



SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549



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FORM 11-K

ANNUAL REPORT

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

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

For the fiscal year ended December 31, 2006

or

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

For the transition period from _____ to _____
Commission file number: 1-8485

MILACRON INC.
RETIREMENT SAVINGS PLAN
(full title of the plan)

MILACRON INC.
(Name of issuer)

2090 Florence Avenue
Cincinnati, Ohio 45206
(Address and principal executive office)

PROCESSED

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FINANCIAL

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SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Milacron Inc. Benefit Plans Committee has duly caused this annual report to be signed by the undersigned thereunto duly authorized.

MILACRON RETIREMENT SAVINGS PLAN

Date: June 21, 2007

By: 

Ross A. Anderson
Senior Vice President - Finance
and Chief Financial Officer
and Member of the
Milacron Inc. Benefit Plans
Committee

MILACRON RETIREMENT SAVINGS PLAN

Financial Statements

December 31, 2006 and 2005

With

Report of Independent Registered Public Accounting Firm

MILACRON RETIREMENT SAVINGS PLAN

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Clark, Schaefer, Hackett & Co.
CERTIFIED PUBLIC ACCOUNTANTS
BUSINESS CONSULTANTS

Report of Independent Registered Public Accounting Firm

Milacron Benefit Plans Committee:

We have audited the accompanying statements of net assets available for benefits of Milacron Retirement Savings Plan (the Plan) as of December 31, 2006 and 2005, and the related statement of changes in net assets available for benefits for the year ended December 31, 2006. 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. The Plan is not required to have, nor were we engaged to perform an audit of its 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, 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 benefits of the Plan as of December 31, 2006 and 2005, and the changes in net assets available for benefits for the year ended December 31, 2006, in conformity with accounting principles generally accepted in the United States of America.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets held for investment purposes is presented for purposes 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. This supplemental schedule has been subjected to the auditing procedures applied in the audit 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.

Clark, Schaefer, Hackett & Co.

Cincinnati, Ohio
June 12, 2007

MILACRON RETIREMENT SAVINGS PLAN

Statements of Net Assets Available for Benefits

December 31, 2006 and 2005

	<u>Assets</u>	
	<u>2006</u>	<u>2005</u>
Investments, at fair value (Note 4)	\$ 172,655,763	\$ 163,472,786
Contributions receivable:		
Participants	376,101	315,780
Employer	<u>638,638</u>	<u>638,522</u>
	<u>1,014,739</u>	<u>954,302</u>
Net assets available for benefits at fair value	\$ 173,670,502	\$ 164,427,088
Adjustment from fair value to contract value for fully benefit-responsive investment contracts	<u>22,084</u>	<u>-</u>
Net assets available for benefits	\$ <u>173,692,586</u>	\$ <u>164,427,088</u>

See accompanying notes to financial statements.

MILACRON RETIREMENT SAVINGS PLAN

Statement of Changes in Net Assets Available for Benefits

Year Ended December 31, 2006

Additions to net assets attributed to:

Contributions:

Participants	\$ 6,859,921
Employer	1,918,430
Employer - noncash common stock of Milacron Inc.	816,408
Rollovers	<u>436,014</u>
	10,030,773

Investment income:

Net appreciation in fair value of investments (Note 4)	9,923,688
Interest and dividends	<u>6,968,824</u>
Total additions	<u>26,923,285</u>

Deductions from net assets attributed to:

Benefit payments and withdrawals	17,655,065
Administrative expenses	<u>2,722</u>
Total deductions	<u>17,657,787</u>

Net increase 9,265,498

Net assets available for benefits at:

Beginning of year	<u>164,427,088</u>
End of year	\$ <u>173,692,586</u>

See accompanying notes to financial statements.

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements

December 31, 2006 and 2005

1. Description of Plan:

The following description of the Milacron Retirement Savings Plan (the Plan) provides only general information. Participants should refer to the Summary Plan Description for a more complete description of the Plan's provisions.

General

The Plan is a defined contribution plan sponsored by Milacron Inc. (the Company and Plan Sponsor) and covers all eligible employees of Milacron Inc. and other affiliated companies as designated by the Board of Directors. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Contributions

Participants may make pre-tax and post-tax compensation contributions of up to such percentages as specified by the Plan document. The pre-tax contributions may not exceed the maximum allowable deferral as defined by the Internal Revenue Code.

The Plan Sponsor makes quarterly contributions to the Plan, which vary by affiliated company participation. The quarterly contributions are defined by the supplements to the plan document. The Plan Sponsor also may make a matching contribution equal to the lesser of a specified percentage of each participant's eligible compensation or 50% of the amount of the participant's salary deferral contribution, with the exception of Pliers and Northern Supply employees. Plan Sponsor match contributions to the Plan are directed by the Plan Sponsor and its investment policy.

The Plan has annual compliance testing performed by Mercer Trust Company. The Plan's policy is to make corrective distributions in a timely manner and to accrue for the respective distributions if the amount is determined to be material to the financial statements.

Rollover contributions

Participants may contribute amounts representing distributions from other qualified defined benefit or defined contribution plans, provided the rollover contribution is received by the Plan on or before the sixtieth day immediately following the participant's receipt of the rollover amount.

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements (continued)

1. Description of Plan (continued):

Participant accounts

Each participant's account is credited with the participant's contributions and allocations of (a) the Company's contributions and (b) Plan earnings. Allocations are based on participant earnings or account balances, as defined. Forfeitures are first applied against restorals and then against Company contributions made by the Plan Sponsor. The benefit to which a participant is entitled is the benefit that can be provided from the participant's account.

Vesting

Participants are vested immediately in their own contributions plus actual earnings thereon. Amounts in a participant's account attributable to Plan Sponsor basic contributions are fully vested after five years of service. Amounts in a participant's account attributable to Plan Sponsor match contributions made to the Plan prior to January 1, 2002 are fully vested after five years of service and those made January 1, 2002 and after are fully vested after three years of service. A participant also becomes fully vested upon total or permanent disability, upon attainment of age 65 or upon death before retirement.

Participant loans

Participants may borrow from their accounts a minimum of \$1,000 up to a maximum of the lesser of \$50,000 or 50% of their account balance, excluding Voluntary and Company Matching Contributions. The loans are secured by the balance in the participant's account and bear interest at a rate commensurate with local prevailing rates as determined quarterly by the Plan administrator. Principal and interest is paid ratably through payroll deductions and is credited to each participant's account balance.

Payment of benefits

Upon termination of service, a participant may receive a lump-sum amount equal to the vested value of the participant's account, defer their distribution, establish a distribution schedule, or may direct Mercer Trust Company, the trustee, to transfer payment directly into an IRA or another employer's qualified plan. Upon death, accounts are fully vested and the entire account value is distributed to the participant's beneficiary(ies).

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements (continued)

1. Description of Plan (continued):

Administrative expenses

The Plan Sponsor paid all expenses of administering the Plan, except for certain administrative services for loan, in-service withdrawals and termination distributions. If not paid by the Plan Sponsor, administrative expenses become a liability of the Plan.

Forfeitures

In the event a participant terminates employment prior to 100% vesting, the portion of employer contributions which is not vested is forfeited at that time. The forfeited amounts are used to reduce future employer contributions. At December 31, 2006 and 2005, there were \$54,844 and \$32,217 of forfeited nonvested accounts, respectively.

Plan amendments

Effective January 1, 2006, the Plan was amended to comply with the provisions of the Pension Protection Act of 2006.

Effective July 1, 2006, the Plan was amended to allow automatic deferral of 2% of pre-tax earnings withheld for covered employees (as defined in the Plan Document) starting on or after May 1, 2006. The automatic deferral shall increase by 1% on the participant's anniversary up to a maximum of 6%. Participants will receive a notice from the Plan Sponsor explaining their rights to waive the automatic deferral.

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies:

Basis of accounting

The financial statements of the Plan are prepared under the accrual method of accounting.

Use of estimates

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

As described in Financial Accounting Standards Board Staff Position, FSP AAG INV-1 and SOP 94-4-1, *Reporting of Fully Benefit-Responsive Investment Contracts Held by Certain Investment Companies Subject to the AICPA Investment Company Guide and Defined-Contribution Health and Welfare and Pension Plans* (the FSP), investment contracts held by a defined-contribution plan are required to be reported at fair value. However, contract value is the relevant measurement attribute for that portion of the net assets available for benefits of a defined-contribution plan attributable to fully benefit-responsive investment contracts because contract value is the amount participants would receive if they were to initiate permitted transactions under the terms of the plan. As required by the FSP, the Statement of Net Assets Available for Benefits presents the fair value of the investment contracts as well as the adjustment of the fully benefit-responsive investment contracts from fair value to contract value. The Statement of Changes in Net Assets Available for Benefits is prepared on a contract value basis.

Payment of benefits

Benefits are recorded when paid.

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued):

Investment valuation and income recognition

Money market accounts are valued at cost which approximates fair value. All other investments are recorded at fair value based on quotations obtained from national securities exchanges as of the end of the year. Participant loans are recorded as the unpaid principal balances of the individual loans.

Purchases and sales of investments are recorded on the trade date. Gains and losses on the sale of investments are calculated on the specific identification method. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. The Plan presents in the statement of changes in net assets available for plan benefits the net appreciation or depreciation in the fair value of its investments, which consists of realized gains and losses and unrealized gains and losses on those investments.

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.

3. Related Party Transactions:

During the year ended December 31, 2006, the Plan purchased, transferred, and sold or distributed to terminated participants shares of Milacron Inc. common stock as follows:

Number of shares purchased	1,693,302
Cost	\$1,827,374
Average cost per share	\$1.08
Number of shares sold or distributed	1,374,158
Proceeds	\$1,469,341
Average proceeds per share	\$1.07
Dividends	—

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements (continued)

4. Investments:

The current value of individual investments that represent 5% or more of the Plan's net assets available for benefits at December 31 are as follows:

	<u>2006</u>	<u>2005</u>
Putnam Voyager Fund	\$32,178,898	\$40,223,583
Neuberger Berman Genesis Trust	9,449,361	10,843,860
American Beacon Large Cap Value Fund	34,422,633	**
PIMCO Total Return Fund	15,881,834	**
Dodge & Cox Balanced Fund	12,240,019	**
Thornburg International Value Fund	20,496,254	**
Putnam Stable Value Fund	17,366,990	**
Putnam Money Market Fund	**	14,057,677
Putnam Bond Index Fund	**	9,456,675
Washington Mutual Investors R4 Fund	**	32,586,396
Putnam International Equity Fund	**	16,316,450

** Investment represents less than 5% of the Plan's net assets at the specified dated.

During 2006, the Plan's investments (including investments purchased, sold as well as held during the year) appreciated (depreciated) in fair value as determined by quoted market prices as follows:

Shares of registered investment companies	\$10,945,076
Milacron Inc. common stock	(1,039,369)
Common stock – other	<u>17,981</u>
	\$ <u>9,923,688</u>

MILACRON RETIREMENT SAVINGS PLAN

Notes to Financial Statements (continued)

5. Nonparticipant-Directed Investments:

Information about the net assets and the significant components of the changes in net assets relating to the nonparticipant-directed investments as of December 31 is as follows:

	<u>2006</u>	<u>2005</u>
Assets		
Investments:		
Putnam Money Market Fund	<u>\$85</u>	<u>\$20</u>
		Year ended December 31, 2006
Change in net assets:		
Employer contributions		\$ 817,321
Interest and dividends		(4)
Benefit payments		(64)
Transfer out of restricted assets		<u>(817,188)</u>
		<u>\$ 65</u>

6. Investment Contract with Insurance Company:

During 2006, the Plan began investing in a mutual fund, the Putnam Stable Value Fund (the "fund"), which has entered into benefit-responsive investment contracts managed through Mercer Securities, a division of MMC Securities Corporation (Mercer). The fund is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The guaranteed investment contract issues are contractually obligated to repay the principal and a specified interest rate that is guaranteed to the fund.

As described in Note 2, because the guaranteed investment contracts are fully benefit-responsive, contract value is the relevant measurement attribute for that portion of the net assets available for benefits attributable to the guaranteed investment contracts. Contract value, as reported to the Plan by Mercer, represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value.

There are no reserves against contract value for credit risk of the contract issuers or otherwise. The crediting interest rate is based on the weighted average of interest rates agreed with the issuers. Such interest rates are reviewed on a quarterly basis for resetting.

6. Investment Contract with Insurance Company (continued):

Certain events limit the ability of the Plan to transact at contract value with the fund. Such events include the following: (1) amendments to the plan documents (including complete or partial plan termination or merger with another plan), (2) changes to plan's prohibition of competing investment options or deletion of equity wash provisions, (3) bankruptcy of the plan sponsor or the plan sponsor events (for example, divestitures or spin-offs of a subsidiary) that cause a significant withdrawal from the plan, or (4) the failure of the trust to qualify for exemption from federal income taxes or any required prohibited transaction exemption under Employee Retirement Income Security Act of 1974. The plan administrator does not believe that the occurrence of any such value event, which would limit the Plan's ability to transact at contract value with participants, is probable.

The guaranteed investment contracts do not permit the issuer to terminate the agreement prior to scheduled maturity date.

Average yields:	2006
Based on actual earnings	4.60%
Based on interest rate credited to participants	4.60%

7. Plan Termination:

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants will be 100 percent vested in their employer and employee contributions.

8. Tax Status:

The Plan received a determination letter from the Internal Revenue Service dated February 2, 2004, 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. The Plan was subsequently amended and restated. The Plan Sponsor believes the Plan, as amended and restated, is being operated in compliance with the applicable requirements of the Code and, therefore, believes that the Plan is qualified and the related trust is tax exempt.

9. Subsequent Event:

On May 3, 2007, the shareholders of Milacron Inc. (plan sponsor) voted to approve a 1-for-10 reverse stock split of both the Company's common stock and 4% preferred stock. Milacron has approximately 56 million shares of common stock outstanding. Upon completion of the reverse stock split, the Company will have approximately 5.6 million common shares outstanding. Including Milacron's 6% convertible preferred stock on an "as converted" basis, Milacron has approximately 113 million fully diluted shares, which will become approximately 11.3 million shares. There are 60,000 shares of 4% preferred stock outstanding, which will become 6,000 shares. Common stockholders otherwise entitled to receive fractional shares as a result of the reverse stock split will receive a cash payment in lieu thereof. Fractional shares of Milacron's 4% preferred stock will be issued to qualified holders. The purpose of the reverse stock split is to increase the market price of Milacron's common shares in order to comply with the minimum share price rule of the New York Stock Exchange. The reverse stock split became effective on May 16, 2007. As of December 31, 2006, the Plan held 2,355,345 shares of Milacron stock.

SUPPLEMENTAL INFORMATION

MILACRON RETIREMENT SAVINGS PLAN

Form 5500 E.I.N. 31-1062125

Plan No. 008

Line 4i - Schedule of Assets Held for Investment Purposes

December 31, 2006

(a)	(b)	(c)	(d)
Identity of issuer, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, collateral, par or maturity value	Cost	Current value
<u>Shares of registered investment companies</u>			
* Putnam Stable Value Fund	17,389,074 shares	**	\$ 17,366,990
* Putnam Money Market Fund-SDB	17,877 shares	**	17,877
* S&P 500 Fund	114,152 shares	**	4,243,046
* Putnam Voyager Fund	1,757,449 shares	**	32,178,898
American Beacon Large Cap Value Fund	1,511,090 shares	**	34,422,633
Goldman Sachs Mid Cap Value Fund	190,412 shares	**	7,408,947
Harbor Capital International Fund	53,674 shares	**	3,305,237
Harbor Capital Appreciation Fund	39,829 shares	**	1,316,365
Dodge & Cox Balanced Fund	140,561 shares	**	12,240,019
J.P. Morgan Diversified Midcap Growth Fun	175,726 shares	**	3,920,455
Thornburg International Value Fund	717,907 shares	**	20,496,254
AIM Smallcap Growth Fund	132,725 shares	**	3,879,542
PIMCO Total Return Fund	1,530,042 shares	**	15,881,833
Neuberger Berman Genesis Trust	197,975 shares	**	9,449,361
			<u>166,127,457</u>
<u>Common Stock</u>			
* Milacron Inc.	2,355,345 shares	\$ 16,234,125	1,884,276
Brokerage Securities	421,729 shares	**	421,729
			<u>2,306,005</u>
Participant Loans	Interest rate 4 - 9%		4,217,272
Cash			<u>5,029</u>
			<u>\$ 172,655,763</u>

* Denotes a party-in-interest

** Cost of asset is not required to be disclosed as investment is participant-directed.

Clark, Schaefer, Hackett & Co.
CERTIFIED PUBLIC ACCOUNTANTS
BUSINESS CONSULTANTS

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Plan Administrator of the
Milacron Retirement Savings Plan:

We consent to incorporation by reference in the Registration Statement (No. 333-115949) on Form S-8 of Milacron Inc. of our report dated June 12, 2007, relating to the statements of net assets available for benefits of the Milacron Retirement Savings Plan as of December 31, 2006 and 2005, and the related statements of changes in net assets available for benefits and the supplemental schedules for the year then ended December 31, 2006, which report appears in the December 31, 2006 annual report on Form 11-K of the Milacron Retirement Savings Plan.

Clark, Schaefer, Hackett & Co.

Cincinnati, Ohio
June 20, 2007

END