

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 11-K

(Mark One)

☒ Annual Report pursuant to Section 15 (d) of the Securities Exchange Act of 1934

For the calendar year ended December 31, 2003

OR

☐ Transition report pursuant to Section 15 (d) of the Securities Exchange Act of 1934

For the transition period from _____ to _____

Commission file number 0-30270

A. Full title of the Plan and the address of the Plan, if different from that of the issuer named below:

**CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN**

B. Name of issuer of the securities held pursuant to the Plan and the address of its principal executive office:

Crompton Corporation
199 Benson Rd.
Middlebury, Connecticut 06749

**CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN**

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Statements of Net Assets Available for Plan Benefits as of December 31, 2003 and 2002

Statements of Changes in Net Assets Available for Plan Benefits for the Years Ended December 31, 2003 and 2002

Notes to Financial Statements

Supplemental Schedule:

Schedule H, Line 4i – Schedule of Assets (Held at End of Year)

Signature

Exhibit 23 – Consent of KPMG LLP, Independent Registered Public Accounting Firm

CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN

Financial Statements and Supplemental Schedule

December 31, 2003 and 2002

(With Report of Independent Registered Public Accounting Firm Thereon)

CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN

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Report of Independent Registered Public Accounting Firm

Statements of Net Assets Available for Plan Benefits as of December 31, 2003 and 2002

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Signature

Exhibit 23- Consent of KPMG LLP, Independent Registered Public Accounting Firm

Report of Independent Registered Public Accounting Firm

The Board of Directors
Crompton Corporation:

We have audited the accompanying statements of net assets available for plan benefits of the Crompton Corporation Employee Stock Ownership Plan (the "Plan") as of December 31, 2003 and 2002, and the related statements of changes in net assets available for plan benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for plan benefits of the Plan as of December 31, 2003 and 2002, and the changes in net assets available for plan benefits for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Our audits were performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The accompanying supplemental schedule of assets (held at end of year) is presented for the purpose of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

/s/ KPMG LLP
Stamford, Connecticut
June 25, 2004

**CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN**

Statements of Net Assets Available for Plan Benefits

December 31, 2003 and 2002

	<u>2003</u>	<u>2002</u>
Investments, at fair value:		

Common stock of Crompton Corporation	\$20,657,366	\$14,989,723
Blended Income Fund	11,754,162	12,019,047
Mutual Funds	20,585,350	14,393,489
Contributions receivable from participants	166,656	332,966
Contribution receivable from Crompton Corporation	<u>108,642</u>	<u>214,614</u>
Net assets available for plan benefits	<u><u>\$53,272,176</u></u>	<u><u>\$41,949,839</u></u>

See accompanying notes to financial statements

CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN

Statements of Changes In Net Assets Available for Plan Benefits

Years ended December 31, 2003 and 2002

	<u>2003</u>	<u>2002</u>
Additions to net assets attributed to:		
Investment income:		
Interest and dividends	\$ 754,752	\$ 793,940
Net appreciation/(depreciation) in fair value of investments	<u>8,463,802</u>	<u>(10,920,025)</u>
Net investment income/(loss)	\$9,218,554	\$(10,126,085)
Contributions:		
Participant rollovers	4,496	-
Participants	4,092,972	4,397,318
Employer	<u>2,597,080</u>	<u>2,906,735</u>
Total additions	<u>\$15,913,102</u>	<u>\$(2,822,032)</u>
Deductions from net assets attributed to:		
Withdrawals and distributions	\$(4,548,274)	\$(10,410,114)
Administrative expenses	<u>(42,491)</u>	<u>(59,314)</u>
Total deductions	<u>\$(4,590,765)</u>	<u>\$(10,469,428)</u>
Net increase (decrease)	11,322,337	(13,291,460)
Net assets available for plan benefits at the beginning of the year	<u>41,949,839</u>	<u>55,241,299</u>
Net assets available for plan benefits at the end of the year	<u>\$53,272,176</u>	<u>\$41,949,839</u>

See accompanying notes to financial statements

CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN

Notes to Financial Statements

December 31, 2003 and 2002

1. Basis of Presentation

The accompanying financial statements have been prepared on the accrual basis of accounting and present the net assets available for plan benefits and changes in those net assets.

2. Plan Description

The Employee Stock Purchase and Savings Plan was adopted by the Board of Directors of Crompton Corporation (the "Company" or "Plan Sponsor") on January 27, 1976. Effective July 1, 1989, the Board of Directors amended the Plan to convert it into an Employee Stock Ownership Plan (the "Plan"). The following description of the Plan provides only general information. For complete information see the Plan document. The Plan is a defined contribution plan and is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA).

The Plan is administered by the Crompton Corporation Employee Benefits Committee consisting of persons appointed by the Board of Directors of the Company.

Fidelity Investments ® (the "Trustee") is the custodial trustee for all the Plan's assets. The Trustee has custodial responsibility for a trust fund on behalf of the Plan and maintains accounting records for all Plan assets.

Eligibility

Employees of the Company and participating affiliates of the Company are eligible to participate upon attaining the age of 18 and having worked for at least a thirty (30) consecutive day period of employment.

Contributions and Vesting

The Plan permits an eligible employee to elect to participate by authorizing a withholding of an amount equal to 1%, 2%, 3%, 4%, 5% or 6% of compensation as the basic contribution to the Plan. Contributions by the Company to the Plan are made at an amount equal to 66 2/3% of each participating employee's basic employee contribution to the Plan. If participants are not eligible for any other defined contribution plan, additional employee contributions in 1% increments up to 10% of compensation can be made as supplemental employee contributions. Supplemental employee contributions are not eligible for matching Company contributions.

A participant in the Plan is fully vested in his basic and supplemental contributions. Employer contributions vest 100% over a four-year period at a rate of 25% per year of service. Any amounts forfeited under the Plan are accumulated and used to reduce Company contributions.

At December 31, 2003 and 2002, forfeited non-vested accounts totaled \$14,025 and \$75,740, respectively.

Withdrawals/Benefit Payments

Upon termination, death, or retiring, a participant's account shall be distributed. Funds can remain in the Plan after retirement pending a \$5,000 balance in a participants' account and as long as funds begin to be distributed after the participant reaches the age of 70½.

A participant may elect to make one withdrawal of his basic or supplemental contributions in a 12-month period. Withdrawal of basic contributions will cause a suspension of contributions for a three-month period. A participant who is fully vested and has withdrawn all of his basic and supplemental contributions may also elect to withdraw all or part of his employer contributions. Withdrawal of employer contributions will result in a suspension of contributions for a six-month period.

The Plan does not allow for participant loans.

Investments Options

The Company's contribution to the Plan is invested in the Crompton Corporation Common Stock Fund. The Plan provides for investment of employee contributions in the Crompton Corporation Stock Fund and among various investment funds maintained by Fidelity Investments.

Each participant is permitted to elect to have his basic contribution invested in any of the funds in 1% increments.

Fund transfers can be made on a daily basis in a minimum of 1% increments.

3. Summary of Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Plan Management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported changes in net assets available for plan benefits during the reporting period. Actual results could differ from those estimates.

Investment Valuation and Income Recognition

The Plan's investments are stated at fair value except for the benefit-responsive investment contract, which is valued at contract-value (Note 5). Quoted market prices are used to value investments. Shares of mutual funds are valued at the net asset value of shares held by the Plan at year-end. The Crompton Corporation Common Stock Fund is valued at its year-end closing price.

Net appreciation (depreciation) in fair value of investments includes investments bought and sold and held during the year. Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on an accrual basis and dividends are recorded on the ex-dividend date.

Payment of Benefits

Benefits are recorded when paid.

Plan Expenses

Plan expenses may be paid by the Company, however if not paid by the Company, may be charged to the Plan. The Company provides administrative and accounting services for the Plan at no charge.

4. Investments

The Plan's investments that exceeded 5% of net assets available for plan benefits as of December 31, 2003 and 2002 are as follows:

	<u>2003</u>	<u>2002</u>
Crompton Corporation Common Stock	\$20,657,366	\$14,989,723
Fidelity Blended Income Fund	11,754,162	12,019,047
Fidelity Magellan Fund	4,021,693	3,239,041
Fidelity U.S. Equity Index Commingled Fund	3,331,545	2,299,620
Fidelity Growth Company Fund	3,139,924	2,253,476

During 2003 and 2002, the Plan's investments (including gains and losses on investments bought and sold, as well as held during the year) appreciated/(depreciated) in value as follows:

	<u>2003</u>	<u>2002</u>
Mutual Funds	\$4,435,048	(\$4,238,475)
Common Stock of Crompton Corporation	<u>4,028,754</u>	<u>(6,681,550)</u>
	<u>\$8,463,802</u>	<u>(\$10,920,025)</u>

5. Investment Contracts with Insurance Company

The Blended Income Fund invests in benefit-responsive guaranteed investment contracts ("GICs") offered by major insurance companies and other approved financial institutions and in certain types of fixed income securities. These GICs are stated at contract value, as determined by Fidelity, which approximates fair value. The average yield on the Company's GICs were 4.27% and 5.18%, respectively, during 2003 and 2002. The crediting interest rate on these GICs was 3.97% and 4.69% , respectively, at December 31, 2003 and 2002.

6. Income Taxes

The Internal Revenue Service ("IRS") has determined and has informed the Company by a letter dated October 30, 2002, that the Plan and related trust are designed in accordance with applicable sections of the Internal Revenue Code ("IRC").

7. Party-in-Interest Transactions

Fidelity Investments ® and the Company are parties-in-interest as defined in Section 3 (14) of ERISA. During the years 2003 and 2002, there were no prohibited party-in-interest transactions.

8. Priorities Upon Termination of the Plan

The Board of Directors of the Company shall have the right from time to time to add to, modify or amend the Plan, and the Board of Directors shall have the right to terminate the Plan. The Board of Directors may also authorize the inclusion in any contract entered into by the Company with the union or unions representing employees, or with any group or groups of employees, of a provision or provisions having the effect of limiting or foregoing any such rights. Further, no addition to, modification, amendment or termination of the Plan shall have the effect of reducing the entitlement of any participant benefit accrued under the Plan or of diverting any part of the assets of the Trust Fund for purposes other than provided in the Plan.

Upon termination of the Plan, or a complete and permanent discontinuance of contributions of all participants, the value of each participant account, if not already vested, shall vest fully and all amounts remaining in all participant accounts shall be delivered and paid as soon as practicable in accordance with the Plan document.

CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN

Schedule H, Line 4i- Schedule of Assets (Held at End-of-Year)

December 31, 2003

Identity of Issue, Borrower, Lessor or Similar Party	Description of Investment Including Maturity Date, Rate of Interest, Collateral, Par or Maturity Value	Current Value
	Common Stock	
* Crompton Corporation	4,652,560 shares, par value \$1.00	\$20,657,366
* Fidelity	Blended Income Fund	
	11,754,162 shares	11,754,162
* Fidelity	Fidelity Magellan Fund	
	41,147 shares	4,021,693
* Fidelity	U.S. Equity Index Commingled Fund	
	98,654 shares	3,331,545
* Fidelity	Fidelity Freedom 2010	
	175,844 shares	2,289,483
* Fidelity	Fidelity Growth Company Fund	
	62,711 shares	3,139,924
* Fidelity	Fidelity Low Price Stock	
	62,012 shares	2,169,192
Dodge & Cox	Dodge & Cox Income Fund	
	106,023 shares	1,369,821
Putnam Investments	Putnam Int'l Growth Fund A	
	74,221 shares	1,533,405
* Fidelity	Fidelity Dividend Growth	
	26,324 shares	718,637
* Fidelity	Fidelity Freedom 2020	
	29,027 shares	377,936
* Dodge & Cox	Dodge & Cox Stock	
	10,998 shares	1,251,393
* Fidelity	Fidelity Freedom 2030	
	8,140 shares	105,417
* Fidelity	Fidelity Freedom Income	
	4,968 shares	55,099
Dreyfus	Dreyfus Founders Discovery A	
	5,049 shares	131,482
* Fidelity	Fidelity Freedom 2040	
	5,045 shares	38,142
* Fidelity	Fidelity Freedom 2000	
	4,430 shares	<u>52,181</u>
TOTAL INVESTMENTS		<u>\$52,996,878</u>

* Denotes a party-in-interest to the Plan

See accompanying Report of Independent Registered Public Accounting Firm

SIGNATURE

The Plan. Pursuant to the requirements of the Securities and Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

CROMPTON CORPORATION
EMPLOYEE STOCK OWNERSHIP PLAN

Date: June 28, 2004

By: /s/ Peter Barna
Peter Barna
Senior Vice President &
Chief Financial Officer

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Crompton Corporation:

We consent to incorporation by reference in the Registration Statements (Nos. 333-62429, 33-21246, 2-57629, and 333-71030) on Form S-8 of Crompton Corporation of our report dated June 25, 2004, relating to the statements of net assets available for plan benefits of the Crompton Corporation Employee Stock Ownership Plan as of December 31, 2003 and 2002, and the related statements of changes in net assets available for plan benefits for the years then ended, and the related schedule, included in this annual report on Form 11-K.

/s/ KPMG LLP
Stamford, Connecticut
June 28, 2004