SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 11-K

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

For the Twelve-Month Period Ended December 31, 2004

Commission File No. 0-20165

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

STERIS Corporation 401(k) Plan

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

STERIS Corporation 5960 Heisley Road Mentor, Ohio 44060

AUDITED FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE

STERIS Corporation 401(k) Plan

December 31, 2004 and 2003 and the Year ended December 31, 2004 with Report of Independent Registered Public Accounting Firm

STERIS Corporation 401(k) Plan

Audited Financial Statements and Supplemental Schedule

December 31, 2004 and 2003

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Report of Independent Registered Public Accounting Firm

Board of Directors STERIS Corporation Mentor, Ohio

We have audited the accompanying statements of net assets available for benefits of the STERIS Corporation 401(k) Plan as of December 31, 2004 and 2003, and the related statement of changes in net assets available for benefits for the year ended December 31, 2004. 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. We were not engaged to perform an audit of the Plan's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and 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 benefits of the Plan at December 31, 2004 and 2003, and the changes in its net assets available for benefits for the year ended December 31, 2004, in conformity with U.S. generally accepted accounting principles.

Our audits were performed for the purpose of forming an opinion on the financial statements taken as a whole. The accompanying supplemental schedule of assets (held at end of year) as of December 31, 2004, is presented for purposes of additional analysis and is not a required part of the 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 our audits of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.

/s/ ERNST & YOUNG, LLP

Cleveland, Ohio June 28, 2005

STERIS Corporation 401(k) Plan

Statements of Net Assets Available for Benefits

	Decem	December 31,	
	2004	2003	
Assets:			
Investments, at fair value	\$ 216,897,954	\$ 188,790,121	
Employer contributions receivable	-	930,992	
		-	
Total assets	216,897,954	189,721,113	
Liabilities:			
Excess contributions payable to participants	633,491	_	
		-	
Total liabilities	633,491	_	
Net assets available for benefits	\$ 216,264,463	\$ 189,721,113	

 $See\ accompanying\ notes\ to\ the\ audited\ financial\ statements.$

STERIS Corporation 401(k) Plan

Statement of Changes in Net Assets Available for Benefits

Year ended December 31, 2004

Additions:	
Net realized and unrealized appreciation in fair value of investments	\$ 17,541,081
Interest and dividend income	1,368,445
Loan interest income	266,003
Contributions:	
Participant	13,596,392
Employer	4,520,227
Rollovers	988,936
Total contributions	19,105,555
Total additions	38,281,084
Deductions:	
Benefits paid directly to participants	11,697,804
Administrative expenses	39,930
Total deductions	11,737,734
Net increase	26,543,350
Net assets available for benefits:	
Beginning of year	189,721,113
End of year	\$ 216,264,463

See accompanying notes to the audited financial statements.

STERIS Corporation 401(k) Plan

Notes to Audited Financial Statements

December 31, 2004 and 2003

1. Description of Plan

The following brief description of the STERIS Corporation 401(k) Plan (the "Plan") provides only general information. Participants should refer to the Plan document for complete information regarding the Plan's provisions.

General

The Plan is a defined contribution plan administered by STERIS Corporation (the "Company", "STERIS", or "Plan Administrator"). All domestic employees of STERIS and certain subsidiaries who have attained the age of 18 are eligible to participate in the Plan on the first day of the month following the month that they began employment with the Company. The assets of the Plan are maintained and the transactions therein are executed by Principal Life Insurance Company (the Trustee), who also serves as the Plan record-keeper. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Contributions

Effective January 1, 2004, the Plan was amended to allow participants to contribute between zero and 20 percent of their compensation received during a calendar year. Prior to January 1, 2004, participants were permitted to contribute between zero and 10 percent of their compensation received during a calendar year. Participants age 50 and older may also make additional catch up contributions. Effective July 1, 2004, an administrative change was made allowing participants to modify contribution percentages at any time. Prior to July 1, 2004, participants were permitted to change elected contribution percentages once per calendar quarter. All contributions made by a participant are "before-tax" deferred compensation contributions. Participants may also contribute amounts representing distributions from other qualified defined contribution plans.

The Company may make matching discretionary contributions to a participant's account. Employer contributions are allocated to each participant's account in accordance with the investment election choices made by the participant. For the year ended December 31, 2004, the Company made 25 percent matching cash contributions on the first 6 percent of compensation that an employee of Erie UAW Local 832 and Erie IAM Local 1968, hired on or before December 4, 1998 made to the Plan. The Company made a 50 percent matching contribution in cash on the first 6 percent of compensation made to the Plan for all other participants. Effective July 1, 2004, the Plan was amended such that the Company discretionary matching contribution is made each pay period. Prior to July 1, 2004, the Company matching contribution was made once per calendar quarter.

STERIS Corporation 401(k) Plan

Notes to Audited Financial Statements (continued)

1. Description of Plan (continued)

Vesting

All participants are immediately vested in their contributions plus actual earnings thereon and Company matching contributions plus actual earnings thereon.

Participant Accounts

A separate account is maintained for each participant in the Plan, reflecting contributions, investments, realized and unrealized investment gains and losses, loans, withdrawals, transfers, and investment fees. The net value of each participant account is established at the close of each business day through the valuation of each fund's assets at market value.

A participant may elect to invest contributions, including the Company contributions, in any combination of the investment funds offered by the Plan, including STERIS Corporation common stock, in 1 percent increments.

Participants may change their investment elections at any time. A participant may elect to have a portion or all of the balance of his prior contributions (in increments of 1 percent) transferred from any fund in which it is invested to any other fund.

Plan Withdrawals and Distributions

On termination of service, upon death, disability or retirement, a participant may receive a lump sum amount equal to the vested value of their account. An employed participant who is age 59 ½ or older or who has a specific financial hardship may withdraw a portion of their account.

Participants Loans

Participants currently employed may borrow from their fund accounts a minimum of \$500 up to a maximum equal to the lesser of \$50,000 or 50 percent of their vested account balance. Loan terms generally range from 1-5 years and are secured by the balance in the participant's account. Loan terms for loans used for the purchase of a participant's primary residence can be longer than 5 years. The loans bear interest at a rate established by the Trustee. Principal and interest is paid through payroll deductions. Participants may have only one loan outstanding at any time and participants may take only one loan in a twelve-month period.

STERIS Corporation 401(k) Plan

Notes to Audited Financial Statements (continued)

1. Description of Plan (continued)

Plan Termination

Although it has not expressed any intent to do so, the Company, by action of its Board of Directors and without approval of its shareholders, has the right under the Plan to amend, suspend, or terminate the Plan in its entirety subject to the provisions of ERISA. In the event of Plan termination, participants will remain 100 percent vested in their accounts.

Plan Expenses

Costs incident to the purchase and sale of securities, such as brokerage commissions and stock transfer taxes, are paid by the respective funds. All other administrative expenses incurred in the administration of the Plan are charged against the respective funds, unless the employer elects to pay such amounts. The Company has elected to pay audit and consulting fees only.

2. Summary of Accounting Policies

Basis of Accounting

The financial statements have been prepared on the accrual basis of accounting.

Investment Valuation and Income Recognition

The Plan's investments in common shares are stated at fair value which equals the quoted market price on the last business day of the plan year. The fair value of the participation units held by the Plan in the mutual funds and common/collective fixed income investment funds are based on quoted redemption values on the last business day of the plan year. The pooled separate accounts are valued at the redemption value of units held by the Plan at year end. The participant loans are valued at their outstanding balances, which approximate fair value. Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts

STERIS Corporation 401(k) Plan

Notes to Audited Financial Statements (continued)

2. Summary of Accounting Policies (continued)

reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

3. Transactions with Parties-in-Interest

Party-in-interest transactions include the investment in the funds of the Trustee and the payment by the Plan Administrator of certain administrative expenses.

The Plan purchased common shares of the Company for \$2,735,327 and sold common shares of the Company for \$7,591,254 during the year ended December 31, 2004.

4. Income Tax Status

The Plan has received a determination letter from the Internal Revenue Service dated July 10, 2002, stating that the Plan is qualified under Section 401(a) of the Internal Revenue Code (the "Code") and, therefore, the related trust is exempt from taxation. Subsequent to this determination by the Internal Revenue Service, the Plan was amended. Once qualified, the Plan is required to operate in conformity with the Code to maintain its qualification. The Plan Administrator believes the Plan is being operated in compliance with the applicable requirements of the Code and, therefore, believes that the Plan, as amended, is qualified and the related trust is tax exempt.

5. Investments

During 2004, the Plan's investments (including investments purchased, sold, as well as held during the year) appreciated in fair value as follows:

	Year Ended cember 31, 2004
Net realized and unrealized appreciation in fair value of investments:	
STERIS Corporation Common Stock Fund	\$ 1,771,731
Mutual funds	10,114,798
Common/Collective fixed income investment fund	1,239,850
Pooled separate accounts	4,414,702
Net realized and unrealized appreciation in fair value of investments	\$ 17,541,081

STERIS Corporation 401(k) Plan

Notes to Audited Financial Statements (continued)

5. Investments (continued)

Investments that represent 5% or more of the fair value of the Plan's net assets are as follows:

	Decem	December 31,	
	2004	2003	
Dodge & Cox Balanced Fund	\$ 52,809,485	\$ 44,933,427	
Principal Large Cap. Stock Index Separate Account	42,684,476	39,702,474	
Victory DCS Magic Fund	31,386,722	27,607,789	
STERIS Corporation Common Stock Fund	31,317,374	34,595,548	
Neuberger Berman Genesis Asset Fund	14,722,219	NA	
Pimco Total Return Admin. Fund	12,513,480	12,695,357	

NA-Investment did not represent more than 5% of the fair value of the Plan's net assets at December 31, 2003.

6. Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the Statement of Net Assets Available for Benefits.

7. Excess Contributions Payable to Participants

Contributions of Highly Compensated Employees, as defined within the Code, may be limited in relation to eligible earnings and nondiscrimination tests. For the year ended December 31, 2004, excess contributions totaling \$581,009 were made by certain Highly Compensated Employees. These contributions, as well as earnings on invested contributions totaling \$52,482, were refunded to affected participants in March 2005.

8. Differences Between Financial Statements and Form 5500

The following is a reconciliation of net assets available for benefits per the financial statements to the Form 5500 as of December 31, 2004:

Net assets available for benefits per the financial statements	\$ 216,264,463
Excess contributions payable to participants	633,491
Net assets available for benefits per the Form 5500	\$ 216,897,954

STERIS Corporation 401(k) Plan

EIN: 34-1482024 Plan Number: 001

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

December 31, 2004

Identity of Issue, Borrower, Lessor, or Similar Party	Description of Investment Including Maturity Date, Rate of Interest Par, or Maturity Value	Current Value
Common Stock:		
* STERIS Corporation	STERIS Corporation Common Stock Fund	\$ 31,317,374
Mutual Funds:		
Pacific Investment Management Co.	Pimco Total Return Admin. Fund	12,513,480
Dodge and Cox Funds	Dodge & Cox Balanced Fund	52,809,485
Victory Funds	Victory Diversified Stock A Fund	6,964,192
Fidelity Investments	Fidelity Advisor Mid Cap T Fund	9,731,222
Neuberger Berman Management, Inc.	Neuberger Berman Genesis Asset Fund	14,722,219
American Funds Service Company	American Europacific Growth Fund	4,992,676
American Funds Service Company	American Funds Growth Fund of America R4 Fund	625,006
* Principal Life Insurance Company	Vanguard Explorer Portfolio	403,088
* Principal Life Insurance Company	Vanguard U.S. Value Portfolio	832,726
		103,594,094
Common/Collective Fixed Income Investment Funds:		
Victory Funds	Victory DCS Magic Fund	31,386,722
Pooled Separate Accounts		
* Principal Life Insurance Company	Principal Large Cap. Stock Index Separate Account	42,684,476
* Principal Life Insurance Company	Principal Real Estate Securities Separate Account	3,142,194
		45,826,670
Other		
* Participant Loans	Bearing interest between 5.00% and 10.50% and maturing through 2024	4,773,094
		\$ 216,897,954

st Indicates party-in-interest to the Plan.

SIGNATURE

The Plan. Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the Plan Administrator has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

STERIS Corporation 401 (k) Plan

Dated: June 28, 2005

/s/ LAURIE BRLAS

Laurie Brlas Senior Vice President and Chief Financial Officer Principal Financial and Accounting Officer

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 33-55976) pertaining to the STERIS Corporation 401(k) Plan of our report dated June 28, 2005, with respect to the financial statements and schedule of the STERIS Corporation 401(k) Plan included in this Annual Report (Form 11-K) for the year ended December 31, 2004.

/s/ ERNST & YOUNG LLP

June 28, 2005 Cleveland, Ohio