

# Powder Metallurgy Part Manufacturing: 2002

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## 2002 Economic Census

*Manufacturing*

Industry Series



U S C E N S U S B U R E A U

*Helping You Make Informed Decisions*

U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU



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-- Not applicable for this report.

**Table 1. Historical Statistics for the Industry: 2002 and Earlier Years**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry and year <sup>1</sup>	Com-panies <sup>2</sup>	All estab-lish-ments <sup>3</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)	
			Number <sup>4</sup>	Payroll (\$1,000)	Number <sup>4</sup>	Hours (1,000)	Wages (\$1,000)					
332117, Powder metallurgy part manufacturing .....	2002..	120	138	9 311	339 541	7 004	13 888	216 411	730 686	539 498	1 285 569	'62 649
	2001..	N	N	10 802	398 108	7 707	15 306	238 417	688 062	571 664	1 275 219	89 310
	2000..	N	N	11 302	420 950	8 234	17 050	259 277	824 090	624 953	1 458 966	114 655
	1999..	N	N	10 837	394 867	8 005	17 043	246 263	836 729	613 127	1 476 771	172 546
	1998..	N	N	11 212	393 062	8 218	17 143	248 356	833 348	576 575	1 400 680	85 712
	1997..	114	129	10 858	371 007	7 925	16 769	237 897	798 124	550 191	1 332 721	80 977

<sup>1</sup>Statistics presented for years ending in 2 and 7 are census data. Interim census years are derived in a representative sample of manufacturing establishments canvassed in the Annual Survey of Manufactures (ASM).

<sup>2</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>3</sup>Includes establishments with payroll at any time during the year.

<sup>4</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 2. Industry Statistics for Selected States: 2002**

[States that are a disclosure or with less than 100 employees are not shown. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, explanation of terms, and geographical definitions, see note at end of table. For information on geographic areas followed by \*, see Appendix D. For meaning of abbreviations and symbols, see introductory text]

Industry and geographic area	All establishments <sup>2</sup>			All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
	E <sup>1</sup>	Total	With 20 employees or more	Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
332117, Powder metallurgy part manufacturing												
United States .....	1	138	79	9 311	339 541	7 004	13 888	216 411	730 686	539 498	1 285 569	'62 649
California .....	-	11	6	381	16 613	263	596	9 108	32 825	25 988	59 030	'1 370
Connecticut .....	-	4	2	265	8 718	200	242	6 196	17 453	9 653	27 005	'368
Indiana .....	-	8	6	1 157	44 566	842	1 593	24 304	107 703	56 485	169 405	'4 684
Pennsylvania .....	-	39	27	3 772	125 367	2 983	6 013	90 264	266 647	204 553	474 968	'22 888

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1-10 to 19 percent; 2-20 to 29 percent; 3-30 to 39 percent; 4-40 to 49 percent; 5-50 to 59 percent; 6-60 to 69 percent; 7-70 to 79 percent; 8-80 to 89 percent; 9-90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C. For geographical definitions, see Appendix D.

**Table 3. Detailed Statistics by Industry: 2002**

[Data based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). For information on confidentiality protection, sampling error, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Item	Value
<b>332117, Powder metallurgy part manufacturing</b>	
Companies <sup>1</sup> .....	number.. 120
All establishments <sup>2</sup> .....	number.. 138
Establishments with 1 to 19 employees .....	number.. 59
Establishments with 20 to 99 employees .....	number.. 50
Establishments with 100 employees or more .....	number.. 29
All employees <sup>3</sup> .....	number.. 9 311
Total compensation .....	\$1,000.. 424 497
Annual payroll .....	\$1,000.. 339 541
Total fringe benefits .....	\$1,000.. 84 956
Production workers, average for year .....	number.. 7 004
Production workers on March 12 .....	number.. 7 010
Production workers on May 12 .....	number.. 7 062
Production workers on August 12 .....	number.. 6 981
Production workers on November 12 .....	number.. 6 942
Production worker hours .....	1,000.. 13 888
Production worker wages .....	\$1,000.. 216 411
Total cost of materials .....	\$1,000.. 539 498
Materials, parts, containers, packaging, etc., used .....	\$1,000.. 400 587
Resales .....	\$1,000.. 26 215
Purchased fuels .....	\$1,000.. 13 906
Purchased electricity .....	\$1,000.. 28 343
Contract work .....	\$1,000.. 70 447
Quantity of electricity purchased for heat and power .....	1,000 kWh.. 601 802
Quantity of electricity generated less sold for heat and power .....	1,000 kWh.. -
Total value of shipments .....	\$1,000.. 1 285 569
Primary products value of shipments .....	\$1,000.. 1 237 230
Secondary products value of shipments .....	\$1,000.. 10 335
Total miscellaneous receipts .....	\$1,000.. 38 004
Value of resales .....	\$1,000.. 32 278
Contract receipts .....	\$1,000.. 842
Other miscellaneous receipts .....	\$1,000.. 4 884
Primary products specialization ratio .....	percent.. 99
Value of primary products shipments made in all industries .....	\$1,000.. 1 320 167
Value of primary products shipments made in this industry .....	\$1,000.. 1 237 230
Value of primary products shipments made in other industries .....	\$1,000.. 82 937
Coverage ratio .....	percent.. 94
Value added .....	\$1,000.. 730 686
Total inventories, beginning of year .....	\$1,000.. 161 831
Finished goods inventories .....	\$1,000.. 62 324
Work-in-process inventories .....	\$1,000.. 52 437
Materials and supplies inventories .....	\$1,000.. 47 070
Total inventories, end of year .....	\$1,000.. 141 599
Finished goods inventories .....	\$1,000.. 54 231
Work-in-process inventories .....	\$1,000.. 45 145
Materials and supplies inventories .....	\$1,000.. 42 223
Gross value of depreciable assets (acquisition costs) at beginning of year .....	\$1,000.. 785 084
Total capital expenditures (new and used) .....	\$1,000.. 62 649
Buildings and other structures (new and used) .....	\$1,000.. 3 127
Machinery and equipment (new and used) .....	\$1,000.. 59 522
Automobiles, trucks, etc., for highway use .....	\$1,000.. 1864
Computers and peripheral data processing equipment .....	\$1,000.. 1 956
All other expenditures for machinery and equipment .....	\$1,000.. 56 702
Total retirements .....	\$1,000.. 148 811
Gross value of depreciable assets at end of year .....	\$1,000.. 798 922
Depreciation charges during year .....	\$1,000.. 67 323
Total rental payments .....	\$1,000.. 13 126
Buildings and other structures .....	\$1,000.. 7 532
Machinery and equipment .....	\$1,000.. 5 594
Total other expenses <sup>4</sup> .....	\$1,000.. 168 221
Response coverage ratio <sup>5</sup> .....	percent.. 90
Repair and maintenance services of buildings and/or machinery <sup>4</sup> .....	\$1,000.. 30 137
Communications services <sup>4</sup> .....	\$1,000.. 3 491
Legal services <sup>4</sup> .....	\$1,000.. 2 795
Accounting, auditing, and bookkeeping services <sup>4</sup> .....	\$1,000.. 2 447
Advertising and promotional services <sup>4</sup> .....	\$1,000.. 1 213
Expensed computer hardware and supplies and purchased computer services <sup>4</sup> .....	\$1,000.. 5 226
Refuse removal (including hazardous waste) services <sup>4</sup> .....	\$1,000.. 1 716
Management consulting and administrative services <sup>4</sup> .....	\$1,000.. 2 299
Taxes and license fees <sup>4</sup> .....	\$1,000.. 8 749
All other expenses <sup>4</sup> .....	\$1,000.. 110 147

<sup>1</sup>For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Based on 2002 Annual Survey of Manufactures (ASM) sample data.

<sup>5</sup>A response coverage ratio is derived for this item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight) for those Annual Survey of Manufactures (ASM) establishments that reported to the weighted total employment for all ASM establishments classified in this industry.

Note 1: The amounts shown for other expenses reflect only those services that establishments purchase from other companies.

Note 2: The data in this table are based on the 2002 Economic Census and the 2002 Annual Survey of Manufactures (ASM). To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain sampling errors and nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 4. Industry Statistics by Employment Size: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Employment size class	E <sup>1</sup>	All establishments <sup>2</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>3</sup>	Payroll (\$1,000)	Number <sup>3</sup>	Hours (1,000)	Wages (\$1,000)				
332117, Powder metallurgy part manufacturing											
All establishments .....	1	138	9 311	339 541	7 004	13 888	216 411	730 686	539 498	1 285 569	'62 649
Establishments with—											
1 to 4 employees .....	8	18	b	D	D	D	D	D	D	D	D
5 to 9 employees .....	8	17	119	4 326	87	179	2 534	8 406	4 667	13 112	D
10 to 19 employees .....	5	24	342	12 560	238	469	6 935	26 741	13 574	40 440	'1 529
20 to 49 employees .....	—	25	822	30 146	592	1 164	18 312	64 522	50 966	116 259	'3 484
50 to 99 employees .....	—	25	1 869	63 693	1 335	2 680	38 829	153 891	140 076	310 392	'16 878
100 to 249 employees .....	1	21	3 038	113 547	2 306	4 369	72 189	233 353	190 463	422 217	'18 569
250 to 499 employees .....	2	7	2 563	96 062	1 988	4 089	63 419	197 876	117 315	315 514	'20 153
500 to 999 employees .....	—	1	f	D	D	D	D	D	D	D	D
1,000 to 2,499 employees .....	—	—	—	—	—	—	—	—	—	—	—
2,500 employees or more .....	—	—	—	—	—	—	—	—	—	—	—
Administrative records <sup>4</sup> .....	9	32	279	11 683	214	445	7 240	31 067	34 675	65 742	'3 196

<sup>1</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown where estimated data account for 10 percent or more of the figures shown: 1—10 to 19 percent; 2—20 to 29 percent; 3—30 to 39 percent; 4—40 to 49 percent; 5—50 to 59 percent; 6—60 to 69 percent; 7—70 to 79 percent; 8—80 to 89 percent; 9—90 percent or more.

<sup>2</sup>Includes establishments with payroll at any time during the year.

<sup>3</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

<sup>4</sup>Some payroll and sales data for small single-establishment companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. Data are also included in respective size classes shown.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 5. Industry Statistics by Primary Product Class Specialization: 2002**

[Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note at end of table. For meaning of abbreviations and symbols, see introductory text]

Industry or product class code	Industry or primary product class	All establishments <sup>1</sup>	All employees		Production workers			Value added (\$1,000)	Total cost of materials (\$1,000)	Total value of shipments (\$1,000)	Total capital expenditures (\$1,000)
			Number <sup>2</sup>	Payroll (\$1,000)	Number <sup>2</sup>	Hours (1,000)	Wages (\$1,000)				
332117	Powder metallurgy part manufacturing .....	138	9 311	339 541	7 004	13 888	216 411	730 686	539 498	1 285 569	'62 649
3321170	Powder metallurgy parts .....	138	9 311	339 541	7 004	13 888	216 411	730 686	539 498	1 285 569	'62 649

<sup>1</sup>Includes establishments with payroll at any time during the year.

<sup>2</sup>Number of employees figures represent average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

Note: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

**Table 6a. Products Statistics: 2002 and 1997**

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Product code	Product	Number of companies with shipments of \$100,000 or more	Quantity of production for all purposes	Product shipments	
				Quantity	Value (\$1,000)
332117	Powder metallurgy part manufacturing .....	2002.. N 1997.. N	X X	X X	1 320 167 1 316 959
3321170	Powder metallurgy parts .....	2002.. N 1997.. N	X X	X X	1 320 167 1 316 959
33211701	Copper and copper-base alloy .....	2002.. N 1997.. N	X X	X X	81 127 75 139
3321170106	Copper and copper-base alloy .....	2002.. 22 1997.. 28	X X	X X	81 127 75 139
33211702	Iron and steel powder metallurgy parts .....	2002.. N 1997.. N	X X	X X	818 608 692 773
3321170211	Iron and steel powder metallurgy parts .....	2002.. 48 1997.. 60	X X	X X	818 608 692 773
33211703	Tungsten metal and tungsten-base alloy powder metallurgy parts .....	2002.. N 1997.. N	X X	X X	165 556 140 553
3321170321	Tungsten metal and tungsten-base alloy powder metallurgy parts .....	2002.. 13 1997.. 14	X X	X X	165 556 140 553
33211704	Powder metallurgy materials, excluding bearings, gears, and machine cutting tools and all cemented carbide parts .....	2002.. N 1997.. N	X X	X X	160 830 303 221
3321170401	Aluminum and aluminum-base alloy powder metallurgy parts .....	2002.. 7 1997.. 12	X X	X X	20 166 42 821
3321170416	Nickel-cobalt-base super alloy powder metallurgy parts .....	2002.. 7 1997.. 13	X X	X X	18 368 37 691
3321170426	Other powder metallurgy materials, excluding bearings, gears, and machine cutting tools and all cemented carbide parts .....	2002.. 21 1997.. 26	X X	X X	122 296 222 709
3321170Y	Powder metallurgy parts, nsk, total .....	2002.. N 1997.. N	X X	X X	94 046 105 273
3321170YWW	Powder metallurgy parts, nsk, for nonadministrative-record establishments .....	2002.. N 1997.. N	X X	X X	78 172 102 455
3321170YWY	Powder metallurgy parts, nsk, for administrative-record establishments .....	2002.. N 1997.. N	X X	X X	15 874 2 818

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.

Table 6b. **Product Class Shipments for Selected States: 2002 and 1997**

[Not applicable for this report.]

**Table 7. Materials Consumed by Kind: 2002 and 1997**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. Data based on the 2002 Economic Census. For information on confidentiality protection, nonsampling error, and explanation of terms, see note 2 at end of table. For meaning of abbreviations and symbols, see introductory text]

Material code	Material consumed	Quantity	Delivered cost (\$1,000)
332117	<b>Powder metallurgy part manufacturing</b>		
0090001	Total materials .....	X	400 587
	.....2002..	X	416 852
	.....1997..	X	5 982
3320057	Fabricated metal products (excluding forgings) .....	X	N
	.....2002..	X	D
	.....1997..	X	D
33151001	Iron and steel castings (rough and semifinished) .....	X	D
	.....2002..	X	D
	.....1997..	X	
33120001	Steel shapes and forms (excluding castings, forgings, and fabricated metal products) .....	X	6 795
	.....2002..	X	N
	.....1997..	X	
331000AJ	Nonferrous metal shapes and forms (excluding castings, forgings, and fabricated metal products) .....	X	D
	.....2002..	X	N
	.....1997..	X	
331000AA	Metal powders .....	X	235 321
	.....2002..	X	206 645
	.....1997..	X	
00970099	All other materials and components, parts, containers, and supplies .....	X	59 264
	.....2002..	X	D
	.....1997..	X	
00971000	Materials, ingredients, containers, and supplies, nsk .....	X	88 969
	.....2002..	X	97 801
	.....1997..	X	

Note 1: For some establishments, data have been estimated from central unit values that are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: p-10 to 19 percent estimated; q-20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by S.

Note 2: The data in this table are based on the 2002 Economic Census. To maintain confidentiality, the Census Bureau suppresses data to protect the identity of any business or individual. The census results in this table contain nonsampling errors. Data users who create their own estimates using data from American FactFinder tables should cite the Census Bureau as the source of the original data only. For explanation of terms, see Appendix A. For full technical documentation, see Appendix C.