

OHIO DEPARTMENT OF DEVELOPMENT
Office of Strategic Research

THE OHIO MACHINERY INDUSTRY



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THE OHIO MACHINERY INDUSTRY

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TABLE OF CONTENTS

Page

Introduction

1

Introduction and Industry Definition ----- 3

Executive Summary

4

Description of Ohio's Machinery Industry ----- 7

Notable Machinery Industry Manufacturers

9

Recent Expansions and Attractions ----- 15

The Composition of Ohio's Machinery Industry: Gross State Product and Value-Added

17

The Composition of Ohio's Machinery Industry: Employment ----- 19

Industry Wages

21

The Distribution of Industry Establishments in Ohio ----- 23

The Distribution of Industry Employment in Ohio

25

Foreign Investment in Ohio ----- 26

Trends

27

Establishments ----- 29

Employment

31

Gross State Product ----- 33

Value-Added by Group	35
Capital Expenditures by Group -----	37
Imports and Exports of Machinery	39
Overview and Forecasts -----	41
An Overview of the Machinery Industry	42
The Short- and Long-Term Forecasts -----	44
Appendices	46
Detailed Tables -----	47
Table A1: Expansions and Attractions in Ohio's Machinery Industry, 2002-2004	48
Table A2a: Value-Added in the Machinery Industry by Group, 2003 -----	52
Table A2b: Value-Added for Selected Machinery Industries in Ohio and the U.S., 2002	54
Table A2c: Value of Shipments for Selected Machinery Product Classes in Ohio and the U.S., 2002 - - - -	56
Table A3: Machinery Industry Establishments and Employment, Ohio and the U.S.: 2002 Means and Percentages -----	59
Table A4: Machinery Industry Wages and Employment, Ohio and the U.S.: 2002 Means and Percentages	62
Table A5: Establishments and Employment in the Machinery Industry, by County in Ohio: 2002 -----	65
Table A6: Foreign Corporations with Machinery Industry Establishments in Ohio	66
Table A7: Machinery Industry Establishment Trends, Ohio and the U.S.: 1998-2002 -----	69
Table A8: Machinery Industry Employment Trends, Ohio and the U.S.: 1998-2002	70
Table A9: Machinery and Total Gross State Product for Ohio and the U.S., 1997-2003 -----	71
Table A10: Value-Added by Group in the Machinery Industry for Ohio and the U.S., 1997-2003	72
Table A11: Capital Expenditures by Group in the Machinery Industry for Ohio and the U.S., 1997-2003 - - -	73
Table A12: Index Value of the Dollar, and Imports and Exports of Selected Machinery, 1995-2003	74
Table A13: Projections for Machinery Industry Employment by Group, Ohio and the U.S.: 2002-2012 - - - -	75

NAICS Code Definitions and Examples	76
Notes -----	81
Sources and References Cited	83

APPENDICES

DETAILED TABLES

TABLE A1: EXPANSIONS AND ATTRACTIONS IN OHIO'S MACHINERY INDUSTRY, 2002-2004

Year	Parent/Company/Division	County	NAICS Code	Product	New or Expansion	Amount Invested	Anticipated New Jobs	Space (Sq.Ft.)
2002	Accuform Manufacturing	Mahoning	333513	Tools for castings	Expansion	\$1,110,000	5	
2002	Allied Machine & Engineering	Tuscarawas	333515	Drills	Expansion	\$2,500,000		
2002	Alpha Welding & Fabricating	Lawrence	333298	Cullet processing systems	New	\$1,500,000		21,000
2002	Apache Technologies	Montgomery	333314	Laser alignment devices	Expansion	\$1,500,000	27	
2002	Automated Packaging Systems	Portage	333993	Packaging machinery	Expansion	\$4,027,000		
2002	Cleveland Tool & Machine	Cuyahoga	333414	Air-conditioning machinery	Expansion	\$1,200,000	8	
2002	Crown Equipment Corp.	Auglaize	333924	Lift trucks	Expansion	\$2,000,000		
2002	DaimlerChrysler AG/Detroit Diesel Remanufacturing	Guernsey	333618	Diesel engines	Expansion		50	
2002	David Round	Cuyahoga	333923	Industrial cranes	New	\$2,000,000	9	36,000
2002	Enerco Group, Inc.	Cuyahoga	333414	Heating equipment	Expansion	\$3,050,000	30	120,000
2002	Enerfab, Inc.	Hamilton	333294	Steel tank parts	Expansion	\$3,000,000	70	
2002	First Solar LLC	Wood	333414	Heating equipment	Expansion	\$19,000,000		
2002	Gradall Industries	Tuscarawas	33312	Excavators	Expansion	\$5,000,000		
2002	Hawkline	Brown	333111	Farm implements	New	\$1,700,000	65	85,000
2002	Hunter Manufacturing	Cuyahoga	333994	Vehicle heating systems	Expansion	\$2,468,000	57	25,000
2002	Hydraulic Technologies	Crawford	333995	Hydraulic cylinders	Expansion	\$1,700,000	71	
2002	IMI Norgren PLC/IMI Norgren, Inc.	Montgomery	333995	Cylinders	Expansion	\$2,700,000	25	
2002	Industrial Waste Control	Mahoning	333999	Power cleaning equipment	New	\$3,650,000	45	41,000
2002	Isuzu Motors Ltd./DMAX Ltd.	Montgomery	333618	Diesel engines	Expansion	\$87,000,000	185	
2002	Kadant Black Clawson	Warren	333291	Paper making machinery	New	\$3,500,000	50	24,000
2002	Lakin General Corp.	Auglaize	333111	Agricultural equipment parts	New	\$3,750,000	65	
2002	Mettler-Toledo, Inc.	Franklin	333997	Scales	New	\$11,600,000		130,000
2002	Midwest Filtration	Butler	333999	Filters	New		30	96,000
2002	Milacron	Clermont	33322	Plastic making machinery	New	\$14,400,000	75	
2002	Morgan Engineering Systems	Stark	333923	Cranes	New	\$3,300,000	65	
2002	NAPCO, Inc.	Darke	333923	Hoists	New	\$2,600,000	50	80,000
2002	National Machinery LLC	Seneca	333513	Cold-forming machinery	New		250	
2002	Norse Dairy Systems	Franklin	333294	Food processing machinery	Expansion	\$1,152,000		27,900
2002	Peerless Machinery	Shelby	333294	Food products machinery	Expansion	\$3,066,000	111	60,000
2002	RRR Development Co.	Stark	33322	Tire building machines	New	\$4,800,000	25	55,000
2002	Select-Arc	Shelby	333999	Welding electrodes	Expansion	\$1,800,000	16	
2002	Stanley Works/Stanley Air Tools	Cuyahoga	333991	Air tools	Expansion	\$3,000,000		50,000
2002	TSS Technologies, Inc.	Hamilton	333298	Machine assembly	Expansion	\$5,530,000	53	
2002	Versa LLC	Madison	333922	Material handling machinery	New	\$2,100,000	64	208,000
2002	VMAXX	Auglaize	333515	Adapters for cutting tools	New	\$3,000,000	10	25,000
2002 Subtotals						\$208,703,000	1,511	1,083,900

TABLE A1: EXPANSIONS AND ATTRACTIONS IN OHIO'S MACHINERY INDUSTRY, 2002-2004

Year	Parent/Company/Division	County	NAICS Code	Product	New or Expansion	Amount Invested	Anticipated New Jobs	Space (Sq.Ft.)
2003	Brilex Industries	Mahoning	333518	Custom machinery	Expansion	\$1,484,000	10	
2003	Butech	Columbiana	333518	Cutting machinery	Expansion	\$1,047,000	10	
2003	CECO Environmental Corp./Kirk & Blum Manufacturing	Clermont	333412	Air pollution controls	New	\$6,200,000	40	125,000
2003	CHC Industries	Medina	333518	Wire machinery	Expansion	\$1,250,000	36	
2003	Cold Jet, Inc.	Clermont	333298	Cleaning machines	Expansion		70	
2003	Dayton Progress Corp.	Montgomery	333514	Metal dies	Expansion	\$4,600,000		
2003	Efficient Molding & Die	Cuyahoga	333511	Industrial molds	New	\$2,700,000		130,000
2003	Emerson Electric Co./Copeland Corp.	Shelby	333919	Compressors	Expansion	\$12,500,000		
2003	Ferriot, Inc.	Summit	333511	Molds	Expansion	\$9,100,000	50	
2003	Great Lakes Power Lift	Lake	33312	Power equipment	New		25	110,000
2003	International Paper	Clermont	333993	Paper product development	Expansion	\$3,000,000	70	
2003	Kaneta Kogyo Co. Ltd./Bucyrus Precision Tech	Crawford	333613	Power transmission	Expansion	\$7,500,000	16	72,000
2003	Kennametal, Inc.	Ashtabula	333515	Cutting tools	Expansion	\$1,650,000		
2003	Neundorfer, Inc.	Lake	333411	Air cleaning systems	Expansion	\$3,000,000	10	
2003	OKI Systems	Franklin	333924	Industrial equipment	New	\$1,500,000		41,000
2003	Opticast, Inc.	Hancock	333319	Eyeglass machinery	Expansion		50	
2003	Ransohoff, Inc.	Butler	333319	Cleaning equipment	Expansion	\$10,000,000	10	
2003	Rockstedt Tool and Die	Medina	333298	Tool & die maker	Expansion	\$6,500,000	25	
2003	Siemens AG/Van Dorn Demag	Cuyahoga	33322	Plastic making machinery	Expansion	\$5,700,000		
2003	Taylor's Industrial Services	Morrow	333322	Plastic industry machinery	Expansion	\$1,550,000	30	
2003	Topaz Tool & Die	Greene	333514	Dies	New	\$1,265,000	5	
2003 Subtotals						\$80,546,000	457	478,000
2004	Applied Vision Co.	Summit	333314	Machine vision systems	New	\$1,800,000	35	32,000
2004	Atlantic Tool & Die	Cuyahoga	333514	Tool & die shop	Expansion	\$12,000,000		100,000
2004	BeamAlloy Technologies	Franklin	333319	Coatings equipment	Expansion	\$1,159,000	2	
2004	Burmah Castrol PLC/Foseco Metallurgical	Cuyahoga	333511	Foundry supplies	Expansion	\$5,600,000	42	
2004	Cascade Kenhan, Inc.	Hancock	333924	Forklifts	Expansion	\$2,549,000	30	
2004	Cenmac Metal Works	Marion	333999	Machine shop	New	\$1,000,000	2	25,600
2004	Combi Packaging	Stark	333993	Packaging equipment	Expansion	\$445,000	30	31,200
2004	Crown Equipment Corp.	Mercer	333924	Forklifts	Expansion	\$1,335,000	8	
2004	DaimlerChrysler AG/Detroit Diesel Remanufacturing	Guernsey	333618	Diesel engines	Expansion	\$12,600,000	55	126,400
2004	Emerson Electric Co./Copeland Corp.	Shelby	333912	Air-conditioning compressors	Expansion	\$700,000		20,000
2004	Energy Storage Technologies	Montgomery	333415	Temperature control products	Expansion	\$1,300,000	30	
2004	Fecon, Inc.	Warren	33312	Construction machinery	New	\$2,200,000		56,000
2004	First Solar LLC	Wood	333414	Solar modules	Expansion	\$5,000,000	20	
2004	Goodyear Tire & Rubber Co.	Union	333922	Conveyor belts	Expansion	\$1,270,000	20	
2004	Herschel Products	Summit	333511	Machinery	New	\$2,000,000		

TABLE A1: EXPANSIONS AND ATTRACTIONS IN OHIO'S MACHINERY INDUSTRY, 2002-2004

Year	Parent/Company/Division	County	NAICS Code	Product	New or Expansion	Amount Invested	Anticipated New Jobs	Space (Sq.Ft.)
2004	Induction Tooling	Medina	333315	Heating equipment	Expansion	\$1,950,000	7	12,000
2004	Industry Products	Miami	333514	Tool & die shop	Expansion	\$500,000		25,500
2004	Kennametal, Inc.	Ashtabula	333515	Cutting tools	Expansion	\$6,000,000		
2004	Liebert North America	Delaware	333415	Power supply products	Expansion	\$15,800,000	113	
2004	Markley Enterprises/Diecraft	Hamilton	333514	Tool & die shop	Expansion	\$1,665,000	9	
2004	Melink Corp.	Clermont	333319	Ventilation systems	New	\$2,500,000	15	
2004	MTD Products, Inc./MTD Consumer Group	Huron	333112	Outdoor power equipment	Expansion	\$1,400,000	80	
2004	Myco Plastic Corp.	Trumbull	33322	Custom molds	Expansion	\$2,500,000	50	90,000
2004	Nelson Stud Welding	Lorain	333992	Welding equipment	Expansion	\$2,540,000	4	
2004	Nilpeter USA	Hamilton	333293	Printing equipment	Expansion	\$1,500,000	25	21,400
2004	Parker Hannifin Corp.	Cuyahoga	3334111	Hydraulic equipment	Expansion	\$2,868,000		
2004	Saint-Gobain/Saint-Gobain Calmar, Inc.	Fayette	333911	Non-aerosol pumps	Expansion	\$6,760,000	12	
2004	SGS Tool Co.	Summit	333512	Machine tools	Expansion	\$6,000,000		
2004	Stewart Filmscreen	Clermont	333315	Film screens	Expansion	\$1,541,000		22,000
2004	Tokai Rubber Industries Ltd./DRT Manufacturing Co.	Montgomery	333298	Machine tools	Expansion	\$6,000,000		
2004	Trentec, Inc.	Hamilton	333999	Machinery	Expansion	\$1,000,000	5	5,000
2004	TSS Technologies, Inc.	Hamilton	333298	Machining	Expansion	\$3,300,000	100	
2004	Ultra-Met Co.	Champaign	333512	Machine tools	Expansion	\$1,300,000	4	
2004	Ver-Mac Industries	Knox	333999	Air filtration systems	Expansion	\$1,200,000		40,650
2004	Waltco Truck Equipment	Summit	333924	Tailgate lifts	Expansion	\$1,052,000	55	
2004	Wellman Products	Cuyahoga	333613	Friction materials	New	\$1,700,000	8	21,000
2004 Subtotals						\$120,034,000	761	628,750
Grand totals 2002-2004						\$409,283,000	2,729	2,190,650

Source: Office of Strategic Research (2005a).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (JK, DL, 3/05).

TABLE A2a: VALUE-ADDED IN THE MACHINERY INDUSTRY BY GROUP, 2003 (in millions)

Area	Industry Group*							
	333	3331	3332	3333	3334	3335	3336	3339
U.S.	\$125,782.1	\$20,821.3	\$15,060.2	\$11,490.9	\$16,548.4	\$15,392.9	\$17,175.8	\$29,292.6
Alabama	\$728.2	\$131.9	\$0.0	\$87.3	\$151.7	\$108.1	D	\$268.3
Alaska	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Arizona	\$815.5	\$108.3	\$251.5	\$0.0	\$163.7	\$107.4	\$0.0	\$0.0
Arkansas	\$1,514.5	\$288.0	\$0.0	\$0.0	\$642.6	\$111.4	\$0.0	\$277.7
California	\$9,015.4	\$330.8	\$2,518.2	\$1,886.1	\$760.2	\$907.0	\$798.8	\$1,814.2
Colorado	\$966.1	\$0.0	\$135.2	\$256.0	\$203.2	\$0.0	\$0.0	\$220.5
Connecticut	\$2,188.1	\$0.0	\$636.9	\$404.2	\$0.0	\$314.5	\$303.0	\$414.5
Delaware	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
District of Columbia	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Florida	\$2,242.5	\$89.1	\$185.5	\$1,010.5	\$165.1	\$192.6	\$0.0	\$530.1
Georgia	\$2,787.9	\$647.7	\$401.1	\$132.0	\$765.1	\$76.0	\$260.2	\$505.8
Hawaii	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Idaho	\$242.2	\$87.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Illinois	\$10,440.6	\$3,166.2	\$964.4	\$799.7	\$839.1	\$1,140.1	\$1,425.8	\$2,105.3
Indiana	\$3,947.7	\$258.7	\$255.0	\$234.3	\$921.5	\$588.3	\$820.9	\$869.1
Iowa	\$4,975.5	\$3,379.3	\$162.4	\$199.0	\$440.4	\$141.9	\$120.6	\$531.8
Kansas	\$1,933.7	\$823.8	\$154.9	\$0.0	\$393.8	\$0.0	\$0.0	\$370.3
Kentucky	\$1,553.9	\$127.6	\$0.0	\$0.0	\$459.2	\$271.9	\$158.5	\$408.0
Louisiana	\$753.6	\$312.9	\$0.0	\$120.9	\$112.6	\$0.0	\$0.0	\$102.0
Maine	\$249.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$84.1
Maryland	\$991.3	\$0.0	\$0.0	\$0.0	\$180.1	\$0.0	D	\$359.5
Massachusetts	\$2,722.9	\$0.0	\$1,030.0	\$360.8	\$165.0	\$330.2	\$130.5	\$651.0
Michigan	\$8,870.5	\$247.5	\$740.7	\$219.5	\$339.6	\$3,926.1	\$1,199.0	\$2,198.1
Minnesota	\$3,684.6	\$614.4	\$309.2	\$751.2	\$312.2	\$420.5	\$99.3	\$1,177.8
Mississippi	\$1,132.4	\$235.9	\$0.0	\$0.0	\$218.2	\$0.0	\$170.4	\$288.7
Missouri	\$2,751.1	\$129.7	\$255.6	\$207.5	\$726.2	\$301.1	\$182.8	\$948.3
Montana	\$143.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Nebraska	\$914.1	\$581.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$126.6

TABLE A2a: VALUE-ADDED IN THE MACHINERY INDUSTRY BY GROUP, 2003 (in millions)

Area	Industry Group*							
	333	3331	3332	3333	3334	3335	3336	3339
Nevada	\$340.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$186.8
New Hampshire	\$862.1	\$0.0	\$176.1	\$187.6	\$0.0	\$0.0	\$0.0	\$329.8
New Jersey	\$2,139.7	\$0.0	\$343.8	\$330.5	\$329.8	\$282.3	\$0.0	\$738.8
New Mexico	\$113.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
New York	\$4,905.3	\$124.4	\$762.4	\$327.6	\$694.8	\$562.1	\$764.0	\$1,670.1
North Carolina	\$4,022.9	\$807.7	\$431.1	\$320.0	\$480.6	\$262.3	\$412.8	\$1,308.4
North Dakota	\$667.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Ohio	\$7,856.5	\$576.0	\$835.6	\$740.6	\$799.5	\$1,758.8	\$592.4	\$2,553.6
Oklahoma	\$2,278.0	\$570.0	\$207.6	\$0.0	\$297.3	\$0.0	D	\$730.1
Oregon	\$939.2	\$134.1	\$241.2	\$124.9	\$0.0	\$77.6	\$0.0	\$282.9
Pennsylvania	\$4,927.8	\$706.3	\$734.6	\$308.6	\$567.2	\$901.7	\$172.4	\$1,537.0
Rhode Island	\$349.1	\$0.0	\$0.0	\$0.0	\$0.0	\$79.7	\$0.0	\$186.9
South Carolina	\$8,401.3	\$151.5	\$186.0	\$128.6	\$284.7	\$171.5	\$7,062.3	\$416.7
South Dakota	\$396.6	\$146.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$115.4
Tennessee	\$4,227.7	\$878.0	\$116.9	\$288.9	\$1,539.0	\$318.0	\$309.2	\$777.6
Texas	\$7,305.2	\$2,062.1	\$833.3	\$310.6	\$1,877.4	\$259.2	\$317.8	\$1,644.7
Utah	\$456.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$202.1
Vermont	\$271.4	\$0.0	\$0.0	\$0.0	\$0.0	\$112.1	\$0.0	\$0.0
Virginia	\$1,744.5	\$353.1	\$153.0	\$91.0	\$546.0	\$131.8	\$0.0	\$374.5
Washington	\$1,365.2	\$0.0	\$265.7	\$108.9	\$140.3	\$302.7	\$0.0	\$449.4
West Virginia	\$196.1	\$74.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Wisconsin	\$6,307.3	\$1,686.5	\$868.8	\$329.5	\$515.4	\$783.2	\$733.6	\$1,390.1
Wyoming	\$74.0	D	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

Notes: D - Suppressed - usually to maintain confidentiality; \$0.0. - may only indicate that the state and industry combination was too small to be covered by the survey. * - Group figures may not sum to the total because of unresolved classification questions.

Source: U.S. Bureau of the Census (2005a).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 6/05).

Table A2b: Value-Added for Selected Machinery Industries in Ohio and the U.S., 2002

NAICS Code	Industry Title	Value-added (\$1,000,000s)		Ohio as Percent- age of U.S.	Ohio's Apparent [^] Rank	Top 5 States
		Ohio	U.S.			
333111	Farm mchnry. & eqpt.	\$86.4	\$6,968.2	1.2%	11	IA, IL, NE, MN, KS
333112	Lawn & garden eqpt.	\$181.6	\$2,420.4	7.5%	2	TN, OH , PA, IL, IN
33312	Construction eqpt.	\$233.5	\$7,639.1	3.1%	8	IL, WI, NC, PA, KS
333131	Mining mchnry. & eqpt.	\$74.9	\$883.7	8.5%	3	PA, WV, OH , TX, UT
33321	Sawmill & Woodworking mchnry.	\$24.5	\$567.9	4.3%	8	OR, NC, MN, MS, IN
33322	Plastic & rubber working mchnry.	\$201.9	\$1,551.8	13.0%	2	MI, OH , PA, IL, MA
333291	Paper industry mchnry.	\$38.5	\$1,032.4	3.7%	6	WI, PA, MA, NJ, NY
333292	Textile mchnry.	\$20.3	\$568.3	3.6%	6	SC, NC, GA, PA, NY
333293	Printing mchnry. & eqpt.	\$65.6	\$1,559.6	4.2%	7	NY, IL, PA, CA, MA
333294	Food products mchnry.	\$208.8	\$1,697.2	12.3%	1	OH , IL, WI, CA, IA
333298	All other industrial mchnry.	\$236.4	\$4,039.5	5.9%	6	IL, CA, NY, TX, MI
333315	Photographic & photocopying eqpt.	\$35.3	\$1,091.2	3.2%	6	CA, MA, MN, NY, NJ
333319	Other commercial & service mchnry.	\$348.1	\$6,322.8	5.5%	5	FL, CA, IL, MN, OH
333411	Air purification eqpt.	\$41.6	\$1,225.5	3.4%	8	TX, IL, WI, NC, CA
333412	Industrial & commercial fans & blowers	\$129.5	\$1,032.9	12.5%	1	OH , MO, IL, WI, NC
333414	Heating eqpt., exc. warm air furnaces	\$87.4	\$2,247.9	3.9%	9	IN, CA, PA, MN, NY
333415	AC, warm air furnaces, & refrigeration eqpt.	\$504.1	\$12,020.9	4.2%	9	TX, TN, AR, IA, MO
333511	Industrial molds	\$409.7	\$3,836.1	10.7%	2	MI, OH , IL, PA, CA
333512	Machine tools, metal cutting type	\$80.3	\$1,431.9	5.6%	7	MI, CA, NY, IL, WI
333513	Machine tools, metal forming types	\$129.7	\$637.8	20.3%	1	OH , MI, IL, PA, NY
333514	Special dies, tools, jigs & fixtures	\$562.7	\$4,846.0	11.6%	2	MI, OH , IL, WI, PA
333515	Machine tool accessories	\$307.5	\$3,333.0	9.2%	2	MI, OH , IL, CA, PA
333516	Rolling mill mchnry.	\$64.3	\$245.1	26.2%	1	OH , PA*
333518	Other metalworking mchnry.	\$123.9	\$1,621.0	7.6%	3	MI, IL, OH , NY, PA
333613	Mechanical power transmission eqpt.	\$163.2	\$1,639.7	10.0%	2	WI, OH , MI, PA, TX
333911	Pumps & pumping eqpt.	\$288.8	\$3,624.9	8.0%	3	OK, CA, OH , TX, WI

Table A2b: Value-Added for Selected Machinery Industries in Ohio and the U.S., 2002

NAICS Code	Industry Title	Value-added (\$1,000,000s)		Ohio as Percent- age of U.S.	Ohio's Apparent [^] Rank	Top 5 States
		Ohio	U.S.			
333922	Conveyors & conveying eqpt.	\$267.2	\$3,080.3	8.7%	2	MI, OH , CA, IL, WI
333924	Industrial trucks, tractors, trailers, stackers	\$174.3	\$1,710.7	10.2%	2	TX, OH , MO, IN, NC
333992	Welding & soldering eqpt.	\$710.9	\$2,010.5	35.4%	1	OH , MI, WI, NH, TX
333993	Packaging mchnry.	\$204.8	\$2,341.0	8.7%	3	IL, CA OH , WI, GA
333995	Fluid power cylinders & actuators	\$132.2	\$1,846.4	7.2%	3	NY, CA, OH , MI, WI
333996	Fluid power pumps & motors	\$109.6	\$1,288.8	8.5%	2	IL, OH , KS, CA, MI
333999	Misc. general purpose mchnry.	\$243.9	\$5,502.0	4.4%	8	MI, MO, PA, CA, MN

Notes: ^ - Data for one or more states may have been suppressed, and, if available, could change the rank;

* - No additional states were ranked. Abbreviations used: AC - airconditioning; Eqpt. - equipment; Exc. - except; H - heating; Mchnry. - machinery; Mfg. - manufacturing; Misc. - miscellaneous; V - ventilation.

Source: U.S. Bureau of the Census (2005c).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 3/05).

Table A2c: Value of Shipments for Selected Machinery Product Classes in Ohio and the U.S., 2002

NAICS Code	Product Class Title	Value of Shipments (\$1,000,000s)		Ohio as Percent- age of U.S.	Ohio's Apparent ^A Rank	Top 5 States
		Ohio	U.S.			
333111C	Parts for farm mchnry., sold separately	\$2.9	\$1,353.9	0.2%	13	IA, IL, WI, NE, KS
333111G	All other farm mchnry. & eqpt., exc. parts, including attachments	\$30.8	\$1,802.7	1.7%	11	NE, IN, IA, CA, WI
3331201	Power cranes, excavation loaders, dozers, etc.	\$173.6	\$11,913.8	1.5%	9	IL, NC, WI, KS, OK
3331208	Other construction mchnry. & eqpt., exc. parts	\$110.0	\$1,879.4	5.9%	4	WI, MI, PA, OH , TX
3331209	Parts for construction mchnry. & eqpt., sold separately	\$115.8	\$2,263.4	5.1%	4	IL, WI, PA, OH , OK
3331319	Parts & attachments, mining machinery & eqpt., sold separately	\$61.2	\$619.8	9.9%	1	OH , TX, PA, WV, MI
3332103	Woodworking mchnry., including parts, attachments & accessories	\$21.1	\$711.6	3.0%	9	MN, OR, MS, IN, CA
3332201	Plastics-working mchnry. & eqpt., exc. patterns & molds	\$409.0	\$2,382.7	17.2%	1	OH , MI, PA, IL, MA
3332203	Rubber-working mchnry. & eqpt., exc. tire molds	\$100.7	\$210.0	47.9%	1	OH , CA, NC, IN, PA
3332911	Paper industry mchnry.	\$47.8	\$939.8	5.1%	3	WI, MA, OH , PA, NY
3332913	Parts & attachments for paper industry mchnry., sold separately	\$22.3	\$538.6	4.1%	4	WI, PA, LA, OH , GA
3332923	Parts & attachments for textile mchnry.	\$6.8	\$285.1	2.4%	6	SC, NC, GA, PA, NY
3332933	Printing presses, other than lithographic	\$50.3	\$334.1	15.1%	2	NJ, OH , PA, IL, MI
3332939	All other misc. printing trades mchnry.	\$29.6	\$1,428.5	2.1%	9	NY, CA, IL, MA, NJ
3332943	Commercial food products mchnry.	\$110.5	\$994.8	11.1%	2	IL, OH , GA, CA, WA
3332945	Mchnry. & eqpt. for processing foods, beverages & animal feed	\$131.7	\$990.3	13.3%	1	OH , WI, CA, IA, KS
3332981	Chemical mfg. mchnry. & eqpt. & parts	\$50.6	\$1,249.1	4.1%	7	TX, NY, IL, NC, PA
3332983	Foundry mchnry. & eqpt., exc. patterns & molds	\$50.5	\$403.4	12.5%	3	MI, NY, OH , IL, WI
3332987	All other misc. special industry mchnry. & eqpt.	\$320.7	\$3,443.5	9.3%	4	MI, CA, IL, OH , CT
3333191	Commercial cooking & food-warming eqpt.	\$245.1	\$2,115.1	11.6%	3	IL, CA, OH , WI, TN
3333193	Commercial & industrial vacuum cleaners, including parts & attachments	\$38.3	\$470.1	8.1%	4	MI, CA, MN, OH , NY
3333195	Automotive maintenance eqpt., exc. handtools	\$34.8	\$632.4	5.5%	2	MI, OH , TX, IL, PA
333319A	Misc. mchnry. products, exc. electrical	\$222.2	\$5,419.9	4.1%	9	CA, MN, IL, WI, MI
3334111	Dust collection & air purification eqpt., industrial gas cleaning systems	\$24.7	\$721.7	3.4%	4	WI, TX, IL, OH , NC
3334113	Dust collection & air purification eqpt., cleaning incoming air	\$53.2	\$1,375.5	3.9%	6	NC, TX, IL, CA, KY
3334147	Floor & wall furnaces, unit & infrared heaters & mechanical stokers	\$47.3	\$441.9	10.7%	2	IN, OH , MI, IL, CA
333414A	Other heating eqpt., exc. electric, including parts	\$131.0	\$1,416.6	9.2%	1	OH , CA, PA, TN, NY
3334152	Heat transfer eqpt., mechanical refrigerated, self-contained	\$61.2	\$4,775.3	1.3%	15	GA, NY, TX, AR, MO
3334153	Commercial refrigerators & related eqpt.	\$171.1	\$2,740.8	6.2%	4	IL, TX, CA, OH , TN
3334159	All other misc. refrigeration & AC eqpt.	\$5.3	\$927.8	0.6%	6	CA, AZ, TX, IL, FL
333415D	Parts & accessories for AC & heat transfer eqpt.	\$76.6	\$1,697.4	4.5%	7	WI, TX, TN, IA, IN
333415E	Unitary AC eqpt., exc. air source heat pumps	\$386.3	\$5,403.8	7.1%	3	TN, TX, OH , OK, GA
3335122	Metal grinding, polishing, buffing, honing & lapping machines	\$12.8	\$312.5	4.1%	3	MI, PA, OH , NY, WI
3335124	Metal milling machines, exc. machining centers	\$17.5	\$51.3	34.2%	1	OH , MI*

Table A2c: Value of Shipments for Selected Machinery Product Classes in Ohio and the U.S., 2002

NAICS Code	Product Class Title	Value of Shipments (\$1,000,000s)		Ohio as Percent- age of U.S.	Ohio's Apparent ^A Rank	Top 5 States
		Ohio	U.S.			
3335125	Machine tools for home workshops, etc. (metalworking only)	\$7.1	\$78.3	9.0%	2	MI, OH , CA*
3335126	Parts for metal cutting-type machine tools, sold separately	\$108.4	\$566.2	19.1%	2	MI, OH , NY, CA, WI
3335129	Other metal cutting machine tools, exc. those designated for home use	\$34.3	\$458.4	7.5%	3	MI, IL, OH , WI, CA
333512A	Metal boring & drilling machines, exc. machining centers	\$3.5	\$114.7	3.1%	3	IL, WI, OH *
3335131	Metal punching, shearing, bending & forming machines	\$35.6	\$351.5	10.1%	2	MI, OH , IL*
3335133	Metalworking presses, exc. forging & die-stamping presses	\$78.3	\$204.7	38.2%	1	OH , MI, PA, CA*
3335135	Other metal forming machine tools, exc. metalwork presses	\$59.6	\$228.4	26.1%	1	OH , MI, PA, IL, MA
3335137	Parts for metal forming machine tools, sold separately, rebuilt or remanufactured	\$75.0	\$242.3	30.9%	1	OH , MI, IL, PA, IN
3335151	Small cutting tools for machine tools & metalworking mchnry.	\$263.8	\$2,863.3	9.2%	3	MI, IL, OH , CA, PA
3335153	Other attachments for machine tools & metalworking mchnry.	\$90.3	\$962.8	9.4%	3	MI, WI, OH , MO, NY
3335163	Cold rolling mill mchnry.	\$18.4	\$71.7	25.6%	1	OH *
3335165	Other rolling mill mchnry., including tube mill mchnry. & parts	\$68.5	\$271.6	25.2%	1	OH , PA, IL*
3335181	Assembly machines	\$117.4	\$1,829.9	6.4%	3	MI, IL, OH , NY, TN
3335183	Other metalworking mchnry., exc. handheld & ultrasonic	\$70.1	\$738.3	9.5%	2	MI, OH , MA, IL, FL
3336133	Mechanical power transmission eqpt., exc. speed changers, drives & gears	\$223.0	\$2,095.6	10.6%	2	WI, OH , PA, TX, NY
3339111	Pump and pumping eqpt.	\$581.4	\$5,062.0	11.5%	1	OH , OK, CA, TX, WI
3339115	Parts & attachments for pumps & pumping eqpt.	\$28.7	\$1,140.2	2.5%	9	CA, NY, MI, OK, TX
3339121	Air & gas compressors & vacuum pumps	\$225.8	\$2,608.3	8.7%	2	NY, OH , PA, OK, MA
3339125	Parts for air & gas compressors, including packing compressors	\$54.1	\$583.6	9.3%	4	NY, PA, TX, OH , IL
3339127	Industrial spraying eqpt.	\$9.2	\$823.5	1.1%	4	MI, IN, CA, OH *
3339221	Unit handling conveyors & conveying systems, exc. hoists & farm eqpt.	\$219.8	\$2,223.5	9.9%	2	MI, OH , KY, AR, MO
3339223	Parts for unit handling conveyors & conveying systems	\$36.1	\$251.0	14.4%	2	MI, OH , CA, WI, KY
3339228	Bulk material handling conveyors & conveying systems	\$102.6	\$1,590.9	6.4%	4	MI, PA, TX, OH , IL
3339229	Parts, bulk material handling conveyors & conveying systems	\$29.8	\$550.8	5.4%	3	IL, IA, OH , MI, WI
3339242	Industrial trucks & tractors, mobile straddle carriers, cranes, etc.	\$432.8	\$3,422.7	12.6%	1	OH , IN, TX, IL, GA
3339243	Parts & attachments, industrial trucks & tractors, sold separately	\$81.4	\$983.3	8.3%	3	TX, NC, OH , IN, MI
3339923	Arc welding electrodes, metal	\$469.1	\$682.2	68.8%	1	OH , MI, CA*
3339927	Resistance welders, components, accessories & electrodes	\$90.3	\$565.9	16.0%	2	MI, OH , CA, WI, IL
333992A	Other welding eqpt., components & accessories	\$34.0	\$601.8	5.7%	3	MI, CA, OH , CT, IN
3339931	Packing, packaging & bottling mchnry., exc. parts	\$302.0	\$2,910.4	10.4%	2	IL, OH , MN, CA, GA
3339935	Parts for packing, packaging & bottling mchnry.	\$42.8	\$651.6	6.6%	5	IL, WI, CA, SC, OH
3339951	Nonaerospace type hydraulic fluid power cylinders & actuators, linear & rotary	\$110.8	\$956.8	11.6%	2	IL, OH , IA, WI, MI
3339953	Nonaerospace type pneumatic fluid power cylinders & actuators, linear & rotary	\$44.2	\$520.7	8.5%	4	IN, MI, IL, OH , NY
3339955	Parts, nonaerospace hydraulic & pneumatic fluid power cylinders & actuators	\$45.1	\$369.1	12.2%	1	OH , WI, IL, CA, NY
3339963	Nonaerospace type rotary & other fluid power pumps	\$43.7	\$492.2	8.9%	2	IL, OH , FL, KS*

Table A2c: Value of Shipments for Selected Machinery Product Classes in Ohio and the U.S., 2002

NAICS Code	Product Class Title	Value of Shipments (\$1,000,000s)		Ohio as Percent- age of U.S.	Ohio's Apparent [^] Rank	Top 5 States
		Ohio	U.S.			
3339965	Nonaerospace type fluid power motors	\$6.9	\$369.8	1.9%	2	IL, OH *
3339967	Aerospace type fluid power pumps & motors	\$11.1	\$212.9	5.2%	2	CA, OH *
3339969	Parts, fluid power pumps, motors & hydrostatic transmissions	\$15.3	\$510.0	3.0%	3	CA, FL, OH , MI, MN
3339991	Filters & strainers, exc. fluid power	\$118.9	\$2,373.0	5.0%	9	MN, MI, CT, IL, CA
3339997	All other misc. general industrial mchnry.	\$212.8	\$3,242.1	6.6%	4	MI, PA, TX, OH , IL
333999A	All other misc. mchnry. products, exc. electrical	\$12.0	\$906.3	1.3%	10	CA, MI, PA, MA, TX

Notes: ^ - Data for one or more states may have been suppressed, and, if available, could change the rank; * - No additional state were ranked.

Abbreviations used: AC - air conditioning; eqpt. - equipment; exc. - except or excluding; mchnry. - machinery; mfg. - manufacturing; misc. - miscellaneous.

Source: U.S. Bureau of the Census (2005c).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 3/05).

Table A3: Machinery Industry Establishments and Employment, Ohio and the U.S.: 2002 Means and Percentages

NAICS Code	Shorter Industry Title	Ohio			U.S.			Ohio as a Percentage of the U.S.	
		Establishments	Employment	Mean	Establishments	Employment	Mean	Establishments	Employment
	Total	271,181	4,743,151	17.5	7,200,770	112,400,654	15.6	3.8%	4.2%
333	Machinery Mfg.	2,075	84,469	40.7	27,941	1,166,221	41.7	7.4%	7.2%
3331	Agricultural, Construction & Mining Mchnry.	109	5,378	49.3	2,937	176,458	60.1	3.7%	3.0%
33311	Agricultural Implements	38	1,957	51.5	1,367	79,005	57.8	2.8%	2.5%
333111	Farm Mchnry. & Eqpt.*	29	666	23.0	1,217	55,742	45.8	2.4%	1.2%
333112	Lawn & Garden Eqpt.*	9	1,428	158.7	150	23,263	155.1	6.0%	6.1%
33312	Construction Mchnry.	46	2,591	56.3	783	59,627	76.2	5.9%	4.3%
33313	Mining & Oil and Gas Field Mchnry.	25	830	33.2	787	37,826	48.1	3.2%	2.2%
333131	Mining Mchnry.*	17	666	39.2	274	9,938	36.3	6.2%	6.7%
333132	Oil & Gas Field Mchnry.*	8	33	4.1	513	27,888	54.4	1.6%	0.1%
3332	Industrial Mchnry.	268	9,199	34.3	4,226	146,269	34.6	6.3%	6.3%
33321	Sawmill & Woodworking Mchnry.	13	561	43.2	292	6,720	23.0	4.5%	8.3%
33322	Plastics & Rubber Industry Mchnry.	68	2,940	43.2	558	16,820	30.1	12.2%	17.5%
33329	Other Industrial Mchnry.	187	5,698	30.5	3,376	122,729	36.4	5.5%	4.6%
333291	Paper Industry Mchnry.	14	415	29.6	298	11,484	38.5	4.7%	3.6%
333292	Textile Mchnry.*	7	143	20.4	423	8,758	20.7	1.7%	1.6%
333293	Printing Mchnry. & Eqpt.	22	627	28.5	456	14,266	31.3	4.8%	4.4%
333294	Food Products Mchnry.	23	1,401	60.9	560	17,009	30.4	4.1%	8.2%
333295	Semiconductor Mchnry.*	6	143	23.8	259	30,445	117.5	2.3%	0.5%
333298	All Other Industrial Mchnry.	115	2,973	25.9	1,380	40,767	29.5	8.3%	7.3%
3333	Commercial & Service Industry Mchnry.	95	6,185	65.1	2,358	111,610	47.3	4.0%	5.5%
333311	Automatic Vending Machines*	2	333	166.5	98	6,853	69.9	2.0%	4.9%
333312	Commercial Laundry Eqpt.	0	0	n.a.	57	3,281	57.6	0.0%	0.0%
333313	Office Mchnry.*	3	143	47.7	119	16,602	139.5	2.5%	0.9%
333314	Optical Instruments & Lenses	8	1,549	193.6	474	20,723	43.7	1.7%	7.5%
333315	Photographic & Photocopying Eqpt.	8	232	29.0	316	13,182	41.7	2.5%	1.8%
333319	Other Commercial & Service Mchnry.	74	3,945	53.3	1,294	50,969	39.4	5.7%	7.7%
3334	VHAC & Commercial Refrigeration Eqpt.	82	9,247	112.8	1,800	156,821	87.1	4.6%	5.9%
333411	Air Purification Eqpt.	16	848	53.0	360	13,597	37.8	4.4%	6.2%

Table A3: Machinery Industry Establishments and Employment, Ohio and the U.S.: 2002 Means and Percentages

NAICS Code	Shorter Industry Title	Ohio			U.S.			Ohio as a Percentage of the U.S.	
		Establishments	Employment	Mean	Establishments	Employment	Mean	Establishments	Employment
333412	Industrial & Commercial Fans & Blowers	12	974	81.2	182	11,281	62.0	6.6%	8.6%
333414	Heating Eqpt. (Exc. Warm Air Furnaces)	15	924	61.6	418	21,484	51.4	3.6%	4.3%
333415	AC, Warm Air Furnaces, & Refrigeration Eqpt.	39	6,501	166.7	840	110,459	131.5	4.6%	5.9%
3335	Metalworking Mchnry.	976	23,023	23.6	9,346	187,361	20.0	10.4%	12.3%
333511	Industrial Molds	244	4,996	20.5	2,270	41,760	18.4	10.7%	12.0%
333512	Machine Tools, Metal Cutting Type	45	1,969	43.8	540	19,820	36.7	8.3%	9.9%
333513	Machine Tools, Metal Forming Types	44	2,248	51.1	316	9,285	29.4	13.9%	24.2%
333514	Special Dies, Tools, Jigs & Fixtures	424	7,616	18.0	4,079	62,426	15.3	10.4%	12.2%
333515	Machine Tool Accessories	160	4,070	25.4	1,630	37,240	22.8	9.8%	10.9%
333516	Rolling Mill Mchnry.	15	478	31.9	77	2,361	30.7	19.5%	20.2%
333518	Other Metalworking Mchnry.	44	1,646	37.4	434	14,469	33.3	10.1%	11.4%
3336	Engine, Turbine & Transmission Eqpt.	70	4,723	67.5	922	96,501	104.7	7.6%	4.9%
333611	Turbines & Turbine Generator Sets*	8	1,428	178.5	116	19,560	168.6	6.9%	7.3%
333612	Speed Changers, Drives & Gears*	23	666	29.0	246	13,180	53.6	9.3%	5.1%
333613	Mechanical Power Transmission Eqpt.	23	1,122	48.8	279	17,021	61.0	8.2%	6.6%
333618	Other Engine Eqpt.	16	1,746	109.1	281	46,740	166.3	5.7%	3.7%
3339	Other General Purpose Mchnry.	475	26,714	56.2	6,352	291,201	45.8	7.5%	9.2%
33391	Pumps & Compressors	53	5,362	101.2	818	55,238	67.5	6.5%	9.7%
333911	Pumps & Pumping Eqpt.	23	3,369	146.5	452	30,623	67.8	5.1%	11.0%
333912	Air & Gas Compressors	22	1,401	63.7	295	19,823	67.2	7.5%	7.1%
333913	Measuring & Dispensing Pumps	8	592	74.0	71	4,792	67.5	11.3%	12.4%
33392	Material Handling Eqpt.	123	6,551	53.3	1,700	78,058	45.9	7.2%	8.4%
333921	Elevators & Moving Stairways	7	375	53.6	187	9,359	50.0	3.7%	4.0%
333922	Conveyors & Conveying Eqpt.	68	2,896	42.6	795	33,077	41.6	8.6%	8.8%
333923	Hoists, Cranes & Monorails	16	663	41.4	294	14,189	48.3	5.4%	4.7%
333924	Industrial Trucks, Tractors, Trailers, Stackers	32	2,617	81.8	424	21,433	50.5	7.5%	12.2%
33399	All Other General Purpose Mchnry.	299	14,801	49.5	3,834	157,905	41.2	7.8%	9.4%
333991	Power-Driven Handtools	21	1,287	61.3	217	13,153	60.6	9.7%	9.8%
333992	Welding & Soldering Eqpt.	26	4,698	180.7	268	17,621	65.8	9.7%	26.7%
333993	Packaging Mchnry.	41	2,256	55.0	640	23,680	37.0	6.4%	9.5%
333994	Industrial Furnaces & Ovens	38	795	20.9	355	11,998	33.8	10.7%	6.6%

Table A3: Machinery Industry Establishments and Employment, Ohio and the U.S.: 2002 Means and Percentages

NAICS Code	Shorter Industry Title	Ohio			U.S.			Ohio as a Percentage of the U.S.	
		Establishments	Employment	Mean	Establishments	Employment	Mean	Establishments	Employment
333995	Fluid Power Cylinders & Actuators	30	1,424	47.5	305	20,765	68.1	9.8%	6.9%
333996	Fluid Power Pumps & Motors	15	1,370	91.3	169	12,391	73.3	8.9%	11.1%
333997	Scales & Balances (Exc. Laboratory)	6	452	75.3	109	3,469	31.8	5.5%	13.0%
333999	Misc. General Purpose Mchnry.	122	2,519	20.6	1,771	54,828	31.0	6.9%	4.6%

Notes: * - Ohio employment figure is estimated. Abbreviations used: Eqpt. - equipment; Exc. - except; Mchnry. - machinery; Mfg. - manufacturing; Misc. - miscellaneous; VHAC - ventilation, heating, air-conditioning.

Source: U.S. Bureau of the Census (2004).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 3/05).

Table A4: Machinery Industry Wages and Employment, Ohio and the U.S.: 2002 Means and Percentages

NAICS Code	Shorter Industry Title	Ohio			U.S.			Ohio Mean as Percentage of U.S.
		Wages (millions)	Employment	Annual Mean	Wages (millions)	Employment	Annual Mean	
	Total	\$154,820.4	4,743,151	\$32,641	\$3,943,179.6	112,400,654	\$35,081	93.0%
333	Machinery Mfg.	\$3,695.0	84,469	\$43,744	\$50,101.4	1,166,221	\$42,960	101.8%
3331	Agricultural, Construction & Mining Mchnry.	\$191.1	5,378	\$35,538	\$6,978.9	176,458	\$39,550	89.9%
33311	Agricultural Implements	\$65.1	1,957	\$33,282	\$2,755.2	79,005	\$34,874	95.4%
333111	Farm Mchnry. & Eqpt.*	D	666	n.a.	\$2,076.1	55,742	\$37,246	n.a.
333112	Lawn & Garden Eqpt.*	D	1,428	n.a.	\$679.1	23,263	\$29,191	n.a.
33312	Construction Mchnry.	\$94.2	2,591	\$36,342	\$2,543.7	59,627	\$42,660	85.2%
33313	Mining & Oil and Gas Field Mchnry.	\$31.8	830	\$38,352	\$1,679.9	37,826	\$44,413	86.4%
333131	Mining Mchnry.*	D	666	n.a.	\$392.9	9,938	\$39,539	n.a.
333132	Oil & Gas Field Mchnry.*	D	33	n.a.	\$1,287.0	27,888	\$46,149	n.a.
3332	Industrial Mchnry.	\$402.8	9,199	\$43,786	\$7,291.3	146,269	\$49,849	87.8%
33321	Sawmill & Woodworking Mchnry.	\$21.3	561	\$38,048	\$257.0	6,720	\$38,250	99.5%
33322	Plastics & Rubber Industry Mchnry.	\$136.8	2,940	\$46,532	\$708.3	16,820	\$42,113	110.5%
33329	Other Industrial Mchnry.	\$244.6	5,698	\$42,934	\$6,325.9	122,729	\$51,544	83.3%
333291	Paper Industry Mchnry.	\$20.6	415	\$49,636	\$531.4	11,484	\$46,277	107.3%
333292	Textile Mchnry.*	D	143	n.a.	\$317.5	8,758	\$36,251	n.a.
333293	Printing Mchnry. & Eqpt.	\$28.6	627	\$45,574	\$655.7	14,266	\$45,961	99.2%
333294	Food Products Mchnry.	\$58.4	1,401	\$41,719	\$746.4	17,009	\$43,881	95.1%
333295	Semiconductor Mchnry.*	D	143	n.a.	\$2,271.8	30,445	\$74,621	n.a.
333298	All Other Industrial Mchnry.	\$126.3	2,973	\$42,468	\$1,803.1	40,767	\$44,230	96.0%
3333	Commercial & Service Industry Mchnry.	\$257.5	6,185	\$41,629	\$4,847.5	111,610	\$43,432	95.8%
333311	Automatic Vending Machines*	D	333	n.a.	\$235.9	6,853	\$34,423	n.a.
333312	Commercial Laundry Eqpt.	\$0.0	0	n.a.	\$117.4	3,281	\$35,768	n.a.
333313	Office Mchnry.*	D	143	n.a.	\$797.3	16,602	\$48,025	n.a.
333314	Optical Instruments & Lenses	\$69.6	1,549	\$44,947	\$986.0	20,723	\$47,580	94.5%
333315	Photographic & Photocopying Eqpt.	\$12.7	232	\$54,905	\$603.8	13,182	\$45,805	119.9%
333319	Other Commercial & Service Mchnry.	\$160.9	3,945	\$40,776	\$2,107.1	50,969	\$41,341	98.6%
3334	VHAC & Commercial Refrigeration Eqpt.	\$409.2	9,247	\$44,253	\$5,556.3	156,821	\$35,431	124.9%
333411	Air Purification Eqpt.	\$25.9	848	\$30,496	\$425.4	13,597	\$31,285	97.5%

Table A4: Machinery Industry Wages and Employment, Ohio and the U.S.: 2002 Means and Percentages

NAICS Code	Shorter Industry Title	Ohio			U.S.			Ohio Mean as Percentage of U.S.
		Wages (millions)	Employment	Annual Mean	Wages (millions)	Employment	Annual Mean	
333412	Industrial & Commercial Fans & Blowers	\$40.9	974	\$42,030	\$414.7	11,281	\$36,759	114.3%
333414	Heating Eqpt. (Exc. Warm Air Furnaces)	\$37.9	924	\$41,054	\$786.6	21,484	\$36,612	112.1%
333415	AC, Warm Air Furnaces, & Refrigeration Eqpt.	\$304.5	6,501	\$46,836	\$3,929.7	110,459	\$35,576	131.7%
3335	Metalworking Mchnry.	\$975.1	23,023	\$42,354	\$8,136.6	187,361	\$43,428	97.5%
333511	Industrial Molds	\$214.9	4,996	\$43,008	\$1,811.4	41,760	\$43,376	99.1%
333512	Machine Tools, Metal Cutting Type	\$89.0	1,969	\$45,201	\$953.6	19,820	\$48,113	93.9%
333513	Machine Tools, Metal Forming Types	\$106.0	2,248	\$47,173	\$427.2	9,285	\$46,014	102.5%
333514	Special Dies, Tools, Jigs & Fixtures	\$308.7	7,616	\$40,537	\$2,687.8	62,426	\$43,056	94.2%
333515	Machine Tool Accessories	\$148.0	4,070	\$36,360	\$1,432.5	37,240	\$38,466	94.5%
333516	Rolling Mill Mchnry.	\$26.2	478	\$54,877	\$116.8	2,361	\$49,468	110.9%
333518	Other Metalworking Mchnry.	\$82.3	1,646	\$49,981	\$707.3	14,469	\$48,885	102.2%
3336	Engine, Turbine & Transmission Eqpt.	\$250.5	4,723	\$53,035	\$4,637.4	96,501	\$48,055	110.4%
333611	Turbines & Turbine Generator Sets*	D	1,428	n.a.	\$1,125.5	19,560	\$57,541	n.a.
333612	Speed Changers, Drives & Gears*	D	666	n.a.	\$529.0	13,180	\$40,136	n.a.
333613	Mechanical Power Transmission Eqpt.	\$52.3	1,122	\$46,611	\$698.5	17,021	\$41,036	113.6%
333618	Other Engine Eqpt.	\$111.6	1,746	\$63,928	\$2,284.4	46,740	\$48,876	130.8%
3339	Other General Purpose Mchnry.	\$1,208.8	26,714	\$45,250	\$12,653.4	291,201	\$43,452	104.1%
33391	Pumps & Compressors	\$230.7	5,362	\$43,023	\$2,516.2	55,238	\$45,553	94.4%
333911	Pumps & Pumping Eqpt.	\$136.5	3,369	\$40,513	\$1,378.7	30,623	\$45,022	90.0%
333912	Air & Gas Compressors	\$67.2	1,401	\$47,965	\$919.2	19,823	\$46,372	103.4%
333913	Measuring & Dispensing Pumps	\$27.0	592	\$45,613	\$218.3	4,792	\$45,555	100.1%
33392	Material Handling Eqpt.	\$299.3	6,551	\$45,690	\$3,265.9	78,058	\$41,839	109.2%
333921	Elevators & Moving Stairways	\$13.1	375	\$34,989	\$355.5	9,359	\$37,988	92.1%
333922	Conveyors & Conveying Eqpt.	\$123.0	2,896	\$42,485	\$1,521.5	33,077	\$45,998	92.4%
333923	Hoists, Cranes & Monorails	\$31.5	663	\$47,525	\$547.6	14,189	\$38,593	123.1%
333924	Industrial Trucks, Tractors, Trailers, Stackers	\$131.6	2,617	\$50,305	\$841.3	21,433	\$39,251	128.2%
33399	All Other General Purpose Mchnry.	\$678.8	14,801	\$45,862	\$6,871.3	157,905	\$43,515	105.4%
333991	Power-Driven Handtools	\$64.8	1,287	\$50,353	\$486.6	13,153	\$36,996	136.1%
333992	Welding & Soldering Eqpt.	\$239.1	4,698	\$50,887	\$856.7	17,621	\$48,621	104.7%
333993	Packaging Mchnry.	\$101.6	2,256	\$45,049	\$1,141.5	23,680	\$48,203	93.5%
333994	Industrial Furnaces & Ovens	\$39.5	795	\$49,747	\$490.0	11,998	\$40,842	121.8%

Table A4: Machinery Industry Wages and Employment, Ohio and the U.S.: 2002 Means and Percentages

NAICS Code	Shorter Industry Title	Ohio			U.S.			Ohio Mean as Percentage of U.S.
		Wages (millions)	Employment	Annual Mean	Wages (millions)	Employment	Annual Mean	
333995	Fluid Power Cylinders & Actuators	\$47.9	1,424	\$33,662	\$883.5	20,765	\$42,549	79.1%
333996	Fluid Power Pumps & Motors	\$58.0	1,370	\$42,323	\$530.4	12,391	\$42,802	98.9%
333997	Scales & Balances (Exc. Laboratory)	\$20.7	452	\$45,777	\$130.1	3,469	\$37,511	122.0%
333999	Misc. General Purpose Mchnry.	\$107.1	2,519	\$42,532	\$2,352.4	54,828	\$42,905	99.1%

Notes: * - Ohio employment figure is estimated. Abbreviations used: Eqpt. - equipment; Exc. - except; Mchnry. - machinery; Mfg. - manufacturing; Misc. - miscellaneous; VHAC - ventilation, heating, air-conditioning.

Source: U.S. Bureau of the Census (2004).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 3/05).

TABLE A5: ESTABLISHMENTS AND EMPLOYMENT IN THE MACHINERY INDUSTRY, BY COUNTY IN OHIO: 2002

Area Name	Establish- ments	Employ- ment	Area Name	Establish- ments	Employ- ment	Area Name	Establish- ments	Employ- ment
Ohio	2,075	84,469	Greene	17	239	Morrow	3	143 *
Adams	1	33 *	Guernsey	11	661	Muskingum	3	143 *
Allen	10	208	Hamilton	113	5,360	Noble	1	10 *
Ashland	13	1,192	Hancock	8	437	Ottawa	9	211
Ashtabula	23	758	Hardin	5	134	Paulding	1	10 *
Athens	3	33 *	Harrison	4	143 *	Perry	3	143 *
Auglaize	20	2,665	Henry	9	203	Pickaway	5	143 *
Belmont	3	61	Highland	2	333 *	Pike	2	10 *
Brown	2	143 *	Hocking	0	0	Portage	41	736
Butler	47	1,900	Holmes	2	10 *	Preble	9	666 *
Carroll	6	68	Huron	11	1,515	Putnam	7	293
Champaign	6	185	Jackson	3	33 *	Richland	25	1,165
Clark	26	833	Jefferson	3	33 *	Ross	1	10 *
Clermont	24	2,566	Knox	6	1,582	Sandusky	17	358
Clinton	9	228	Lake	115	2,980	Scioto	1	10 *
Columbiana	36	1,108	Lawrence	7	459	Seneca	14	760
Coshocton	2	33 *	Licking	7	24	Shelby	24	2,166
Crawford	13	765	Logan	6	39	Stark	65	1,576
Cuyahoga	306	12,099	Lorain	51	2,373	Summit	164	4,439
Darke	8	176	Lucas	73	1,736	Trumbull	33	477
Defiance	7	420	Madison	5	175	Tuscarawas	19	1,307
Delaware	17	335	Mahoning	56	1,241	Union	6	666 *
Erie	13	1,006	Marion	4	254	Van Wert	8	114
Fairfield	12	484	Medina	46	926	Vinton	2	10 *
Fayette	1	33 *	Meigs	0	0	Warren	25	1,065
Franklin	61	3,459	Mercer	10	217	Washington	7	196
Fulton	12	398	Miami	49	2,329	Wayne	26	1,497
Gallia	1	10 *	Monroe	2	10 *	Williams	24	1,397
Geauga	26	876	Montgomery	167	8,163	Wood	26	705
			Morgan	2	333 *	Wyandot	2	33 *

Notes: * - Employment is estimated; therefore, county figures will not sum to the state total. However, the fact that using the estimates produces a total figure for Ohio that is only slightly greater than the actual figure means that the estimates, on average, are very good.

Source: U.S. Census Bureau (2005b).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 3/05).

TABLE A6: FOREIGN CORPORATIONS WITH MACHINERY INDUSTRY ESTABLISHMENTS IN OHIO

Foreign Parent(s)	Country	Ohio Subsidiaries	Co. Jobs
ABN AMRO Holding*	Netherlands	Cincinnati Industrial Machinery Co.	200
AEG Elektrofotografic GmbH	Germany	AEG Photoconductor Corp.	68
Aida Corp.	Japan	Aida-Dayton Technologies Corp.	130
Aker Kvaener ASA	Norway	EPCO	100
Anest Iwata Corp.	Japan/U.S.	Powerex-Iwata Air Technology, Inc. (a joint venture with the Campbell Hausfeld subsidiary of Berkshire-Hathaway, Inc.*)	30
ATS Corp.	Canada	ATS Machine & Tool Co.	15
Babcock Borsig AG	Germany	TLT Babcock Inc.	60
BARCO NV	Belgium	Barco Simulation	100
Barudan Co., Ltd.	Japan	Barudan America, Inc.	47
Canadian Feed Screws	Canada	American Feed Screws, Inc.	20
CECO Environmental Corp.	Canada	Kirk & Blum Manufacturing	250
CFS Holding BV	Netherlands	CFS North America, Inc.	20
Charter PLC	United Kingdom	Morgantown Machine & Hydraulic	50
Consumer Packaging, Inc.	Canada	Anchor Glass Container Corp.	190
Daewoo Corp.	S. Korea	Daewoo Heavy Industries America	40
Daido Metal	Japan/U.S.	Dana Glacier Daido America (a joint venture with Dana Corp.*)	425
Daifuku Company, Ltd.	Japan	Daifuku America Corp.	175
DaimlerChrysler AG*	Germany	Detroit Diesel Remanufacturing	550
DMS Bliss Corp.	France	DMS Bliss Corp.	40
Durr AG	Germany	Henry Filters	200
Ebner Industrieofenbau GmbH	Austria	Ebner Furnaces, Inc.	60
Falkenroth Gruppe	Germany	Falkenroth, Inc.	175
Fenner PLC	United Kingdom	Fenner Dunlop Americas	166
Fette GmbH	Germany	LMT-Fette	30
Framatome Group	France	FCI Automotive	125
FSP Holding AG	Switzerland	ARGO-HYTOS, Inc.	10
Fujitec	Japan	Fujitec America, Inc.	388
Furukawa Co., Ltd.	Japan	Gougler Industries, Inc.	175
		Kent Tool	75
General Electric Co. PLC	United Kingdom	American Fan Co.	150
GKN PLC	United Kingdom	GKN Sinter Metals, Inc.	325
Green Fuji & Hongo America	Japan	DieNamic Solutions LLC	75

TABLE A6: FOREIGN CORPORATIONS WITH MACHINERY INDUSTRY ESTABLISHMENTS IN OHIO

Foreign Parent(s)	Country	Ohio Subsidiaries	Co. Jobs
Grob-Werke GmbH & Co. AG	Germany	Grob Systems, Inc.	183
Heidelberger Druckmaschinen	Germany	Baumfolder Corp.	100
Isuzu Motors, Ltd.*	Japan	DMAX, Ltd. (a joint venture with General Motors Corp.*)	1,000
Itochu Corp.	Japan	Bevcorp, LLC	75
		P E Technologies	80
Jax Mold & Machine, Ltd.	Canada	Athens Mold & Machine, Inc.	25
KCI Konecranes PLC	Finland	Crane Pro	15
		Konecranes Americas	60
		R & M Materials Handling	40
Kobe Steel, Ltd.	Japan	Kobelco Stewart Bolling, Inc.	100
Kone Corp.	Finland	Princeton Delivery Systems	70
		Waltco Truck Equipment Co.	385
Korber Schleifring Group AG	Germany	United Grinding Technologies, Inc.	76
Koyo Seiko Co., Ltd.	Japan	Koyo Corp. of USA	85
Kvaerner Corp.	United Kingdom	EPCO	150
Linde AG	Germany	Linde Gas LLC	10
		Linde Hydraulics Corp.	40
LNS SA	Switzerland	LNS America, Inc.	54
Makino Milling Machine Co.	Japan	Makino, Inc.	250
Mettler-Toledo International, Inc.*	Switzerland	Mettler-Toledo, Inc.	660
Mitsubishi Heavy Industries, Ltd.*	Japan	Mitsubishi Heavy Industries America, Inc.	50
Mitutoyo Corp.	Japan	Mitutoyo America Corp./Nelson Precision, Inc.	20
Nestle SA*	Switzerland	Norse Dairy Systems	120
Nippon Pneumatic Kogyo, Ltd.	Japan	NPK Construction Equipment	50
		NPK Manufacturing, Inc.	20
NKT Holding A/S	Denmark	Alto US (a.k.a. American-Lincoln)	150
NV Twentsche Kabel Holding	Netherlands	VMI Americas, Inc.	37
Odawara Engineering Co., Ltd.	Japan	Odawara Automation, Inc.	70
Palfinger	Austria	Tiffin Loader Crane/Palfinger USA	30
Patriot Forge, Inc.	Canada	Morgan Engineering Systems, Inc.	65
Ralph McKay Industries	Canada	Empire Plow Co., Inc.	51
Robert Bosch GmbH*	Germany	Bosch Rexroth Corp.	380
Rolls Royce PLC	United Kingdom	Rolls Royce Energy Systems, Inc.	800

TABLE A6: FOREIGN CORPORATIONS WITH MACHINERY INDUSTRY ESTABLISHMENTS IN OHIO

Foreign Parent(s)	Country	Ohio Subsidiaries	Co. Jobs
Saint-Gobain Corp.*	France	Saint-Gobain Calmar, Inc.	300
Salvagnini Italia SPA	Italy	Salvagnini America, Inc.	25
Sandoz, Ltd.	Switzerland	Ceilcote Air Pollution Control	75
Sankyo Co., Ltd.	Japan	Sankyo America, Inc.	20
Sanyo Tool Co., Ltd.	Japan	Superion, Inc.	40
Seeberger GmbH	Germany	Seepex, Inc.	48
Sematic Group	Italy	Tyler Elevator Products	150
SEW-Eurodrive GmbH & Co.	Germany	SEW-Eurodrive, Inc.	100
Siebtechnik GmbH	Germany	TEMA Systems, Inc.	30
Siemens AG*	Germany/U.S.	Demag Cranes & Components, and Demag Plastics Group (joint ventures with Kohlberg, Kravis, Roberts & Co.*)	641
	Germany	Siemens Dematic	30
Smiths Group PLC	United Kingdom	Tech Development, Inc.	75
Stromag AG	Germany	Stromag, Inc.	40
Taikisha, Ltd.	Japan	TKS Industrial Co.	26
Tatematsu Mold Works & Tanazawa Hakkosha	Japan	Midwest Mold & Texture Corp.	33
Thames Water PLC	United Kingdom	PCI Membrane Systems, Inc.	9
Tipco, Inc.	Canada	Tipco Punch, Inc.	36
Tomkins PLC	United Kingdom	Lau Industries, Inc., including Lau Conaire Mayfran International, Inc.	110 322
Vogelsang Gruppe	Germany	Vogelsang USA	400
Yaskawa Electric Corp.	Japan	Yaskawa Electric America, Inc.	35
Total Jobs:			12,310

Note: * - A Fortune U.S. 1,000 or Global 500 company.

Sources: American Business Directories (2003), Fortune (2004, 2005), Harris (2004), Office of Strategic Research (2005a), and various company websites.

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 4/05).

Table A7: Machinery Industry Establishment Trends, Ohio and the U.S.: 1998-2002

NAICS Code	Shorter Industry Title	1998	1999	2000	2001	2002	Changes: 1998-2002	
							Number	Percent
Ohio	Total	270,343	270,766	270,509	269,944	271,181	838	0.3%
31-33	Manufacturing	18,052	17,930	17,704	17,597	17,189	-863	-4.8%
333	Machinery Mfg.	2,277	2,245	2,200	2,170	2,075	-202	-8.9%
3331	Agricultural, Construction & Mining Mchnry.	108	111	108	108	109	1	0.9%
3332	Industrial Mchnry.	313	307	294	293	268	-45	-14.4%
3333	Commercial & Service Industry Mchnry.	100	99	99	96	95	-5	-5.0%
3334	VHAC & Commercial Refrigeration Eqpt.	82	85	84	83	82	0	0.0%
3335	Metalworking Mchnry.	1,095	1,060	1,036	1,019	976	-119	-10.9%
3336	Engine, Turbine & Transmission Eqpt.	68	64	63	64	70	2	2.9%
3339	Other General Purpose Mchnry.	511	519	516	507	475	-36	-7.0%
U.S.	Total	6,941,822	7,008,444	7,070,048	7,095,302	7,200,770	258,948	3.7%
31-33	Manufacturing	366,249	360,244	354,498	352,619	344,341	-21,908	-6.0%
333	Machinery Mfg.	30,824	30,177	29,442	28,922	27,941	-2,883	-9.4%
3331	Agricultural, Construction & Mining Mchnry.	3,181	3,110	3,044	2,964	2,937	-244	-7.7%
3332	Industrial Mchnry.	4,649	4,674	4,544	4,408	4,226	-423	-9.1%
3333	Commercial & Service Industry Mchnry.	2,576	2,550	2,490	2,457	2,358	-218	-8.5%
3334	VHAC & Commercial Refrigeration Eqpt.	1,868	1,819	1,779	1,814	1,800	-68	-3.6%
3335	Metalworking Mchnry.	10,538	10,168	9,873	9,691	9,346	-1,192	-11.3%
3336	Engine, Turbine & Transmission Eqpt.	958	971	961	949	922	-36	-3.8%
3339	Other General Purpose Mchnry.	7,054	6,885	6,751	6,639	6,352	-702	-10.0%

Sources: U.S. Census Bureau (2000, 2001, 2002, 2003b, 2004).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 5/05).

Table A8: Machinery Industry Employment Trends, Ohio and the U.S.: 1998-2002

NAICS Code	Shorter Industry Title	1998	1999	2000	2001	2002	Changes: 1998-2002	
							Number	Percent
Ohio	Total	4,806,046	4,867,368	5,001,980	4,932,943	4,743,151	-62,895	-1.3%
31-33	Manufacturing	994,788	982,853	988,612	936,161	829,456	-165,332	-16.6%
333	Machinery Mfg.	109,658	107,703	104,053	97,693	84,469	-25,189	-23.0%
3331	Agricultural, Construction & Mining Mchnry.	7,533	6,750	6,221	6,048	5,378	-2,155	-28.6%
3332	Industrial Mchnry.	13,689	13,316	13,996	12,166	9,199	-4,490	-32.8%
3333	Commercial & Service Industry Mchnry.	5,481	6,106	6,318	6,149	6,185	704	12.8%
3334	VHAC & Commercial Refrigeration Eqpt.	9,723	10,055	9,129	9,522	9,247	-476	-4.9%
3335	Metalworking Mchnry.	33,279	31,462	29,389	27,417	23,023	-10,256	-30.8%
3336	Engine, Turbine & Transmission Eqpt.	5,492	5,197	5,012	4,144	4,723	-769	-14.0%
3339	Other General Purpose Mchnry.	34,461	34,817	33,988	32,247	26,714	-7,747	-22.5%
U.S.	Total	108,117,731	110,705,661	114,064,976	115,061,184	112,400,654	4,282,923	4.0%
31-33	Manufacturing	16,945,834	16,659,930	16,473,994	15,950,424	14,393,609	-2,552,225	-15.1%
333	Machinery Mfg.	1,444,438	1,398,226	1,377,950	1,332,854	1,166,221	-278,217	-19.3%
3331	Agricultural, Construction & Mining Mchnry.	220,938	207,328	199,497	193,884	176,458	-44,480	-20.1%
3332	Industrial Mchnry.	197,896	181,012	183,398	177,435	146,269	-51,627	-26.1%
3333	Commercial & Service Industry Mchnry.	128,572	130,751	129,077	125,312	111,610	-16,962	-13.2%
3334	VHAC & Commercial Refrigeration Eqpt.	170,863	177,520	178,626	179,211	156,821	-14,042	-8.2%
3335	Metalworking Mchnry.	255,350	239,484	232,695	220,206	187,361	-67,989	-26.6%
3336	Engine, Turbine & Transmission Eqpt.	112,920	112,560	112,406	104,525	96,501	-16,419	-14.5%
3339	Other General Purpose Mchnry.	357,899	349,571	342,251	332,281	291,201	-66,698	-18.6%

Sources: U.S. Census Bureau (2000, 2001, 2002, 2003b, 2004).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 5/05).

TABLE A9: MACHINERY AND TOTAL GROSS STATE PRODUCT FOR OHIO AND THE U.S., 1997-2003
(in millions of chained 2000 dollars, except percentages and ratios)

Industry Titles	Gross State Product							Percent Change (or Difference) 1997-2003
	1997	1998	1999	2000	2001	2002	2003	
Ohio: Total GSP	\$350,603	\$362,461	\$367,895	\$371,228	\$365,791	\$369,354	\$375,740	7.17%
Machinery GSP	\$7,134	\$7,920	\$6,771	\$6,566	\$6,030	\$5,554	\$5,567	-21.97%
As a Percentage Total	2.03%	2.19%	1.84%	1.77%	1.65%	1.50%	1.48%	-0.55%
U.S.: Total GSP	\$8,620,955	\$9,004,669	\$9,404,249	\$9,749,104	\$9,836,571	\$10,009,433	\$10,289,220	19.35%
Machinery GSP	\$102,579	\$113,799	\$104,960	\$109,296	\$100,402	\$94,453	\$93,653	-8.70%
As a Percentage Total	1.19%	1.26%	1.12%	1.12%	1.02%	0.94%	0.91%	-0.28%
Ohio as a Percentage of U.S.: Total	4.07%	4.03%	3.91%	3.81%	3.72%	3.69%	3.65%	-0.42%
Machinery	6.95%	6.96%	6.45%	6.01%	6.01%	5.88%	5.94%	-1.01%
Ohio::U.S. Concentration Ratio	1.71	1.73	1.65	1.58	1.62	1.59	1.63	-0.05

Source: U.S. Bureau of Economic Analysis (2005).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 6/05).

TABLE A10: VALUE-ADDED BY GROUP IN THE MACHINERY INDUSTRY FOR OHIO AND U.S., 1997-2003
(in millions of current dollars, except percentages)

Industry Titles	Value-Added						Percent Change (or Dif- ference) 1997-2003	
	1997	1998	1999	2000	2001	2002		2003
Ohio: 333 Machinery Industry Total	\$10,015.8	\$10,244.0	\$9,321.7	\$9,555.3	\$8,321.6	n.a.	\$7,856.5	-21.6%
3331: Agricultural, Construction & Mining Mchnry.	\$565.6	\$721.9	\$517.0	\$523.0	\$429.7	n.a.	\$576.0	1.8%
3332: Industrial Mchnry.	\$1,463.9	\$1,357.7	\$1,193.1	\$1,392.7	\$1,356.9	n.a.	\$835.6	-42.9%
3333: Commercial & Service Industry Mchnry.	\$729.5	\$542.0	\$590.8	\$649.4	\$648.7	n.a.	\$740.6	1.5%
3334: VHAC & Commercial Refrigeration Eqpt.	\$964.2	\$1,105.6	\$956.7	\$936.1	\$787.9	n.a.	\$799.5	-17.1%
3335: Metalworking Mchnry.	\$2,703.6	\$2,543.3	\$2,283.3	\$2,371.7	\$2,001.2	n.a.	\$1,758.8	-34.9%
3336: Engine, Turbine & Transmission Eqpt.	\$548.8	\$555.3	\$601.2	\$421.6	\$403.0	n.a.	\$592.4	7.9%
3339: Other General Purpose Mchnry.	\$3,040.1	\$3,418.2	\$3,179.7	\$3,260.9	\$2,694.3	n.a.	\$2,553.6	-16.0%
U.S.: 333 Machinery Industry Total	\$137,934.7	\$141,268.8	\$139,610.6	\$146,053.9	\$131,103.4	n.a.	\$125,782.1	-8.8%
3331: Agricultural, Construction & Mining Mchnry.	\$24,431.9	\$26,248.8	\$20,217.7	\$21,113.0	\$20,929.2	n.a.	\$20,821.3	-14.8%
3332: Industrial Mchnry.	\$19,456.1	\$17,746.2	\$19,599.1	\$24,816.2	\$17,447.9	n.a.	\$15,060.2	-22.6%
3333: Commercial & Service Industry Mchnry.	\$14,215.1	\$15,212.5	\$15,228.4	\$14,315.2	\$11,813.8	n.a.	\$11,490.9	-19.2%
3334: VHAC & Commercial Refrigeration Eqpt.	\$14,637.8	\$15,513.4	\$16,962.3	\$16,825.7	\$15,855.1	n.a.	\$16,548.4	13.1%
3335: Metalworking Mchnry.	\$19,331.1	\$19,239.8	\$18,419.7	\$19,274.1	\$16,029.9	n.a.	\$15,392.9	-20.4%
3336: Engine, Turbine & Transmission Eqpt.	\$14,530.6	\$15,106.6	\$17,013.4	\$16,078.9	\$18,962.0	n.a.	\$17,175.8	18.2%
3339: Other General Purpose Mchnry.	\$31,332.2	\$32,201.5	\$32,170.0	\$33,630.8	\$30,065.5	n.a.	\$29,292.6	-6.5%
Ohio as Percentage of U.S.: 333 Machinery Industry Total	7.3%	7.3%	6.7%	6.5%	6.3%	n.a.	6.2%	-1.0%
3331: Agricultural, Construction & Mining Mchnry.	2.3%	2.8%	2.6%	2.5%	2.1%	n.a.	2.8%	0.5%
3332: Industrial Mchnry.	7.5%	7.7%	6.1%	5.6%	7.8%	n.a.	5.5%	-2.0%
3333: Commercial & Service Industry Mchnry.	5.1%	3.6%	3.9%	4.5%	5.5%	n.a.	6.4%	1.3%
3334: VHAC & Commercial Refrigeration Eqpt.	6.6%	7.1%	5.6%	5.6%	5.0%	n.a.	4.8%	-1.8%
3335: Metalworking Mchnry.	14.0%	13.2%	12.4%	12.3%	12.5%	n.a.	11.4%	-2.6%
3336: Engine, Turbine & Transmission Eqpt.	3.8%	3.7%	3.5%	2.6%	2.1%	n.a.	3.4%	-0.3%
3339: Other General Purpose Mchnry.	9.7%	10.6%	9.9%	9.7%	9.0%	n.a.	8.7%	-1.0%

Note: n.a. - not available.

Source: U.S. Bureau of the Census (2003a, 2005a).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 6/05).

TABLE A11: CAPITAL EXPENDITURES BY GROUP IN THE MACHINERY FOR OHIO AND U.S., 1997-2003
(in millions of current dollars, except percentages)

Industry Titles	Capital Expenditures							Percent Change (or Dif- ference) 1997-2003
	1997	1998	1999	2000	2001	2002	2003	
Ohio: 333 Machinery Industry Total	\$640.2	\$774.1	\$509.3	\$586.8	\$455.1	n.a.	\$268.5	-58.1%
3331: Agricultural, Construction & Mining Mchnry.	\$43.5	\$44.5	\$24.5	\$20.9	\$17.1	n.a.	\$13.2	-69.7%
3332: Industrial Mchnry.	\$65.6	\$83.0	\$61.2	\$67.5	\$45.0	n.a.	\$36.6	-44.1%
3333: Commercial & Service Industry Mchnry.	\$46.0	\$73.5	\$30.8	\$50.9	\$93.4	n.a.	\$16.9	-63.2%
3334: VHAC & Commercial Refrigeration Eqpt.	\$57.1	\$68.4	\$76.2	\$108.9	\$50.5	n.a.	\$27.0	-52.7%
3335: Metalworking Mchnry.	\$213.0	\$263.5	\$141.9	\$143.7	\$92.4	n.a.	\$49.1	-76.9%
3336: Engine, Turbine & Transmission Eqpt.	\$41.8	\$33.2	\$27.5	\$18.4	\$15.6	n.a.	\$41.7	-0.3%
3339: Other General Purpose Mchnry.	\$173.2	\$208.0	\$147.2	\$176.4	\$141.2	n.a.	\$83.9	-51.5%
U.S.: 333 Machinery Industry Total	\$8,835.7	\$9,527.6	\$9,298.4	\$9,267.4	\$8,322.2	n.a.	\$5,385.2	-39.1%
3331: Agricultural, Construction & Mining Mchnry.	\$1,478.0	\$1,500.9	\$1,255.9	\$1,204.9	\$1,145.3	n.a.	\$867.7	-41.3%
3332: Industrial Mchnry.	\$1,439.7	\$1,607.2	\$1,385.7	\$1,522.4	\$1,427.6	n.a.	\$711.9	-50.6%
3333: Commercial & Service Industry Mchnry.	\$852.6	\$815.7	\$779.2	\$803.1	\$945.1	n.a.	\$504.6	-40.8%
3334: VHAC & Commercial Refrigeration Eqpt.	\$780.4	\$1,048.3	\$1,078.8	\$1,073.7	\$1,004.1	n.a.	\$468.2	-40.0%
3335: Metalworking Mchnry.	\$1,464.4	\$1,596.4	\$1,592.1	\$1,477.9	\$1,002.5	n.a.	\$695.5	-52.5%
3336: Engine, Turbine & Transmission Eqpt.	\$1,056.4	\$1,192.3	\$1,348.0	\$1,392.5	\$1,232.8	n.a.	\$964.6	-8.7%
3339: Other General Purpose Mchnry.	\$1,764.2	\$1,766.7	\$1,858.7	\$1,792.9	\$1,564.8	n.a.	\$1,172.7	-33.5%
Ohio as Percentage of U.S.: 333 Machinery Industry Total	7.2%	8.1%	5.5%	6.3%	5.5%	n.a.	5.0%	-2.3%
3331: Agricultural, Construction & Mining Mchnry.	2.9%	3.0%	1.9%	1.7%	1.5%	n.a.	1.5%	-1.4%
3332: Industrial Mchnry.	4.6%	5.2%	4.4%	4.4%	3.1%	n.a.	5.1%	0.6%
3333: Commercial & Service Industry Mchnry.	5.4%	9.0%	4.0%	6.3%	9.9%	n.a.	3.3%	-2.0%
3334: VHAC & Commercial Refrigeration Eqpt.	7.3%	6.5%	7.1%	10.1%	5.0%	n.a.	5.8%	-1.5%
3335: Metalworking Mchnry.	14.5%	16.5%	8.9%	9.7%	9.2%	n.a.	7.1%	-7.5%
3336: Engine, Turbine & Transmission Eqpt.	4.0%	2.8%	2.0%	1.3%	1.3%	n.a.	4.3%	0.4%
3339: Other General Purpose Mchnry.	9.8%	11.8%	7.9%	9.8%	9.0%	n.a.	7.2%	-2.7%

Note: n.a. - not available.

Source: U.S. Bureau of the Census (2003a, 2005a).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 6/05).

TABLE A12: INDEX VALUE OF THE DOLLAR, AND IMPORTS AND EXPORTS OF SELECTED MACHINERY, 1995-2003
(in millions of current dollars)

Subject	1995	1996	1997	1998	1999	2000	2001	2002	2003
Index Value of the Dollar	92.52	97.40	104.44	116.48	116.87	119.44	125.91	126.75	119.28
Exports summary:	\$64,729	\$69,805	\$81,503	\$77,593	\$73,860	\$84,810	\$77,925	\$72,498	\$73,244
Oil drilling, mining & construction	\$11,498	\$12,671	\$15,936	\$15,913	\$11,965	\$12,598	\$14,057	\$12,893	\$12,834
Industrial engines, pumps & compressors	\$9,504	\$9,593	\$11,724	\$10,919	\$10,992	\$11,602	\$11,992	\$11,601	\$11,690
Machine tools & metalworking machinery	\$5,241	\$5,799	\$6,503	\$6,274	\$6,208	\$7,468	\$5,816	\$5,174	\$5,253
Other industrial, agricultural & service machinery	\$38,486	\$41,742	\$47,340	\$44,487	\$44,695	\$53,142	\$46,060	\$42,830	\$43,467
Imports summary	\$55,151	\$57,377	\$63,133	\$69,045	\$69,305	\$76,914	\$71,575	\$69,529	\$75,098
Oil drilling, mining & construction	\$4,993	\$5,143	\$6,325	\$7,960	\$6,984	\$7,166	\$6,901	\$6,573	\$7,823
Industrial engines, pumps & compressors	\$5,798	\$5,863	\$6,088	\$6,817	\$7,715	\$9,453	\$9,780	\$9,034	\$9,210
Machine tools & metalworking machinery	\$6,718	\$7,569	\$8,315	\$8,892	\$7,757	\$8,659	\$7,416	\$5,943	\$6,193
Other industrial, agricultural & service machinery	\$37,642	\$38,802	\$42,405	\$45,376	\$46,849	\$51,636	\$47,478	\$47,979	\$51,872
Balance of trade:	\$9,578	\$12,428	\$18,370	\$8,548	\$4,555	\$7,896	\$6,350	\$2,969	-\$1,854
Oil drilling, mining & construction	\$6,505	\$7,528	\$9,611	\$7,953	\$4,981	\$5,432	\$7,156	\$6,320	\$5,011
Industrial engines, pumps & compressors	\$3,706	\$3,730	\$5,636	\$4,102	\$3,277	\$2,149	\$2,212	\$2,567	\$2,480
Machine tools & metalworking machinery	-\$1,477	-\$1,770	-\$1,812	-\$2,618	-\$1,549	-\$1,191	-\$1,600	-\$769	-\$940
Other industrial, agricultural & service machinery	\$844	\$2,940	\$4,935	-\$889	-\$2,154	\$1,506	-\$1,418	-\$5,149	-\$8,405
Exports as a percentage of imports:	117.4%	121.7%	129.1%	112.4%	106.6%	110.3%	108.9%	104.3%	97.5%
Oil drilling, mining & construction	230.3%	246.4%	252.0%	199.9%	171.3%	175.8%	203.7%	196.2%	164.1%
Industrial engines, pumps & compressors	163.9%	163.6%	192.6%	160.2%	142.5%	122.7%	122.6%	128.4%	126.9%
Machine tools & metalworking machinery	78.0%	76.6%	78.2%	70.6%	80.0%	86.2%	78.4%	87.1%	84.8%
Other industrial, agricultural & service machinery	102.2%	107.6%	111.6%	98.0%	95.4%	102.9%	97.0%	89.3%	83.8%

Sources: Federal Reserve Board (1999-2005); U.S. Bureau of Economic Analysis (2004: 90 & 92).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 5/05).

Table A13: Projections for Machinery Industry Employment by Group, Ohio and the U.S.: 2002-2012

NAICS Code	Shorter Industry Title	Jobs		Changes: 2002-2012	
		Actual 2002	Projected 2012	Number	Percent
Ohio	Total	5,813,800	6,376,100	562,300	9.7%
31-33	Manufacturing	884,100	842,700	-41,400	-4.7%
333	Machinery Mfg.	89,100	89,700	600	0.7%
3331 & 3336	Subtotal: Agricultural, Construction & Mining plus Engine, Turbine & Transmission Eqpt.*	10,600	8,900	-1,700	-16.0%
3332	Industrial Mchnry.	9,600	8,200	-1,400	-14.6%
3333	Commercial & Service Industry Mchnry.	7,100	6,700	-400	-5.6%
3334	VHAC & Commercial Refrigeration Eqpt.	8,800	9,000	200	2.3%
3335	Metalworking Mchnry.	27,100	27,900	800	3.0%
3339	Other General Purpose Mchnry.	25,900	29,000	3,100	12.0%
U.S.	Total Non-agricultural Wage & Salary Employment	144,014,000	165,319,000	21,305,000	14.8%
31-33	Manufacturing	15,307,000	15,149,000	-158,000	-1.0%
333	Machinery Mfg.	1,237,000	1,357,000	120,000	9.7%
3331	Agricultural, Construction & Mining Mchnry.	201,000	212,000	11,000	5.5%
3332	Industrial Mchnry.	132,000	125,000	-7,000	-5.3%
3333	Commercial & Service Industry Mchnry.	132,000	141,000	9,000	6.8%
3334	VHAC & Commercial Refrigeration Eqpt.	167,000	189,000	22,000	13.2%
3335	Metalworking Mchnry.	217,000	251,000	34,000	15.7%
3336	Engine, Turbine & Transmission Eqpt.	100,000	100,000	0	0.0%
3339	Other General Purpose Mchnry.	288,000	339,000	51,000	17.7%

Note: * - The Bureau of Labor Market Information makes no forecasts for industries with fewer than 5,000 employees. The figures for the combined groups are remainders obtained by subtraction.

Sources: Berman (2004), ODJFS/BLMI (2004).

Prepared by: Office of Strategic Research, Ohio Dept. of Development. Telephone 614/466-2116 (DL, 5/05).