UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of report: August 10, 2005 (Date of earliest event reported: August 10, 2005)

RBC BEARINGS INCORPORATED

(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

Delaware (State or other jurisdiction of incorporation) 333-124824 (Commission File Number) 95-4372080 (IRS Employer Identification No.)

One Tribology Center Oxford, CT 06478

Telephone: (203) 267-7001 (Address of Principal Executive Offices, including Zip Code)

(203) 267-7001

(Registrant's Telephone Number, Including Area Code)

N/A

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

/ / Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

/ / Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

/ / Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

/ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01. Other Events.

August 10, 2005, RBC Bearings Incorporated (RBC Bearings) issued a press release which disclosed that RBC Bearings commenced trading its common stock on the Nasdaq National Market, under the ticker symbol "ROLL" and other details concerning its offering of common stock. A copy of the press release is attached hereto as Exhibit 99.1, which is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits.

- (c) Exhibits
- 99.1 Press Release dated August 10, 2005.

SIGNATURES

According to the requirements of the Securities Exchange Act of 1934, the Company has duly caused this report to be signed on its behalf by the undersigned, hereunto duly authorized.

Date: August 10, 2005

RBC BEARINGS INCORPORATED

By: /s/ DANIEL A. BERGERON

Name: Daniel A. Bergeron Title: Chief Financial Officer

2

QuickLinks

Item 8.01. Other Events. Item 9.01 Financial Statements and Exhibits.

SIGNATURES

Exhibit 99.1

Contact: 1-800-281-1163 investors@rbcbearings.com

RBC Bearings Incorporated Prices its Initial Public Offering Shares to Trade Under Ticker Symbol "ROLL"

Oxford, Connecticut—August 10, 2005—RBC Bearings Incorporated (RBC Bearings) will begin trading its common stock on the Nasdaq National Market today under the ticker symbol "ROLL." The initial public offering of 9,288,000 shares of common stock was priced at \$14.50 per share. Of the shares offered, 6,273,000 shares were sold by the Company and 3,015,000 shares were sold by selling stockholders. The underwriters have an option to purchase up to 1,243,200 additional shares to cover any over-allotments.

The offering was made through an underwriting syndicate led by Merrill Lynch & Co. as the sole book-running manager and Keybanc Capital Markets and Jefferies & Company as co-managers.

Copies of the prospectus relating to the offering may be obtained from Merrill Lynch & Co., Attn: Merrill Lynch & Co., 4 World Financial Center, New York, New York 10080.

This press release shall not constitute an offer to sell or a solicitation of an offer to buy, nor shall there be any sale of these securities in any state or jurisdiction where such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of such state or jurisdiction. Any offer or sale will be made only by means of the written prospectus forming a part of the effective registration statement.

About RBC Bearings

RBC Bearings Incorporated (RBC Bearings) is an international manufacturer and marketer of highly engineered precision bearings and components. Founded in 1919, the Company is primarily focused on producing highly technical or regulated bearing products requiring sophisticated design, testing, and manufacturing capabilities for the diversified industrial, aerospace and defense markets. Headquartered in Oxford, Connecticut, RBC Bearings currently employs approximately 1,700 people in 18 facilities located throughout North America and Europe.

QuickLinks

Exhibit 99.1