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Bureau of the Census**

Metalworking Machinery - Summary 1998

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Information about the scope of the survey, methodology, explanation of terms and historical notes for this survey can be found in the introduction of the 1996 Manufacturing Profiles, issued July 1998.

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Table 1. Value of Shipments, Including Exports of Metalworking Machinery by Class of Product: 1989 to 1998
 [Thousands of dollars]

Product code	Product description	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989
	Metalworking machinery.....	4,817,066	5,010,262	4,607,757	4,547,133	3,780,074	3,222,456	3,073,862	3,171,748	3,426,081	3,514,224
	Metal cutting type 1/.....	3,481,754	3,583,298	3,141,128	3,036,592	2,463,001	2,084,864	1,999,668	2,138,713	2,371,266	2,428,520
3541D	Boring machines 2/.....	73,583	80,161	88,929	172,417	129,835	84,667	97,975	77,655	(D)	(D)
3541D	Drilling machines 2/.....	102,930	89,219	99,453	78,936	51,987	37,076	37,472	37,374	184,118	183,151
35413	Gear cutting machines.....	197,672	213,507	164,258	137,121	100,612	87,662	79,600	115,226	102,678	97,304
35414	Grinding and polishing machines (except gear-tooth grinding, lapping, polishing buffing machines).....	535,508	595,014	541,277	549,580	443,262	360,894	335,121	378,946	433,574	419,754
35415	Lathes 3/.....	472,943	480,672	451,115	478,003	390,407	305,488	258,885	317,087	355,632	343,223
35416	Milling machines 4/.....	281,101	280,158	199,667	194,757	138,852	180,174	210,403	201,137	214,254	206,248
3541A	Machining centers (multi-function numerically controlled machines).....	897,331	931,566	779,433	698,780	552,358	485,375	377,941	361,799	436,999	442,226
3541B	Station type machines.....	571,038	551,870	498,592	477,021	455,138	374,772	434,705	450,366	502,066	562,887
3541C	Other metal cutting machine tools (except those designed primarily for home workshops, laboratories, etc.).....	344,562	358,299	315,977	246,237	200,114	166,248	166,535	195,654	141,945	173,727
	Metal forming type.....	1,335,312	1,426,964	1,466,629	1,510,541	1,317,073	1,139,581	1,073,994	1,033,035	1,080,181	1,085,704
35421 pt.	Punching and shearing machines.....	254,323	319,208	331,382	326,318	294,441	213,402	172,872	180,756	200,050	200,104
35421 pt.	Bending and forming machines.....	262,748	258,479	283,020	256,882	253,219	255,299	270,044	204,357	222,861	217,891
35422	Presses (except forging).....	399,489	422,396	401,990	379,203	376,398	345,653	288,248	297,889	308,338	316,549
35423 pt.	Forging machines 5/.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	73,947	58,478
35423 pt.	Other metal forming type machines 5/.....	418,752	426,881	450,237	548,138	393,015	325,227	342,830	350,033	274,985	292,682

D Withheld to avoid disclosing individual company data. pt. Part.

- 1/Data for "All lathes (turning machines)" and "All milling machines," valued at under \$3,025 each are included in total "Metal cutting type" for 1995 through 1998.
- 2/For 1989 and 1990 data for "Boring machines" were combined with "Drilling machines" to avoid disclosing individual company data.
- 3/For 1991 through 1998 product code 35415, "Lathes", excludes the value for product code 35415 09, "All Lathes valued under \$3,025 each."
- 4/For 1991 through 1998 product code 35416, "Milling machines", excludes the value for product code 35416 09, "All Milling machines valued under \$3,025 each."
- 5/For 1991 through 1998 data for "Forging machines" have been combined with "Other metal forming machines" to avoid disclosing individual company data.

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

Product code	Product description	No. of cos.	1998			1997		
			Total shipments		Unfilled orders (value)	Total shipments		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
	Metalworking machinery.....	(X)	205,059	4,817,066	2,139,958	243,920	5,010,262	2,142,586
	Total metal cutting type machine tools.....	(X)	123,583	3,481,754	1,418,250	169,624	3,583,298	1,406,987
	Total metal forming type machine tools.....	(X)	81,476	1,335,312	721,708	74,296	1,426,964	735,599
	Metal cutting type machine tools valued at \$3,025 each or more.....	(X)	37,491	3,434,208	1,415,614	40,168	3,520,170	1,404,777
	Metal cutting type machine tools valued under \$3,025 1/2/3/.....	(X)	86,092	47,546	2,636	129,456	63,128	2,210
3541D 00	Boring and drilling machines.....	40	5,812	176,513	106,539	6,234	169,380	109,720
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 rail mounted 4/5/.....	6	215 a/	20,711	(D)	(D)	(D) a/	9,509
3541D 40	Precision boring machines, including horizontal and vertical boring machines 4/5/6/.....	7	(D)	(D) b/	52,010	(D)	(D)	(D)
3541D 46	Jig boring and all other boring machines, excluding boring lathes 5/6/.....	1	745	52,872	(X) a/	982 b/	80,161	46,033
3541D 05	All drilling machines valued under \$3,025 each.....	13 b/	4,067 a/	7,816	179	4,524 a/	7,350 b/	226
	Drilling machines valued at \$3,025 each or more:							
3541D 15	Vertical upright drilling machines, including plain upright and heavy duty.....	10	141 a/	1,582	434	135 a/	1,604	1,022
3541D 25	Radial drilling machines, including plain and universal.....	-	(X)	(X)	(X)	(X)	(X)	(X)
3541D 35	Deep hole drilling machines	4 a/	99 b/	14,380 a/	933 b/	92 b/	11,301 c/	3,649
	Multiple spindle drilling machines:							
3541D 45	Adjustable joint and fixed center types 7/8/.....	6	(D)	(D) b/	743	(D)	(D)	(D)
3541D 55	All other automatic multiple spindle drilling machines 7/9/	6 c/	273 b/	14,018	(D)	73 b/	10,324 c/	8,226
3541D 65	All other drilling machines, n.e.c. 8/9/.....	7 a/	272 a/	65,134 a/	52,240 a/	428 b/	58,640	41,055
35413 00	Gear cutting machines, includes gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines.....	9	500	197,672	94,044	619	213,507	126,484
35414 00	Grinding, polishing, buffing, honing, and lapping machines	82	68,389	535,508	223,195	112,443	595,014	227,050
35414 10	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each	20	61,186	20,768	399	104,506	40,407	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 10/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
35414 13	Universal 10/.....	3	121	24,609	7,939	106	27,308	12,726
35414 14	Roll, chucking, centerless, and other cylindrical grinding machines.....	13 b/	557 a/	149,965	123,470 b/	985 a/	218,674	95,353
35414 33	Surface grinding machines, rotary table type, horizontal and vertical 11/.....	7	(D)	(D)	(D)	(D)	(D)	(D)
35414 34	Surface grinding machines, reciprocating table type, including face grinders, horizontal and vertical 12/.....	5	(D)	(D) c/	432	(D)	(D)	(D)
35414 37	Surface grinding machines, reciprocating table type, including face grinders, hand surface type 12/.....	2 a/	893 a/	10,852 b/	779	1,030 a/	14,155	1,731
35414 42	All other disc grinders, includes bench, floor, snag, double spindle grinders, and abrasive belt grinders 11/.....	4 b/	1,727 b/	48,636 b/	6,338	1,090 a/	33,429 b/	17,893
35414 52	Tool and cutter grinding machines	13 a/	653 a/	115,798	12,294	654	97,783	16,910
35414 53	Drill point grinders 13/	4	(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 13/	16 b/	1,912 b/	92,046	25,290 b/	2,399 a/	75,546	38,203
35414 75	Honing and lapping machines, internal, including combination bore, hone, and external 14/	5	(D)	(D)	(D)	(D)	(D)	4,835
35414 79	Flat surface lapping machines, except gear lapping 14/.....	4	888	30,259 b/	13,285	1,051	46,770	813
35414 84	All other honing and lapping or polishing and buffing machines, including speed lathes and multistation type.....	16	452	42,575	32,969 a/	622 a/	40,942	37,232
35415 00	Lathes.....	(X)	5,089	472,943	80,146	5,058	480,672	120,867
	Numerically controlled:							
	Horizontal.....	11	3,829	351,773	34,951	3,679	356,700	49,668
35415 15	Multiple spindle NC turning machine 15/16/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
	Single spindle NC turning machines:							
35415 19	Chuck sizes up to and including 6 inches 15/16/.....	3	(D)	(D)	(D)	(D)	(D)	(D)
35415 21	Chuck sizes over 6 inches but less than 10 inches 16/.....	8	2,404	201,496	16,079	(D)	(D)	(D)
35415 11	Chuck sizes from 10 inches but less than 15 15 inches.....	8	1,013	104,611	7,597	816	94,603	12,311
35415 12	Chuck sizes 15 inches and over 15/16/.....	3 a/	412	45,666	11,275	2,863	262,097	37,357
35415 22	Vertical NC turning machines.....	7	228	86,902	29,550	228	76,711	49,414
	Nonnumerically controlled turning machines 1/.....	10	1,032	34,268	15,645	1,151	47,261	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 17/.....	3	(D)	(D)	(D)	(D)	(D)	(D)

Continued

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

Product code	Product description	No. of cos.	1998			1997			Unfilled orders (value)
			Total shipments		Unfilled orders (value)	Total shipments			
			Quantity	Value		Quantity	Value		
35415 83	Automatic lathes: Single spindle 17/.....	-	(X)	(X)	(X)	(D)	(D)	(X)	
35415 88	Multiple spindle: Bar (screw) machines 17/.....	2	(D)	(D)	(D)	(D)	(D)	(D)	
35415 67	Chucking machines 17/.....	-	(D)	(D)	(X)	(D)	(D)	(D)	
35415 57	All other horizontal turning machines, including turret lathes and automatic between center lathes 17/.....	4	(D)	(D)	(X)	(D)	(D)	(X)	
35415 86	All vertical turning machines 17/.....	1 b/	1,032	34,268	15,645 b/	1,151 a/	47,261	21,785	
35416 00	Milling machines 2/.....	25	3,416	281,101	174,928	4,240	280,158	198,989	
35416 09	All milling machines valued under \$3,025 each 2/.....	5	(D)	(D)	(D)	(D)	(D)	(D)	
35416 23	All milling machines valued at \$3,025 or more: General purpose, knee milling machines all types 18/19/.....	7	(D)	(D)	(D)	(D)	(D)	(D)	
35416 32	Automatic: Single spindle, multiple spindle and special purpose machines 19/.....	7 a/	100	14,103 b/	5,964	(D)	(D)	3,996	
35416 53	Profile machines and duplicators 18/19/.....	4	(D)	(D)	(D)	(D)	(D)	(D)	
35416 62	All other milling machines, n.e.c., including planer type and thread milling machines 18/19/.....	12	3,316 b/	266,998 c/	168,964	4,240	280,158	194,993	
3541A 00	Machining centers.....	26	9,175	897,331	182,012	9,809	931,566	234,849	
3541A 05	Drill, mill, and bore, vertical (automatic tool change): Y-axis travel less than 20 inches.....	10	3,775	237,779	10,416	3,882 b/	234,871	16,905	
3541A 07	Y-axis travel 20 inches through 26 inches.....	9	2,899	233,672	13,918	3,440 b/	281,210	25,188	
3541A 09	Y-axis travel over 26 inches.....	8	604	87,100	14,265	537 b/	77,889 b/	22,618	
3541A 12	Drill, mill, and bore, horizontal (automatic tool change): 400mm pallet and smaller 20/.....	4	284	64,643	13,913	310	65,477	(D)	
3541A 14	401mm-500mm pallet 20/.....	5	333	84,372	14,224	352 b/	82,626	25,393	
3541A 16	501mm-630mm pallet 21/.....	4	(D)	(D)	(D)	(D)	(D)	(D)	
3541A 17	631mm-800mm pallet 21/.....	4	145	78,131	18,746	176	90,835	62,300	
3541A 18	801mm-1000mm pallet 22/.....	3	(D)	(D)	4,213	(D)	(D)	7,101	
3541A 21	Over 1000mm pallet 22/.....	4	66	69,611	31,743	58	48,885	55,525	
3541A 19	All other machining centers, including special machining, special adapting of standard machining, and machining centers with indexing turret.....	7 b/	1,069 a/	42,023 c/	60,574	1,054	49,773	19,819	
3541B 00	Station type machines.....	19	422	571,038	499,105	435	551,870	293,901	
3541B 31	Dial or rotary, trunnion, and center column.....	10	124	119,210	60,259	152	110,443	71,570	
3541B 35	Transfer 23/.....	9	(D)	(D)	(D)	(D)	(D)	(D)	
3541B 37	Other station type, n.e.c. 23/.....	4	298 b/	451,828 b/	438,846 a/	283 c/	441,427	222,331	
3541C 00	Other metal cutting machine tools 3/.....	63	25,858	344,562	56,223	28,760	358,299	94,497	
3541C 41	Other metal cutting machine tools, n.e.c. valued under \$3,025 3/.....	16 a/	15,917 c/	13,876	(D) b/	18,400 c/	12,539	(D)	
3541C 51	Other metal cutting machine tools, n.e.c. valued at \$3,025 each or more: Broaching machines.....	6 b/	77 b/	11,600 b/	6,851 c/	72 a/	9,479 b/	9,163	
3541C 53	Sawing and cutoff machines: Power hack saws 24/.....	2	(D)	(D)	(D)	(D)	(D)	(D)	
3541C 55	Circular cutoff saws (cold) 24/.....	2	(D)	(D)	(D)	(D)	(D)	(D)	
3541C 59	Band saws 25/.....	11	4,401	61,070 b/	9,177	4,470	63,686	(D)	
3541C 61	All other sawing and cutoff machines 24/25/.....	10	908	35,645	9,197	1,078 a/	46,551	18,309	
3541C 64	Spark erosion, ultrasonic, and electrolytic machines all types.....	6	1,217	93,498	6,330	1,284	83,179	24,235	
3541C 91	Miscellaneous metal cutting machine tools.....	25 c/	3,338	128,873	24,668 a/	3,456 a/	142,865 a/	42,790	
	Metal forming type machine tools valued at \$3,025 or more....	(X)	20,331	1,288,160	719,256	19,898	1,384,291	733,060	
	Metal forming type machine tools valued under \$3,025 26/.....	(X)	61,145	47,152	2,452	54,398	42,673	2,539	
35421 00	Punching, shearing, bending, and forming machines.....	78	16,353	517,071	176,000	15,559	577,687	167,196	
35421 08	All punching and shearing machines valued under \$3,025 each.....	11 c/	650 b/	1,218 b/	107 c/	775 b/	1,433 c/	163	
	All punching and shearing machines valued at \$3,025 each or more: Power operated only: Punches, including combination punching and shearing machines.....	16 b/	3,976 a/	48,443	4,086 a/	3,628 a/	53,936	4,383	
35421 16	Punching machines fixed position and two axes positioning table.....	5	484	108,015	11,947	533	115,197	15,275	
35421 12	Plate shearing machines: Mechanical 27/.....	5	(D)	(D)	(D)	(D)	(D)	(D)	
35421 14	Hydraulic.....	12 a/	1,266	26,545	5,381	1,085	22,281	6,856	
35421 19	Other power operated punching and shearing machines 27/.....	12 b/	1,969 a/	70,102	43,999	1,766	126,361	33,199	
35421 33	All bending and forming machines, power operated, valued under \$3,025 each 26/.....	7	2,456	3,081	(D)	2,300	3,288	421	
	All bending and forming machines, power operated, valued at \$3,025 each or more: Press brakes, all types.....	7	996	66,507	15,515 a/	1,022	66,810	14,076	
35421 34	Bending rolls, sheet, and plate 28/.....	7 c/	576 c/	10,378 a/	2,434 b/	541 c/	11,423	(D)	
35421 35	Bending rolls, angles, bars, shapes, and tubes 28/29/.....	5	(D)	(D)	(D)	(D)	(D)	(D)	
35421 43	Rotary bending and forming machines, including rotary head 28/29/.....	13 b/	885	81,290 b/	15,394 b/	712	69,796 a/	13,210	
35421 47	Ram and press bending machines 30/.....	4	(D)	(D)	(D)	(D)	(D)	(D)	
35421 49	Other bending and forming machines, including folders 30/.....	20	3,095	101,492	77,137	3,197 a/	107,162 a/	79,613	

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

Product code	Product description	No. of cos.	1998		Unfilled orders (value)	1997		Unfilled orders (value)
			Quantity	Value		Quantity	Value	
35422 00	Presses (except forgings).....	42	12,559	399,489	389,549	12,084	422,396	382,333
35422 01	All presses valued under \$3,025 each 26/.....	6 b/	9,198 b/	6,297	(D) a/	8,916	6,531	155
	All presses valued at \$3,025 each or more:							
	Mechanical presses:							
	Open back inclinable, gap type:							
35422 12	50 tons and under.....	8	498 a/	9,424 a/	2,101	356	6,346	2,893
35422 02	51 tons to 120 tons.....	5 b/	116 b/	6,756 c/	1,935	144	9,025	3,251
35422 03	121 tons and over 31/.....	1	(D)	(D)	(D)	(D)	(D)	(D)
	Vertical straight sided and arch frame single action:							
35422 16	Single point 32/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
	Two point:							
35422 17	300 tons and under 32/.....	3	109 a/	23,315 c/	13,547	108	20,235	10,808
35422 18	301 tons and over 31/.....	2	(D)	(D)	(D)	(D)	(D)	(D)
35422 45	Automatic presses, strip or coil field 31/.....	8	(D)	(D)	38,809	480	137,779	62,501
35422 53	All other mechanical presses 31/.....	4	554	254,278	278,827	106	132,627	228,878
	Hydraulic presses:							
	Vertical single action, all tonnages:							
35422 56	Housing or straight side type 33/.....	5	(D)	(D)	16,256	62	25,726	(D)
35422 57	Column type (open rod) 33/.....	8 a/	154	39,338	14,654	103	20,102	50,301
	Gap or C-frame:							
35422 58	15 tons and under.....	7	766	11,784	870	603	7,339	627
35422 59	16 tons to 35 tons.....	6	118	4,535	1,039	111	5,145	376
35422 60	Over 35 tons.....	7	134	9,595 b/	6,384	147	12,639	3,978
35422 92	Other hydraulic and pneumatic presses, including horizontal.....	10 c/	912 a/	34,167	15,127 b/	948 a/	38,902	18,565
35423 20	Forging machines, including forging presses and die stamping presses 34/.....	6	(D)	(D)	(D)	(D)	(D)	(D)
35423 00	All other metal forming type machine tools.....	44	52,564	418,752	156,159	46,653	426,881	186,070
35423 97	All other metal forming type machine tools valued under \$3,025 each.....	5 a/	48,841 a/	36,556	1,819	42,407 a/	31,421	1,800
	All other metal forming type machine tools valued at \$3,025 each or more:							
35423 43	Thread rolling machinery.....	6 a/	115 b/	29,003	5,387 a/	148 c/	22,232	7,848
35423 30	Metal container-making machinery 34/.....	6	380	63,558	23,952	(D)	(D)	33,220
35423 55	Die casting machines all types 34/.....	4	(D)	(D)	(D)	(D)	(D)	(D)
35423 49	Riveting machines.....	10 a/	1,128	30,830 b/	2,975 b/	1,094 b/	23,252 b/	1,869
35423 93	All other metal forming type machine tools n.e.c. 34/..	22 b/	2,100	258,805	122,026 b/	3,004	349,976	141,333

- Represents zero. D Withheld to avoid disclosing individual company data. n.e.c. Not elsewhere classified. 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 (value)" for product code 3541C 41 is included in the total for "Metal cutting type machine tools valued under \$3,025."
- 4/"Unfilled orders (value)" for product codes 3541D 16 and 3541D 40 for 1998 were combined to avoid disclosing individual company data.
- 5/Product codes 3541D 16, 3541D 40, and 3541D 46 for 1997 "Total shipments" data were combined to avoid disclosing individual company data.
- 6/Product codes 3541D 40, and 3541D 46 "Total shipments" for 1998 and "Unfilled orders (value)" for 1997 were combined to avoid disclosing individual company data.
- 7/Product codes 3541D 45 and 3541D 55 "Total shipments" for 1998 were combined to avoid disclosing individual company data.
- 8/Product codes 3541D 45 and 3541D 65 for 1997 were combined to avoid disclosing individual company data.
- 9/"Unfilled orders (value)" for product codes 3541D 55 and 3541D 65 for 1998 were combined to avoid disclosing individual company data.
- 10/Product codes 35414 11 and 35414 13 were combined to avoid disclosing individual company data.
- 11/Product codes 35414 33 and 35414 42 were combined to avoid disclosing individual company data.
- 12/Product codes 35414 34 and 35414 37 "Total shipments" for 1997 and 1998 and "Unfilled orders (value)" for 1997 were combined to avoid disclosing individual company data.
- 13/Product codes 35414 53 and 35414 55 were combined to avoid disclosing individual company data.
- 14/Product codes 35414 75 and 35414 79 were combined to avoid disclosing individual company data.
- 15/Product codes 35415 15, 35415 19, and 35415 12 for 1998 were combined to avoid disclosing individual company data.
- 16/Product codes 35415 15, 35415 19, 35415 21 and 35415 12 for 1997 were combined to avoid disclosing individual company data.
- 17/Product codes 35415 23, 35415 83, 35415 88, 35415 67, 35415 57, and 35415 86 were combined to avoid disclosing individual company data.
- 18/Product codes 35416 23, 35416 53, and 35416 62 for 1998 and "Unfilled orders for 1997 were combined to avoid disclosing individual company data.
- 19/Product codes 35416 23, 35416 32, 35416 53, and 35416 62 "Total shipments" for 1997 were combined to avoid disclosing individual company data.
- 20/"Unfilled orders (value)" for product codes 3541A 12 and 3541A 14 for 1997 were combined to avoid disclosing individual company data.
- 21/Product codes 3541A 16 and 3541A 17 were combined to avoid disclosing individual company data.
- 22/Product codes 3541A 18 and 3541A 21 "Total shipments" were combined to avoid disclosing individual company data.
- 23/Product codes 3541B 35 and 3541B 37 were combined to avoid disclosing individual company data.
- 24/Product codes 3541C 53, 3541C 55, and 3541C 61 were combined to avoid disclosing individual company data.
- 25/"Unfilled orders (value)" for product codes 3541C 59 and 3541C 61 for 1997 were combined to avoid disclosing individual company data.
- 26/"Unfilled orders (value)" for product codes 35421 33 and 35422 01 for 1998 were combined with "Metal forming type machine tools valued at \$3,025 and under" to avoid disclosing individual company data.
- 27/Product codes 35421 12, and 35421 19 were combined to avoid disclosing individual company data.
- 28/"Unfilled orders (value)" for product codes 35421 37, 35421 35, and 35421 43 for 1997 were combined to avoid disclosing individual company data.
- 29/Product codes 35421 35 and 35421 43 for 1998 and "Total shipments" for 1997 were combined to avoid disclosing individual company data.
- 30/Product codes 35421 47 and 35421 49 were combined to avoid disclosing individual company data.
- 31/Product codes 35422 03, 35422 18, 35422 45 "Total shipments" for 1998, and 35422 53 were combined to avoid disclosing individual company data.
- 32/Product codes 35422 16 and 35422 17 were combined to avoid disclosing individual company data.
- 33/Product codes 35422 56 and 35422 57 "Total shipments" for 1998 and "Unfilled orders (value)" for 1997 were combined to avoid disclosing individual company data.
- 34/Product codes 35423 20, 35423 30 "Total shipments" for 1997, 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 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; All Export Shipments
 [Quantity in units. Value in thousands of dollars]

Product description	1998			1997		
	Shipments of numerically controlled machines		Export shipments (value 1/)	Shipments of numerically controlled machines		Export shipments (value 1/)
	Quantity	Value		Quantity	Value	
Metalworking machinery.....	18,235	2,571,845	643,535	19,414	2,681,441	696,607
Metal cutting type machine tools 2/.....	16,945	2,318,124	424,169	17,844	2,386,843	459,737
Boring and drilling machines 2/.....	118	38,346	(D)	72	38,657	(D)
Gear cutting machines 2/.....	435	180,099	(D)	420	184,320	(D)
Grinding, polishing, buffing, and lapping machines.....	1,276	264,408	58,030	1,336	279,049	63,492
Valued under \$3,025 each, external cylindrical grinding machines (plain and universal) and surface grinding machines, all types.....	1,196	259,563	48,676	1,203	265,201	48,957
Honing, lapping, polishing and buffing machines.....	80	4,845	9,354	133	13,848	14,535
Horizontal NC turning machines, valued at \$3,025 or more.....	3,829	351,773	56,433	3,679	356,700	52,945
Single spindle NC turning machines:						
Chuck sizes up to and including 6 inches 3/.....	(D)	(D)	(D)	(D)	(D)	(D)
Chuck sizes over 6 inches but less than 10 inches 3/.....	2,404	201,496	40,083	(D)	(D)	(D)
Chuck sizes from 10 inches but less than 15 inches.....	1,013	104,611	10,730	816	94,603	10,048
Chuck sizes 15 inches and over, and multiple spindle 3/.....	412	45,666	5,620	2,863	262,097	42,897
Vertical NC turning machines, valued at \$3,025 or more.....	228	86,902	3,529	228	76,711	1,180
Nonnumerically controlled turning machines, valued at \$3,025 or more.....	(X)	(X)	2,124	(X)	(X)	3,265
Milling machines.....	1,127	239,750	20,841	1,461	240,695	29,319
Machining centers 2/.....	9,175	897,331	155,088	9,809	931,566	154,061
Drill, mill and bore, vertical (automatic tool change).....	7,278	558,551	102,153	7,859	593,970	83,819
Y-axis travel less than 20 inches.....	3,775	237,779	49,754	3,882	234,871	44,082
Y-axis travel 20 inches through 26 inches.....	2,899	233,672	39,976	3,440	281,210	34,863
Y-axis travel over 26 inches.....	604	87,100	12,423	537	77,889	4,874
Drill, mill and bore, horizontal (automatic tool change) 4/.....	828	296,757	52,935	896	287,823	70,242
400mm pallet and smaller 4/.....	284	64,643	(D)	310	65,477	(D)
401mm-500mm pallet 4/.....	333	84,372	(D)	352	82,626	(D)
501mm-630mm pallet 4/5/.....	(D)	(D)	(D)	(D)	(D)	(D)
631mm-800mm pallet 4/5/.....	145	78,131	(D)	176	90,835	(D)
801mm-1000mm pallet 4/6/.....	(D)	(D)	(D)	(D)	(D)	(D)
Over 1000mm pallet 4/6/.....	66	69,611	(D)	58	48,885	(D)
All other machining centers 2/.....	1,069	42,023	(D)	1,054	49,773	(D)
Station type machines, and other metal cutting machine tools, n.e.c.....	757	259,515	52,000	839	279,145	56,905
Metal forming type machine tools.....	1,290	253,721	219,366	1,570	294,598	236,870
Punching, shearing, bending, and forming machines.....	914	168,184	75,608	996	214,035	77,260
Punching and shearing machines.....	529	114,756	29,619	640	163,360	29,772
All bending and forming machines, power operated.....	385	53,428	45,989	356	50,675	47,488
Presses (except forgings).....	207	51,166	30,594	205	57,744	26,422
Forging machines, and all other metal forming type machine tools.....	169	34,371	113,164	369	22,819	133,188

D Withheld to avoid disclosing individual company data. 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 included in total for "Metal cutting type machine tools."
- 3/Data included in "Chuck sizes 15 inches and over, and multiple spindle."
- 4/Data for export shipments included in "Drill, mill and bore, horizontal (automatic tool change)."
- 5/Data included in "631mm-800mm pallet."
- 6/Data included in over "1000mm pallet."

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 1997 and 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/
1998						
Boring and drilling machines, excluding multifunction NC machines, machining centers:						
Boring machines:						
Valued under \$3,025 each.....	(X)	(X)	6,871	629	3,633	900
Valued at \$3,025 each or more	960	73,583	469	22,769	938	103,026
Drilling machines:						
Valued under \$3,025 each.....	4,067	7,816	5,384	4,031	177,669	19,710
Valued at \$3,025 each or more.....	785	95,114	1,055	32,884	1,821	66,547
Gear cutting machines.....	500	197,672	2,257	49,340	1,038	74,222
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	61,186	20,768	41,119	9,493	889,288	33,332
Valued at \$3,025 each or more.....	7,203	514,740	3,656	132,544	10,064	396,261
Lathes (turning machines) under \$3,025.....						
Horizontal NC turning machines.....	(D)	(D)	1,199	1,949	17,766	14,642
Vertical NC turning machines.....	3,829	351,773	487	49,334	9,948	935,924
Vertical NC turning machines.....	228	86,902	49	6,966	597	118,795
Nonnumerically controlled turning machines:						
Engine or toolroom lathes, all types 5/.....	(D)	(D)	81	943	5,007	50,184
Single spindle automatic lathes	(X)	(X)	44	1,552	253	4,279
Multiple spindle automatic lathes 5/.....	(D)	(D)	22	1,970	106	18,678
All other horizontal turning machines 5/.....	(D)	(D)	403	7,684	700	15,299
All vertical lathes and vertical boring machines 5/.....	1,032	34,268	469	10,814	718	29,338
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	6,713	9,912	12,349	11,248
Valued at \$3,025 each or more.....	3,416	281,101	1,002	50,473	8,030	129,969
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.....						
Y-axis travel 26 inches and over.....	6,674	471,451	682	81,992	4,796	383,815
Y-axis travel 26 inches and over.....	604	87,100	18	4,324	1,081	140,311
Drill, mill, and bore, horizontal (automatic tool change).....	828	296,757	45	9,649	2,488	628,115
Other machining centers.....	1,069	42,023	516	42,245	124	56,412
Station type machines.....	422	571,038	133	67,369	348	140,315
Other metal cutting machine tools:						
Valued under \$3,025 each.....	15,917	13,876	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	9,941	330,686	5,456	131,909	8,722	338,266
Punching and shearing machines:						
Valued under \$3,025 each.....	650	1,218	2,935	1,469	8,589	3,691
Valued at \$3,025 each or more.....	7,347	258,598	2,439	110,080	2,539	193,559
Bending and forming machines:						
Valued under \$3,025 each.....	2,456	3,081	9,773	4,611	37,819	5,386
Valued at \$3,025 each or more.....	5,552	259,667	2,798	88,848	9,370	288,626
Presses (except forging presses).....	12,559	399,489	9,073	92,732	22,998	283,981
Forging machines, including presses 6/.....	(D)	(D)	471	88,342	2,061	94,975
All other metal forming type machine tools:						
Valued under \$3,025 each.....	42,407	31,421	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines 6/.....	(D)	(D)	1,543	32,515	5,320	84,688
Thread rolling machines.....	115	29,003	341	9,346	146	15,620
Other metal forming machines 6/.....	2,100	258,805	(NA)	(NA)	(NA)	(NA)

1997

Boring and drilling machines, excluding multifunction

NC machines, machining centers:

Boring machines:

Valued under \$3,025 each..... (X) (X) 4,952 741 2,892 1,394

Table 4. Shipments, Exports, and Imports of Metalworking Machinery: 1997 and 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/
Valued at \$3,025 each or more	982	80,161	554	23,512	997	85,549
Drilling machines:						
Valued under \$3,025 each.....	4,524	7,350	12,769	4,529	178,245	20,275
Valued at \$3,025 each or more.....	728	81,869	838	25,314	1,463	72,541
Gear cutting machines.....	619	213,507	1,107	11,321	1,311	66,324
Grinding, polishing, buffing, honing, and lapping machinery (except gear tooth grinding, lapping, polishing, and buffing machines):						
Valued under \$3,025 each.....	104,506	40,407	39,230	9,843	937,554	35,811
Valued at \$3,025 each or more.....	7,937	554,607	1,152	78,808	9,229	387,340
Lathes (turning machines) under \$3,025.....	(D)	(D)	693	635	14,274	12,058
Horizontal NC turning machines.....	3,679	356,700	603	58,178	7,656	751,327
Vertical NC turning machines.....	228	76,711	57	8,320	481	75,310
Nonnumerically controlled turning machines:						
Engine or toolroom lathes, all types 5/.....	(D)	(D)	74	1,315	4,954	47,162
Single spindle automatic lathes	(D)	(D)	13	1,861	286	14,379
Multiple spindle automatic lathes 5/.....	(D)	(D)	35	2,300	80	12,750
All other horizontal turning machines 5/.....	(D)	(D)	555	8,756	410	12,060
All vertical lathes and vertical boring machines 5/.....	1,151	47,261	263	7,010	585	38,451
Milling machines:						
Valued under \$3,025 each.....	(D)	(D)	9,220	13,125	11,132	10,760
Valued at \$3,025 each or more.....	4,240	280,158	1,439	58,780	7,990	144,953
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.....	7,322	516,081	643	75,003	3,775	329,462
Y-axis travel 26 inches and over.....	537	77,889	34	6,259	657	82,960
Drill, mill, and bore, horizontal (automatic tool change).....	896	287,823	51	17,628	1,840	483,408
Other machining centers.....	1,054	49,773	600	46,123	97	37,210
Station type machines.....	435	551,870	135	58,629	855	332,704
Other metal cutting machine tools:						
Valued under \$3,025 each.....	18,400	12,539	(NA)	(NA)	(NA)	(NA)
Valued at \$3,025 each or more.....	10,360	345,760	5,806	143,484	6,773	306,388
Punching and shearing machines:						
Valued under \$3,025 each.....	775	1,433	2,150	1,481	9,473	3,109
Valued at \$3,025 each or more.....	7,012	317,775	2,048	92,401	2,282	164,421
Bending and forming machines:						
Valued under \$3,025 each.....	2,300	3,288	8,230	5,202	28,321	4,614
Valued at \$3,025 each or more.....	5,472	255,191	2,855	113,830	5,303	226,414
Presses (except forging presses).....	12,084	422,396	2,642	2,419	8,233	262,414
Forging machines, including presses 6/.....	(D)	(D)	464	99,549	2,051	139,455
All other metal forming type machine tools:						
Valued under \$3,025 each.....	42,407	31,421	(NA)	(NA)	(NA)	(NA)
Machines valued at \$3,025 each or more:						
Die casting machines 6/.....	(D)	(D)	1,056	18,215	1,043	58,029
Thread rolling machines.....	148	22,232	46	1,750	186	12,403
Other metal forming machines 6/.....	3,004	349,976	(NA)	(NA)	(NA)	(NA)

D Withheld to avoid disclosing individual company data. 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 in the first quarter 1998 report for this series, MQ35W(98)-1, issued June 9, 1998.

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

3/Source: Census Bureau 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/Data included with "All vertical lathes and vertical boring machines."

6/Data included with "Other metal forming machines."

Table 5. Comparison of Standard Industrial Classification-Based Product Codes with Schedule B Export Numbers, and HTUSA 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 8459.40.0020	8459.39.0020 8459.40.0020
	Machines valued at \$3,025 each or more:		
3541D 16	Horizontal boring, drilling, and milling machines, includes floor, table and rail mounted	8459.31.0010 8459.31.0040 8459.39.0040	8459.31.0010 8459.31.0040 8459.39.0040
3541D 40	Precision boring machines, including horizontal, vertical, and all other precision boring machines	8459.10.0000 8459.31.0070	8459.10.0000 8459.31.0070
3541D 46	Jig boring and all other boring machines (except boring lathes)	8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 8459.40.0080	8459.39.0050 8459.40.0040 8459.40.0050 8459.40.0070 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
35413 00	Gear cutting machines, includes 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):		
35414 10	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
	Machines valued at \$3,025 each or more:		
35414 11	External cylindrical grinding machines: Plain, including angular wheel types	8460.21.0080	8460.21.0080

Continued

Table 5. Comparison of Standard Industrial Classification-Based Product Codes with Schedule B Export Numbers, and HTUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
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	8460.40.0060 8460.40.0080	8460.40.4060 8460.40.8080
35414 79	Flat surface lapping machines, except gear lapping	8460.90.0060	8460.90.4060
35414 84	All other honing and lapping or polishing and buffing machines (including speed lathes and multistation type)	8460.90.0080	8460.90.8080
	Lathes (turning machines):		
35415 09	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:		
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 8458.91.1080 8458.91.5050 8458.91.5070	8458.91.1060 8458.91.1080 8458.91.5050 8458.91.5070
	Nonnumerically controlled turning machines		
	Horizontal spindle:		
35415 23	Engine or toolroom lathes all types	8458.19.0030	8458.19.0030
	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

Continued

Table 5. Comparison of Standard Industrial Classification-Based Product Codes with Schedule B Export Numbers, and HTUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
35415 57	All other horizontal turning machines	8458.19.0090	8458.19.0090
35415 86	Vertical spindle:	8458.99.1050	8458.99.1050
	All vertical turning machines	8458.99.5090	8458.99.5090
35416 09	Milling machines, excluding machining centers: All milling machines valued under \$3,025 each	8459.59.0020	8459.59.0020
		8459.69.0020	8459.69.0020
35416 23	Machines valued at \$3,025 each or more: General purpose, knee milling machines all types	8459.51.0080	8459.51.0080
		8459.59.0030	8459.59.0030
35416 32	Automatic and manufacturing bed type: Single spindle, multiple spindle and special purpose machines	8459.61.0080	8459.61.0080
35416 53	Profile machines and duplicators, including spar and skin millers	8459.69.0050	8459.69.0050
		8459.69.0070	8459.69.0070
35416 62	All other milling machines, n.e.c., (including planer type and thread milling machines)	8459.69.0090	8459.69.0090
	Machining centers (multifunctions NC machines):		
	Drill, mill, and bore, vertical (automatic tool change):		
3541A 05	Y-axis travel less than 20"	8457.10.0015	8457.10.0015
3541A 07	Y-axis travel 20" through 26"		
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	8457.10.0035	8457.10.0055
3541A 14	401mm-500mm pallet		8457.10.0060
3541A 16	501mm-630mm pallet		8457.10.0065
3541A 17	631mm-800mm pallet		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	8457.10.0045	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
		8457.30.0090	8457.30.0090
	Other metal cutting machine tools:		
3541C 41	Other metal cutting machine tools n.e.c. valued under \$3,025	8459.70.0060	8459.70.8060
		8461.10.0040	8461.10.8040
		8461.20.0070	8461.20.8070
		8461.30.0040	8461.30.8040
		8461.50.0020	8461.50.8020
		8461.90.0020	8461.90.8020
	Machines valued at \$3,025 each or more:		
3541C 51	Broaching machines, including internal surface and all other broaching machines	8461.30.0060	8461.30.4060
		8461.30.0080	8461.30.8080

Continued

Table 5. Comparison of Standard Industrial Classification-Based Product Codes with Schedule B Export Numbers, and HTUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
	Sawing and cutoff machines:		
3541C 53	Power hack saws	8461.50.0050	8461.50.4050
3541C 55	Circular cutoff saws (cold)	8461.50.0090	8461.50.8090
3541C 59	Band saws		
3541C 61	All other sawing and cutoff machines		
	Spark erosion, ultrasonic and electrolytic machines all types		
3541C 64		8456.20.0000	8456.20.1010
		8456.30.0000	8456.20.1050
		8456.99.3005	8456.30.1020
		8456.99.3040	8456.30.1050
		8456.99.3060	8456.30.1070
		8456.99.3080	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	8459.70.0020	8459.70.4000
		8459.70.0080	8459.70.8080
		8461.10.0060	8461.10.4060
		8461.10.0080	8461.10.8080
		8461.20.0010	8461.20.4000
		8461.20.0090	8461.20.8090
		8461.90.0040	8461.90.4040
		8461.90.0080	8461.90.8080
	Punching and shearing machines:		
35421 08	All punching and shearing machines valued under \$3,025 each	8462.39.0020	8462.39.0020
		8462.49.0020	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	8462.39.0050
		8462.41.0080	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 & 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
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
			8462.29.4085
35421 47	Ram and press bending machines (pipe, bar, etc.)		8462.29.8055
35421 49	Other bending and forming machines, including folders		
	Presses except forging presses:		
35422 01	All presses valued under \$3,025 each	8462.99.0020	8462.99.8020
	Machines valued at \$3,025 each or more:		

Continued

Table 5. Comparison of Standard Industrial Classification-Based Product Codes with Schedule B Export Numbers, and HTUSA Import Numbers: 1998

Product code	Product description	Export number 1/	Import number 2/
	Mechanical		
	Open back inclinable (gap type):		
35422 12	50 tons and under	8462.99.0030	8462.99.4030
35422 02	51 tons to 120 tons	8462.99.0040	8462.99.8035
35422 03	121 tons and over		8462.99.8045
	Vertical straight sided and arch frame, excluding knuckle joint, including cam and crank:		
	Single action:		
35422 16	Single point	8462.99.0060	8462.99.8060
	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		
35422 57	Column type (open rod)		
	Gap or C-frame:		
35422 58	15 tons and under	8462.91.0060	8462.91.4060
35422 59	16 tons to 35 tons	8462.91.0090	8462.91.8090
35422 60	Over 35 tons		
35422 92	Other hydraulic and pneumatic presses, including horizontal		
35423 20	Forging machines, (including forging presses and die stamping presses)	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 8463.90.0060	8463.20.0060 8463.90.0060
	Machines valued at \$3,025 each or more:		
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).