

Antifriction Bearings: 2001

Issued August 2002

MA332Q(01)-1

Current Industrial Reports

Current data are released electronically on Internet for all individual surveys as they become available. Use: <http://www.census.gov/mcd/>. Individual reports can be accessed by choosing "Current Industrial Reports (CIR)," clicking on "CIRs by Subsector;" then choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (WK format) to your personal computer.

These data are also available on Internet through the U.S. Department of Commerce and STAT-USA by subscription. The Internet address is: www.stat-usa.gov/. Follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information.

SUMMARY OF FINDINGS. The value of shipments of antifriction bearings, components

and parts was \$5,262.2 million in 2001, a 9-percent decrease from shipments of \$5,769.5 million in 2000. The 2001 total includes ball bearings, complete, unmounted, \$1,897.7 million, a 4-percent decrease from the 2000 value of shipments; tapered roller bearings, including cups and cones, unmounted, \$1,275.8 million, a decrease of 15 percent; roller bearings (except tapered), unmounted \$1,169.3 million, a decrease of 6 percent; mounted bearings (except plain), \$383.9 million, a decrease of 7 percent; and parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately, \$535.5 million, a decrease of 15 percent.

For general CIR information, explanation of general terms and historical note, see the appendix.

Address inquiries concerning these data to Primary Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Gloria Peebles-Butler, 301-457-4732.

For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-457-4673.

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



Table 1. Value of Shipments of Antifriction Ball and Roller Bearings, Components, and Parts by Product Class: 1992 to 2001
[Millions of dollars]

Product code	Product description	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992
332991	Ball and roller bearings.....	5,262.1	5,769.5	5,766.1	5,800.1	5,723.1	5,488.0	5,205.5	4,693.8	4,334.6	4,011.3
3329911	Ball bearings, complete, unmounted.....	1,897.7	1,978.0	1,974.4	2,024.2	2,095.9	1,989.1	1,896.7	1,676.2	1,616.8	1,484.2
3329913	Tapered roller bearings, including cups and cones, unmounted.....	1,275.8	1,501.9	1,531.5	1,538.8	1,420.9	1,408.8	1,283.1	1,139.2	1,001.0	935.6
3329915	Roller bearings (except tapered), unmounted.....	1,169.3	1,246.6	1,196.2	1,169.4	1,117.2	1,017.4	987.5	935.5	810.4	773.1
3329917	Mounted bearings (except plain).....	383.9	413.5	445.4	450.6	426.1	458.4	459.7	407.8	439.4	378.0
3329919	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately.....	535.5	629.5	618.6	617.1	663.0	614.3	578.5	535.1	467.0	440.4

Table 2. Quantity and Value of Shipments of Antifriction Ball and Roller Bearings, Components, and Parts: 2001 and 2000
[Quantity in thousands of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2001		2000	
			Quantity	Value	Quantity	Value
332991	Ball and roller bearings.....	(X)	(X)	5,262,146	(X)	5,769,501
3329911	Ball bearings, complete, unmounted.....	70	473,453	a/ 1,897,699	554,614	1,978,005
	Annular, including self-aligning:					
	Ground or precision:					
	Single-row conrad:					
	Miniature (below 9 mm outside diameter):					
3329911001	Regular (ABEC 1 and 3).....	3	(D)	(D)	(D)	(D)
3329911002	Precision (ABEC 5 and up).....	5	(S)	(S)	4,884	19,255
	Other regular (ABEC 1 and 3):					
3329911003	9 mm outside diameter through 30 mm outside diameter.....	8	49,978	a/ 50,946	78,313	a/ 69,791
3329911004	Over 30 mm outside diameter through 52 mm outside diameter.....	18	a/ 96,566	a/ 157,055	a/ 108,557	a/ 171,857
3329911005	Over 52 mm outside diameter through 100 mm outside diameter.....	20	31,376	182,876	36,812	205,751
3329911007	Over 100 mm outside diameter.....	18	4,320	182,699	a/ 4,504	185,232
	Other precision (ABEC 5 and up):					
3329911009	9 mm outside diameter through 30 mm outside diameter.....	8	4,737	61,637	c/ 4,786	c/ 59,917
3329911011	Over 30 mm outside diameter through 52 mm outside diameter.....	8	c/ 582	b/ 41,217	(S) c/	37,469
3329911012	Over 52 mm outside through 100 mm outside diameter.....	6	a/ 205	a/ 32,157	209	r/ 31,954
3329911013	Over 100 mm outside diameter.....	7	66	47,478	(S) c/	39,989
3329911014	Single-row maximum capacity type.....	7	875	13,203	866	13,054
3329911018	Integral shaft and integral spindle ball bearings.....	8	b/ 23,548	c/ 388,491	25,193	382,520
3329911020	Double-row.....	13	27,122	216,613	30,687	223,820
	Angular contact:					
3329911019	Regular.....	11	603	56,707	633	54,035
3329911023	Precision.....	5	(D)	(D)	(D)	(D)
3329911024	All other ground or precision bearings (ABEC 1 and up).....	3	(D)	(D)	(D)	(D)
3329911027	Ground bearings of less than ABEC 1 precision.....	5	3,858	34,095	3,874	34,574
3329911029	Unground (less than ABEC 1).....	17	192,040	111,757	220,694	132,375
	Thrust ball bearings:					
3329911033	Ground.....	14	7,155	25,620	7,025	25,492
3329911035	Unground.....	5	6,556	11,627	8,120	a/ 12,939
3329911055	Other ball bearings.....	18	c/ 15,802	(S)	15,602	a/ 220,673
3329913	Tapered roller bearings, including cups and cones, unmounted.....	20	225,410	1,275,764	276,947	1,501,898
3329913032	Cup and cone assemblies shipped as a set	17	(D)	(D)	(D)	(D)
3329913033	Cups shipped separately.....	14	(D)	(D)	(D)	(D)
3329913034	Cone assemblies shipped separately.....	16	(D)	(D)	(D)	(D)
3329915	Roller bearings (except tapered), unmounted.....	40	945,608	1,169,261	981,964	1,246,632
	Cylindrical roller bearings:					
3329915011	Regular (ABEC 1 and 3).....	26	246,883	297,843	259,196	333,262
3329915012	Precision (ABEC 5 and up).....	8	191	89,581	192	89,093
	Spherical roller bearings, including hourglass and barrel:					
3329915024	Single-row.....	4	(D)	(D)	(D)	(D)
3329915025	Double-row.....	5	678	159,027	742	168,808
3329915041	Needle roller bearings.....	14	531,852	434,893	562,187	472,460
3329915093	Other roller bearings, n.e.c.	15	(D)	(D)	(D)	(D)
3329917	Mounted bearings (except plain).....	19	7,411	383,888	8,361	413,473
3329917017	Ball bearings, unit and/or split-mounted.....	12	6,377	186,336	7,309	219,746
	Roller:					
3329917053	Unit-mounted.....	9	a/ 891	a/ 167,439	910	172,907
3329917055	Split-mounted.....	6	143	30,113	142	20,820
3329919	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately.....	64	(X)	535,534	(X)	629,493
3329919011	Balls (millions of units) 1/.....	21	20,963	213,256	23,078	236,591
3329919021	Other antifriction ball bearing components and parts, including unassembled ball bearings, cages, races, seals, shields, etc. (except balls).....	19	(X)	72,492	(X)	99,018
3329919031	Rollers (millions of units) 2/.....	21	11,725	114,121	r/ 14,432	r/ 145,759
	Other roller bearing parts and components (except rollers):					
3329919035	For tapered roller bearings (except cup and cone assemblies)..	9	(X)	(D)	(X)	75,213

Continued

Table 2. Quantity and Value of Shipments of Antifriction Ball and Roller Bearings, Components, and Parts: 2001 and 2000
[Quantity in thousands of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2001		2000	
			Quantity	Value	Quantity	Value
3329919036	For cylindrical roller bearings.....	8	(X)	(D)	(X)	(D)
3329919037	For spherical roller bearings.....	2	(X)	(D)	(X)	(D)
3329919049	For other roller bearings.....	12	(X)	30,271	(X)	(D)
3329919059	Housings and parts and components for housings, including housing closures, collars, spacers, sleeves, adapters, and other miscellaneous items.....	5	(X)	21,469	(X)	(D)

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

1/Production for all purposes of balls for 2001 and 2000 is 21.2 millions of units and 23.3 millions of units, respectively.

2/Production for all purposes of rollers for 2001 and 2000 is 8.7 millions of units and 10.9 millions of units, respectively.

Note: Percent of estimation of each item is indicated as follows: a/10 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Shipments, Exports, Imports, and Apparent Consumption of Antifriction Ball and Roller Bearings, Components, and Parts: 2001
[Quantity in thousands of units. Value and duty in thousands of dollars]

Product code	Product description	Manufacturers' shipments		Exports of domestic merchandise 1/		Imports for consumption 2/		Apparent consumption 3/	
		Quantity	Value f.o.b. plant	Quantity	Value at port	Quantity	C.i.f. and calculated duty	Quantity	Value
	Total	(X)	5,262,146	(X)	936,903	(X)	1,330,001	(X)	5,655,244
	Ball bearings, complete, unmounted:								
	Annular, including self-aligning:								
	Ground or precision:								
	Single-row conrad:								
3329911001, 002	Miniature (below 9 mm outside diameter), regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	(D)	(D)	750	6,566	21,575	10,436	(D)	(D)
3329911003, 009	Other regular and other precision (ABEC 5 and up): 9 mm outside diameter through 30 mm outside diameter..	54,715	112,583	1,041	15,490	283,210	129,589	336,884	226,682
3329911004, 011	Over 30 mm outside diameter through 52 mm outside diameter.....	97,148	198,272	656	10,216	188,505	151,918	284,997	339,974
3329911005, 012	Over 52 mm outside diameter through 100 mm outside diameter.....	31,580	215,033	771	13,765	4,244	108,224	35,053	309,492
3329911007, 013	Over 100 mm outside diameter.....	4,386	230,177	105	6,550	6,348	48,103	10,629	271,730
3329911014	Single-row maximum capacity type.....	875	13,203	216	8,669	19,043	10,748	19,702	15,282
3329911018	Integral shaft and integral spindle.....	23,548	388,491	1,463	29,021	35,229	53,965	57,314	413,435
3329911020	Double-row.....	27,122	216,613	131	2,110	7,142	13,545	34,133	228,048
3329911019, 023	Angular contact, regular and precision.....	(D)	(D)	9,673	64,551	16,769	110,806	(D)	(D)
3329911024, 027, 029, 035	All other ground or precision (ABEC 1 and up) and ground bearings of less than ABEC 1 precision; annular ball bearings including self-aligning, unground (less than ABEC 1); and unground thrust ball bearings.....	(D)	(D)	221	9,905	24,272	17,989	(D)	(D)
3329911033	Ground thrust ball bearings.....	7,155	25,620	1,092	5,482	7,630	13,428	13,693	33,566
3329911055	Other ball bearings.....	15,802	(S)	21,405	133,077	31,470	93,735	25,867	(S)
	Tapered roller bearings, including cups and cones, unmounted:								
33299113032	Cup and cone assemblies shipped as a set.....	(D)	(D)	4,047	94,499	27,616	75,289	(D)	(D)
33299113033	Cups shipped separately.....	(D)	(D)	5,788	26,198	46,820	45,627	(D)	(D)
33299113034	Cone assemblies shipped separately.....	(D)	(D)	8,814	102,937	34,521	69,998	(D)	(D)
3329915011, 012	Cylindrical roller bearings, regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	247,074	387,424	3,244	61,701	20,879	119,202	264,709	444,925
	Spherical roller bearings, including hourglass and barrel:								
33299115024	Single-row.....	(D)	(D)	338	11,179	448	5,699	(D)	(D)
33299115025	Double-row.....	678	159,027	3,241	22,717	4,284	57,379	1,721	193,689
33299115041	Needle rolling bearings.....	531,852	434,893	15,741	46,324	70,463	27,034	586,574	415,603
33299115093	Other roller bearings, n.e.c.	(D)	(D)	331	5,084	358	1,592	(D)	(D)
	Mounted bearings (except plain):								
329917017	Ball bearings, unit and/or split mounted.....	6,377	186,336	650	30,129	11,322	29,864	17,049	186,071
3329917053, 055	Roller bearings, unit and split mounted.....	1,034	197,552	184	10,245	653	5,965	1,503	193,272
	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers, sold separately:								
3329919011	Balls (millions of units).....	20,963	213,256	(X)	26,673	6,369	21,114	(X)	207,697
3329919021	Other antifriction ball bearings components and parts, including unassembled ball bearings, cages, races, seals, shields, etc. (except balls).....	(X)	72,492	(X)	44,626	-	-	(X)	27,866
3329919031	Rollers (millions of units).....	11,725	114,121	(X)	62,487	4,835	26,081	(X)	77,715
	Other roller bearing parts and components (except rollers):								
3329919035	For tapered roller bearings (except cup and cone assemblies)....	(X)	(D)	(X)	32,482	(X)	18,403	(X)	(D)
3329919036	For cylindrical roller bearings.....	(X)	(D)	(X)	7,649	(X)	15,644	(X)	(D)
3329919037	For spherical roller bearings.....	(X)	(D)	(X)	3,090	(X)	8,627	(X)	(D)
3329919049	For other roller bearings.....	(X)	30,271	(X)	20916	(X)	5,628	(X)	(D)
3329919059	Housings and parts and components for housing, including housing closures, collars, spacers, sleeves, adapters, and other miscellaneous items.....	(X)	21,469	(X)	22,565	(X)	34,369	(X)	(D)

- Represents zero. D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. S Does not meet publication standards.
X Not applicable.

1/Source: Census Bureau report EM 545, U.S. Exports.

2/Source: Census Bureau report IM 145, U.S. Imports for Consumption.

3/Apparent consumption is derived by subtracting exports from manufacturer's shipments plus imports.

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2001

Product code	Product description	Export code 1/	Import code 2/
	Ball bearings, complete, unmounted:		
	Annular, including self-aligning:		
	Ground or precision:		
	Single-row conrad:		
3329911001, 002	Miniature (below 9 mm outside diameter), regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	8482.10.5036	8482.10.5036
	Other regular and other precision (ABEC 5 and up):		
3329911003, 009	9 mm outside diameter through 30 mm outside diameter.....	8482.10.5044	8482.10.5044
3329911004, 011	Over 30 mm outside diameter through 52 mm outside diameter.....	8482.10.5048	8482.10.5048
3329911005, 012	Over 52 mm outside diameter through 100 mm outside diameter.....	8482.10.5052	8482.10.5052
3329911007, 013	Over 100 mm outside diameter.....	8482.10.5056	8482.10.5056
3329911014	Single-row maximum capacity type.....	8482.10.5032	8482.10.5032
3329911018	Integral shaft and integral spindle.....	8482.10.1000	8482.10.1040 8482.10.1080
3329911020	Double-row.....	8482.10.5060	8482.10.5060
3329911019, 023	Angular contact, regular and precision.....	8482.10.5016 8482.10.5024 8482.10.5028	8482.10.5016 8482.10.5024 8482.10.5028
3329911024, 027, 029, 035	All other ground or precision bearings (ABEC 1 and up) and ground bearings of less than ABEC 1 precision; annular ball bearings, including self-aligning, unground (less than ABEC 1); and unground thrust ball bearings.....	8482.10.5004 8482.10.5064	8482.10.5004 8482.10.5064
3329911033	Ground thrust ball bearings.....	8482.10.5008	8482.10.5008
3329911055	Other ball bearings.....	8482.10.5012 8482.10.5068	8482.10.5012 8482.10.5068
	Tapered roller bearings, including cups and cones, unmounted:		
3329913032	Cup and cone assemblies shipped as a set.....	8482.20.0020 8482.20.0030 8482.20.0040 8482.20.0060	8482.20.0020 8482.20.0030 8482.20.0040 8482.20.0060
3329913033	Cups shipped separately.....	8482.99.3010	8482.99.1540
3329913034	Cone assemblies shipped separately.....	8482.20.0070 8482.20.0080	8482.20.0070 8482.20.0080
3329915011, 012	Cylindrical roller bearings, regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	8482.50.0000	8482.50.0000
	Spherical roller bearings, including hourglass and barrel:		
3329915024	Single-row.....	8482.30.0040	8482.30.0040
3329915025	Double-row.....	8482.30.0080	8482.30.0080
3329915041	Needle roller bearings.....	8482.40.0000	8482.40.0000

Continued

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2001

Product code	Product description	Export code 1/	Import code 2/
3329915093	Other roller bearings, n.e.c.	8482.80.0020 8482.80.0040 8482.80.0060	8482.80.0020 8482.80.0040 8482.80.0060
3329917017	Mounted ball bearings (except plain): Ball bearings, unit and/or split mounted.....	8483.20.0010	8483.20.4040 8483.20.8040
3329917053, 055	Roller bearings, unit and split mounted.....	8483.20.0050	8483.20.4080 8483.20.8080
3329919011	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers, sold separately: Balls (millions of units).....	8482.91.0010 8482.91.0020	8482.91.0010 8482.91.0020
3329919021	Other antifriction ball bearings components and parts, including unassembled ball bearings, cages, races, seals, shields, etc. (except balls).....	8482.99.1010 8482.99.1050	8482.99.0500 8482.99.3500
3329919031	Rollers (millions of units).....	8482.91.0040 8482.91.0050 8482.91.0070 8482.91.0080 8482.91.0090	8482.91.0040 8482.91.0050 8482.91.0070 8482.91.0080 8482.91.0090
3329919035	Other roller bearing and components (except rollers): For tapered roller bearings (except cup and cone assemblies).....	8482.99.3050	8482.99.1580 8482.99.4500
3329919036	For cylindrical roller bearings.....	8482.99.7060	8482.99.2560 8482.99.6560
3329919037	For spherical roller bearings.....	8482.99.5000	8482.99.2520 8482.99.6510
3329919049	For other roller bearings.....	8482.99.7030 8482.99.7090	8482.99.2540 8482.99.6530
3329919059	Housings and parts and components for housings, including housing closures, collars, spacers, sleeves, adapters, and other miscellaneous items.....	8483.30.5020	8483.30.4040 8483.30.8020 8483.90.2000 8483.90.7000

n.e.c. Not elsewhere classified.

1/Source: 2001 edition, Harmonized System-based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2001).

Appendix.

General CIR Survey Information, Explanation of General Terms and Historical Note

GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

EXPLANATION OF GENERAL TERMS

Capacity. The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

Consumption. Materials used in producing or processing a product or otherwise removing the product from the inventory.

Exports. Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

Gross shipments. The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

Interplant transfers. Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

Inventories. The quantity or value of finished goods, work in progress, and materials on hand.

Machinery in place. The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

Net receipts. Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

Production. The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

Quantities produced and consumed. Quantities of each type of product produced by a company for internal consumption within that same company.

Quantity and value of new orders. The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

Quantity and value of shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Stocks. Total quantity of ending finished inventory.

Unfilled orders (backlog). Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

HISTORICAL NOTE

Data on antifriction bearings have been collected by the Census Bureau since 1972. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.