redemption date).

The notice shall identify the Securities of the Series to be redeemed and shall state:

- (a) the redemption date;
- (b) the redemption price;
- (c) the name and address of the Paying Agent;
- (d) if any Securities are being redeemed in part, the portion of the principal amount of such Securities to be redeemed and that, after the redemption date and upon surrender of such Security, a new Security or Securities in principal amount equal to the unredeemed portion of the original Security shall be issued in the name of the Holder thereof upon cancellation of the original Security;
- (e) that Securities of the Series called for redemption must be surrendered to the Paying Agent to collect the redemption price;

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(f) that interest on Securities of the Series called for redemption ceases to accrue on and after the redemption date unless the Company defaults in the deposit of the redemption price;

(g) the CUSIP number, if any; and

(h) any other information as may be required by the terms of the particular Series or the Securities of a Series being redeemed.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense, *provided, however*, that the Company has delivered to the Trustee, at least ten (10) days (unless a shorter time shall be acceptable to the Trustee) prior to the notice date, an Officer's Certificate requesting that the Trustee give such notice and setting forth the information to be stated in such notice.

Section 3.04 Effect of Notice of Redemption.

Once notice of redemption is sent as provided in Section 3.03, Securities of a Series called for redemption become due and payable on the redemption date and at the redemption price. Except as otherwise provided in the Board Resolution, supplemental indenture or Officer's Certificate for a Series, a notice of redemption may not be conditional. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price plus accrued interest to the redemption date.

Section 3.05 Deposit of Redemption Price.

On or before 11:00 a.m., New York City time, on the redemption date, the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date.

Section 3.06 Securities Redeemed in Part.

Upon surrender of a Security that is redeemed in part, the Trustee shall authenticate for the Holder a new Security of the same Series and the same maturity equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE IV
COVENANTS

Section 4.01 Payment of Principal and Interest.

The Company covenants and agrees for the benefit of the Holders of each Series of Securities that it will duly and punctually pay the principal of and interest, if any, on the Securities of that Series in accordance with the terms of such Securities and this Indenture. On or before 11:00 a.m., New York City time, on the applicable payment date, the Company shall deposit with the Paying Agent money sufficient to pay the principal of and interest, if any, on the Securities of each Series in accordance with the terms of such Securities and this Indenture.

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Section 4.02 SEC Reports.

To the extent any Securities of a Series are outstanding, the Company shall deliver to the Trustee within fifteen (15) days after it files them with the SEC copies of the annual reports and of the information, documents, and other reports (or copies of such portions of any of the foregoing as the SEC may by rules and regulations prescribe) which the Company is required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act. The Company also shall comply with the other provisions of TIA § 314(a). Reports, information and documents filed with the SEC via the EDGAR system will be deemed to be delivered to the Trustee as of the time of such filing via EDGAR for purposes of this Section 4.02.

Delivery of reports, information and documents to the Trustee under this Section 4.02 are for informational purposes only and the Trustee's receipt of the foregoing shall not constitute constructive or actual notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officer's Certificates).

Section 4.03 Compliance Certificate.

To the extent any Securities of a Series are outstanding, the Company shall deliver to the Trustee, within one hundred twenty (120) days after the end of each fiscal year of the Company, an Officer's Certificate stating that a review of the activities of the Company and its Subsidiaries during the preceding fiscal year has been made under the supervision of the signing Officer(s) with a view to determining whether the Company has kept, observed, performed and fulfilled its obligations under this Indenture, and further stating, as to each such Officer signing such certificate, that to the best of his/her knowledge the Company has kept, observed, performed and fulfilled each and every covenant contained in this Indenture and is not in default in the performance or observance of any of the terms, provisions and conditions hereof (or, if a Default or Event of Default shall have occurred, describing all such Defaults or Events of Default of which the Officer may have knowledge).

Section 4.04 Stay, Extension and Usury Laws.

The Company (to the extent that it may lawfully do so) covenants that it will not at any time insist upon, plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture or the Securities; and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law has been enacted.

Section 4.05 Corporate Existence.

Subject to Article V, the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence and rights (charter and statutory); *provided, however*, that the Company shall not be required to preserve any such right if the Board of Directors shall determine that the preservation thereof is no longer desirable in

the conduct of the business of the Company and its Subsidiaries taken as a whole and that the loss thereof is not adverse in any material respect to the Holders.

ARTICLE V SUCCESSORS

Section 5.01 When Company May Merge, Etc.

The Company shall not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of its properties and assets to, any person (a “**successor person**”) unless:

- (a) the Company is the surviving corporation or the successor person (if other than the Company) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes the Company’s obligations on the Securities and under this Indenture; and
- (b) immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

The Company shall deliver to the Trustee prior to the consummation of the proposed transaction an Officer’s Certificate to the foregoing effect and an Opinion of Counsel stating that the proposed transaction and any supplemental indenture comply with this Indenture.

Notwithstanding the above, any Subsidiary of the Company may consolidate with, merge into or transfer all or part of its properties to the Company. Neither an Officer’s Certificate nor an Opinion of Counsel shall be required to be delivered in connection therewith.

Section 5.02 Successor Corporation Substituted.

Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section 5.01, the successor corporation formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor person has been named as the Company herein; *provided, however*, that the predecessor Company in the case of a sale, conveyance or other disposition (other than a lease) shall be released from all obligations and covenants under this Indenture and the Securities.

ARTICLE VI DEFAULTS AND REMEDIES

Section 6.01 Events of Default.

“**Event of Default**,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental

indenture or Officer’s Certificate, it is provided that such Series shall not have the benefit of said Event of Default:

- (a) default in the payment of any interest on any Security of that Series when it becomes due and payable, and continuance of such default for a period of thirty (30) days (unless the entire amount of such payment is deposited by the Company with the Trustee or with a Paying Agent prior to 11:00 a.m., New York City time, on the 30th day of such period); or
- (b) default in the payment of principal of any Security of that Series at its Maturity; or
- (c) default in the performance or breach of any covenant or warranty of the Company in this Indenture (other than defaults pursuant to paragraphs (a) or (b) above or pursuant to a covenant or warranty that has been included in this Indenture solely for the benefit of any Series of Securities other than that Series), which default continues uncured for a period of sixty (60) days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of at least 25% in principal amount of the outstanding Securities of that Series a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” hereunder; or
- (d) the Company pursuant to or within the meaning of any Bankruptcy Law:
 - (i) commences a voluntary case,
 - (ii) consents to the entry of an order for relief against it in an involuntary case,
 - (iii) consents to the appointment of a Custodian of it or for all or substantially all of its property,
 - (iv) makes a general assignment for the benefit of its creditors, or
 - (v) generally is unable to pay its debts as they become due; or

(e) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

- (i) is for relief against the Company in an involuntary case,
- (ii) appoints a Custodian of the Company or for all or substantially all of its property, or
- (iii) orders the liquidation of the Company,

and the order or decree remains unstayed and in effect for ninety (90) days; or

(f) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officer's Certificate, in accordance with Section 2.02(r).

The term "**Bankruptcy Law**" means title 11, U.S. Code or any similar Federal or State law for the relief of debtors. The term "**Custodian**" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

The Company will provide the Trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action the Company is taking or proposes to take in respect thereof.

Section 6.02 Acceleration of Maturity; Rescission and Annulment.

If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing (other than an Event of Default referred to in Section 6.01(d) or (e)) then in every such case the Trustee or the Holders of not less than 25% in principal amount of the outstanding Securities of that Series may declare the principal amount (or, if any Securities of that Series are Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities) of and accrued and unpaid interest, if any, on all of the Securities of that Series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) and accrued and unpaid interest, if any, shall become immediately due and payable. If an Event of Default specified in Section 6.01(d) or (e) shall occur, the principal amount (or specified amount) of and accrued and unpaid interest, if any, on all outstanding Securities shall ipso facto become and be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder.

At any time after such a declaration of acceleration with respect to any Series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in principal amount of the outstanding Securities of that Series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if all Events of Default with respect to Securities of that Series, other than the non-payment of the principal and interest, if any, of Securities of that Series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 6.13.

No such rescission shall affect any subsequent Default or impair any right consequent thereon.

Section 6.03 Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if

- (a) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of thirty (30) days, or
- (b) default is made in the payment of principal of any Security at the Maturity thereof, or

- (c) default is made in the deposit of any sinking fund payment, if any, when and as due by the terms of a Security,

then, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal and any overdue interest at the rate or rates prescribed therefor in such Securities, and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company or any other obligor upon such Securities and collect the moneys adjudged or deemed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to any Securities of any Series occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such Series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

Section 6.04 Trustee May File Proofs of Claim.

In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their

creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise,

(a) to file and prove a claim for the whole amount of principal and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and

(b) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same,

and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly

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to the Holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.07.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

Section 6.05 Trustee May Enforce Claims Without Possession of Securities.

All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

Section 6.06 Application of Money Collected.

Any money or property collected by the Trustee pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money or property on account of principal or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: To the payment of all amounts due the Trustee under Section 7.07; and

Second: To the payment of the amounts then due and unpaid for principal of and interest on the Securities in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal and interest, respectively; and

Third: To the Company.

Section 6.07 Limitation on Suits.

No Holder of any Security of any Series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless

(a) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that Series;

(b) the Holders of not less than 25% in principal amount of the outstanding Securities of that Series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

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(c) such Holder or Holders have offered to the Trustee indemnity or security satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by the Trustee in compliance with such request;

(d) the Trustee for sixty (60) days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(e) no direction inconsistent with such written request has been given to the Trustee during such sixty (60) day period by the Holders of a majority in principal amount of the outstanding Securities of that Series;

it being understood, intended and expressly covenanted by the Holder of every Security with every other Holder and the Trustee that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders of the applicable Series.

Section 6.08 Unconditional Right of Holders to Receive Principal and Interest.

Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of and interest, if any, on such Security on the Maturity of such Security, including the Stated Maturity expressed in such Security (or, in the case of redemption, on the redemption date) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

Section 6.09 Restoration of Rights and Remedies.

If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

Section 6.10 Rights and Remedies Cumulative.

Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in Section 2.08, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

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Section 6.11 Delay or Omission Not Waiver.

No delay or omission of the Trustee or of any Holder of any Securities to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

Section 6.12 Control by Holders.

The Holders of a majority in principal amount of the outstanding Securities of any Series shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred on the Trustee, with respect to the Securities of such Series, *provided that*

- (a) such direction shall not be in conflict with any rule of law or with this Indenture,
- (b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction,
- (c) subject to the provisions of Section 7.01, the Trustee shall have the right to decline to follow any such direction if the Trustee in good faith shall, by a Responsible Officer of the Trustee, determine that the proceeding so directed would involve the Trustee in personal liability, and
- (d) prior to taking any action as directed under this Section 6.12, the Trustee shall be entitled to indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

Section 6.13 Waiver of Past Defaults.

The Holders of not less than a majority in principal amount of the outstanding Securities of any Series may on behalf of the Holders of all the Securities of such Series waive any past Default hereunder with respect to such Series and its consequences, except a Default in the payment of the principal of or interest on any Security of such Series (*provided, however*, that the Holders of a majority in principal amount of the outstanding Securities of any Series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration). Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Section 6.14 Undertaking for Costs.

All parties to this Indenture agree, and each Holder of any Security by his acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee

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for any action taken, suffered or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the outstanding Securities of any Series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of or interest on any Security on or after the Maturity of such Security, including the Stated Maturity expressed in such Security (or, in the case of redemption, on the redemption date).

- (a) If an Event of Default has occurred and is continuing, the Trustee shall exercise the rights and powers vested in it by this Indenture and use the same degree of care and skill in their exercise as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.
- (b) Except during the continuance of an Event of Default:
- (i) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others.
- (ii) In the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon Officer's Certificates or Opinions of Counsel furnished to the Trustee and conforming to the requirements of this Indenture; however, in the case of any such Officer's Certificates or Opinions of Counsel which by any provisions hereof are specifically required to be furnished to the Trustee, the Trustee shall examine such Officer's Certificates and Opinions of Counsel to determine whether or not they conform to the form requirements of this Indenture.
- (c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:
- (i) This paragraph does not limit the effect of paragraph (b) of this Section.
- (ii) The Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.
- (iii) The Trustee shall not be liable with respect to any action taken, suffered or omitted to be taken by it with respect to Securities of any Series in good faith in accordance with the direction of the Holders of a majority in principal amount of the outstanding Securities of such Series relating to the time, method and place of conducting

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any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such Series in accordance with Section 6.12.

- (d) Every provision of this Indenture that in any way relates to the Trustee is subject to paragraph (a), (b) and (c) of this Section.
- (e) The Trustee may refuse to perform any duty or exercise any right or power unless it receives indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in performing such duty or exercising such right or power.
- (f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.
- (g) No provision of this Indenture shall require the Trustee to risk its own funds or otherwise incur any financial liability in the performance of any of its duties, or in the exercise of any of its rights or powers, if adequate indemnity against such risk is not assured to the Trustee in its satisfaction.
- (h) The Paying Agent, the Registrar and any authenticating agent shall be entitled to the protections and immunities as are set forth in paragraphs (e), (f) and (g) of this Section and in Section 7.02, each with respect to the Trustee.

Section 7.02 Rights of Trustee.

- (a) The Trustee may rely on and shall be protected in acting or refraining from acting upon any document (whether in its original or facsimile form) believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document.
- (b) Before the Trustee acts or refrains from acting, it may require an Officer's Certificate or an Opinion of Counsel or both. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on such Officer's Certificate or Opinion of Counsel.
- (c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent (other than an agent who is an employee of the Trustee) appointed with due care. No Depository shall be deemed an agent of the Trustee and the Trustee shall not be responsible for any act or omission by any Depository.
- (d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it reasonably believes to be authorized or within its rights or powers, *provided* that the Trustee's conduct does not constitute willful misconduct or negligence.
- (e) The Trustee may consult with counsel and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any

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action taken, suffered or omitted by it hereunder without willful misconduct or negligence, and in reliance thereon.

- (f) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders of Securities unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to it against the costs,

expenses and liabilities which might be incurred by it in compliance with such request or direction.

(g) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default unless a Responsible Officer of the Trustee has actual knowledge thereof or unless written notice of any event which is in fact such a default is received by the Trustee at the Corporate Trust Office of the Trustee, and such notice references the Securities generally or the Securities of a particular Series and this Indenture.

(i) In no event shall the Trustee be liable to any person for special, punitive, indirect, consequential or incidental loss or damage of any kind whatsoever (including but not limited to lost profits), even if the Trustee has been advised of the likelihood of such loss or damage.

(j) The permissive right of the Trustee to take the actions permitted by this Indenture shall not be construed as an obligation or duty to do so.

Section 7.03 Individual Rights of Trustee.

The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee is also subject to Sections 7.10 and 7.11.

Section 7.04 Trustee's Disclaimer.

The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities, and it shall not be responsible for any statement in the Securities other than its authentication.

Section 7.05 Notice of Defaults.

If a Default or Event of Default occurs and is continuing with respect to the Securities of any Series and if it is known to a Responsible Officer of the Trustee, the Trustee shall send to each Securityholder of the Securities of that Series notice of a Default or Event of Default within ninety (90) days after it occurs or, if later, after a Responsible Officer of the Trustee has

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knowledge of such Default or Event of Default. Except in the case of a Default or Event of Default in payment of principal of or interest on any Security of any Series, the Trustee may withhold the notice if and so long as its corporate trust committee or a committee of its Responsible Officers in good faith determines that withholding the notice is in the interests of Securityholders of that Series.

Section 7.06 Reports by Trustee to Holders.

Within sixty (60) days after [] in each year, the Trustee shall transmit by mail to all Securityholders, as their names and addresses appear on the register kept by the Registrar, a brief report dated as of such [], in accordance with, and to the extent required under, TIA § 313. The Trustee shall also comply with TIA § 313(b), 313(c) and 313(d).

A copy of each report at the time of its mailing to Securityholders of any Series shall be filed with the SEC and each national securities exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee in writing when Securities of any Series are listed on any national securities exchange.

Section 7.07 Compensation and Indemnity.

The Company shall pay to the Trustee from time to time compensation for its services as the Company and the Trustee shall from time to time agree upon in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable out-of-pocket expenses incurred by it. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel.

The Company shall indemnify each of the Trustee and any predecessor Trustee (including for the cost of defending itself) against any cost, expense or liability, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it except as set forth in the next paragraph in the performance of its duties under this Indenture as Trustee or Agent. The Trustee shall notify the Company promptly of any claim for which it may seek indemnity. Failure by the Trustee to so notify the Company shall not relieve the Company of its obligations hereunder, unless and to the extent that the Company is materially prejudiced thereby. The Company shall defend the claim and the Trustee shall cooperate in the defense. The Trustee may have one separate counsel and the Company shall pay the reasonable fees and expenses of such counsel. The Company need not pay for any settlement made without its consent, which consent will not be unreasonably withheld. This indemnification shall apply to officers, directors, employees, shareholders and agents of the Trustee.

The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee or by any officer, director, employee, shareholder or agent of the Trustee through willful misconduct or negligence.

To secure the Company's payment obligations in this Section, the Trustee shall have a lien prior to the Securities of any Series on all money or property held or collected by the Trustee, except that held in trust to pay principal of and interest on particular Securities of that Series.

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When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.01(d) or (e) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any Bankruptcy Law.

The provisions of this Section shall survive the termination of this Indenture.

Section 7.08 Replacement of Trustee.

A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section.

The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company at least thirty (30) days prior to the date of the proposed resignation. The Holders of a majority in principal amount of the Securities of any Series may remove the Trustee with respect to that Series by so notifying the Trustee and the Company. The Company may remove the Trustee with respect to Securities of one or more Series if:

- (a) the Trustee fails to comply with Section 7.10;
- (b) the Trustee is adjudged a bankrupt or an insolvent or an order for relief is entered with respect to the Trustee under any Bankruptcy Law;
- (c) a Custodian or public officer takes charge of the Trustee or its property; or
- (d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee. Within one year after the successor Trustee takes office, the Holders of a majority in principal amount of the then outstanding Securities may appoint a successor Trustee to replace the successor Trustee appointed by the Company.

If a successor Trustee with respect to the Securities of any one or more Series does not take office within sixty (60) days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least a majority in principal amount of the Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall transfer all property held by it as Trustee to the successor Trustee subject to the lien provided for in Section 7.07, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee with respect to each Series of Securities for which it is acting as Trustee under this Indenture. A successor Trustee shall mail a notice of its succession to each Securityholder of each such Series. Notwithstanding replacement of the Trustee pursuant to this Section 7.08, the Company's obligations under Section 7.07 hereof shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities

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incurred by it for actions taken or omitted to be taken in accordance with its rights, powers and duties under this Indenture prior to such replacement.

Section 7.09 Successor Trustee by Merger, Etc.

If the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business to, another corporation or entity, the successor corporation or entity without any further act shall be the successor Trustee, subject to Section 7.10.

Section 7.10 Eligibility; Disqualification.

This Indenture shall always have a Trustee who satisfies the requirements of TIA § 310(a)(1), (2) and (5). The Trustee shall always have a combined capital and surplus of at least \$25,000,000 as set forth in its most recent published annual report of condition. The Trustee shall comply with TIA § 310(b).

Section 7.11 Preferential Collection of Claims Against Company.

The Trustee is subject to TIA § 311(a), excluding any creditor relationship listed in TIA § 311(b). A Trustee who has resigned or been removed shall be subject to TIA § 311(a) to the extent indicated.

ARTICLE VIII
SATISFACTION AND DISCHARGE; DEFEASANCE

Section 8.01 Satisfaction and Discharge of Indenture.

This Indenture shall upon Company Order be discharged with respect to the Securities of any Series and cease to be of further effect as to all Securities of such Series (except as hereinafter provided in this Section 8.01), and the Trustee, at the expense of the Company, shall execute instruments acknowledging satisfaction and discharge of this Indenture, when

- (a) either
 - (i) all Securities of such Series theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or
 - (ii) all such Securities of such Series not theretofore delivered to the Trustee for cancellation
 - (A) have become due and payable by reason of sending a notice of redemption or otherwise, or

(B) will become due and payable at their Stated Maturity within one year, or

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(C) have been called for redemption or are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company, or

(D) are deemed paid and discharged pursuant to Section 8.03, as applicable;

and the Company, in the case of (A), (B) or (C) above, shall have irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount of money or U.S. Government Obligations sufficient for the purpose of paying and discharging each installment of principal (including mandatory sinking fund or analogous payments) of and interest on all the Securities of such Series on the dates such installments of principal or interest are due;

(b) the Company shall have paid or caused to be paid all other sums payable hereunder by the Company; and

(c) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the satisfaction and discharge contemplated by this Section have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.07, and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section, the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.02 and 8.05 shall survive.

Section 8.02 Application of Trust Funds; Indemnification.

(a) Subject to the provisions of Section 8.05, all money and U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.01, Section 8.03 or Section 8.04 and all money received by the Trustee in respect of U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.01, Section 8.03 or Section 8.04, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or to make mandatory sinking fund payments or analogous payments as contemplated by Section 8.01, Section 8.03 or Section 8.04.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations or Foreign Government Obligations deposited pursuant to Section 8.01, Section 8.03 or Section 8.04 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon Company Order any U.S. Government Obligations or Foreign Government Obligations or

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money held by it as provided in Section 8.01, Section 8.03 or Section 8.04 which, in the opinion of a nationally recognized firm of independent certified public accountants or investment bank expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or Foreign Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations or Foreign Government Obligations held under this Indenture.

Section 8.03 Legal Defeasance of Securities of any Series.

Unless this Section 8.03 is otherwise specified, pursuant to Section 2.02, to be inapplicable to Securities of any Series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any Series on the 91st day after the date of the deposit referred to in subparagraph (d) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such Series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, upon receipt of a Company Order, execute instruments acknowledging the same), except as to:

(a) the rights of Holders of Securities of such Series to receive, from the trust funds described in subparagraph (d) hereof, (i) payment of the principal of and each installment of principal of and interest on the outstanding Securities of such Series on the Maturity of such principal or installment of principal or interest and (ii) the benefit of any mandatory sinking fund payments applicable to the Securities of such Series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such Series;

(b) the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.02, 8.03 and 8.05; and

(c) the rights, powers, trusts and immunities of the Trustee hereunder and the Company's obligations in connection therewith;

provided that, the following conditions shall have been satisfied:

(d) the Company shall have irrevocably deposited or caused to be deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments, specifically pledged as security for and dedicated solely to the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent public accountants or investment bank expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, if any, on and any mandatory sinking fund payments in respect of all the Securities of such Series on the dates such installments of principal or interest and such sinking fund payments are due;

(e) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other material agreement or instrument to which the Company is a party or by which it is bound;

(f) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(g) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall confirm that, the Holders of the Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to Federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

(h) the Company shall have delivered to the Trustee an Officer's Certificate stating that the deposit was not made by the Company with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company; and

(i) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the defeasance contemplated by this Section have been complied with.

Section 8.04 Covenant Defeasance.

Unless this Section 8.04 is otherwise specified pursuant to Section 2.02 to be inapplicable to Securities of any Series, the Company may omit to comply with respect to the Securities of any Series with any term, provision or condition set forth under Sections 4.02, 4.03, 4.04, 4.05, and 5.01 and, unless otherwise specified therein, any additional covenants specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officer's Certificate delivered pursuant to Section 2.02 (and the failure to comply with any such covenants shall not constitute a Default or Event of Default with respect to such Series under Section 6.01) and the occurrence of any event specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officer's Certificate delivered pursuant to Section 2.02 and designated as an Event of Default shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such Series, *provided* that the following conditions shall have been satisfied:

(a) with reference to this Section 8.04, the Company has irrevocably deposited or caused to be deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a

composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants or investment bank expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal (including mandatory sinking fund or analogous payments) of and interest, if any, on all the Securities of such Series on the dates such installments of principal or interest are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other material agreement or instrument to which the Company is a party or by which it is bound;

(c) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit;

(d) the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that Holders of the Securities of such Series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and covenant defeasance and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit and covenant defeasance had not occurred;

(e) the Company shall have delivered to the Trustee an Officer's Certificate stating the deposit was not made by the Company with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company; and

(f) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the covenant defeasance contemplated by this Section have been complied with.

Section 8.05 Repayment to Company.

Subject to applicable abandoned property law, the Trustee and the Paying Agent shall pay to the Company upon request any money held by them for the payment of principal and interest that remains unclaimed for two years. After that, Securityholders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another person.

Section 8.06 Reinstatement.

If the Trustee or the Paying Agent is unable to apply any money deposited with respect to Securities of any Series in accordance with Section 8.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the obligations of the Company under this Indenture with respect to the Securities of such Series and under the Securities of such

8.01; *provided, however*, that if the Company has made any payment of principal of or interest on or any Additional Amounts with respect to any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money or U.S. Government Obligations held by the Trustee or Paying Agent.

ARTICLE IX
AMENDMENTS AND WAIVERS

Section 9.01 Without Consent of Holders.

The Company and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without the consent of any Securityholder:

- (a) to cure any ambiguity, defect or inconsistency;
- (b) to comply with Article V;
- (c) to provide for uncertificated Securities in addition to or in place of certificated Securities;
- (d) to add guarantees with respect to Securities of any Series or secure Securities of any Series;
- (e) to surrender any of the Company's rights or powers under this Indenture;
- (f) to add covenants or events of default for the benefit of the holders of Securities of any Series;
- (g) to comply with the applicable procedures of the applicable depository;
- (h) to make any change that does not adversely affect the rights of any Securityholder;
- (i) to provide for the issuance of and establish the form and terms and conditions of Securities of any Series as permitted by this Indenture;
- (j) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more Series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee; or
- (k) to comply with requirements of the SEC in order to effect or maintain the qualification of this Indenture under the TIA.

Section 9.02 With Consent of Holders.

The Company and the Trustee may enter into a supplemental indenture with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of

each Series affected by such supplemental indenture (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series), for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of any supplemental indenture or of modifying in any manner the rights of the Securityholders of each such Series. Except as provided in Section 6.13, the Holders of at least a majority in principal amount of the outstanding Securities of any Series by notice to the Trustee (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series) may waive compliance by the Company with any provision of this Indenture or the Securities with respect to such Series.

It shall not be necessary for the consent of the Holders of Securities under this Section 9.02 to approve the particular form of any proposed supplemental indenture or waiver, but it shall be sufficient if such consent approves the substance thereof. After a supplemental indenture or waiver under this Section becomes effective, the Company shall send to the Holders of Securities affected thereby, a notice briefly describing the supplemental indenture or waiver. Any failure by the Company to send such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

Section 9.03 Limitations.

Without the consent of each Securityholder affected, an amendment or waiver may not:

- (a) reduce the principal amount of Securities whose Holders must consent to an amendment, supplement or waiver;
- (b) reduce the rate of or extend the time for payment of interest (including default interest) on any Security;
- (c) reduce the principal or change the Stated Maturity of any Security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation;

- (d) reduce the principal amount of Discount Securities payable upon acceleration of the maturity thereof;
- (e) waive a Default or Event of Default in the payment of the principal of or interest, if any, on any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);
- (f) make the principal of or interest, if any, on any Security payable in any currency other than that stated in the Security;
- (g) make any change in Sections 6.08, 6.13 or 9.03 (this sentence); or
- (h) waive a redemption payment with respect to any Security, *provided* that such redemption is made at the Company's option.

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Section 9.04 Compliance with Trust Indenture Act.

Every amendment to this Indenture or the Securities of one or more Series shall be set forth in a supplemental indenture hereto that complies with the TIA as then in effect.

Section 9.05 Revocation and Effect of Consents.

Until an amendment is set forth in a supplemental indenture or a waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. However, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives the notice of revocation before the date of the supplemental indenture or the date the waiver becomes effective.

Any amendment or waiver once effective shall bind every Securityholder of each Series affected by such amendment or waiver unless it is of the type described in any of clauses (a) through (h) of Section 9.03. In that case, the amendment or waiver shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security.

The Company may, but shall not be obligated to, fix a record date for the purpose of determining the Holders entitled to give their consent or take any other action described above or required or permitted to be taken pursuant to this Indenture. If a record date is fixed, then notwithstanding the second immediately preceding paragraph, those Persons who were Holders at such record date (or their duly designated proxies), and only those persons, shall be entitled to give such consent or to revoke any consent previously given or take any such action, whether or not such Persons continue to be Holders after such record date. No such consent shall be valid or effective for more than one hundred twenty (120) days after such record date.

Section 9.06 Notation on or Exchange of Securities.

The Company or the Trustee may place an appropriate notation about an amendment or waiver on any Security of any Series thereafter authenticated. The Company in exchange for Securities of that Series may issue and the Trustee shall authenticate upon receipt of a Company Order in accordance with Section 2.03 new Securities of that Series that reflect the amendment or waiver.

Section 9.07 Trustee Protected.

In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and (subject to Section 7.01) shall be fully protected in relying upon, an Officer's Certificate or an Opinion of Counsel or both complying with Section 10.04. The Trustee shall sign all supplemental indentures upon delivery of such an Officer's Certificate or Opinion of Counsel or both, except that the Trustee need not sign any supplemental indenture that adversely affects its rights under this Indenture.

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ARTICLE X
MISCELLANEOUS

Section 10.01 Trust Indenture Act Controls.

If any provision of this Indenture limits, qualifies or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, such required or deemed provision shall control.

Section 10.02 Notices.

Any notice or communication by the Company or the Trustee to the other, or by a Holder to the Company or the Trustee, is duly given if in writing and delivered in person, by registered or certified mail (postage prepaid), by nationally recognized overnight courier service, by facsimile transmission (with confirmation of transmission), addressed as follows:

if to the Company:

KVH Industries, Inc.
50 Enterprise Center
Middletown, RI 02842
Attention: Chief Executive Officer

Telephone: (401) 847-3327
Facsimile: (401) 849-0045

with a copy (which shall not constitute notice) to:

Foley Hoag LLP
Seaport West
155 Seaport Boulevard
Boston, MA 02210
Attention: John D. Hancock, Esq.
Telephone: (617) 832-1201
Facsimile: (617) 832-7000

if to the Trustee:

[]
Attention: []
Telephone: []
Facsimile: []

with a copy (which shall not constitute notice) to:

[]
Attention: []
Telephone: []

Facsimile: []

The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to the Company or the Trustee shall be deemed to have been given or made (except that a notice of change of address shall not be deemed to have been given or made until actually received by the addressee) on the earlier of (i) confirmation of receipt by the recipient and (ii) as of the date so delivered if delivered in person; when transmission is confirmed, if sent by facsimile transmission during normal business hours of the recipient, or, if not sent during normal business hours of the recipient, on the Business Day after the day transmission is confirmed; (iii) five (5) calendar days after mailing if sent by registered or certified mail, postage prepaid; or (iv) one (1) Business Day after deposit with a nationally recognized overnight courier service guaranteeing overnight delivery of such notice or communication.

Any notice or communication to a Securityholder shall be sent electronically or by first-class mail to his, her or its address shown on the register kept by the Registrar in accordance with the procedures of the Depository. Failure to send a notice or communication to a Securityholder of any Series or any defect in it shall not affect its sufficiency with respect to other Securityholders of that or any other Series.

If a notice or communication is sent or published in the manner provided above, within the time prescribed, it is duly given, whether or not the Securityholder receives it.

If the Company sends a notice or communication to Securityholders, it shall send a copy to the Trustee and each Agent at the same time.

Notwithstanding any other provision of this Indenture or any Security, where this Indenture or any Security provides for notice of any event (including any notice of redemption) to a Holder of a Global Security (whether by mail or otherwise), such notice shall be sufficiently given to the Depository for such Security (or its designee) pursuant to the customary procedures of such Depository.

Section 10.03 Communication by Holders with Other Holders.

Securityholders of any Series may communicate pursuant to TIA § 312(b) with other Securityholders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or all Series. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA § 312(c).

Section 10.04 Certificate and Opinion as to Conditions Precedent.

Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee, if requested by the Trustee:

(a) an Officer's Certificate stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(b) an Opinion of Counsel stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

Section 10.05 Statements Required in Certificate or Opinion.

Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than a certificate provided pursuant to TIA § 314(a)(4)) shall comply with the provisions of TIA § 314(e) and shall include:

- (a) a statement that the person making such certificate or opinion has read such covenant or condition;
- (b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (c) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and
- (d) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

Section 10.06 Rules by Trustee and Agents.

The Trustee may make reasonable rules for action by or a meeting of Securityholders of one or more Series. Any Agent may make reasonable rules and set reasonable requirements for its functions.

Section 10.07 Legal Holidays.

Unless otherwise provided by a Board Resolution, an Officer's Certificate or a supplemental indenture hereto for a particular Series, a "**Legal Holiday**" is any day that is not a Business Day. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

Section 10.08 No Recourse Against Others.

A director, officer, employee or stockholder (past or present), as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of such obligations or their creation. Each Securityholder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities.

Section 10.09 Counterparts.

This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and

all of which taken together shall constitute one and the same agreement. The exchange of copies of this Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

Section 10.10 Governing Law.

THIS INDENTURE AND THE SECURITIES, INCLUDING ANY CLAIM OR CONTROVERSY ARISING OUT OF OR RELATING TO THE INDENTURE OR THE SECURITIES, SHALL BE GOVERNED BY THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO CONFLICT OF LAW PRINCIPLES THAT WOULD RESULT IN THE APPLICATION OF ANY LAW OTHER THAN THE LAW OF THE STATE OF NEW YORK.

Section 10.11 No Adverse Interpretation of Other Agreements.

This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary of the Company. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

Section 10.12 Successors.

All agreements of the Company in this Indenture and the Securities shall bind its successor. All agreements of the Trustee in this Indenture shall bind its successor.

Section 10.13 Severability.

In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 10.14 Table of Contents, Headings, Etc.

The Table of Contents, Cross Reference Table, and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

Section 10.15 Securities in a Foreign Currency.

Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officer's Certificate delivered pursuant to Section 2.02 of this Indenture with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in more than one currency, then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be determined by converting any such other currency into a

currency that is designated upon issuance of any particular Series of Securities. Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officer's Certificate delivered pursuant to Section 2.02 of this Indenture with respect to a particular Series of Securities, such conversion shall be at the spot rate for the purchase of the designated currency as published in The Financial Times in the "Currency Rates" section (or, if The Financial Times is no longer published, or if such information is no longer available in The Financial Times, such source as may be selected in good faith by the Company) on any date of determination. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture.

All decisions and determinations provided for in the preceding paragraph shall, in the absence of manifest error, to the extent permitted by law, be conclusive for all purposes and irrevocably binding upon the Trustee and all Holders.

Section 10.16 Judgment Currency.

The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of or interest or other amount on the Securities of any Series (the "**Required Currency**") into a currency in which a judgment will be rendered (the "**Judgment Currency**"), the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the day on which final unappealable judgment is entered, unless such day is not a New York Banking Day, then the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the New York Banking Day preceding the day on which final unappealable judgment is entered and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, any recovery pursuant to any judgment (whether or not entered in accordance with subsection (a)), in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable, and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture. For purposes of the foregoing, "**New York Banking Day**" means any day except a Saturday, Sunday or a legal holiday in The City of New York on which banking institutions are authorized or required by law, regulation or executive order to close.

Section 10.17 Force Majeure.

In no event shall the Trustee be responsible or liable for any failure or delay in the performance of its obligations hereunder arising out of or caused by, directly or indirectly, forces beyond its control, including, without limitation, strikes, work stoppages, accidents, acts of war or terrorism, civil or military disturbances, nuclear or natural catastrophes or acts of God, and

interruptions, loss or malfunctions of utilities, communications or computer (software and hardware) services, it being understood that the Trustee shall use reasonable best efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

ARTICLE XI
SINKING FUNDS

Section 11.01 Applicability of Article.

The provisions of this Article shall be applicable to any sinking fund for the retirement of the Securities of a Series if so provided by the terms of such Securities pursuant to Section 2.02 and except as otherwise permitted or required by any form of Security of such Series issued pursuant to this Indenture.

The minimum amount of any sinking fund payment provided for by the terms of the Securities of any Series is herein referred to as a "mandatory sinking fund payment" and any other amount provided for by the terms of Securities of such Series is herein referred to as an "optional sinking fund payment." If provided for by the terms of Securities of any Series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.02. Each sinking fund payment shall be applied to the redemption of Securities of any Series as provided for by the terms of the Securities of such Series.

Section 11.02 Satisfaction of Sinking Fund Payments with Securities.

The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any Series to be made pursuant to the terms of such Securities (1) deliver outstanding Securities of such Series to which such sinking fund payment is applicable (other than any of such Securities previously called for mandatory sinking fund redemption) and (2) apply as credit Securities of such Series to which such sinking fund payment is applicable and which have been repurchased by the Company or redeemed either at the election of the Company pursuant to the terms of such Series of Securities (except pursuant to any mandatory sinking fund) or through the application of permitted optional sinking fund payments or other optional redemptions pursuant to the terms of such Securities, *provided* that such Securities have not been previously so credited. Such Securities shall be received by the Trustee, together with an Officer's Certificate with respect thereto, not later than fifteen (15) days prior to the date on which the Trustee begins the process of selecting Securities for redemption, and shall be credited for such purpose by the Trustee at the price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities in lieu of cash payments pursuant to this Section 11.02, the principal amount of Securities of such Series to be redeemed in order to exhaust the aforesaid cash payment shall be less than \$100,000, the Trustee need not call Securities of such Series for redemption, except upon receipt of a Company Order that such action be taken, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, *provided*,

however, that the Trustee or such Paying Agent shall from time to time upon receipt of a Company Order pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery

by the Company to the Trustee of Securities of that Series purchased by the Company having an unpaid principal amount equal to the cash payment required to be released to the Company.

Section 11.03 Redemption of Securities for Sinking Fund.

Not less than forty-five (45) days (unless otherwise indicated in the Board Resolution, supplemental indenture hereto or Officer's Certificate in respect of a particular Series of Securities) prior to each sinking fund payment date for any Series of Securities, the Company will deliver to the Trustee an Officer's Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that Series pursuant to the terms of that Series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that Series pursuant to Section 11.02, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and the Company shall thereupon be obligated to pay the amount therein specified. Not less than thirty (30) days (unless otherwise indicated in the Board Resolution, Officer's Certificate or supplemental indenture in respect of a particular Series of Securities) before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 3.02 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 3.03. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 3.04, 3.05 and 3.06.

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed as of the day and year first above written.

KVH INDUSTRIES, INC.

By: _____
Name:
Its:

[], as Trustee

By: _____
Name:
Its:

Seaport West
155 Seaport Boulevard
Boston, MA 02210-2600

617 832 1000 *main*
617 832 7000 *fax*

June 20, 2017

KVH Industries, Inc.
50 Enterprise Center
Middletown, Rhode Island 02842

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to KVH Industries, Inc., a Delaware corporation (the "**Company**"), in connection with its filing of a registration statement on Form S-3 (the "**Registration Statement**") with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Securities Act**"), on the date hereof.

The Registration Statement includes a base prospectus (the "**Prospectus**"), which provides that it will be supplemented in the future by one or more supplements to the Prospectus describing the securities offered thereby and the terms of the offering (each, a "**Prospectus Supplement**"). The Prospectus provides for the offer and sale of up to \$100,000,000 in aggregate offering price of the following securities: (i) shares of the Company's common stock, par value \$0.01 per share ("**Common Stock**"), (ii) shares of one or more series of the Company's preferred stock, par value \$0.01 per share ("**Preferred Stock**"), (iii) one or more series of the Company's debt securities, which may be issued pursuant to an indenture between the Company, as issuer, and a trustee to be named therein (the "**Trustee**"), in the form attached as Exhibit 4.6 to the Registration Statement (as such indenture may be amended or supplemented from time to time, the "**Indenture**"), and one or more supplements or officer's certificates thereto or resolutions of the Board of Directors of the Company, in each case establishing the terms of each such series (collectively, "**Debt Securities**"), (iv) warrants to purchase Common Stock, Preferred Stock, Debt Securities or any combination of the foregoing, either individually or as units comprised of two or more securities ("**Warrants**"), (v) rights to purchase shares of Common Stock, Preferred Stock, Debt Securities, Warrants or any combination of the foregoing, either individually or as units comprised of two or more securities ("**Rights**"), and (vi) units consisting of Common Stock, Preferred Stock, Debt Securities, Warrants and/or Rights, which may or may not be separable from one another ("**Units**").

KVH Industries, Inc.
June 20, 2017
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The Common Stock, Preferred Stock, Debt Securities, Warrants, Rights and Units are collectively referred to as the "**Securities.**"

The Debt Securities may be exchangeable and/or convertible into other Securities. The Warrants may be issued under one or more warrant agreements (each, a "**Warrant Agreement**") between the Company and a third party to be identified therein as warrant agent or directly issued by the Company to the purchasers of such Warrants. The Rights may be issued under one or more rights agreements (each, a "**Rights Agreement**") between the Company and a third party to be identified therein as rights agent or directly issued by the Company to the recipients of such Rights. The Units may be issued under one or more unit agreements (each, a "**Unit Agreement**") between the Company and a third party to be identified therein as unit agent or directly issued by the Company to the purchasers of such Units. The Debt Securities, the Warrants, the Rights and the Units are herein collectively referred to as the "**Covered Securities.**" The Indenture, the Warrant Agreements, the Rights Agreements and the Unit Agreements are herein collectively referred to as the "**Agreements.**"

The Securities may be offered and sold from time to time pursuant to Rule 415 promulgated under the Securities Act, in amounts, at prices and on terms to be determined at the time of the offering thereof.

We have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. We have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We have assumed that the proceedings to be taken by the Company after the date hereof in connection with the authorization of the Indenture and the Agreements and the authorization, issuance and sale of the Securities, and the terms of each issuance, will be in compliance with law. In our examination, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals and the conformity to authentic original documents of all documents submitted to us as copies.

The opinions expressed below are limited to the General Corporation Law of the State of Delaware (including the statutory provisions contained therein, applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting those provisions), and, with respect to the opinions set forth in paragraphs 3, 4, 5 and 6 below, the internal laws of the State of New York.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof:

1. When an issuance of shares of Common Stock has been duly authorized by all necessary corporate action of the Company, upon issuance, delivery and payment of lawful consideration therefor in an amount not less than the par value thereof in the manner contemplated by the Registration Statement, the Prospectus and the applicable

Prospectus Supplement(s), by such corporate action and by the terms of any underwriting, purchase or other agreement, instrument or Security relating to such issuance, such shares of Common Stock will be validly issued, fully paid and nonassessable.

2. When a series of Preferred Stock has been duly authorized and established in accordance with the terms of the Company's Amended and Restated Certificate of Incorporation, as amended, and an issuance of shares of such series of Preferred Stock has been duly authorized by all necessary corporate action of the Company, upon issuance, delivery and payment of lawful consideration therefor in an amount not less than the par value thereof in the manner contemplated by the Registration Statement, the Prospectus and the applicable Prospectus Supplement(s), by such corporate action and by the terms of any underwriting, purchase or other agreement, instrument or Security relating to such issuance, such shares of Preferred Stock will be validly issued, fully paid and nonassessable.

3. When the Indenture has been duly authorized by all necessary corporate action of the Company and duly executed and delivered, and when the specific terms of a particular series of Debt Securities have been duly established in accordance with the Indenture and authorized by all necessary corporate action of the Company, and when any such Debt Securities have been duly executed and issued by the Company, duly authenticated by the Trustee and duly delivered by or on behalf of the Company against payment therefor in accordance with the Indenture and in the manner contemplated by the Registration Statement, the Prospectus and the applicable Prospectus Supplement(s), by such corporate action and by the terms of any underwriting, purchase or other agreement, instrument or Security relating to such issuance, such Debt Securities will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

4. When a Warrant Agreement, if applicable, has been duly authorized by all necessary corporate action of the Company and duly executed and delivered, and when the specific terms of a particular issuance of Warrants have been duly established in accordance with any such Warrant Agreement and authorized by all necessary corporate action of the Company, and the Warrants have been duly executed, authenticated, issued and delivered against payment therefor in accordance with any such Warrant Agreement and in the manner contemplated by the Registration Statement, the Prospectus and the applicable Prospectus Supplement(s), by such corporate action and by the terms of any underwriting, purchase or other agreement, instrument or Security relating to such issuance, the Warrants will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

5. When a Rights Agreement, if applicable, has been duly authorized by all necessary corporate action of the Company and duly executed and delivered, and when the specific terms of a particular issuance of Rights have been duly established in accordance with such Rights Agreement and authorized by all necessary corporate action

of the Company, and the Rights have been duly executed, authenticated, issued and delivered against any payment therefor in accordance with any such Rights Agreement and in the manner contemplated by the Registration Statement, the Prospectus and the applicable Prospectus Supplement(s), by such corporate action and by the terms of any underwriting, purchase or other agreement, instrument or Security relating to such issuance, the Rights will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

6. When a Unit Agreement, if applicable, has been duly authorized by all necessary corporate action of the Company and duly executed and delivered, and when the specific terms of a particular issuance of Units have been duly established in accordance with any such Unit Agreement and authorized by all necessary corporate action of the Company, and the Units have been duly executed, authenticated, issued and delivered against payment therefor in accordance with any such Unit Agreement and in the manner contemplated by the Registration Statement, the Prospectus and the applicable Prospectus Supplement(s), by such corporate action and by the terms of any underwriting, purchase or other agreement, instrument or Security relating to such issuance, the Units will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

Our opinions are subject to the qualification that we express no opinion regarding the applicability of, compliance with or effect of (i) any bankruptcy, insolvency, reorganization, preference, fraudulent conveyance, fraudulent transfer, moratorium or other similar laws relating to or affecting the rights and remedies of creditors; (ii) general principles of equity, whether considered in a proceeding in equity or at law (including the possible unavailability of specific performance or injunctive relief), concepts of materiality, reasonableness, good faith and fair dealing, and the discretion of the court before which a proceeding is brought; (iii) the invalidity under certain circumstances under law or court decisions of provisions providing for the indemnification of or contribution to a party with respect to a liability where such indemnification or contribution is contrary to public policy or (iv) public policy considerations that may limit the rights of parties to obtain certain remedies. We express no opinion as to (a) any provision for liquidated damages, default interest, late charges, monetary penalties, make-whole premiums or other economic remedies to the extent such provisions are deemed to constitute a penalty, (b) consents to, or restrictions upon, governing law, jurisdiction, forum, venue (including waivers of forum non conveniens), arbitration, remedies or judicial relief, (c) waivers of rights or defenses, (d) any provision requiring the payment of attorneys' fees, where such payment is contrary to law or public policy, (e) any provision permitting, upon acceleration of any Debt Security, collection of that portion of the stated principal amount thereof which might be determined to constitute unearned interest thereon, (f) the creation, validity, attachment, perfection or priority of any lien or security interest, (g) advance waivers of claims, defenses, rights granted by law (including any waiver of rights or defenses in the Indenture), or notice, opportunity for hearing, evidentiary requirements, statutes of limitation, trial by jury or at law, or other

procedural rights, (h) waivers of broadly or vaguely stated rights, (i) provisions for exclusivity, election or cumulation of rights or remedies, (j) provisions authorizing or validating conclusive or discretionary determinations, (k) grants of setoff rights, (l) proxies, powers and trusts, (m) provisions prohibiting, restricting or requiring consent to assignment or transfer of any right or property, (n) any provision to the extent it requires that a claim with respect to a security denominated in other than U.S. dollars (or a judgment in respect of such a claim) be converted into U.S. dollars at a rate of exchange at a particular date, to the extent applicable law otherwise provides, (o) the severability, if invalid, of provisions to the foregoing effect and (p) compliance with any usury laws.

We have assumed that (i) each of the Covered Securities and the respective Agreements governing such Covered Securities will be governed by the internal laws of the State of New York, (ii) each of the parties to any Agreement other than the Company will be duly organized, validly existing and in good standing under the laws of its jurisdiction of organization and qualified to perform its obligations under such Agreement, (iii) the Covered Securities and the Agreements will be duly authorized, executed and delivered by the parties thereto other than the Company, (iv) the Covered Securities and the Agreements will constitute legally valid and binding obligations of the parties thereto other than the Company, enforceable against each of them in accordance with their respective terms, and (v) the status of the Covered Securities and the Agreements as legally valid and binding obligations of the parties will not be affected by any (a) breaches of, or defaults under, agreements or instruments, (b) violations of statutes, rules, regulations or court or governmental orders, or (c) failures to obtain required consents, approvals or authorizations from, or to make required registrations, declarations or filings with, governmental authorities.

This opinion is to be relied upon only in connection with the offer and sale of the Securities while the Registration Statement and any and all required post-effective amendments thereto are effective.

This opinion is being delivered solely for the benefit of the Company and such other persons as are entitled to rely upon it pursuant to applicable provisions of the Securities Act. This opinion may not be used, quoted, relied upon or referred to for any other purpose nor may this opinion be used, quoted, relied upon or referred to by any other person, for any purpose, without our prior written consent.

We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus under the heading "Legal Matters." 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 Securities Act or the rules and regulations of the Commission thereunder.

KVH Industries, Inc.
June 20, 2017
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Very truly yours,

FOLEY HOAG LLP

By: /s/ John D. Hancock
a Partner

KVH INDUSTRIES, INC.
COMPUTATION OF RATIO OF EARNINGS TO FIXED CHARGES
(Dollar amounts in thousands)
(Unaudited)

	Three Months Ended March 31, 2017	Year Ended December 31,				
		2016	2015	2014	2013	2012
Ratio of Earnings to Fixed Charges						
<u>Earnings</u>						
(Loss) income before income tax expense	\$ (4,725)	\$ (1,970)	\$ 2,666	\$ 1,325	\$ 6,683	\$ 6,843
Plus:						
Fixed charges	397	1,563	1,591	1,440	740	377
Amortization of capitalized interest	—	—	—	—	—	—
Equity earnings in unconsolidated subsidiaries	—	—	—	—	—	—
Less:						
Capitalized interest	—	—	—	—	—	—
(Loss) income before income tax expense and fixed charges	<u>\$ (4,328)</u>	<u>\$ (407)</u>	<u>\$ 4,257</u>	<u>\$ 2,765</u>	<u>\$ 7,423</u>	<u>\$ 7,220</u>
<u>Fixed charges</u>						
Interest expense, net, including amortization of deferred financing fees	\$ 367	\$ 1,491	\$ 1,515	\$ 1,341	\$ 663	\$ 331
Capitalized interest	—	—	—	—	—	—
Estimate of interest component in rent expense	30	72	76	99	77	46
Total fixed charges	<u>\$ 397</u>	<u>\$ 1,563</u>	<u>\$ 1,591</u>	<u>\$ 1,440</u>	<u>\$ 740</u>	<u>\$ 377</u>
Ratio of earnings to fixed charges	(10.9)	(0.3)	2.7	1.9	10.0	19.2
(Deficiency) excess	<u>\$ (4,725)</u>	<u>\$ (1,970)</u>	<u>\$ 2,666</u>	<u>\$ 1,325</u>	<u>\$ 6,683</u>	<u>\$ 6,843</u>
Ratio of Earnings to Fixed Charges and Preferred Stock Dividends						
<u>Earnings</u>						
Income (loss) before provision for income taxes	(4,725)	(1,970)	2,666	1,325	6,683	6,843
Plus:						
Fixed Charges and preferred dividends	397	1,563	1,591	1,440	740	377
Amortization of capitalized interest	—	—	—	—	—	—
Equity earnings in unconsolidated subsidiaries	—	—	—	—	—	—
Less:						
Capitalized interest	—	—	—	—	—	—
Preferred dividends	—	—	—	—	—	—
(Loss) income before income tax expense and fixed charges	<u>\$ (4,328)</u>	<u>\$ (407)</u>	<u>\$ 4,257</u>	<u>\$ 2,765</u>	<u>\$ 7,423</u>	<u>\$ 7,220</u>
<u>Fixed charges</u>						
Interest expense, net, including amortization of deferred financing fees	\$ 367	\$ 1,491	\$ 1,515	\$ 1,341	\$ 663	\$ 331
Capitalized interest	—	—	—	—	—	—
Estimate of interest component in rent expense	30	72	76	99	77	46
Preferred dividends	—	—	—	—	—	—
Total fixed charges	<u>\$ 397</u>	<u>\$ 1,563</u>	<u>\$ 1,591</u>	<u>\$ 1,440</u>	<u>\$ 740</u>	<u>\$ 377</u>
Ratio of earnings to fixed charges	(10.9)	(0.3)	2.7	1.9	10.0	19.2
(Deficiency) excess	<u>\$ (4,725)</u>	<u>\$ (1,970)</u>	<u>\$ 2,666</u>	<u>\$ 1,325</u>	<u>\$ 6,683</u>	<u>\$ 6,843</u>

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated March 9, 2017, with respect to the consolidated financial statements and internal control over financial reporting of KVH Industries, Inc. included in the Annual Report on Form 10-K for the year ended December 31, 2016, which are incorporated by reference in this Registration Statement. We consent to the incorporation by reference of the aforementioned reports in this Registration Statement, and to the use of our name as it appears under the caption "Experts."

/s/ Grant Thornton LLP

Boston, Massachusetts

June 20, 2017
