

Metalworking Machinery: 2005

Issued July 2006

Summary

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Current Industrial Reports

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

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Larry Blumberg, 301-763-4744.

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

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Economics and Statistics Administration
U.S. CENSUS BUREAU

Table 1. Value of Shipments, Including Exports of Metalworking Machinery by Class of Product: 2005
[Thousands of dollars]

Product code	Product description	2005
	Metalworking machinery.....	2,800,272
	Metal cutting type 1/ 2/ 3/.....	2,079,874
333512A1	Boring and drilling machines.....	110,971
33351211	Gear cutting machines 1/.....	(D)
33351221	Grinding and polishing machines (except gear-tooth grinding, lapping, polishing, and buffing machines).....	265,035
33351231	Lathes 2/ 3/ 4/ 5/.....	248,240
33351241	Milling machines 2/ 6/.....	53,582
33351271	Machining centers (multifunction numerically controlled machines).....	619,563
33351281	Station type machines	104,481
33351291	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, etc.).....	431,962
3335126111	Remanufactured metal cutting machine tools.....	93,404
	Metal forming type 7/ 8/.....	720,398
33351311 pt.	Punching and shearing machines.....	125,808
33351311 pt.	Bending and forming machines.....	218,465
33351331	Presses (except forging) 7/.....	139,924
33351351	Other metal forming type machines 7/ 8/.....	206,547
3335137121	Remanufactured metal forming machine tools 8/.....	(D)

D Withheld to avoid disclosing data for individual companies. pt. Part.

1/For 2005, data for "Gear cutting machines" are included in total "Metal cutting type."

2/Data for "All lathes (turning machines) valued under \$3,025 each" and "All milling machines valued under \$3,025 each" are included in total "Metal cutting type."

3/For 2005, data for product code 3335123126, "Vertical NC turning machines," are included in total "Metal cutting type."

4/For 2005, product class 33351231, "Lathes," excludes the values for product code 3335123131, "All lathes (turning machines) valued under \$3,025 each."

5/For 2005, product class 33351231, "Lathes," excludes the values for product code 3335123126, "Vertical NC turning machines."

6/Product class 33351241, "Milling machines," excludes the value for product code 3335124101, "All milling machines valued under \$3,025 each."

7/For 2005, data for product codes 3335133101, "All presses valued under \$3,025 each" and 3335135101, "All other metal forming type machine tools valued under \$3,025 each," are included in total "Metal forming type."

8/For 2005, product code 3335137121 was included in product class 33351351 to avoid disclosing data for individual companies.

Note: For previous year data, see the summary report MQ333W(04)-5, "Metalworking Machinery," issued July 2005.

Table 2. Total Shipments and Unfilled Orders
 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2005			2004		
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
	Metalworking machinery.....	(X)	131,488	2,800,272	1,096,652	123,353	2,492,125	935,956
	Total metal cutting type machine tools.....	(X)	82,955	2,079,874	745,421	70,221	1,838,691	623,876
	Total metal forming type machine tools.....	(X)	48,533	720,398	351,231	53,132	653,434	312,080
	Metal cutting type machine tools valued at \$3,025 each or more 1/ 2/.....	(X)	31,587	1,948,673	710,795	25,905	1,762,817	588,998
	Metal cutting type machine tools valued under \$3,025 3/ 4/ 5/ 7/.....	(X)	50,800	37,797	632	43,820	29,790	464
333512A1	Boring and drilling machines 3/.....	32	7,200	110,971	54,593	3,118	145,969	49,240
	Boring machines valued at \$3,025 each or more:							
333512A103	Horizontal boring, drilling, and milling machines, including floor, table, rail mounted, and all other nonprecision boring machines (except boring lathes).....	7	(D)	(D)	(D)	(D)	(D)	(D)
333512A105	Precision and jig boring machines, including horizontal and vertical machines	3	(D)	(D)	(D)	c/ 1,519	b/ 90,956	36,322
333512A111	All drilling machines valued under \$3,025 each 3/.....	11	5,371	5,725	(D)	b/ 1,177	a/ 2,494	88
	Drilling machines valued at \$3,025 each or more:							
333512A113	Vertical upright drilling machines, including plain upright and heavy duty.....	1	(D)	(D)	115	(D)	(D)	(D)
333512A117	Deep hole drilling machines.....	5	c/ 141	c/ 34,418	(D)	b/ 203	c/ 36,914	b/ 3,289
333512A120	Multiple spindle drilling machines.....	10	(D)	(D)	c/ 11,331	(D)	(D)	(D)
333512A123	All other drilling machines.....	3	(D)	(D)	(X)	(D)	(D)	(D)
3335121200	Gear cutting machines, including gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines 1/ 6/.....	3	(D)	(D)	(D)	553	342,244	151,697
33351221	Grinding, polishing, buffing, honing, and lapping machines 4/.....	56	29,261	265,035	121,206	29,606	195,753	128,659
3335122101	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each 4/....	13	26,464	13,599	(D)	27,090	11,912	(D)
	All grinding, polishing, buffing, honing, and lapping machines valued at \$3,025 each or more:							
3335122110	External cylindrical grinding machines.....	11	c/ 792	69,110	48,194	(D)	(D)	(D)
3335122120	Internal cylindrical grinding machines.....	1	(D)	(D)	(D)	(D)	(D)	(D)
3335122122	Surface grinding machines.....	7	b/ 564	c/ 14,361	c/ 5,283	(D)	(D)	5,727
3335122136	All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335122142	Tool, cutter, and drill point grinding machines	11	305	57,372	(D)	218	38,911	(D)
3335122151	All other grinding machines, including planer type, and thread grinding machines.....	12	371	40,240	a/ 9,649	(D)	(D)	(D)
3335122156	Honing and lapping machines (except flat surface lapping machines), internal, including combination bore, hone, and external.....	5	348	50,933	(D)	(D)	(D)	(D)
3335122161	Flat surface lapping machines (except gear lapping)	4	(D)	(D)	c/ 276	(D)	(D)	(D)
3335122166	Polishing and buffing machines, including speed lathes and multistation type.....	9	b/ 210	a/ 14,187	(D)	b/ 244	b/ 9,955	(D)
33351231	Lathes 2/5/.....	(X)	4,852	248,240	43,822	4,038	232,063	60,509
	Numerically controlled:							
	Horizontal.....	5	4,169	235,865	42,500	3,212	187,580	36,328
	Single spindle NC turning machines:							
3335123107	Chuck sizes less than 10 inches.....	4	2,594	121,118	19,227	2,181	103,431	18,496
3335123116	Chuck sizes from 10 inches but less than 15 inches.....	4	(D)	(D)	(D)	(D)	(D)	(D)
3335123127	Chuck sizes 15 inches and over and multiple spindle NC turning machines.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335123126	Vertical NC turning machines 2/.....	3	(D)	(D)	(D)	70	31,287	23,200
3335123131	All lathes (turning machines) valued under \$3,025 each 5/.....	2	(D)	(D)	(X)	(D)	(D)	(X)
3335123134	All nonnumerically controlled lathes (turning machines) valued at \$3,025 each or more.....	8	c/ 683	c/ 12,375	b/ 1,322	c/ 756	b/ 13,196	b/ 981

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 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2005			2004		
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
33351241	Milling machines 5/.....	12	1,607	53,582	45,019	812	35,086	3,125
3335124101	All milling machines valued under \$3,025 each 5/.....	2	(D)	(D)	(X)	(D)	(D)	(X)
3335124125	All milling machines valued at \$3,025 or more.....	12	b/ 1,607	a/ 53,582	45,019	a/ 812	c/ 35,086	a/ 3,125
33351271	Machining centers.....	14	12,747	619,563	154,365	9,308	475,206	114,856
	Drill, mill, and bore, vertical (automatic tool change):							
3335127101	Y-axis travel less than 20 inches.....	4	(D)	(D)	22,379	(D)	(D)	15,741
3335127106	Y-axis travel 20 inches through 26 inches.....	8	3,300	251,112	45,501	(D)	(D)	41,129
3335127111	Y-axis travel over 26 inches.....	5	669	74,138	19,093	639	66,111	13,814
	Drill, mill, and bore, horizontal (automatic tool change):							
3335127112	Under 500mm pallet and smaller.....	4	a/ 284	a/ 39,134	10,909	(D)	(D)	(D)
3335127113	500 to 800mm pallet.....	3	(D)	(D)	7,761	(D)	(D)	(D)
3335127114	Over 800mm pallet.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335127146	All other machining centers, including special machining, special adapting of standard machining and machining centers with indexing turret.....	4	3,649	59,138	(D)	(D)	(D)	(D)
33351281	Station type machines.....	7	90	104,481	93,395	(D)	(D)	(D)
3335128101	Dial or rotary, trunnion, and center column 6/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3335128106	Transfer 6/.....	3	(D)	(D)	52,966	(D)	(D)	(D)
3335128111	Other station type 6/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
33351291	Other metal cutting machine tools 7/.....	50	24,518	431,962	93,896	20,446	364,962	81,000
3335129101	Other metal cutting machine tools valued under \$3,025 7/.....	12	b/ 17,121	b/ 17,149	214	b/ 13,709	14,060	(D)
	Other metal cutting machine tools valued at \$3,025 each or more:							
3335129106	Broaching machines.....	6	c/ 53	b/ 8,456	a/ 3,412	(D)	(D)	a/ 1,561
	Sawing and cutoff machines:							
	Band saws:							
3335129122	Horizontal.....	7	1,540	28,346	(D)	(D)	(D)	(D)
3335129123	Vertical.....	5	1,263	21,681	(D)	(D)	(D)	(D)
3335129126	All other sawing and cutoff machines.....	9	613	18,358	4,397	470	16,466	5,575
3335129131	Spark erosion, ultrasonic, and electrolytic machines, all types.....	2	(D)	(D)	(D)	(D)	(D)	(D)
3335129136	Miscellaneous metal cutting machine tools.....	23	(D)	(D)	73,044	(D)	(D)	(D)
3335126111	Remanufactured metal cutting machine tools.....	19	568	93,404	33,994	496	46,084	34,414
	Metal forming type machine tools valued at \$3,025 or more.....	(X)	12,426	685,675	345,320	11,645	595,152	304,382
	Metal forming type machine tools valued under \$3,025 8/9/.....	(X)	36,107	34,723	650	41,422	50,753	648
33351311	Punching, shearing, bending, and forming machines 8/.....	62	12,911	344,273	159,461	9,134	323,816	148,250
3335131101	All punching and shearing machines valued under \$3,025 each 8/.....	9	b/ 1,963	a/ 1,835	148	(D)	(D)	(D)
	All punching and shearing machines valued at \$3,025 each or more:							
	Power operated only:							
3335131106	Punches, including combination punching and shearing machines.....	15	b/ 3,492	b/ 39,533	b/ 3,163	b/ 3,016	a/ 60,803	b/ 2,279
3335131111	Punching machines fixed position and two axes positioning table.....	3	(D)	(D)	(D)	(D)	(D)	(D)
	Plate shearing machines:							
3335131116	Mechanical.....	3	c/ 97	b/ 3,249	c/ 2,868	113	4,271	(D)
3335131121	Hydraulic.....	8	853	15,367	4,236	723	14,218	2,439
3335131126	Other power operated punching and shearing machines.....	4	(D)	(D)	(D)	(D)	(D)	(D)
3335131131	All bending and forming machines, power operated valued at under \$3,025 each.....	6	2,144	3,234	124	1,197	2,200	378
	All bending and forming machines, power operated valued at \$3,025 each or more:							
3335131136	Press brakes, all types.....	8	584	54,919	11,430	a/ 629	a/ 62,042	7,390
3335131145	Roll bending machines including sheet, plate, angles, bars, shapes and tubes, and rotary bending and forming machines, including rotary head.....	17	a/ 742	74,122	63,734	a/ 559	48,684	a/ 16,206
3335131161	Other bending and forming machines, including folders and slide bending machines.....	16	a/ 2,098	a/ 86,190	60,676	1,825	62,562	106,022

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 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2005			2004			Unfilled orders (value)
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)	
			Quantity	Value	(value)	Quantity	Value	(value)	
33351331	Presses (except forging) 9/.....	29	1,811	139,924	104,872	1,542	123,399	74,505	
3335133101	All presses valued under \$3,025 each 9/.....	6	(D)	(D)	(D)	(D)	(D)	(D)	
	All presses valued at \$3,025 each or more:								
3335133109	Mechanical presses: gap or C-frame.....	6	(D)	(D)	(D)	b/ 138	b/ 2,567	185	
3335133136	Automatic presses, strip or coil fed.....	6	(D)	(D)	33,344	(D)	(D)	(D)	
3335133143	Vertical, automatic, and all other mechanical presses.....	5	c/ 64	b/ 33,003	(D)	(D)	(D)	(D)	
	Hydraulic presses:								
	Vertical single action, all tonnages:								
3335133146	Housing or straight side type.....	4	(D)	(D)	5,244	(D)	(D)	(D)	
3335133151	Column type (open rod).....	4	(D)	(D)	14,784	(D)	(D)	(D)	
	Gap or C-frame:								
3335133156	15 tons and under.....	6	240	4,446	780	(D)	(D)	(D)	
3335133161	16 tons to 35 tons.....	4	65	2,903	1,169	(D)	(D)	(D)	
3335133166	Over 35 tons.....	4	50	3,029	c/ 3,684	59	3,893	c/ 3,092	
3335133171	Other hydraulic and pneumatic presses, including horizontal.....	7	c/ 918	b/ 16,704	11,038	c/ 708	a/ 14,300	b/ 6,671	
33351351	All other metal forming type machine tools 9/ 10/.....	30	1,811	206,547	81,259	2,166	150,137	82,005	
3335135101	All other metal forming type machine tools valued under \$3,025 each 9/.....	6	(D)	(D)	(D)	(D)	(D)	(D)	
	All other metal forming type machine tools valued at \$3,025 each or more:								
3335135118	Forging machines, including forging presses and die stamping presses, and die casting machines, all types.....	6	(D)	(D)	(D)	(D)	(D)	(D)	
3335135121	Riveting machines.....	5	486	10,654	(D)	(D)	(D)	(D)	
3335135126	All other metal forming type machine tools.....	24	(D)	(D)	80,127	(D)	(D)	(D)	
3335137121	Remanufactured metal forming machine tools 10/.....	5	(D)	(D)	5,261	a/ 65	7,529	7,050	

D Withheld to avoid disclosing data for individual companies. X Not applicable.

1/For 2005, product code 3335121200 is included in the total for "Metal cutting type machine tools valued at \$3,025 each or more."

2/Product code 3335123126 is included in the total for "Metal cutting type machine tools valued at \$3,025 each or more," but excluded from product class 33351231.

3/For 2005, "Unfilled orders (value)" for product code 333512A111 is included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 333512A1.

4/"Unfilled orders (value)" for product code 3335122101 is included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 33351221.

5/Product codes 3335123131 and 3335124101 are included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from from product classes 33351231 and 33351241, respectively.

6/For 2004, product codes 3335121200, 3335128101, 3335128106, and 3335128111 were combined to avoid disclosing data for individual companies.

7/For 2004, "Unfilled orders (value)" for product code 3335129101 was included in the total for "Metal cutting type machine tools valued under \$3,025," but excluded from product class 33351291.

8/For 2004, product code 3335131101 was included in the total for "Metal forming type machine tools valued under \$3,025," but excluded from product class 33351311.

9/Product codes 3335133101 and 3335135101 are included in the total for "Metal forming type machine tools valued under \$3,025," but excluded from product classes 33351331 and 33351351, respectively.

10/For 2005, product code 3335137121 for shipments is included in product class 33351351 to avoid disclosing data for individual companies.

Note: This report includes complete machines only. Percent of estimation of each item is indicated as follows: a/16 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 of Numerically Controlled Machines and Exports: 2005 and 2004
 [Quantity in units. Value in thousands of dollars]

Product description	2005			2004		
	Shipments of numerically controlled machines		Export shipments (value) 1/	Shipments of numerically controlled machines		Export shipments (value) 1/
	Quantity	Value		Quantity	Value	
Metalworking machinery.....	22,690	1,746,266	680,209	16,813	1,394,202	469,359
Metal cutting type machine tools 2/.....	21,924	1,562,709	522,280	15,983	1,223,133	372,926
Boring and drilling machines 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Gear cutting machines 2/.....	(D)	(D)	(D)	(D)	(D)	(D)
Grinding, polishing, buffing, and lapping machines.....	506	115,008	62,119	494	81,172	(D)
Valued under \$3,025 each, external cylindrical grinding machines (plain and universal), and surface grinding machines, all types.....	(D)	(D)	53,919	451	77,879	(D)
Honing, lapping, polishing and buffing machines.....	(D)	(D)	8,200	43	3,293	(D)
Horizontal NC turning machines, valued at \$3,025 or each or more.....	4,169	235,865	72,516	3,212	187,580	58,372
Single spindle NC turning machines:						
Chuck sizes less than 10 inches.....	2,594	121,118	(D)	2,181	103,431	(D)
Chuck sizes over 10 inches but less than 15 inches.....	(D)	(D)	(D)	(D)	(D)	(D)
Chuck sizes 15 inches and over and multiple spindle.....	(D)	(D)	(D)	(D)	(D)	21,756
Vertical NC turning machines valued at \$3,025 each or more 2/.....	(D)	(D)	(D)	70	31,287	(D)
Nonnumerically controlled turning machines valued at \$3,025 or more.....	(X)	(X)	1,151	(X)	(X)	(D)
Milling machines 2/.....	1,406	49,624	(D)	(D)	(D)	(D)
Machining centers 3/.....	12,747	619,563	179,531	9,308	475,206	107,901
Drill, mill and bore, vertical (automatic tool change) 3/.....	(D)	(D)	(D)	7,422	387,422	(D)
Y-axis travel less than 20 inches 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
Y-axis travel 20 inches through 26 inches.....	3,300	251,112	65,505	(D)	(D)	(D)
Y-axis travel over 26 inches 3/.....	669	74,138	(D)	639	66,111	(D)
Drill, mill and bore, horizontal (automatic tool change) 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
Under 500mm pallet 3/.....	284	39,134	(D)	(D)	(D)	(D)
500mm-800mm pallet 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
Over 800mm pallet 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
All other machining centers.....	3,649	59,138	(X)	(D)	(D)	(D)
Station type machines, and other metal cutting machine tools.....	2,032	309,302	100,493	1,055	275,146	69,026
Remanufactured metal cutting machines 2/.....	444	50,876	(D)	319	25,387	(D)
Metal forming type machine tools 4/.....	766	183,557	157,929	830	171,069	96,433
Punching, shearing, bending, and forming machines.....	600	103,683	65,412	642	105,753	53,684
Punching and shearing machines.....	249	57,191	24,270	(D)	(D)	27,669
All bending and forming machines, power operated.....	351	46,492	41,142	(D)	(D)	26,015
Presses (except forgings) 4/.....	(D)	(D)	23,521	31	13,345	14,833
All other metal forming type machine tools 4/ 5/.....	(D)	(D)	(D)	157	51,971	27,916
Remanufactured metal forming machines 4/ 5/.....	(D)	(D)	(D)	(D)	(D)	(D)

D Withheld to avoid disclosing data for individual companies. X Not applicable.

1/Data includes the value of all types of machines exported, as reported by MQ333W survey panel.

2/Data were included in total "Metal cutting type machine tools."

3/For 2005, data are included in total "Machining centers."

4/For 2005, data are included in total "Metal forming type machine tools."

5/For 2004, data were included in "All other metal forming type machine tools."

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2005 and 2004
 [Quantity in units. Value in thousands of dollars]

Product description	Manufacturers' shipments		Exports of domestic merchandise 1/2/		Imports for consumption 1/3/	
	Quantity	Value	Quantity	Value at port	Quantity	Value 4/
2005						
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines valued at \$3,025 each or more.....	(D)	(D)	387	15,433	894	71,107
Drilling machines:						
Valued under \$3,025 each.....	5,371	5,725	11,836	7,978	187,953	22,873
Valued at \$3,025 each or more.....	(D)	(D)	1,088	33,679	1,051	77,390
Gear cutting machines.....	(D)	(D)	24,959	54,114	790	124,998
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	26,464	13,599	98,997	11,752	816,681	28,481
Valued at \$3,025 each or more.....	2,797	251,436	1,988	75,648	5,160	326,776
Lathes (turning machines) under \$3,025.....	(D)	(D)	2,588	3,765	26,054	17,147
Horizontal NC turning machines.....	4,169	235,865	490	50,013	6,689	753,014
Vertical NC turning machines.....	(D)	(D)	86	17,378	395	85,049
Nonnumerically controlled turning machines.....	683	12,375	1,632	35,408	4,014	67,290
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	3,662	5,632	13,686	9,237
Valued at \$3,025 each or more.....	1,607	53,582	1,156	39,741	4,934	115,623
Machining centers (multifunction NC machines).....						
Drill, mill, and bore, vertical (automatic tool change):						
Y-axis travel less than 20 inches and 20 inches through 26 inches.....	(D)	(D)	1,088	155,107	3,313	349,231
Y-axis travel 26 inches and over.....	669	74,138	62	9,382	566	82,346
Drill, mill, and bore, horizontal (automatic tool change).....	(D)	(D)	-	-	1,720	476,597
Other machining centers.....	3,649	59,138	267	23,127	104	40,092
Station type machines.....	90	104,481	62	15,236	287	186,305
Other metal cutting machine tools:						
Valued under \$3,025 each.....	17,121	17,149	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	7,397	414,813	13,727	420,841	8,600	443,723
Punching and shearing machines:						
Valued under \$3,025 each.....	1,963	1,835	12,289	5,977	13,151	4,461
Valued at \$3,025 each or more.....	(D)	(D)	2,388	86,722	2,239	134,641
Bending and forming machines:						
Valued under \$3,025 each.....	2,144	3,234	28,100	11,368	107,643	13,945
Valued at \$3,025 each or more.....	3,424	215,231	3,058	110,256	10,362	284,839
Presses (except forging presses).....	1,811	139,924	7,038	80,883	15,693	203,122
All other metal forming type machine tools:						
Valued under \$3,025 each.....	(D)	(D)	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Forging machines, including forging presses and die stamping presses, and die casting machines, all types.....	(D)	(D)	1,087	70,979	6,235	199,437
Other metal forming machines.....	(D)	(D)	(NA)	(NA)	(NA)	(NA)
2004						
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines valued at \$3,025 each or more.....	1,519	90,956	285	17,493	813	53,589
Drilling machines:						
Valued under \$3,025 each.....	1,177	2,494	8,947	4,966	261,861	22,525
Valued at \$3,025 each or more.....	422	52,519	1,315	29,526	1,180	50,118
Gear cutting machines 5/.....	553	342,244	1,192	43,044	512	64,729
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	27,090	11,912	75,324	10,770	892,674	31,984
Valued at \$3,025 each or more.....	2,516	183,841	2,220	86,238	4,693	247,637
Lathes (turning machines) under \$3,025.....	(D)	(D)	3,327	3,207	19,974	14,641

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 2005 and 2004
 [Quantity in units. Value in thousands of dollars]

Product description	Manufacturers' shipments		Exports of domestic merchandise 1/2/		Imports for consumption 1/3/	
	Quantity	Value	Quantity	Value at port	Quantity	Value 4/
Horizontal NC turning machines.....	3,212	187,580	414	43,921	5,062	562,744
Vertical NC turning machines.....	70	31,287	34	6,888	399	68,303
Nonnumerically controlled turning machines.....	756	13,196	1,147	14,728	3,233	71,146
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	3,375	4,781	14,350	8,620
Valued at \$3,025 each or more.....	812	35,086	997	26,971	4,467	118,177
Machining centers (multifunction NC machines).....	9,308	475,206	1,257	139,883	5,030	737,124
Drill, mill, and bore, vertical (automatic tool change):						
Y-axis travel less than 20 inches and 20 inches through 26 inches.....	6,783	321,311	1,012	113,529	2,478	215,743
Y-axis travel 26 inches and over.....	639	66,111	55	7,518	528	76,765
Drill, mill, and bore, horizontal (automatic tool change).....	(D)	(D)	-	-	1,444	397,388
Other machining centers.....	1,886	87,784	190	18,836	580	47,228
Station type machines 5/.....	(D)	(D)	76	19,648	500	203,269
Other metal cutting machine tools:						
Valued under \$3,025 each.....	13,709	14,060	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	6,737	350,902	13,048	415,523	7,741	364,857
Punching and shearing machines:						
Valued under \$3,025 each.....	(D)	(D)	10,704	4,328	18,820	4,095
Valued at \$3,025 each or more.....	4,924	148,328	1,768	72,137	2,069	109,049
Bending and forming machines:						
Valued under \$3,025 each.....	1,197	2,200	20,924	8,012	100,782	13,574
Valued at \$3,025 each or more.....	3,013	173,288	2,284	82,123	12,655	265,180
Presses (except forging presses).....	1,542	123,399	4,858	65,329	28,312	136,497
All other metal forming type machine tools:						
Valued under \$3,025 each.....	(D)	(D)	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Forging machines, including forging presses and die stamping presses, and die casting machines, all types.....	(D)	(D)	49	2,500	28	2,330
Other metal forming machines.....	2,166	150,137	(NA)	(NA)	(NA)	(NA)

- Represents zero. D Withheld to avoid disclosing data for individual companies. NA Not available.

1/For a comparison of North American Industry Classification System (NAICS)-based product codes, Schedule B export codes, and HTSUSA import codes, see Table 5.

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

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

4/Dollar value represents the c.i.f. (cost, insurance, and freight) value at first port of entry in the United States plus import duties.

5/In 2004, "Manufacturers' shipments" data for "Station type machines" were combined with "Gear cutting machines" to avoid disclosing data for individual companies.

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
	Boring machines, excluding multifunction NC machines, machining centers:		
	Machines valued at \$3,025 each or more:		
333512A103	Horizontal boring, drilling, and milling machines, including floor, table and rail mounted, and all other boring machines (except boring lathes).....	8459.31.0010 8459.31.0040 8459.31.0070 8459.39.0040 8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080	8459.31.0010 8459.31.0040 8459.31.0070 8459.39.0040 8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080
333512A105	Precision and jig boring machines, including horizontal, vertical, and all other precision boring machines.....	8459.10.0000	8459.10.0000
	Drilling machines, excluding machining centers:		
333512A111	All drilling machines valued under \$3,025 each.....	8459.29.0020	8459.29.0020
333512A113	Machines valued at \$3,025 each or more: Vertical, upright drilling machines, including plain upright and heavy duty.....	8459.29.0070	8459.29.0070
333512A119	Multiple spindle drilling machines (cluster of spindles driven from one central power unit): Adjustable joint and fixed center type AND		
333512A121	All other automatic multiple spindle drilling machines, including indexing turret head (fixed column and table).....	8459.29.0040	8459.29.0040
333512A117	Deep hole drilling machines.....	8459.21.0080	8459.21.0080
333512A123	All other drilling machines, including bench type sensitive vertical and radial.....	8459.29.0050 8459.29.0090	8459.29.0050 8459.29.0090
3335121100	Gear cutting machines, including gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines.....	8461.40.1050 8461.40.1070 8461.40.1090 8461.40.5040 8461.40.5060	8461.40.1020 8461.40.1030 8461.40.1040 8461.40.1060 8461.40.5040 8461.40.5050 8461.40.5070
	Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):		
3335122101	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each.....	8460.39.0020 8460.40.0020 8460.90.0020	8460.39.0020 8460.40.8020 8460.90.8020
3335122110	Machines valued at \$3,025 each or more: External cylindrical grinding machines AND		
3335122136	All other disc grinders, including bench, floor, snag, double spindle grinders, and abrasive belt grinders		
3335122151	All other grinding machines, including planer type, and thread grinding machines.....	8460.21.0080 8460.29.0010 8460.29.0030 8460.29.0050	8460.21.0080 8460.29.0010 8460.29.0030 8460.29.0050

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
3335122122	Surface grinding machines.....	8460.11.0080 8460.19.0010 8460.19.0050	8460.11.0080 8460.19.0010 8460.19.0050
3335122142	Tool, cutter, and drill point grinding machines, including universal and special.....	8460.31.0080	8460.31.0080
	Honing and lapping machines (except gear honing and lapping):		
3335122156	Internal, including combination bore, hone, and external (except flat surface lapping machines) AND		
3335122161	Flat surface lapping machines (except gear lapping) AND		
3335122166	Polishing and buffing machines (including speed lathes and multistation type).....	8460.40.0060 8460.40.0080 8460.90.0060 8460.90.0080	8460.40.4060 8460.40.8080 8460.90.4060 8460.90.8080
	Lathes (turning machines):		
3335123131	All lathes valued under \$3,025 each.....	8458.19.0020 8458.99.5060	8458.19.0020 8458.99.5060
	Machines valued at \$3,025 each or more:		
	Horizontal spindle:		
	Single spindle NC turning machine:		
3335123107	Chuck sizes less than 10".....	8458.11.0050	8458.11.0050
3335123116	Chuck sizes from 10" but less than 15".....	8458.11.0090	8458.11.0090
3335123127	Chuck sizes 15" and over, and multiple spindle NC turning machines.....	8458.11.0010	8458.11.0010
3335123126	Vertical spindle.....	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070
3335123134	Nonnumerically controlled turning machines valued at \$3,025 each or more.....	8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090	8458.19.0030 8458.19.0050 8458.19.0070 8458.19.0090 8458.99.1050 8458.99.5090
	Milling machines, excluding machining centers:		
3335124101	All milling machines valued under \$3,025 each.....	8459.59.0020 8459.69.0020	8459.59.0020 8459.69.0020
3335124125	All milling machines valued at \$3,025 each or more.....	8459.51.0080 8459.59.0030 8459.61.0080 8459.69.0050 8459.69.0070 8459.69.0090	8459.51.0080 8459.59.0030 8459.61.0080 8459.69.0050 8459.69.0070 8459.69.0090
	Machining centers (multifunctions NC machines):		
	Drill, mill, and bore, vertical (automatic tool change):		
3335127101	Y-axis travel less than 20" AND		
3335127106	Y-axis travel 20" through 26" AND		
3335127111	Y-axis travel over 26".....	8457.10.0015 8457.10.0025	8457.10.0015 8457.10.0025

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
3335127112	Drill, mill, and bore, horizontal (automatic tool change): Under 500mm pallet AND		
3335127113	500mm-800mm pallet AND		
3335127114	Over 800mm pallet.....	8457.10.0036 8457.10.0039	8457.10.0055 8457.10.0060 8457.10.0065 8457.10.0070
3335127146	All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret.....	8457.10.0045	8457.10.0075
	Station type machines:		
3335128101	Dial or rotary, trunnion, and center column AND		
3335128106	Transfer (free, palletized shuttle) AND		
3335128111	Other station type.....	8457.20.0010 8457.20.0090 8457.30.0010 8457.30.0090	8457.20.0010 8457.20.0090 8457.30.0010 8457.30.0090
	Other metal cutting machine tools:		
3335129101	Other metal cutting machine tools, valued under \$3,025.....	8459.70.0060 8461.20.0070 8461.30.0040 8461.50.0020 8461.90.6020 8461.90.6050	8459.70.8060 8461.20.8070 8461.30.8040 8461.50.8020 8461.90.6020 8461.90.6050
	Machines valued at \$3,025 each or more:		
3335129106	Broaching machines, including internal surface and all other broaching machines.....	8461.30.0060 8461.30.0080	8461.30.4060 8461.30.8080
	Sawing and cutoff machines:		
3335129122	Band saws - vertical AND		
3335129123	Band saws - horizontal AND		
3335129126	All other sawing and cutoff machines.....	8461.50.0050 8461.50.0090	8461.50.4050 8461.50.8090
	Spark erosion, ultrasonic and electrolytic machines all types.....		
3335129131		8456.20.0000 8456.30.0000 8456.99.3005 8456.99.3040 8456.99.3060 8456.99.3080	8456.20.1010 8456.20.1050 8456.30.1020 8456.30.1050 8456.30.1070 8456.99.3005 8456.99.3040 8456.99.3060 8456.99.3080
3335129136	Miscellaneous metal cutting machine tools, including rifling, centering, keyseating, pointing, chemfering, facing, shaving, grooving, countersinking, burring, reaming, screw and nut slotting machines, threading planers, and shapers.....	8456.10.0000 8459.70.0020 8459.70.0080 8461.20.0010 8461.20.0090	8456.10.1010 8456.10.1020 8459.70.4000 8459.70.8080 8461.20.4000

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
3335129136	Miscellaneous metal cutting machine tools, including rifling, centering, keyseating, pointing, chemfering, facing, shaving, grooving, countersinking, burring, reaming, screw and nut slotting machines, threading planers, and shapers (continued)	8461.90.3040 8461.90.3080 8461.90.6030 8461.90.6090	8461.20.8090 8461.90.3040 8461.90.3080 8461.90.6030 8461.90.6090
3335131101	Punching and shearing machines: All punching and shearing machines valued under \$3,025 each.....	8462.39.0020 8462.49.0020	8462.39.0020 8462.49.0020
	Machines valued at \$3,025 or more: Power operated only: Plate shearing machines (squaring, slitting, etc.):		
3335131116	Mechanical AND		
3335131121	Hydraulic AND		
3335131106	Punches, including combination punching and shearing machines AND		
3335131111	Punching machines fixed position and two axes positioning table AND		
3335131126	Other power operated punching and shearing machines.....	8462.31.0080 8462.39.0050 8462.41.0080 8462.49.0050	8462.31.0080 8462.39.0050 8462.41.0080 8462.49.0050
3335131131	Bending and forming machines: All bending and forming machines valued under \$3,025.....	8462.29.0020	8462.29.8025
	Machines valued at \$3,025 each or more:		
3335131136	Press brakes all types AND		
3335131145	Roll bending machines, including sheet, plate, angles, bars, shapes, and tubes, and rotary bending and forming machines, including rotary head AND		
3335131161	Other bending and forming machines, including folders.....	8462.21.0080 8462.29.0030 8462.29.0040 8462.29.0050	8462.21.4085 8462.21.8085 8462.29.4085 8462.29.8035 8462.29.8045 8462.29.8055
3335133101	Presses except forging presses: All presses valued under \$3,025 each.....	8462.99.0020	8462.99.8020
	Machines valued at \$3,025 each or more:		
3335133109	Mechanical presses: Gap or C-frame.....	8462.99.0030 8462.99.0040	8462.99.4030 8462.99.8045
	Vertical straight sided and arch frame, excluding knuckle joint, including cam and crank: Single action:		
3335133136	Automatic presses, strip or coil field AND		
3335133143	Vertical, automatic, and other mechanical presses, including end wheel type bulldozer, double and triple action, and transfer fed presses, four point and knuckle joint, excluding automated lines of standard equipment.....	8462.99.0060	8462.99.8060
	Hydraulic presses (metalworking only): Vertical single action, all tonnages:		
3335133146	Housing or straight side type AND		
3335133151	Column type (open rod) AND		
	Gap or C-frame:		
3335133156	15 tons and under AND		
3335133161	16 tons to 35 tons AND		

Table 5. Comparison of the North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes, and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
3335133166	Over 35 tons AND		
3335133171	Other hydraulic and pneumatic presses, including horizontal.....	8462.91.0060	8462.91.4060
		8462.91.0090	8462.91.8090
	All other metal forming type machine tools:		
3335135101	All other metal forming type machine tools valued under \$3,025 each.....	8463.20.0060	8463.20.0060
		8463.90.0060	8463.90.0060
	Machines valued at \$3,025 each or more:		
3335135118	Forging machines, including forging presses and die stamping presses, and die casting machines all types AND		
3335135121	Riveting machines (except hand held portable types) AND		
3335135126	All other metal forming type machine tools.....	8462.10.0030	8462.10.0030
		8462.10.0035	8462.10.0035
		8462.10.0055	8462.10.0055
		8454.30.0010	8454.30.0010
		8463.20.0080	8463.20.0080
		8463.90.0080	8463.90.0080

1/Source: 2006 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 (2006).

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 metalworking machinery have been collected by the Census Bureau since 1942. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library.