

Current Industrial Reports  
U.S. Department of Commerce  
Economics and Statistics Administration  
Bureau of the Census

Metalworking Machinery - First Quarter 1998

MQ35W(98)-1  
Issued June 9, 1998

Information about the scope of the survey, methodology, explanation of terms and historical notes for this survey may be found in the introduction of the 1995 Manufacturing Profiles, issued June 1997.

These data are also available through the U.S. Department of Commerce and STAT-USA Electronic Bulletin Board by subscription. To access, dial 202-482-3870 and follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information. The Internet address is: [stat-usa.gov/](http://stat-usa.gov/).

For mail or fax copies of the publication, contact the Manufacturing and Construction Division Information Center, 301-457-4673.

Address inquiries concerning these data to U.S. Department of Commerce, Bureau of the Census, Manufacturing and Construction Division, Washington, DC 20233, or call Larry Blumberg, 301-457-4744.

Table 1. Total Shipments and Unfilled Orders  
 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
	Metalworking machinery.....	(X)	94,507	1,278,740	2,481,925	81,173	1,432,672	2,155,998
	Total metal cutting type machine tools.....	(X)	74,067	960,212	1,667,899	64,691	1,087,168	1,417,545
	Total metal forming type machine tools.....	(X)	20,440	318,528	814,026	16,482 r/	345,504	738,453
	Metal cutting type machine tools valued at \$3,025 each or more.....	(X)	10,235	942,106	1,665,270	11,191	1,071,649	1,415,335
	Metal cutting type machine tools valued under \$3,025 1/ 2/ 3/.....	(X)	63,832	18,106	2,629	53,500	15,519	2,210
3541D 00	Boring and drilling machines.....	37	1,872	46,023	106,235	1,601	51,341	107,529
3541D 10	All boring machines valued under \$3,025 each ....	-	(X)	(X)	(X)	(X)	(X)	(X)
	Boring machines valued at \$3,025 each or more:							
3541D 16	Horizontal boring, drilling, and milling machines, includes floor, table and mounted.....	5	49	4,470 a/	11,202	39	1,640 a/	7,335
3541D 40	Precision boring machines, including horizontal and vertical boring machines 4/.....	7	(D)	(D)	(D)	(D)	(D)	(D)
3541D 46	Jig boring and all other boring machines, excluding boring lathes 4/.....	1 c/	187 c/	13,880 c/	45,873 b/	258 b/	20,369	46,033
3541D 05	All drilling machines valued under \$3,025 each.....	14 c/	1,449 b/	2,292 b/	200 c/	1,097 b/	1,712 b/	226
	Drilling machines valued at \$3,025 each or more:							
3541D 15	Vertical upright drilling machines, including plain upright and heavy duty.....	8	43 a/	481	882	36 b/	381	1,022
3541D 25	Radial drilling machines, including plain and universal.....	-	(X)	(X)	(X)	(X)	(X)	(X)
3541D 35	Deep hole drilling machines .....	4 c/	26 c/	2,673 c/	3,649 b/	26 b/	2,673 c/	3,649
	Multiple spindle drilling machines:							
3541D 45	Adjustable joint and fixed center types 5/ 6/..	5	(D)	(D)	(D) r/	63 r/	971	(D)
3541D 55	All other automatic multiple spindle drilling machines 5/.....	3 b/	44 b/	2,296 c/	12,912 c/r/	18 b/r/	3,285 c/r/	8,226
3541D 65	All other drilling machines n.e.c. 6/.....	6 a/	74 b/	19,931	31,517 b/	64 b/	20,310	41,038
35413 00	Gear cutting machines, includes gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines.....	8 a/	133	45,297	120,051 a/	191 r/	68,204	126,484
35414 00	Grinding, polishing, buffing, honing, and lapping machines.....	84	59,003	141,608	253,903	48,886	174,070	234,254
35414 10	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each.....	20 c/	57,002 c/	12,111 c/	1,864	46,559	9,643 r/	1,354
	All grinding, polishing, buffing, honing, and lapping machines valued at \$3,025 each or more:							
	External cylindrical grinding machines:							
35414 11	Plain, including angular wheel types 7/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
35414 13	Universal 7/.....	3	27	7,568 a/	10,496	26	6,496	12,726
35414 14	Roll, chucking, centerless, and other cylindrical grinding machines.....	12 b/	165 a/	38,865	104,499 b/	347 a/	68,039	101,074
35414 33	Surface grinding machines, rotary table type, horizontal and vertical 8/.....	6 c/	307 c/	9,782	(D) c/r/	306 c/r/	8,937	(D)
35414 34	Surface grinding machines, reciprocating table type, including face grinders, horizontal and vertical 9/.....	5	(D)	(D)	(D)	(D)	(D)	(D)
35414 37	Surface grinding machines, reciprocating table type, including face grinders, hand surface type 9/.....	2 a/	222 b/	3,117 b/	1,951	247	3,412	1,731
35414 42	All other disc grinders, includes bench, floor, snag, double spindle grinders, and abrasive belt grinders 8/.....	4 c/	74 c/	1,989 b/	15,285 r/	83 a/r/	1,759 b/r/	17,893
35414 52	Tool and cutter grinding machines.....	14 b/	170 b/	29,593 a/	21,073 a/	129	25,727	16,910
35414 53	Drill point grinders 10/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
35414 55	All other grinding machines, n.e.c., including internal cylindrical type, planer type, and thread grinding machines 10/.....	20 c/	697 b/	24,793 a/	40,853 c/	776 b/	24,952	39,714
35414 75	Honing and lapping machines, internal, including combination bore, hone, and external 11/.....	5	173	5,002	(D)	(D)	(D) b/	4,835
35414 79	Flat surface lapping machines, (except gear lapping) 11/.....	4	70	2,413 b/	11,261	311 r/	16,859	813
35414 84	All other honing and lapping or polishing							

Table 1. Total Shipments and Unfilled Orders  
 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
	and buffing machines, including speed lathes and multistation type.....	15 a/	96	6,375	46,621 a/	102 r/	8,246	37,204
35415 00	Lathes.....	(X)	1,292	118,106	131,501	1,311	126,179	120,867
	Numerically controlled:							
	Horizontal.....	12	985	88,673	49,424	986	97,295	49,668
35415 15	Multiple spindle NC turning machines 12/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
	Single spindle NC turning machines:							
35415 19	Chuck sizes up to and including 6" 12/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
35415 21	Chuck sizes over 6" but less than 10" 12/..	7	(D)	(D)	(D)	(D)	(D)	(D)
35415 11	Chuck sizes from 10" but less than 15".....	8	239	24,054	10,669	210	23,316	12,311
35415 12	Chuck sizes 15" and over 12/.....	-	746	64,619	38,755	776	73,979	37,357
35415 22	Vertical NC turning machines.....	6	55	19,875	57,004	55	19,951	49,414
35415 99	Nonnumerically controlled turning machines 1/.....	8	252	9,558	25,073	270	8,933	21,785
35415 09	All lathes (turning machines) valued under \$3,025 each 1/.....	1	(D)	(D)	(D)	(D)	(D)	(D)
	All lathes (turning machines) valued at \$3,025 each or more:							
35415 23	Engine or toolroom lathes, all types 13/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
	Automatic lathes:							
35415 83	Single spindle 13/.....	-	(X)	(X)	(X)	(X)	(X)	(X)
	Multiple spindle:							
35415 88	Bar (screw) machines 13/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
35415 67	Chucking machines 13/.....	1	(X)	(X)	(D)	(X)	(X)	(D)
35415 57	All other horizontal turning machines, including turret lathes and automatic between center lathes 13/.....	2	(D)	(D)	(X)	(D)	(D)	(X)
35415 86	All vertical turning machines 13/.....	1 b/	252	9,558	25,073 b/	270	8,933	21,785
35416 00	Milling machines 2/.....	24	1,024	102,347	221,974	1,055	104,104	199,620
35416 09	All milling machines valued under \$3,025 each 2/.....	5	(D)	(D)	(D)	(D)	(D)	(D)
	All milling machines valued at \$3,025 or more:							
35416 23	General purpose, knee milling machines, all types 14/.....	7	(D)	(D)	(D)	(D)	(D)	(D)
	Automatic:							
35416 32	Single spindle, multiple spindle and special purpose machines.....	4	38	2,746	6,313	37 r/	1,435	3,996
35416 53	Profile machines and duplicators 14/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
35416 62	All other milling machines, n.e.c., including planer type and thread milling machines 14/.....	12	986 c/	99,601 c/	215,661	1,018 c/	102,669 c/	195,624
3541A 00	Machining centers.....	23	2,659	264,312	213,153	2,880	313,595	235,579
	Drill, mill, and bore, vertical (automatic tool change):							
3541A 05	Y-axis travel less than 20 inches.....	8 b/	1,150 b/	69,114	17,189 b/	1,122 b/	66,847	16,905
3541A 07	Y-axis travel 20 inches through 26 inches.....	9 b/	890 b/	71,148	18,566 b/	934 b/	75,943	25,918
3541A 09	Y-axis travel over 26 inches.....	5 b/	148 b/	28,912 b/	15,082 b/	136 a/	26,495 b/	22,618
	Drill, mill, and bore, horizontal (automatic tool change):							
3541A 12	400mm pallet and smaller 15/.....	4	81	20,036	35,049	109	24,707	(D)
3541A 14	401mm-500mm pallet.....	5 b/	102 a/	27,928	23,641 b/	165 a/	43,991	25,393
3541A 16	501mm-630mm pallet 15/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
3541A 17	631mm-800mm pallet 15/.....	4	40	21,857	25,019	50	29,788	62,300
3541A 18	801mm-1000mm pallet 16/.....	3	(D)	(D)	7,002	(D)	(D)	7,101
3541A 21	Over 1000mm pallet 16/.....	3	18	16,833	49,125	24	20,862	55,525
3541A 19	All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret.....	6 c/	230 b/	8,484	22,480 b/	340	24,962	19,819
3541B 00	Station type machines.....	22	95	151,650	528,699	110	140,688	293,912
3541B 31	Dial or rotary, trunnion, and center column.....	10	23 a/	18,909	109,478	50	35,290	72,081
3541B 35	Transfer 17/.....	11	(D)	(D)	(D)	(D)	(D)	(D)
3541B 37	Other station type, n.e.c. 17/.....	3 b/	72 c/	132,741	419,221 c/	60 c/	105,398 c/	221,831
3541C 00	Other metal cutting machine tools 3/.....	64	6,975	89,953	91,818	8,168 r/	108,241	98,670
3541C 41	Other metal cutting machine tools n.e.c. valued under \$3,025 3/.....	15 c/	4,367 c/	2,787	(D) c/	5,355 c/t/	3,418	(D)
	Other metal cutting machine tools n.e.c.							

Table 1. Total Shipments and Unfilled Orders  
 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
3541C 51	valued at \$3,025 each or more: Broaching machines.....	5 c/	23 b/	2,630 b/	11,055 b/	26 b/	2,502 b/	13,336
	Sawing and cutoff machines:							
3541C 53	Power hack saws 18/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
3541C 55	Circular cutoff saws (cold) 18/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
3541C 59	Band saws 18/.....	11	1,164	16,458	(D)	1,212	17,516	(D)
3541C 61	All other sawing and cutoff machines 18/.....	11	238 b/	9,013	18,861 a/	273 b/	16,002	18,309
3541C 64	Spark erosion, ultrasonic, and electrolytic machines, all types	7	371	23,194	21,201	325	22,769	24,235
3541C 91	Miscellaneous metal cutting machine tools.....	25 b/	812	35,871 b/	40,701 b/	977 r/	46,034 a/r/	42,790
	Metal forming type machine tools valued at \$3,025 or more.....	(X)	5,061	306,809	811,175	4,991 r/	336,479	735,914
	Metal forming type machine tools valued under \$3,025 19/.....	(X)	15,379	11,719	2,851	11,491	9,025	2,539
35421 00	Punching, shearing, bending, and forming machines.....	80	4,055	130,040	171,701	3,834 r/	137,229 r/	169,839
35421 08	All punching and shearing machines valued under \$3,025 each.....	11 c/	162 b/	318 c/	137 b/	161 b/	299 c/	163
	All punching and shearing machines valued at \$3,025 each or more:							
	Power operated only:							
35421 11	Punches, including combination punching and shearing machines 20/.....	16 b/	1,024 c/	14,106	(D) a/	913 a/	13,657	4,357
35421 16	Punching machines fixed position and two axes positioning table 20/.....	5	116	25,656	20,177	138	28,123	15,275
	Plate shearing machines:							
35421 12	Mechanical 21/.....	5	45	12,977	(D)	(D)	(D)	(D)
35421 14	Hydraulic.....	12 a/	321	6,746	5,800	285 r/	5,824 r/	6,856
35421 19	Other power operated punching and shearing machines 21/.....	13 c/	372 b/	6,245	30,914 c/r/	402 r/	25,688 r/	33,199
35421 33	All bending and forming machines, power operated, valued under \$3,025 each 19/.....	7	663	782	(D)	485	641	421
	All bending and forming machines, power operated, valued at \$3,025 each or more:							
35421 34	Press brakes, all types.....	6 b/	232	14,604	16,536 b/	248	17,475	14,076
35421 37	Bending rolls, sheet, and plate 22/.....	7 c/	167 b/	2,258	2,070 c/r/	183 b/r/	2,605	(D)
35421 35	Bending rolls, angles, bars, shapes, and tubes 22/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
35421 43	Rotary bending and forming machines, including rotary head 22/.....	12 b/	209	17,678 b/	18,581 b/	188	12,947 a/r/	16,214
35421 47	Ram and press bending machines 23/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
35421 49	Other bending and forming machines, including folders 23/.....	20	744	28,670	77,486 b/	831 a/r/	29,970 a/	79,278
35422 00	Presses (except forgings).....	42	3,236	89,417	447,601	3,080 r/	96,287	382,333
35422 01	All presses valued under \$3,025 each 19/.....	6 b/	2,353 b/	1,749	(D)	2,268	1,742	155
	All presses valued at \$3,025 each or more:							
	Mechanical presses:							
	Open back inclinable, gap type:							
35422 12	50 tons and under.....	9	99 b/	2,310 b/	3,166	131	2,600	2,893
35422 02	51 tons to 120 tons.....	4 b/	33 c/	1,891 c/	3,187	34	2,221	3,251
35422 03	121 tons and over 24/.....	1	(D)	(D)	(D)	(D)	(D)	(D)
	Vertical straight sided and arch frame single action:							
35422 16	Single point 25/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
	Two point:							
35422 17	300 tons and under 25/.....	3 b/	42 b/	8,145 b/	9,389	26	5,500	10,808
35422 18	301 tons and over 24/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
35422 45	Automatic presses, strip or coil field.....	7	112	24,713	95,452 r/	139 r/	46,941	62,501
35422 53	All other mechanical presses 24/.....	5 a/	26	25,634	274,889	25	16,844	228,878
	Hydraulic presses:							
	Vertical single action, all tonnages:							
35422 56	Housing or straight side type 26/.....	4	15	6,627	(D) r/	13 r/	4,018	(D)
35422 57	Column type (open rod) 26/.....	7	33	3,515	37,002	19	2,458	50,301
	Gap or C-frame:							
35422 58	15 tons and under.....	6	166	2,096	922	142	1,870	627
35422 59	16 tons to 35 tons.....	5	26	871	441 r/	29	1,071	376

Continued

Table 1. Total Shipments and Unfilled Orders  
 [Quantity in units. Value in thousands of dollars]

Product code	Product description	No. of cos.	Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)						
			Quantity	Value		Quantity	Value							
35422 60	Over 35 tons .....	8	22	1,733	3,653	r/	38	r/	2,896	r/	3,978			
35422 92	Other hydraulic and pneumatic presses, including horizontal .....	11	c/	309	10,133	19,500	c/	216	a/	8,126	18,565			
35423 20	Forging machines, including forging presses and die stamping presses 27/.....	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)			
35423 00	All other metal forming type machine tools.....	42	13,149	99,071	194,724	9,568	r/	111,988	186,281					
35423 97	All other metal forming type machine tools valued under \$3,025 each.....	5	b/	12,201	a/	8,870	2,125	a/	8,577	a/	6,343	1,800		
	All other metal forming type machine tools valued at \$3,025 each or more:													
35423 43	Thread rolling machinery.....	5	b/	27	c/	3,993	11,732	b/r/	36	b/r/	5,661	r/	7,848	
35423 30	Metal container-making machinery.....	6	150	24,149	30,429	140	r/	27,614	33,220					
35423 55	Die casting machines, all types 27/ .....	4	(D)	(D)	(D)	24		13,122	(D)					
35423 49	Riveting machines.....	9	a/	254	a/	4,081	b/	2,942	b/	269	c/	9,372	b/	1,869
35423 93	All other metal forming type machine tools, n.e.c. 27/.....	20	b/	517	57,978	a/	147,496	a/	522	49,876	141,544			

- Represents zero. 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. X Not applicable.

- 1/Product code 35415 09 is included in the total for "Metal cutting type machine tools valued under \$3,025."
- 2/Product code 35416 09 is included in the total for "Metal cutting type machine tools valued under \$3,025."
- 3/Unfilled orders for product code 3541C 41 is included in the total for "Metal cutting type machine tools valued under \$3,025."
- 4/Product codes 3541D 40 and 3541D 46 were combined to avoid disclosing individual company data.
- 5/Product codes 3541D 45 and 3541D 55 were combined to avoid disclosing individual company data.
- 6/Unfilled orders for product codes 3541D 45 and 3541D 65 were combined to avoid disclosing individual company data.
- 7/Product codes 35414 11 and 35414 13 were combined to avoid disclosing individual company data.
- 8/Unfilled orders for product codes 35414 33 and 35414 42 were combined to avoid disclosing individual company data.
- 9/Product codes 35414 34 and 35414 37 were combined to avoid disclosing individual company data.
- 10/Product codes 35414 53 and 35414 55 were combined to avoid disclosing individual company data.
- 11/Product codes 35414 75 and 35414 79 were combined to avoid disclosing individual company data.
- 12/Product codes 35415 15, 35415 19, 35415 21, and 35415 12 were combined to avoid disclosing individual company data.
- 13/Product codes 35415 23, 35415 83, 35415 88, 35415 67, 35415 57, and 35415 86 were combined to avoid disclosing individual company data.
- 14/Product codes 35416 23, 35416 53, and 35416 62 were combined to avoid disclosing individual company data.
- 15/Product codes 3541A 12, 3541A 16 and 3541A 17 were combined to avoid disclosing individual company data.
- 16/Product codes 3541A 18 and 3541A 21 were combined to avoid disclosing individual company data.
- 17/Product codes 3541B 35 and 3541B 37 were combined to avoid disclosing individual company data.
- 18/Product codes 3541C 53, 3541C 55, 3541C 59, and 3541C 61 were combined to avoid disclosing individual company data.
- 19/Unfilled orders for product code 35421 33 and 35422 01 are included in the total for "Metal forming type machine tools valued under \$3,025."
- 20/Unfilled orders for product codes 35421 11 and 35421 16 were combined to avoid disclosing individual company data.
- 21/Product codes 35421 12, and 35421 19 were combined to avoid disclosing individual company data.
- 22/Product codes 35421 37, 35421 35, and 35421 43 were combined to avoid disclosing individual company data.
- 23/Product codes 35421 47 and 35421 49 were combined to avoid disclosing individual company data.
- 24/Product codes 35422 03, 35422 18, and 35422 53 were combined to avoid disclosing individual company data.
- 25/Product codes 35422 16 and 35422 17 were combined to avoid disclosing individual company data.
- 26/Unfilled orders for product codes 35422 56 and 35422 57 were combined to avoid disclosing individual company data.
- 27/Product codes 35423 20, 35423 55, and 35423 93 were combined to avoid disclosing individual company data.

Note: The percent of estimation of each item is indicated as follows: a/16 to 25 percent. b/26 to 50 percent. c/Over 50 percent.

Table 2. Shipments of Numerically Controlled Machines; All Export Shipments  
 [Quantity in units. Value in thousands of dollars]

Product description	First quarter 1998			Fourth quarter 1997		
	Shipments of numerically controlled machines		Export 1/ shipments	Shipments of numerically controlled machines		Export 1/ shipments
	Quantity	Value	Value	Quantity	Value	Value
Metalworking machinery.....	5,071	744,355	184,791	5,428	852,354	172,352
Metal cutting type machine tools 2/.....	4,772	687,994	115,905	5,119	792,115	118,191
Boring and drilling machines 2/.....	21	13,121	(D)	25	13,331	(D)
Gear cutting machines 2/.....	92	39,544	(D)	132	60,100	(D)
Grinding, polishing, buffing, and lapping machines.....	340	64,909	15,750	421	85,246	17,162
Valued under \$3,025 each, external cylindrical grinding machines (plain and universal), and surface grinding machines, all types.....	319	62,589	13,376	384	82,281	12,586
Honing, lapping, polishing and buffing machines .....	21	2,320	2,374	37	2,965	4,576
Horizontal NC turning machines, valued at \$3,025 or more .....	985	88,673	11,581	986	97,295	12551
Single spindle NC turning machines:						
Chuck sizes up to and including 6" 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
Chuck sizes over 6" but less than 10" 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
Chuck sizes over 10" but less than 15".....	239	24,054	2,005	210	23,316	2499
Chuck sizes 15" and over and multiple spindle 3/ .....	746	64,619	9,576	776	73,979	10052
Vertical NC turning machines, valued at \$3,025 or more 2/ .....	55	19,875	(D)	55	19,951	(X)
Nonnumerically controlled turning machines, valued at \$3,025 or more.....	(X)	(X)	240	(X)	(X)	258
Milling machines.....	395	93,308	13,218	382	94,666	8962
Machining centers.....	2,659	264,312	47,281	2,880	313,595	42186
Drill, mill and bore, vertical (automatic tool change) 4/ .....	2,188	169,174	29,663	2,192	169,285	21230
Y-axis travel less than 20 inches 4/.....	1,150	69,114	(D)	1,122	66,847	(D)
Y-axis travel 20 inches through 26 inches	890	71,148	8,891	934	75,943	8035
Y-axis travel over 26 inches/4.....	148	28,912	(D)	136	26,495	(D)
Drill, mill and bore, horizontal (automatic tool change) 5/ .....	241	86,654	17,618	348	119,348	20956
400mm pallet and smaller .....	81	20,036	(D)	109	24,707	(D)
401mm-500mm pallet 5/.....	102	27,928	(D)	165	43,991	10103
501mm-630mm pallet 5/ 6/.....	(D)	(D)	(D)	(D)	(D)	(D)
631mm-800mm pallet 5/ 6/.....	40	21,857	(D)	50	29,788	(D)
801mm-1000mm pallet 5/ 7/.....	(D)	(D)	(D)	(D)	(D)	(D)
Over 1000mm pallet 5/ 7/.....	18	16,833	(D)	24	20,862	(D)
All other machining centers 2/.....	230	8,484	(D)	340	24,962	(D)
Station type machines, and other metal cutting machine tools, n.e.c. ....	225	104,252	12,377	238	107,931	12168
Metal forming type machine tools.....	299	56,361	68,886	309	60,239	54161
Punching, shearing, bending, and forming machines .....	216	38,445	24,999	229	40,992	17759
Punching and shearing machines.....	130	27,841	11,111	142	28,928	6854
All bending and forming machines,						

Continued

Table 2. Shipments of Numerically Controlled Machines; All Export Shipments  
 [Quantity in units. Value in thousands of dollars]

Product description	First quarter 1998			Fourth quarter 1997		
	Shipments of numerically controlled machines		Export 1/ shipments	Shipments of numerically controlled machines		Export 1/ shipments
	Quantity	Value	Value	Quantity	Value	Value
power operated .....	86	10,604	13,888	87	12,064	10905
Presses, except forgings.....	54	13,762	11,918	58	15,165	8181
Forging machines, and all other metal forming type machine tools.....	29	4,154	31,969	22	4,082	28221

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. X Not applicable.

1/Data includes the value of all types of machines exported, as reported by MQ35W survey panel.

2/Data for export shipments included in total "Metal cutting type machine tools."

3/Data included in "Chuck sizes over 6" but less than 10."

4/Data for export shipments included in "Drill, mill and bore, vertical (automatic tool change)."

5/Data for export shipments included in "Drill, mill and bore, horizontal (automatic tool change)."

6/Data for shipments of numerically controlled machines included in "631mm-800mm pallet."

7/Data for shipments of numerically controlled machines included in "Over 1000mm pallet."

Table 3a. Shipments, Exports, and Imports of Metalworking Machinery: First Quarter 1998  
 [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/
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(X)	(X)	1,615	143	630	552
Valued at \$3,025 each or more .....	236	18,350	71	2,919	221	20,392
Drilling machines:						
Valued under \$3,025 each.....	1,449	2,292	1,599	856	38,369	4,739
Valued at \$3,025 each or more.....	187	25,381	114	3,098	406	24,545
Gear cutting machines.....	133	45,297	704	3,064	161	18,680
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	57,002	12,111	7,501	1,931	171,505	7,076
Valued at \$3,025 each or more.....	2,001	129,497	273	16,913	2,277	84,021
Lathes (turning machines) under \$3,025.....	(D)	(D)	332	206	3,521	2,391
Horizontal NC turning machines.....	985	88,673	140	13,542	1,917	186,539
Vertical NC turning machines.....	55	19,875	9	1,218	79	11,566
Nonnumerically controlled turning machines:						
Engine or toolroom lathes, all types 5/.....	(D)	(D)	20	275	1,083	9,900
Single spindle automatic lathes 5/.....	(D)	(D)	5	402	65	4,724
Multiple spindle automatic lathes 5/.....	(D)	(D)	6	525	15	3,106
All other horizontal turning machines 5/.....	(D)	(D)	105	2,759	63	1,749
All vertical lathes and vertical boring machines 5/ .....	252	9,558	62	1,902	103	6,518
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	1,523	2,274	1,930	2,382
Valued at \$3,025 each or more.....	1,024	102,347	255	12,372	1,912	28,503
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.....	2,040	140,262	139	15,440	920	82,758
Y-axis travel 26 inches and over.....	148	28,912	4	618	96	13,611
Drill, mill, and bore, horizontal (automatic tool change).....	241	86,654	8	2,996	389	102,736
Other machining centers.....	230	8,484	123	9,268	9	4,103
Station type machines.....	95	151,650	23	8,141	230	97,841
Other metal cutting machine tools:						
Valued under \$3,025 each.....	4,367	2,787	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	2,608	87,166	1,451	32,512	1,486	73,505
Punching and shearing machines:						
Valued under \$3,025 each.....	162	318	644	344	1,641	617
Valued at \$3,025 each or more.....	1,878	65,730	594	24,835	486	34,465
Bending and forming machines:						
Valued under \$3,025 each.....	625	805	2,131	1,089	7,421	1,023
Valued at \$3,025 each or more.....	1,352	63,210	603	24,735	1,150	66,481
Presses, except forging presses.....	3,236	89,417	551	546	2,937	79,964
Forging machines, including presses.....	(D)	(D)	121	22,225	643	22,431
All other metal forming type machine tools:						
Valued under \$3,025 each.....	12,201	8,870	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines.....	(D)	(D)	240	2,918	160	8,071
Thread rolling machines.....	27	3,993	11	646	63	2,952
Other metal forming machines.....	517	57,978	(NA)	(NA)	(NA)	(NA)

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

1/For a comparison of SIC-based product codes, schedule B export numbers, and HTSUSA import numbers, see Table 4.

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

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

4/This 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/Shipments for "Engine or toolroom lathes, all types" "Single spindle automatic lathes," "Multiple spindle automatic lathes," "All other horizontal turning machines," and "All vertical lathes and other vertical boring machines" were combined to avoid disclosing individual company data.

Table 3b. Shipments, Exports, and Imports of Metalworking Machinery: Fourth Quarter 1997  
 [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/
Boring and drilling machines, excluding multi-function NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(X)	(X)	901	247	137	121
Valued at \$3,025 each or more .....	297	22,009	190	7,038	251	29,124
Drilling machines:						
Valued under \$3,025 each.....	1,097	1,712	7,846	1,782	34,924	4,179
Valued at \$3,025 each or more.....	207	27,620	282	9,237	394	20,236
Gear cutting machines.....	191	68,204	200	1,825	770	23,498
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	46,559	9,643	11,880	2,840	275,305	10,723
Valued at \$3,025 each or more.....	2,327	164,427	368	19,678	2,229	102,386
Lathes (turning machines) under \$3,025.....	(D)	(D)	120	186	3,123	2,900
Horizontal NC turning machines.....	986	97,295	167	17,465	2,159	215,436
Vertical NC turning machines.....	55	19,951	16	2,818	109	21,375
Nonnumerically controlled turning machines:						
Engine or toolroom lathes, all types 5/.....	(D)	(D)	29	524	1,235	13,074
Single spindle automatic lathes 5/.....	(D)	(D)	3	1,371	84	2,400
Multiple spindle automatic lathes 5/.....	(D)	(D)	6	511	34	6,318
All other horizontal turning machines 5/.....	(D)	(D)	201	2,653	139	4,880
All vertical lathes and vertical boring machines 5/ .....	270	8,933	83	2,010	145	9,479
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	2,467	3,571	4,186	3,132
Valued at \$3,025 each or more.....	1,055	104,104	317	14,200	1,952	29,925
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.....	2,056	142,790	204	24,052	1,017	86,049
Y-axis travel 26 inches and over.....	136	26,495	15	2,802	210	27,613
Drill, mill, and bore, horizontal (automatic tool change).....						
Other machining centers.....	348	119,348	7	1,447	518	139,932
Station type machines.....	340	24,962	171	13,604	40	19,128
Station type machines.....	110	140,688	42	15,055	164	80,296
Other metal cutting machine tools:						
Valued under \$3,025 each.....	5,355	3,418	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	2,813	104,823	1,438	38,727	1,848	83,496
Punching and shearing machines:						
Valued under \$3,025 each.....	161	299	503	344	3,040	633
Valued at \$3,025 each or more.....	1,738	73,292	574	22,770	580	45,490
Bending and forming machines:						
Valued under \$3,025 each.....	642	1,095	1,608	1,290	5,456	939
Valued at \$3,025 each or more.....	1,450	62,997	828	40,777	1,801	48,888
Presses, except forging presses.....	3,080	96,287	615	549	1,760	57,405
Forging machines, including presses.....	(D)	(D)	127	32,603	413	64,849
All other metal forming type machine tools:						
Valued under \$3,025 each.....	8,577	6,343	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines.....	24	13,122	203	8,376	287	22,701
Thread rolling machines.....	36	5,661	9	295	34	2,390
Other metal forming machines.....	522	49,876	(NA)	(NA)	(NA)	(NA)

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

1/For a comparison of SIC-based product codes, schedule B export numbers, and HTSUSA import numbers, see Table 4.

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

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

4/This 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/Shipments for "Engine or toolroom lathes, all types," "Single spindle automatic lathes," "Multiple spindle automatic lathes," "All other horizontal turning machines," and "All vertical lathes and other vertical boring machines" were combined to avoid disclosing individual company data.

Table 4. Comparison of Standard Industrial Classification-based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
	Boring machines, excluding multifunction NC machines, machining centers:		
3541D 10	All boring machines valued under \$3,025 each	8459.39.0020	8459.39.0020
	Machines valued at \$3,025 each or more:	8459.40.0020	8459.40.0020
3541D 16	Horizontal boring, drilling, and milling machines, includes floor, table and rail mounted	8459.31.0010	8459.31.0010
		8459.31.0040	8459.31.0040
		8459.39.0040	8459.39.0040
		8459.31.0070	8459.31.0070
3541D 40	Precision boring machines, including horizontal, vertical, and all other precision boring machines	8459.39.0050	8459.39.0050
		8459.40.0040	8459.40.0040
3541D 46	Jig boring and all other boring machines (except boring lathes)	8459.40.0050	8459.40.0050
		8459.40.0070	8459.40.0070
		8459.40.0080	8459.40.0080
	Drilling machines, excluding machining centers:		
3541D 05	All drilling machines valued under \$3,025 each	8459.29.0020	8459.29.0020
	Machines valued at \$3,025 each or more:		
3541D 15	Vertical, upright drilling machines, including plain upright and heavy duty	8459.29.0070	8459.29.0070
3541D 25	Radial drilling machines, including plain and universal	8459.29.0050	8459.29.0050
	Multiple spindle drilling machines (cluster of spindles driven from one central power unit):		
3541D 45	Adjustable joint and fixed center type		
3541D 55	All other automatic multiple spindle drilling machines, including indexing turret head (fixed column and table)	8459.29.0040	8459.29.0040
3541D 35	Deep hole drilling machines	8459.21.0080	8459.21.0080
3541D 65	All other drilling machines, n.e.c., including bench type sensitive, vertical n.e.c., radial n.e.c.	8459.29.0090	8459.29.0090
		8461.40.1020	8461.40.1020
35413 00	Gear cutting machines, includes gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines	8461.40.1030	8461.40.1030
		8461.40.1040	8461.40.1040
		8461.40.1060	8461.40.1060
		8461.40.5040	8461.40.5040
		8461.40.5050	8461.40.5050
		8461.40.5070	8461.40.5070
	Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):		
35414 10	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each	8460.39.0020	8460.39.0020
	Machines valued at \$3,025 each or more:	8460.40.8020	8460.40.8020
	External cylindrical grinding machines:	8460.90.8020	8460.90.8020

Continued

Table 4. Comparison of Standard Industrial Classification-based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
35414 11	Plain, including angular wheel types	8460.21.0080	8460.21.0080
35414 13	Universal	8460.29.0010	8460.29.0010
35414 14	Roll, chucking, centerless, and other cylindrical grinding machines	8460.29.0030	8460.29.0030
35414 42	All other disc grinders, includes bench, floor, snag, double spindle grinders, and abrasive belt grinders		
35414 55	All other grinding machines n.e.c., including internal cylindrical type, planer type, and thread grinding machines	8460.29.0050	8460.29.0050
	Surface grinding machines:		
	Reciprocating table type, including face grinders:		
35414 34	Horizontal and vertical	8460.11.0080	8460.11.0080
35414 37	Hand surface type	8460.19.0010	8460.19.0010
35414 33	Rotary table type, horizontal and vertical	8460.19.0050	8460.19.0050
35414 52	Tool and cutter grinding machines, including universal and special	8460.31.0080	8460.31.0080
35414 53	Drill point grinders	8460.39.0050	8460.39.0050
	Honing and lapping machines, except gear honing and lapping:		
35414 75	Internal, including combination bore, hone, and external	8460.40.4060	8460.40.4060
		8460.40.8080	8460.40.8080
35414 79	Flat surface lapping machines, except gear lapping	8460.90.4060	8460.90.4060
35414 84	All other honing and lapping or polishing and buffing machines (including speed lathes and multistation type)	8460.90.8080	8460.90.8080
	Lathes (turning machines):	8458.19.0020	8458.19.0020
35415 09	All lathes valued under \$3,025 each	8458.99.5060	8458.99.5060
	Machines valued at \$3,025 each or more:		
	Horizontal spindle:		
35415 15	Multiple spindle NC turning machine	8458.11.0010	8458.11.0010
	Single spindle NC turning machine:		
35415 19	Chuck sizes up to and including 6"	8458.11.0030	8458.11.0030
35415 21	Chuck sizes over 6" but less than 10"	8458.11.0050	8458.11.0050
35415 11	Chuck sizes from 10" but less than 15"	8458.11.0090	8458.11.0090
35415 12	Chuck sizes 15" and over		
35415 22	Vertical spindle	8458.91.1060	8458.91.1060
		8458.91.1080	8458.91.1080
		8458.91.5050	8458.91.5050
		8458.91.5070	8458.91.5070
	Nonnumerically controlled turning machines		
	Horizontal spindle:		
35415 23	Engine or toolroom lathes all types	8458.19.0030	8458.19.0030

Continued

Table 4. Comparison of Standard Industrial Classification-based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
	Automatic lathes:		
35415 83	Single spindle	8458.19.0050	8458.19.0050
	Multiple spindle:		
35415 88	Bar (screw) machines		
35415 67	Chucking machines	8458.19.0070	8458.19.0070
35415 57	All other horizontal turning machines	8458.19.0090	8458.19.0090
	Vertical spindle:		
35415 86	All vertical turning machines	8458.99.1050	8458.99.1050
	Milling machines, excluding machining centers:		
35416 09	All milling machines valued under \$3,025 each	8459.59.0020	8459.59.0020
	Machines valued at \$3,025 each or more:		
35416 23	General purpose, knee milling machines all types	8459.51.0080	8459.51.0080
	Automatic and manufacturing bed type:		
35416 32	Single spindle, multiple spindle and special purpose machines	8459.59.0030	8459.59.0030
35416 53	Profile machines and duplicators, including spar and skin millers	8459.61.0080	8459.61.0080
35416 62	All other milling machines, n.e.c., (including planer type and thread milling machines)	8459.69.0050	8459.69.0050
	Machining centers (multifunctions NC machines):		
	Drill, mill, and bore, vertical (automatic tool change):		
3541A 05	Y-axis travel less than 20"	8459.69.0070	8459.69.0070
3541A 07	Y-axis travel 20" through 26"	8459.69.0090	8459.69.0090
3541A 09	Y-axis travel over 26"	8457.10.0025	8457.10.0025
	Drill, mill, and bore, horizontal (automatic tool change):		
3541A 12	400mm pallet and smaller	8457.10.0055	8457.10.0055
3541A 14	401mm-500mm pallet	8457.10.0060	8457.10.0060
3541A 16	501mm-630mm pallet	8457.10.0065	8457.10.0065
3541A 17	631mm-800mm pallet	8457.10.0070	8457.10.0070
3541A 18	801mm-1000mm pallet		
3541A 21	Over 1000mm pallet		
3541A 19	All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret	8457.10.0075	8457.10.0075
	Station type machines:		
3541B 31	Dial or rotary, trunnion, and center column	8457.20.0010	8457.20.0010
3541B 35	Transfer (free, palletized shuttle)	8457.20.0090	8457.20.0090
3541B 37	Other station type n.e.c.	8457.30.0010	8457.30.0010
	Other metal cutting machine tools:		
		8457.30.0090	8457.30.0090
		8459.70.8060	8459.70.8060
		8461.10.8040	8461.10.8040
3541C 41	Other metal cutting machine tools n.e.c. valued	8461.20.8070	8461.20.8070

Continued

Table 4. Comparison of Standard Industrial Classification-based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
	under \$3,025	8461.30.8040	8461.30.8040
		8461.50.8020	8461.50.8020
		8461.90.8020	8461.90.8020
	Machines valued at \$3,025 each or more:		
3541C 51	Broaching machines, including internal surface and all other broaching machines	8461.30.4060 8461.30.8080	8461.30.4060 8461.30.8080
	Sawing and cutoff machines:		
3541C 53	Power hack saws	8461.50.4050	8461.50.4050
3541C 55	Circular cutoff saws (cold)	8461.50.8090	8461.50.8090
3541C 59	Band saws		
3541C 61	All other sawing and cutoff machines		
	Spark erosion, ultrasonic and electrolytic machines all types	8456.30.1020	8456.30.1020
3541C 64		8456.30.1050 8456.30.1070 8456.99.3005 8456.99.3040 8456.99.3060 8456.99.3080	8456.30.1050 8456.30.1070 8456.99.3005 8456.99.3040 8456.99.3060 8456.99.3080
3541C 91	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	8461.90.4040 8461.90.8080 8461.10.4060 8461.10.8080 8461.20.4000 8461.20.8090	8461.90.4040 8461.90.8080 8461.10.4060 8461.10.8080 8461.20.4000 8461.20.8090
	Punching and shearing machines:		
35421 08	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.):		
35421 12	Mechanical		
35421 14	Hydraulic	8462.31.0080	8462.31.0080
35421 11	Punches, including combination punching and shearing machines	8462.39.0050 8462.41.0080	8462.39.0050 8462.41.0080
35421 16	Punching machines fixed position and two axes positioning table	8462.49.0050	8462.49.0050
35421 19	Other power operated punching and shearing machines		
	Bending and forming machines:		
35421 33	All bending and forming machines valued under \$3,025	8462.29.0020	8462.29.8025
	Machines valued at \$3,025 each or more:		
35421 34	Press brakes all types	8462.29.0030	8462.29.8035

Continued

Table 4. Comparison of Standard Industrial Classification-based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
35421 37	Bending rolls, sheet, and plate	8462.29.0040	8462.29.8045
35421 35	Bending rolls, angles, bars, shapes, and tubes	8462.21.0080	8462.21.4085
35421 43	Rotary bending and forming machines, including rotary head	8462.29.0050	8462.21.8085 8462.29.8055
35421 47	Ram and press bending machines (pipe, bar, etc.,)		8462.29.4085
35421 49	Other bending and forming machines, including folders		
	Presses except forging presses:		
35422 01	All presses valued under \$3,025 each	8462.99.8020	8462.99.8020
	Machines valued at \$3,025 each or more:		
	Mechanical		
	Open back inclinable (gap type):		
35422 12	50 tons and under	8462.99.4030	8462.99.4030
35422 02	51 tons to 120 tons	8462.99.8035	8462.99.8035
35422 03	121 tons and over	8462.99.8045	8462.99.8045
	Vertical straight sided and arch frame, excluding knuckle joint, including cam and crank:		
	Single action:		
35422 16	Single point		
	Two point:		
35422 17	300 tons and under		
35422 18	301 tons and over		
35422 45	Automatic presses, strip or coil field		
35422 53	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)		
	Hydraulic presses (metalworking only)		
	Vertical single action, all tonnages		
35422 56	Housing or straight side type	8462.91.4060	8462.91.4060
35422 57	Column type (open rod)	8462.91.8090	8462.91.8090
	Gap or C-frame:		
35422 58	15 tons and under		
35422 59	16 tons to 35 tons		
35422 60	Over 35 tons		
35422 92	Other hydraulic and pneumatic presses, including horizontal		
35423 20	Forging machines, (including forging presses and die stamping preses)	8462.10.0030 8462.10.0050	8462.10.0030 8462.10.0050
	All other metal forming type machine tools:		
35423 97	All other metal forming type machine tools valued under \$3,025 each	8463.20.0060	8463.20.0060
	Machines valued at \$3,025 each or more:	8463.90.0060	8463.90.0060

Continued

Table 4. Comparison of Standard Industrial Classification-based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
35423 55	Die casting machines all types	8454.30.0010	8454.30.0010
35423 43	Thread rolling machinery	8463.20.0080	8463.20.0080
35423 30	Metal container-making machinery		
35423 49	Riveting machines, except hand held portable types	8463.90.0080	8463.90.0080
35423 93	All other metal forming type machine tools n.e.c.		

n.e.c. Not elsewhere classified.

1/Source 1998 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 (1998).