

Motors and Generators

1999

Issued September 2000

(Formerly Series No. MA36H)

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 1997 Manufacturing Profiles, issued August 1999.

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Note: Data are now published on the new North American Industry Classification System (NAICS) basis and therefore are not always comparable

to the old Standard Industrial Classification (SIC) code. For further information on NAICS, see www.census.gov/epcd/www/naics.html.

Summary of Findings

During 1999, the total value of shipments of motors and generators, including interplant transfers, totaled \$13.0 billion, up 6 percent from the revised 1998 value of \$12.2 billion. The 1999 data for individual categories of motors and generators exhibited the following changes. The value of shipments of fractional horsepower motors increased 8 percent from the revised value of \$4.7 billion in 1998, to \$5.1 billion in 1999. The integral horsepower motors and generators decreased 5 percent from the revised value of \$2.0 billion in 1998, to \$1.9 billion in 1999. The value of land transportation motors and generators was combined with parts for motors and generators to avoid disclosing data for individual companies. The value of shipments of prime mover generator sets increased 11 percent from the 1998 revised value of \$2.8 billion, to \$3.1 billion in 1999. Electric motor generator sets increased 5 percent from the revised value of \$1.6 billion in 1998, to \$1.7 billion in 1999.

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

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Table 1. Value of Shipments of Motors and Generators by Product Class: 1994 to 1999
 [Millions of dollars]

Product code	Product description	1999	1998	1997	1996	1995	1994
335312	Motors and generators.....	12,962.6	r/	12,180.9	10,545.8	10,269.2	10,395.5
3353121	Fractional horsepower motors, excluding hermetics.....	5,058.8	r/	4,683.5	4,715.6	4,358.3	4,766.2
3353123	Integral horsepower motors and generators, other than for land transportation equipment.....	1,889.3	r/	1,981.6	2,246.0	2,337.5	2,134.7
3353125	Land transportation motors, generators, and control equipment 1/.....	(D)		(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam or hydraulic turbine).....	3,110.7	r/	2,811.8	1,734.8	1,505.1	1,480.6
3353129, 12A	Electric motor-driven generator sets.....	1,670.4	r/	1,598.2	954.7	1029.6	944.2
335312C	Parts for motors and generators 1/.....	1,233.2	r/	1,105.7	894.8	1,038.6	1,069.8
							968.1

D Withheld to avoid disclosing data for individual companies. r/Revised by 5 percent or more from previously published data.

1/Product code 3353125 is combined with product code 335312C to avoid disclosing data for individual companies.

Table 2. Quantity and Value of Shipments of Motors and Generators: 1999 and 1998
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1999		1998	
			Quantity	Value	Quantity	Value
335312	Motors and generators.....	(NA)	(X)	12,962,596	(X)	12,180,900
3353121	Fractional horsepower, excluding hermetics and other rotating equipment.....	(NA)	307,522,377	5,058,840	271,241,769	4,683,538
3353121001	Used in automobile accessories (such as heaters, convertible tops, automatic windows, etc., excluding starter motors and generators), including ac and dc	14	c/ 132,148,743	c/ 1,725,493	112,832,637	1,549,400
3353121004	Used in aircraft and spacecraft, excluding generators:					
3353121007	Ac	16	a/ 100,836	b/ 38,635	118,556	41,639
3353121011	Dc	16	(D)	(D)	(D)	(D)
3353121011	Used in toys (all sizes) and clock type synch and subsynch timing, ac and dc.....	6	(D)	(D)	(D)	(D)
	All other uses:					
33531210X2,	Ac (noncommutated)	(NA)	136,084,465	2,314,332	r/ 130,242,045	r/ 2,165,363
33531210X3	Single phase or polyphase:					
	Less than 746 watts, under 1 hp (three-digit FS) 1/.....	(NA)	63,813	9,891	65,229	9,826
	Single phase:					
3353121012	Skeleton type shaded pole (use diameter at widest part)	12	a/ 23,484,144	a/ 131,558	b/ 19,891,947	b/ 96,142
	Conventional type shaded pole.....	(NA)	52,825,031	483,873	53,398,465	475,471
3353121019	Less than 2.5-inch diameter.....	9	(D)	(D)	(D)	(D)
	2.5- to less than 3.75-inch diameter:					
3353121022	2 pole.....	7	6,668,252	140,168	6,548,677	125,341
3353121026	4 pole and over	8	c/ 16,625,027	b/ 149,813	16,176,405	141,903
3353121031	3.75- to less than 4.375-inch diameter.....	4	(D)	(D)	(D)	(D)
3353121033	4.375-inch diameter and over.....	8	10,886,804	a/ 74,300	10,521,595	83,355
	Permanent split capacitor:.....	(NA)	33,676,525	718,744	r/ 30,781,754	r/ 630,836
	Less than 3.75-inch diameter:					
3353121045	2 pole	6	(D)	(D)	(D)	(D)
3353121048	4 pole and over.....	8	a/ 1,526,683	a/ 26,977	c/ 1,248,221	b/ 18,449
3353121051	3.75- to less than 4.375-inch diameter.....	10	17,100,863	264,876	16,481,269	a/ 230,819
	4.375 to less than 5.375 diameter:					
3353121062	2 pole and 4 pole	14	5,209,592	a/ 92,018	3,509,913	62,638
3353121067	6 pole and over	6	b/ 839,662	c/ 17,875	494,768	13,247
	5.375-inch diameter and over:					
3353121072	Less than 746 watts, under 1 hp (two-digit FS).....	22	a/ 6,801,086	a/ 239,297	6,710,053	224,351
3353123005	746 watts and over, 1 hp and over (two-digit FS) 2/.....	6	(D)	(D)	(D)	(D)
	Capacitor start	(NA)	3,565,805	191,788	r/ 3,681,220	r/ 195,496
3353121081	Less than 4.375-inch diameter.....	5	(D)	(D)	(D)	(D)
3353121082	4.375- to less than 5.375-inch diameter.....	6	125,051	6,674	135,415	7,370
	5.375-inch diameter and over:					
3353121086	Less than 746 watts, under 1 hp (two-digit FS).....	15	b/ 1,645,781	b/ 112,407	a/ 1,748,882	a/ 120,032
3353123013	746 watts and over, 1 hp and over (two-digit FS) 2/.....	8	(D)	(D)	(D)	(D)
	Split phase.....		7,161,778	293,271	r/ 7,421,249	r/ 306,565
3353121092	Less than 746 watts, under 1 hp (two-digit FS).....	6	(D)	(D)	(D)	(D)
3353123023	746 watts and over, 1 hp and over and over (two-digit FS) 2/.....	6	(D)	(D)	(D)	(D)
	All other single phase		13,787,167	355,177	r/ 13,859,150	r/ 356,336
3353121095	Less than 746 watts, under 1 hp (two-digit FS).....	9	(D)	(D)	(D)	(D)
3353123027	746 watts and over, 1 hp and over and over (two-digit FS) 2/.....	5	(D)	(D)	(D)	(D)
	Polyphase (servo and nonservo)	(NA)	1,584,015	139,921	r/ 1,208,260	r/ 104,517
33531210B1	Synchronous stepper motors.....	8	c/ 298,370	c/ 10,593	322,149	11,192
	All other polyphase:					
3353121098	Less than 746 watts, under 1 hp (two-digit FS).....	13	a/ 859,332	a/ 84,572	b/ 685,693	68,022
3353123029	746 watts and over, 1 hp and over (two-digit FS)...	6	a/ 426,313	b/ 44,756	b/ 200,418	b/ 25,303
	Ac (commutated)	(NA)	(S)	398,623	(S)	r/ 329,290
	Mechanically commutated (brushes, for example):					
	Cased or sleeved:					
33531210C7	Less than 2.875-inch diameter.....	17	7,236,325	92,467	7,708,548	95,528
33531210E1	2.875- to less than 3.188-inch diameter.....	12	b/ 5,205,209	a/ 77,574	7,907,620	92,864
33531210E4	3.188- to less than 3.563-inch diameter.....	14	b/ 354,473	b/ 19,354	299,116	17,663
	3.563 inch diameter and over:					
33531210E7	Less than 746 watts, under 1 hp (two-digit FS).....	10	228,288	27,206	274,059	31,971
3353123034	746 watts and over, 1 hp and over (two-digit FS).....	10	(D)	(D)	(D)	(D)
	Uncased:					
33531210G5	Less than 746 watts, under 1 hp (two-digit FS).....	7	(D)	(D)	(D)	(D)
3353123038	746 watts and over, 1 hp and over (two-digit FS).....	4	(D)	(D)	(D)	(D)
	Dc or universal motors (by case size)	(NA)	12,163,049	620,392	11,829,247	639,485

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 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1999			1998			
			Quantity	Value	Quantity	Value			
Permanent magnet (brushless):									
Servo:									
33531210G7	Less than 4-inch diameter.....	21	a/	1,654,932	b/	131,141	1,389,287		
33531210H1	4-inch diameter and over.....	17	b/	129,865	b/	54,241	126,440		
Nonservo:									
33531210H4	Less than 4-inch diameter.....	23		7,564,539		178,431	7,469,239		
33531210H7	4-inch diameter and over.....	17	a/	553,591	a/	76,664	527,935		
33531210J1	Wound field	9		104,483	a/	10,732	119,456		
33531210J4	Electronically commutated.....	9	c/	1,927,910	c/	119,466	1,967,523		
All other									
33531210J7	Servo.....	12		188,014	b/	38,015	192,506		
33531210K1	Nonservo.....	6		39,715		11,702	36,861		
3353123	Integral horsepower, excluding hermetics and other rotating equipment:								
3353123001	Used in aircraft and spacecraft, excluding generators.....	(NA)		6,387,370		1,889,331	r/		
All other uses:									
Ac (noncommutated)									
Motors:									
33531210K4	Single phase	(NA)		359,240		73,259	r/		
Less than 746 watts, under 1 hp (three-digit FS) 1/.....									
3353123041	746 watts and over, 1 hp and over 2/.....	2		(D)		(D)	(D)		
33531230X4	746 watts and over, 1 hp and over 2/.....	14		(D)		(D)	(D)		
Polyphase induction, excluding synchronous									
All motors, including Energy Efficient (EE):									
33531210K7	Less than 0.746 watts, less than 1hp (three-digit FS) 1/.....	6		(D)		(D)	(D)		
3353123043	0.746 to 3.371 kW, 1 through 5 hp.....	30		1,253,812		205,957	1,215,080		
3353123046	3.731 to less than 14.921 kW, greater than 5 through 20 hp.....	30		538,363		191,364	543,317		
3353123049	14.921 to less than 37.301 kW, greater than 20 through 50 hp.....	27		185,047		158,207	216,189		
3353123052	37.301 to less than 74.601 kW, greater than 50 through 100 hp	22	a/	51,626	a/	114,987	58,530		
3353123055	74.601 to less than 149.201 kW, greater than 100 through 200 hp.....	22		24,592	a/	104,817	36,956		
3353123058	149.201 to less than 373.001 kW, greater than 200 through 500 hp.....	23	a/	17,964	b/	208,590	19,840		
3353123061	373.001 to less than 746.001 kW, greater than 500 through 1,000 hp.....	8	b/	2,583	b/	70,436	1,633		
3353123064	746.001 to less than 1,865.001 kW, greater than 1,000 through 2500 hp.....	5		(D)		(D)	(D)		
3353123067	1,865.001 kW and over, greater than 2,500 hp.....	6		(D)		(D)	(D)		
Energy efficient motors, included in product codes 3353123043 to 3353123055.....									
33531230E1	0.746 to 3.371 kW, 1 thru 5 hp.....	14		462,841		301,750	r/		
33531230E3	3.731 to less than 14.921 kW, greater than 5 through 20 hp.....	15	a/	187,595		49,413	a r/		
33531230E5	14.921 to less than 37.301 kW, greater than 20 through 50 hp.....	15	a/	158,919		58,481	r/		
33531230E7	37.301 to less than 74.601 kW, greater than 50 through 100 hp.....	13	b/	78,658	a/	68,415	98,153		
33531230E9	74.601 to less than 149.201 kW, greater than 100 through 200 hp.....	13	a/	21,362	b/	62,772	30,872		
3353123085	Synchronous (servo and nonservo):								
Ac generators (for internal combustion engines):									
3353123089	Less than 15 kVA	10		(S)	c/	395,969	r/		
3353123098	15 to less than 375 kVA	10		(D)		101,658	b/		
33531230A1	375 to less than 750 kVA.....	6	b/	10,244	b/	101,748	(S)		
33531230A4	750 kVA and over	4		(D)		55,436	a/		
Dc motors and generators, excluding all arc welding and charging generators for internal combustion engines.....									
33531230A7	0.746 to less than 3.375 kW, 1 through 5 hp.....	16		(S)		226,477	(S)		
33531230B1	3.375 to less than 74.601 kW, 5 through 100 hp.....	8	c/	144,808		34,025	r/		
33531230B4	74.601 kW and over, greater than 100 hp.....	6	c/	38,638	a/	47,644	40,923		
				(S)		8,065	36,169		
				(D)		(S)	158,941		
						(S)	50,335		

Table 2. Quantity and Value of Shipments of Motors and Generators: 1999 and 1998
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1999		1998	
			Quantity	Value	Quantity	Value
3353125	Motors and generators for land transportation, including those used in associated control equipment 3/.....	11	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam or hydraulic turbine and electric motor-driven generator sets).....	(NA)	(S)	3,110,745	658,917	2,811,793
	Gas/gasoline engine-driven generator sets, ac and dc output	(NA)	(S)	1,080,436	587,576	803,645
3353127003	Less than 5 kW.....	14	b/	259,528	b/	272,632
3353127007	5 to less than 15 kW.....	20		(S)	(S)	(S)
3353127011	15 to less than 50 kW.....	14	c/	11,288	c/	9,674
3353127013	50 to less than 100 kW.....	12	b/	2,729	c/	40,385
3353127017	100 kW and over.....	13		(D)	(D)	(D)
	Diesel engine-driven generator sets, ac and dc output.....	(NA)	60,806	1,681,665	r/	62,020
3353127025	Under 15 kVA.....	19	a/	14,170	a/	14,209
3353127028	15 to less than 50 kVA.....	23	c/	13,041	c/	14,129
3353127031	50 to less than 100 kVA.....	20	c/	11,535	c/	12,583
3353127034	100 to less than 200 kVA.....	23	a/	6,063	b/	5,733
3353127037	200 to less than 400 kVA.....	20		(D)	(D)	(D)
3353127041	400 to less than 600 kVA.....	16		(D)	(D)	(D)
3353127043	600 to less than 800 kVA.....	14	a/	2,414	a/	182,482
3353127046	800 to less than 1,000 kVA.....	14		(D)	(D)	(D)
3353127049	1,000 to less than 2,000 kVA.....	13		(D)	(D)	(D)
3353127051	2,000 kVA and over.....	5		(D)	(D)	(D)
9993336110	Gas turbine-driven generator sets (all sizes).....	6		(S)	(S)	(S)
3353127065	Other generator set units, including dual fuel (oil and gas) engine-driven generator sets and ac and dc output, excluding electric motor-driven generator sets.....	4		(D)	(D)	(D)
3353129,	Electric motor-driven generator sets	(NA)	(D)	(D)	(D)	(D)
335312A	Electric motor-driven generator sets, including dynamotors, converters, inverters, and frequency changers:		(S)	b/	1,670,447	22,701,331
3353129003	Less than 746 watts ac and dc output rating.....	6		11,625	4,434	9,932
335312A003	746 watts or more ac and dc output rating.....	12	a/	6,057	b/	23,050
	All hermetic motors.....	(NA)		(S)	a/	719,364
3353129011	5.5-inch stator core diameters and smaller.....	10		12,815,094	304,696	21,964,387
335312A011	Over 5.5-inch stator core diameters.....	12		(S)	b/	414,668
	All other rotating equipment, including rate generators, resolvers, and synchro-type components....	(NA)		806,739	218,045	720,452
3353129014	Rated at less than 746 watts.....	15		(S)	a/	168,619
335312A014	Rated at 746 watts or more.....	15		(S)		49,426
335312C	Parts for motors and generators regardless of output rating 3/.....	(NA)		(X)	1,233,233	(X)
335312C001	Commutators	12		(X)	(D)	(X)
335312C004	Land transportation.....	4		(X)	(D)	(X)
335312C007	All other parts.....	74		(X)	(D)	(X)

D Withheld to avoid disclosing data for individual companies. FS Frame size. NA Not available. r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

1/Data are included in product code 33531210X2, 0X3.

2/Data are included in product code 33531230X4.

3/Industries 3353125 and 335312C are combined to avoid disclosing data for individual companies.

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

Table 3. Quantity and Value of Total Shipments and Interplant Transfers of Motors and Generators and Quantity of Motors and Generators Produced and Incorporated Into Other Products at the Same Establishment: 1999 and 1998
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	Total shipments, including interplant transfers		Interplant transfers		Produced and incorpo- rated (quantity)
		Quantity	Value	Quantity	Value	
1999						
335312	Motors and generators:					
3353121	Fractional horsepower motors, excluding hermetics.....	307,522,377	5,058,840	34,240,729	460,402	43,233,665
3353123	Integral horsepower motors and generators, excluding hermetics.....	6,387,370	1,889,331	(D)	(D)	(D)
3353123000	Alternating current: Polyphase, induction greater than 1 hp.....	2,101,126	1,162,078	(D)	(D)	(D)
3353125	Motors and generators for land transportation equipment 1/.....	(D)	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam and hydraulic turbine).....	(S)	3,110,745	(D)	(D)	(D)
3353129	Electric motor generator sets and other rotating equipment, including hermetics with power rating less than 746 watts 2/.....	(D)	(D)	(D)	(D)	(D)
335312A	Electric motor generator sets and other rotating equipment, including hermetics with a power rating of 746 watts or more 2/.....	(S)	1,670,447	9,573,643	108,464	526
335312C	Parts for motors and generators 1/.....	(X)	1,233,233	(X)	163,286	(X)
1998						
335312	Motors and generators:					
3353121	Fractional horsepower motors, excluding hermetics.....	271,241,769	r/ 4,683,538	r/ 22,132,411	332,426 r/	43,823,287
3353123	Integral horsepower motors and generators, excluding hermetics.....	6,238,184	1,981,656	3,172,552 r/	88,367 r/	1,443,741
3353123000	Alternating current: Polyphase, induction greater than 1 hp.....	2,120,418	1,288,241	18,033	26,376 r/	8,166
3353125	Motors and generators for land transportation equipment 1/.....	(D)	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam and hydraulic turbine).....	658,917	2,811,793	23	174	5,228
3353129	Electric motor generator sets and other rotating equipment, including hermetics with power rating less than 746 watts 2/.....	(D)	(D)	(D)	(D)	(D)
335312A	Electric motor generator sets and other rotating equipment, including hermetics with a power rating of 746 watts or more 2/.....	22,701,331	1,598,237	9,784,122	116,855	785
335312C	Parts for motors and generators 1/.....	(X)	1,105,676	(X)	153,729	(X)

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

1/Industries 3353125 and 335312C are combined to avoid disclosing data for individual companies.

2/Industries 3353129 and 335312A are combined to avoid disclosing data for individual companies.

Table 4. Shipments, Exports, Imports, and Apparent Consumption of Motors and Generators: 1999 and 1998
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments		Exports of domestic merchandise 1/ (value at port)	Imports for consumption 2/ (value)
		Quantity	Value f.o.b. plant		
1999					
3353121	Fractional horsepower motors and generators (except hermetics).....	307,522,377	5,058,840	586,833	2,370,071
3353123	Integral horsepower motors and generators.....	6,387,370	1,889,331	642,052	1,345,087
3353125	Motors and generators for land transportation 3/.....	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam or hydraulic and electric motor driven):				
	Gas/gasoline driven 4/.....	(S)	3,110,745	121,895	390,116
	Diesel engine-driven:				
	Less than 400 kVA (3353127025, 028, 031, 034, 037) 5/.....	(D)	(D)	(D)	(D)
	400 kVA to less than 1,000 kVA (3353127041, 043, 046) 5/.....	(D)	(D)	(D)	(D)
	1,000 kVA and over (3353127049, 051) 5/.....	(D)	(D)	399,794	238,156
	Other (3353127065).....	(D)	(D)	267,520	346,134
3353129, 12A	Electric motor-driven generator sets, hermetics, and other rotating equipment:				
	Synchronous converters, double current generators, and electric motor-driven generator sets (335312A003, 3353129003) 6/.....	17,682	27,484	(D)	(D)
	Hermetic motors (3353129011, 335312A011) 6/.....	(S)	719,364	(D)	(D)
	Other rotating equipment (3353129014, 335312A014) 6/.....	(S)	218,045	7,744	6,777
335312C	Parts for all electric motors and generators (335312C001, C004, C007) 3/.....	(X)	1,233,233	1,115,181	948,998
1998					
3353121	Fractional horsepower motors and generators (except hermetics).....	271,241,769	4,683,538	589,520	2,004,015
3353123	Integral horsepower motors and generators.....	6,238,184	1,981,656	700,954	1,108,140
3353125	Motors and generators for land transportation 3/.....	(D)	(D)	(D)	(D)
3353127	Prime mover generator sets (except steam or hydraulic and electric motor driven):				
	Gas/gasoline driven 4/.....	658,917	2,811,793	(D)	(D)
	Diesel engine-driven:				
	Less than 400 kVA (3353127025, 028, 031, 034, 037) 5/.....	(D)	(D)	(D)	(D)
	400 kVA to less than 1,000 kVA (3353127041, 043, 046) 5/.....	(D)	(D)	(D)	(D)
	1,000 kVA and over (3353127049-051) 5/.....	(D)	(D)	(D)	(D)
	Other (3353127065).....	(D)	(D)	(D)	(D)
	Electric motor-driven generator sets, hermetics, and other rotating equipment:				
3353129, 12A	Synchronous converters, double current generators, and electric motor-driven generator sets (335312A003, 3353129003) 6/.....	16,492	25,742	(D)	(D)
	Hermetic motors (3353129011, 335312A011) 6/.....	(S)	677,910	(D)	(D)
	Other rotating equipment (3353129014, 335312A014) 6/.....	(S)	220,986	8,245	6,371
	Parts for all electric motors and generators (335312C001, C004, C007) 3/.....	(X)	1,105,676	1,064,250	787,942

D Withheld to avoid disclosing data for individual companies. S Does not meet publication standards. X Not applicable.

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

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

3/"Motors and generators for land transportation" and "Parts for all electric motors and generators" are combined to avoid disclosing data for individual companies.

4/Exports and imports for "Gas/gasoline engine-driven, less than 5 kVA" and "Gas/gasoline engine-driven, 5 kVA and over" are combined to avoid disclosing data for individual companies.

5/Exports and imports for "Diesel engine-driven, less than 400 kVA," "Diesel engine-driven, 400 kVA to less than 1,000 kVA," and "1,000 kVA and over" are combined to avoid disclosing data for individual companies.

6/Exports and imports for "Synchronous converters, double current generators, and electric motor-driven generator sets," "Hermetic motors," and "Other rotating equipment" are combined to avoid disclosing data for individual companies.

Note: Beginning in 1989, data for exports and imports were classified under a new harmonized system for better comparability.

Table 5. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1999

Product code	Product description	Export number 1/		Import number 2/	
3353121	Fractional horsepower motors and generators.....	8501.10.3000 8501.10.4060 8501.10.6020 8501.10.6060 8501.20.2000 8501.31.2000 8501.31.8000 8501.40.2040 8501.51.2040 8501.51.3040	8501.10.4040 8501.10.4080 8501.10.6040 8501.10.6080 8501.20.3000 8501.31.3000 8501.40.2020 8501.40.3020 8501.51.3020 8501.51.3040	8501.10.2000 8501.10.4040 8501.10.4080 8501.10.6040 8501.10.6080 8501.20.4000 8501.31.2000 8501.31.5000 8501.40.4020 8501.40.5020 8501.51.2020 8501.51.4020	8501.10.4020 8501.10.4060 8501.10.6020 8501.10.6060 8501.20.2000 8501.20.5000 8501.31.4000 8501.31.8000 8501.40.4040 8501.40.5040 8501.51.2040 8501.51.4040
3353123, 125	Integral horsepower motors and generators.....	8501.20.6000 8501.32.2000 8501.32.6000 8501.33.3000 8501.33.4060 8501.34.3000 8501.40.6020 8501.51.6020 8501.52.4000 8501.53.4000 8501.53.8040 8501.61.0000 8501.63.0000 8501.64.0030	8501.31.6000 8501.32.4000 8501.33.2000 8501.33.4040 8501.33.6000 8501.34.6000 8501.40.6040 8501.51.6040 8501.52.8000 8501.53.6000 8501.53.8060 8501.62.0000 8501.64.0020 8501.64.0050	8501.20.6000 8501.32.2000 8501.32.5520 8501.32.6000 8501.33.2080 8501.33.4040 8501.33.6000 8501.34.6000 8501.40.6040 8501.51.6040 8501.52.8020 8501.53.4040 8501.53.6000 8501.53.8060 8501.62.0000 8501.64.0020 8501.64.0050	8501.31.6000 8501.32.4040 8501.32.5540 8501.33.2040 8501.33.3000 8501.33.4060 8501.34.3000 8501.40.6020 8501.51.6020 8501.52.4000 8501.52.8040 8501.53.4080 8501.53.8040 8501.61.0000 8501.63.0000 8501.64.0030 8501.64.0050
3353127003, 007, 011, 013, 017	Gas/gasoline engine-driven.....	8502.20.0040	8502.20.0080	8502.20.0030	8502.20.0060
3353127025, 028, 031, 034, 037, 041, 043, 046, 049, 051	Diesel engine-driven generator sets.....	8502.11.0000 8502.13.0020	8502.12.0000 8502.13.0040	8502.11.0000 8502.13.0020	8502.12.0000 8502.13.0040
3353127065	Other generator sets.....	8502.31.0000	8502.39.0000	8502.31.0000	8502.39.0000
3353129, 12A	Electric motor-driven generator sets and other rotating equipment.....	8502.40.0000		8502.40.0000	
335312C001	Parts for motors and generators, including commutators.....	8503.00.2000		8503.00.2000	
335312C004, 007	Parts for motors and generators, excluding commutators.....	8503.00.5000 8503.00.6060	8503.00.6040	8503.00.3500 8503.00.6500 8503.00.9000 8503.00.9545	8503.00.4500 8503.00.7500 8503.00.9520 8503.00.9560

1/Source: 1999 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 (1999).