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Motors and Generators - 1997

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## Summary of Findings

During 1997, the total value of shipments of motors and generators including interplant transfers totaled \$10.2 billion, which remains constant with the 1996 value of \$10.3 billion. The 1997 data for individual categories of motors and generators exhibited the following changes: The value of shipments of fractional horsepower motors increased 1 percent from the revised value of \$4.4 billion in 1996, to \$4.4 billion in 1997. The integral horsepower motors and generators decreased 4 percent from \$2.3 billion in 1996, to \$2.2 billion in 1997. 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 16 percent from the revised 1996 value of \$1.5 billion, to \$1.7 billion in 1997. Electric motor generator sets and other rotating equipment, including hermetics and parts, decreased 10 percent from \$2.0 billion in 1996, to \$1.8 billion in 1997.

Table 1. Value of Shipments of Motors and Generators by Product Class: 1992 to 1997  
[Millions of dollars]

Product code	Product description	1997		1996	1995	1994	1993	1992
3621-	Motors and generators.....	10,250.5		10,269.2	10,395.5	9,596.2	9,011.2	8,092.3
36211	Fractional horsepower motors, excluding hermetics.....	4,405.9	r/	4,358.3	4,766.2	4,469.7	4,242.8	4,019.7
36212	Integral horsepower motors and generators, other than for land transportation equipment.....	2,245.6		2,337.5	2,134.7	1,951.4	1,695.0	1,568.9
36213	Land transportation motors, generators, and control equipment 1/.....	(D)		(D)	(D)	(D)	(D)	138.4
36214	Prime mover generator sets (except steam or hydraulic turbine).....	1,746.2	r/	1,505.1	1,480.6	1,395.6	1,245.9	1,087.1
36217	Fractional.....	452.5		446.2	405.4	413.7	358.6	344.1
36218	Integral.....	499.2		583.4	538.8	397.7	381.5	394.6
36219	Parts for motors and generators 1/.....	900.9		1,038.6	1,069.8	968.1	1,087.4	539.4

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

1/For years 1993 through 1997, data for industry 36213 - - are combined with industry 36219 - - to avoid disclosing data for individual companies.

Table 2. Quantity and Value of Shipments of Motors and Generators: 1997 and 1996  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1997		1996		
			Quantity	Value	Quantity	Value	
3621-	Motors and generators.....	(NA)	(X)	10,250,479		(X)	10,269,240
36211 --	Fractional horsepower, excluding hermetics and other rotating equipment.....	(NA)	295,558,574	4,405,930	r/	283,979,667	r/ 4,358,338
36211 OM	Used in automobile accessories (such as heaters, convertible tops, automatic windows, etc., excluding starter motors and generators), including ac and dc .....	11	94,106,614	1,339,122	r/	90,813,479	r/ 1,280,067
	Used in aircraft and spacecraft, excluding generators:						
36211 ON	Ac .....	15	83,867	32,092	r/	53,728	r/ 23,120
36211 OP	Dc .....	17	262,782	54,743		161,161	44,066
36211 OT	Used in toys (all sizes) and clock type synch and subsynch timing, ac and dc.....	7	7,346,292	50,963		7,802,499	53,317
	All other uses:						
	Ac (noncommutated) .....	(NA)	132,890,644	1,739,410		130,297,216	1,865,629
	Single phase or polyphase:						
	Less than 746 watts, under 1 hp (three-digit FS) 1/.....	(NA)	72,953	11,465		77,257	13,445
	Single phase:						
	Skeleton type shaded pole.....	(NA)	38,594,983	132,278		38,607,556	137,837
36211 1A	Less than 2.75-inch diameter at widest point 2/.....	8	(D)	(D)		(D)	(D)
36211 1B	2.75-inch diameter and over 2/.....	5	38,594,983	132,278		38,607,556	137,837
	Conventional type shaded pole.....	(NA)	51,851,248	446,351		53,323,936	477,746
36211 1C	Less than 2.5-inch diameter.....	6	15,606,168	78,629		14,833,684	83,378
	2.5- to less than 3.75-inch diameter:						
36211 1D	2 pole.....	8	5,319,527	90,770	r/	6,166,227	r/ 108,633
36211 1Q	4 pole .....	5	15,091,092	137,618	r/	14,514,140	r/ 136,800
36211 1T	6 pole and over.....	1	(D)	(D)		(D)	(D)
36211 1F	3.75- to less than 4.375-inch diameter.....	3	3,044,217	41,322		2,841,066	37,699
	4.375- to less than 5.375-inch diameter:						
36211 1G	2 pole and 4 pole.....	6	3,062,982	40,777		3,243,968	44,011
36211 1H	6 pole and over .....	5	9,727,262	57,235		11,724,851	67,225
36211 1I	5.375-inch diameter and over.....	3	(D)	(D)		(D)	(D)
	Permanent split capacitor .....	(NA)	26,458,590	541,450		22,327,856	614,922
36211 1J	Less than 2.5-inch diameter 3/.....	4	(D)	(D)		(D)	(D)
	2.5- to less than 3.75-inch diameter:						
36211 1K	2 pole 3/.....	9	1,655,549	47,271		2,247,274	52,701
36211 1L	4 pole and over.....	11	2,033,167	33,149		3,027,137	42,835
	3.75- to less than 4.375-inch diameter:						
36211 1M	2 pole 4/.....	5	(D)	(D)		(D)	(D)
36211 1V	4 pole 4/.....	7	(D)	(D)		(D)	(D)
36211 1W	6 pole and over 4/.....	3	12,331,185	151,919		6,182,973	84,942
	4.375- to less than 5.375-inch diameter:						
36211 1O	2 pole 5/.....	3	(D)	(D)		(D)	(D)
36211 1P	4 pole 5/.....	10	2,783,977	55,515		2,129,495	42,076
36211 1R	6 pole and over.....	6	471,273	14,811		707,921	17,913
	5.375- to less than 6-inch diameter:						
36211 1S	Less than 746 watts, under 1 hp (two-digit FS).....	12	6,965,307	221,311		7,851,550	359,761
36212 1A	746 watts and over, 1 hp and over (two-digit FS) 6/.....	5	(D)	(D)		(D)	(D)
	6-inch diameter and over:						

Continued

Table 2. Quantity and Value of Shipments of Motors and Generators: 1997 and 1996  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1997		1996	
			Quantity	Value	Quantity	Value
36211 1U	Less than 746 watts, under 1 hp (two-digit FS).....	8	218,132	17,474	181,506	14,694
36212 1B	746 watts and over, 1 hp and over (two-digit FS) 6/.....	5	(D)	(D)	(D)	(D)
	Capacitor start: .....	(NA)	3,136,716	147,401	4,054,357	162,046
36211 11	Less than 3.75-inch diameter 7/.....	5	(D)	(D)	(D)	(D)
36211 14	3.75- to less than 4.375-inch diameter 7/.....	2	1,072,796	14,099	1,300,973	16,484
36211 15	4.375- to less than 5.375-inch diameter.....	5	138,163	7,280	115,784	5,451
	5.375- to less than 6-inch diameter:					
36211 16	Less than 746 watts, under 1 hp (two-digit FS).....	9	1,178,221	55,840	1,884,507	70,564
36212 1C	746 watts and over, 1 hp and over (two-digit FS) 6/.....	5	(D)	(D)	(D)	(D)
	6-inch diameter and over:					
36211 18	Less than 746 watts, under 1 hp (two-digit FS).....	7	747,536	70,182	753,093	69,547
36212 1D	746 watts and over, 1 hp and over (two-digit FS) 6/.....	8	(D)	(D)	(D)	(D)
	Split phase.....	(NA)	3,276,390	106,286	2,600,861	90,460
36211 30	Less than 3.75-inch diameter.....	2	(D)	(D)	(D)	(D)
36211 31	3.75- to less than 5.375-inch diameter.....	7	(D)	(D)	(D)	(D)
	5.375- to less than 6-inch diameter:					
36211 36	Less than 746 watts, under 1 hp (two-digit FS).....	10	3,276,390	106,286	2,600,861	90,460
36212 3E	746 watts and over, 1 hp and over (two-digit FS) 6/.....	4	(D)	(D)	(D)	(D)
	6-inch diameter and over:					
36211 38	Less than 746 watts, under 1 hp (two-digit FS).....	6	(D)	(D)	(D)	(D)
36212 3F	746 watts and over, 1 hp and over (two-digit FS) 6/.....	4	(D)	(D)	(D)	(D)
	All other single phase .....	(NA)	7,752,740	202,454	7,799,397	247,319
36211 41	Less than 6-inch diameter.....	7	7,752,740	202,454 r/	7,799,397 r/	247,319
	6-inch diameter and over:					
36211 48	Less than 746 watts, under 1 hp (two-digit FS).....	4	(D)	(D)	(D)	(D)
36212 4H	746 watts and over, 1 hp and over (two-digit FS) 6/.....	5	(D)	(D)	(D)	(D)
	Polyphase (servo and nonservo).....	(NA)	1,747,024	151,725	1,505,996	121,854
36211 55	Synchronous stepper motors.....	8	358,841	10,746	419,248	12,317
	All other polyphase:					
36211 56	Servo (induction rotor) 8/.....	4	(D)	(D)	(D)	(D)
	Nonservo:					
36211 57	Less than 5.375-inch diameter 8/.....	11	211,894	27,110	(D)	(D)
	5.375- to less than 6-inch diameter:					
36211 5T	Less than 746 watts, under 1 hp (two-digit FS).....	10	600,270	57,106	561,494	54,777
36212 5I	746 watts and over, 1 hp and over (two-digit FS) 9/.....	6	(D)	(D)	(D)	(D)
	6-inch diameter and over:					
36211 5V	Less than 746 watts, under 1 hp (two-digit FS).....	10	576,019	56,763	525,254	54,760
36212 5J	746 watts and over, 1 hp					

Continued

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Product code	Product description	No. of cos.	1997		1996	
			Quantity	Value	Quantity	Value
	and over (two-digit FS) 9/.....	7	(D)	(D)	(D)	(D)
	Ac (commutated) .....	(NA)	49,322,471	576,124	44,135,124	551,342
	Mechanically commutated (brushes, for example):					
	Cased or sleeved:					
36211 6E	Less than 2.875-inch diameter.....	17	7,440,021	100,822	7,686,771	r/ 95,524
36211 6F	2.875- to less than 3.188-inch diameter.....	13	10,035,116	112,885	9,192,672	106,061
36211 6G	3.188- to less than 3.563-inch diameter.....	13	245,232	16,051	277,399	17,806
	3.563-inch diameter and over:					
36211 6H	Less than 746 watts, under 1 hp (two-digit FS).....	11	349,185	43,078	288,845	37,438
36212 6K	746 watts and over, 1 hp and over (two-digit FS) 10/.....	8	(D)	(D)	(D)	(D)
	Uncased:					
36211 6J	Less than 2.875-inch diameter 11/.....	8	(D)	(D)	(D)	(D)
36211 6K	2.875- to less than 3.188-inch diameter 11/.....	6	31,252,917	303,288	26,689,437	294,513
36211 6L	3.188- to less than 3.563-inch diameter.....	1	(D)	(D)	(D)	(D)
36211 6M	3.563- to less than 4.375-inch diameter.....	2	(D)	(D)	(D)	(D)
	4.375-inch diameter and over:					
36211 6N	Less than 746 watts, under 1 hp (two-digit FS).....	2	(D)	(D)	(D)	(D)
36212 6L	746 watts and over, 1 hp and over (two-digit FS) 10/.....	2	(D)	(D)	(D)	(D)
	Dc or universal motors by case size.....	(NA)	11,545,904	613,476	10,716,460	540,797
	By case diameter:					
36211 6C	Less than 4-inch diameter.....	(S)	(S)	(S)	(S)	(S)
36211 6D	4-inch diameter and over.....	(S)	(S)	(S)	(S)	(S)
	Permanent magnet (brushless):					
	Servo:					
36211 8E	Less than 4-inch diameter.....	18	1,386,972	129,332	1,277,112	111,015
36211 8H	4-inch diameter and over.....	15	129,935	54,989	112,395	51,004
	Nonservo:					
36211 8D	Less than 4-inch diameter.....	22	7,283,914	174,291	6,783,991	160,166
36211 8K	4-inch diameter and over.....	13	406,073	56,714	325,034	46,330
36211 8P	Wound field .....	10	131,256	15,517	129,980	15,018
36211 88	Electronically commutated.....	10	1,958,600	131,004	1,834,634	110,307
	All other:					
36211 89	Servo.....	10	189,245	39,268	197,723	35,714
36211 96	Nonservo.....	6	59,909	12,361	55,591	11,243
36212 --	Integral horsepower, excluding hermetics and other rotating equipment.....	(NA)	8,752,875	2,245,647	9,296,374	2,337,488
36212 04	Used in aircraft and spacecraft, excluding generators.....	4	(D)	(D)	19,180	35,848
	All other uses:					
	Ac (noncommutated) .....	(NA)	5,042,227	1,626,925	4,897,004	1,655,296
	Motors (single, polyphase induction, and synchronous):					
	Single phase.....	(NA)	1,919,713	186,218	1,643,902	180,155
36211 1W	Less than 746 watts, under 1 hp (three-digit FS) 1/.....	3	(D)	(D)	(D)	(D)
36212 12	746 watts and over, 1 hp and over (three-digit FS).....	10	289,641	61,660	275,608	59,244
36212 X4	746 watts and over, 1 hp and over (two-digit FS) 6/.....	(NA)	1,630,072	124,558	1,368,294	120,911

Continued

Table 2. Quantity and Value of Shipments of Motors and Generators: 1997 and 1996  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1997		1996	
			Quantity	Value	Quantity	Value
	Polyphase induction, excluding synchronous.....	(NA)	3,116,436	1,409,058	3,248,298	1,439,909
	All motors, including Energy Efficient (EE):					
36211 1X	Less than 0.746 watts, less than 1 hp (three-digit FS) 1/.....	6	(D)	(D)	(D)	(D)
36212 X5	746 watts and over, 1 hp and over (two-digit FS) 9/.....	(NA)	1,069,731	120,591	1,016,261	124,454
36212 15	0.746 to 3.371 kW, 1 through 5 hp.....	20	1,232,412	197,890	1,367,945	206,938
36212 16	3.731 to less than 14.921 kW, greater than 5 through 20 hp.....	20	516,172	187,084	576,180	204,176
36212 17	14.921 to less than 37.301 kW, greater than 20 through 50 hp.....	19	174,532	166,458	168,933	174,323
36212 18	37.301 to less than 74.601 kW, greater than 50 through 100 hp.....	19	63,571	128,536	61,530	135,542
36212 19	74.601 to less than 149.201 kW, greater than 100 thru 200 hp.....	17	35,561	159,043	35,209	159,599
36212 20	149.201 to less than 373.001 kW, greater than 200 through 500 hp.....	20	18,392	236,694	16,735	244,518
36212 27	373.001 to less than 746.001 kW, greater than 500 through 1,000 hp .....	12	2,533	79,301	2,485	75,387
36212 28	746.001 to less than 1,865.001 kW, greater than 1,000 through 2,500 hp .....	7	3,267	97,811	2,754	78,654
36212 29	1,865.001 kW and over, greater than 2,500 hp.....	6	265	35,650	266	36,318
	Energy efficient motors, included in product codes					
	36212 15 to 36212 19.....	(NA)	323,284	265,197	334,243	220,199
36212 2K	0.746 to 3.371 kW, 1 through 5 hp.....	11	130,238	35,113	151,316	32,874
36212 2L	3.731 to less than 14.921 kW, greater than 5 through 20 hp.....	12	101,730	45,637	109,784	39,732
36212 2M	14.921 to less than 37.301 kW, greater than 20 through 50 hp.....	12	52,516	56,078	42,428	49,126
36212 2N	37.301 to less than 74.601 kW, greater than 50 through 100 hp.....	11	23,672	53,041	19,853	46,178
36212 2P	74.601 to less than 149.201 kW, greater than 100 through 200 hp.....	11	15,128	75,328	10,862	52,289
36212 30	Synchronous (servo and nonservo).....	6	6,078	31,649	4,804	35,232
	Ac generators (for internal combustion engines).....	(NA)	143,017	315,562	r/ 129,603	288,693
36212 33	Less than 5 kVA 12/.....	3	(D)	(D)	44,946	23,100
36212 38	5 to less than 15 kVA 12/.....	12	93,697	65,998	r/ 32,157	27,620
36212 40	15 to less than 75 kVA 13/.....	9	(D)	(D)	23,269	31,710
36212 50	75 to less than 375 kVA 13/.....	7	34,614	75,619	15,963	51,366
36212 51	375 to less than 750 kVA.....	7	8,586	43,772	7,497	39,914
36212 55	750 kVA and over.....	4	6,120	130,173	5,771	114,983
	Dc motors and generators, excluding all arc welding and battery charging generators for internal combustion engines.....	(NA)	3,567,631	303,160	4,250,587	357,651
36212 70	0.746 to less than 3.375 kW, 1 through 5 hp.....	11	3,367,942	131,613	4,059,653	161,305

Continued

Table 2. Quantity and Value of Shipments of Motors and Generators: 1997 and 1996  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1997		1996		
			Quantity	Value	Quantity	Value	
36212 X6	746 watts, and over, 1 hp and over (two-digit FS) 10/.....	(NA)	139,854	68,630	119,598	51,115	
36212 72	3.375 to less than 74.601 kW, 5 through 100 hp.....	7	59,835	53,058	71,336	71,909	
36212 74	74.601 kW and over, greater than 100 hp.....	5	(S)	49,859	(S)	73,322	
36213 --	Motors and generators for land transportation, including those used in associated control equipment 14/.....	9	(S)	(D)	(S)	(D)	
36214 --	Prime mover generator sets (except steam or hydraulic turbine and electric motor-driven generator sets).....	(NA)	561,301	1,746,202	r/	611,269	r/
	Gas/gasoline engine-driven generator sets, ac and dc output .....	(NA)	453,266	438,609		505,651	458,209
36214 03	Under 1.5 kVA 15/.....	1	(D)	(D)	(D)	(D)	
36214 04	1.5 to less than 5 kVA 15/.....	18	311,549	162,550	r/	357,676	176,583
36214 05	5 to less than 15 kVA.....	18	130,205	145,930		136,654	164,896
36214 07	15 to less than 50 kVA.....	16	7,702	45,455	r/	7,409	r/
36214 08	50 to less than 100 kVA.....	12	2,789	30,249	r/	3,049	r/
36214 10	100 to less than 500 kVA 16/.....	11	(D)	(D)	(D)	(D)	
36214 12	500 to less than 1,000 kVA 16/.....	2	(D)	(D)	(D)	(D)	
36214 13	1,000 kVA and over 16/.....	2	1,021	54,425		863	44,799
	Diesel engine-driven generator sets, ac and dc output.....	(NA)	61,805	1,276,613		47,242	r/
36214 41	Under 15 kVA.....	16	20,071	109,428		13,419	r/
36214 42	15 to less than 50 kVA.....	27	9,961	92,163		7,836	r/
36214 43	50 to less than 100 kVA.....	25	7,353	84,834		6,316	r/
36214 44	100 to less than 200 kVA.....	23	5,660	111,878		5,328	r/
36214 45	200 to less than 400 kVA.....	19	10,495	220,426		6,984	145,454
36214 46	400 to less than 600 kVA.....	14	4,194	196,490		3,252	r/
36214 47	600 to less than 800 kVA.....	14	935	70,897		735	48,363
36214 48	800 to less than 1,000 kVA.....	11	702	63,295		1,093	79,509
36214 49	1,000 to less than 2,000 kVA.....	12	2,391	303,188		2,237	277,664
36214 50	2,000 to less than 3,000 kVA 17/.....	3	(D)	(D)	(D)	(D)	
36214 51	3,000 kVA and over 17/.....	3	43	24,014		42	25,791
	Dual fuel (oil and gas) engine-driven generator sets, ac and dc output.....	(NA)	46,230	30,980		58,376	38,909
36214 52	Under 2,000 kVA.....	-	-	-		-	-
36214 53	2,000 kVA and over.....	-	-	-		-	-
36214 75	Other generator set units, excluding electric motor-driven generator sets.....	5	46,230	30,980	r/	58,376	38,909
36217, 8	Electric motor-driven generator sets.....	(NA)	22,516,915	951,749		24,114,826	1,029,646
	Electric motor-driven generator sets, including dynamotors, converters, inverters, and frequency changers:						
36218 11	Synchro converters and double current generators, 746 watts or more 18/.....	1	(D)	(D)	(D)	(D)	
	Other motor generator sets:						
36217 21	Ac and dc output rated at less than 746 watts 18/.....	6	9,659	6,446		8,082	6,001
	Ac and dc output rated at 746 watts or more:						
36218 30	Ac output, based on the rating of the largest ac generator 19/.....	9	(D)	(D)	(D)	(D)	
36218 40	Dc output, based on the rating of the largest dc generator 19/.....	3	5,841	19,881	r/	5,569	r/
	Other rotating equipment:						
36217 53	Rate generators, resolvers, and						

Continued

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

Product code	Product description	No. of cos.	1997		1996	
			Quantity	Value	Quantity	Value
36217 57	combinations (less than 746 watts) 20/..... Synchro-type components, less than 746 watts 20/.....	10 5	(D) 513,383	(D) 132,099	(D) 489,905	(D) 136,289
All hermetic motors:						
36217 97	5.5-inch stator core diameters and smaller.....	7	11,576,625	291,346	10,149,245	285,938
36218 97	Over 5.5-inch stator core diameters.....	10	10,339,724	446,505	13,392,824	520,084
All other rotating equipment:						
36217 98	Rated at less than 746 watts.....	9	61,930	25,521	52,190	r/ 21,196
36218 98	Rated at 746 watts or more.....	9	9,753	29,951	17,011	36,464
36219 --	Parts for motors and generators regardless of output rating 14/ 21/.....	(NA)	(X)	900,951	(X)	1,038,614
36219 90	Commutators 21/.....	11	(X)	(D)	(X)	(D)
36219 59	Land transportation 21/.....	4	(X)	(D)	(X)	(D)
36219 95	All other parts 21/.....	60	(X)	(D)	(X)	(D)

- Represents zero. 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 36211 X2,3.
- 2/Product codes 36211 1A and 36211 1B are combined to avoid disclosing data for individual companies.
- 3/Product codes 36211 1J and 36211 1K are combined to avoid disclosing data for individual companies.
- 4/Product codes 36211 1M, 36211 1V, and 36211 1W are combined to avoid disclosing data for individual companies.
- 5/Product codes 36211 1O and 36211 1P are combined to avoid disclosing data for individual companies.
- 6/Data are included in product code 36212 X4.
- 7/Product codes 36211 11 and 36211 14 are combined to avoid disclosing data for individual companies.
- 8/For 1997, product code 36211 56 is included with product code 36211 57 to avoid disclosing data for individual companies.
- 9/Data are included in product code 36212 X5.
- 10/Data are included in product code 36212 X6.
- 11/Product codes 36211 6J and 36211 6K are combined to avoid disclosing data for individual companies.
- 12/For 1997, product code 36212 33 is included with product code 36212 38 to avoid disclosing data for individual companies.
- 13/For 1997, product code 36212 40 is included with product code 36212 50 to avoid disclosing data for individual companies.
- 14/Industries 36213 and 36219 are combined to avoid disclosing data for individual companies.
- 15/Product codes 36214 03 and 36214 04 are combined to avoid disclosing data for individual companies.
- 16/Product codes 36214 10, 36214 12, and 36214 13 are combined to avoid disclosing data for individual companies.
- 17/Product codes 36214 50 and 36214 51 are combined to avoid disclosing data for individual companies.
- 18/Product codes 36218 11 and 36217 21 are combined to avoid disclosing data for individual companies.
- 19/Product codes 36218 30 and 36218 40 are combined to avoid disclosing data for individual companies.
- 20/Product codes 36217 53 and 36217 57 are combined to avoid disclosing data for individual companies.
- 21/Product codes 36219 90, 36219 59, and 36219 95 are combined with industry 36219 to avoid disclosing data for individual companies



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: 1997 and 1996

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

Product code	Product description	Total shipments including interplant transfers		Interplant transfers		Produced and incorporated (quantity)
		Quantity	Value	Quantity	Value	
1997						
3621 -	Motors and generators:					
36211 -	Fractional horsepower motors, excluding hermetics.....	295,558,574	4,405,930	17,583,932	199,056	37,949,710
36212 -	Integral horsepower motors and generators, excluding hermetics.....	8,752,875	2,245,647	2,955,225	77,686	2,010,630
	Alternating current:					
36212 00	Polyphase, induction greater than 1 hp.....	2,046,705	1,288,467	16,712	22,607	5,819
36212 XX	Other.....	1,069,731	120,591	-	-	-
36213 -	Motors and generators for land transportation equipment 1/.....	(S)	(D)	(S)	(D)	(S)
36214 -	Prime mover generator sets (except steam and hydraulic turbine).....	561,301	1,746,202	(D)	(D)	(D)
36217 -	Electric motor generator sets and other rotating equipment, including hermetics with power rating less than 746 watts 2/.....	12,161,111	452,521	(D)	(D)	(D)
36218 -	Electric motor generator sets and other rotating equipment, including hermetics with a power rating of 746 watts or more 2/.....	10,355,804	499,228	9,536,067	121,315	(D)
36219 -	Parts for motors and generators 1/.....	(X)	900,951	(X)	102,580	(X)
1996						
3621 -	Motors and generators:					
36211 -	Fractional horsepower motors, excluding hermetics.....	r/ 283,979,667	r/ 4,358,338	r/ 14,645,551	r/ 173,460	38,044,907
36212 -	Integral horsepower motors and generators, excluding hermetics.....	9,296,374	2,337,488	4,431,422	111,106	r/ 1,463,438
	Alternating current:					
36212 00	Polyphase, induction greater than 1 hp.....	2,232,037	1,315,455	17,809	28,510	5,062
36212 XX	Other.....	1,016,261	124,454	-	-	-
36213 -	Motors and generators for land transportation equipment 1/.....	(S)	(D)	(S)	(D)	(S)
36214 -	Prime mover generator sets (except steam and hydraulic turbine).....	r/ 611,269	r/ 1,505,154	(D)	(D)	(D)
36217 -	Electric motor generator sets and other rotating equipment, including hermetics with power rating less than 746 watts 2/.....	10,698,880	446,225	(D)	(D)	(D)
36218 -	Electric motor generator sets and other rotating equipment, including hermetics with a power rating of 746 watts or more 2/.....	13,415,946	583,421	r/ 10,232,486	r/ 136,622	(D)
36219 -	Parts for motors and generators 1/.....	(X)	1,038,614	(X)	r/ 98,561	(X)

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

1/Industries 36213 and 36219 are combined to avoid disclosing data for individual companies.

2/For 1997 and 1996, interplant transfers for industries 36217 and 36218 are combined to avoid disclosing data for individual companies.

Table 4. Shipments, Exports, Imports, and Apparent Consumption of Motors and Generators: 1997 and 1996

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

Product code	Product description	Manufacturers' shipments		Exports of domestic merchandise <sup>1/</sup> (value at port)	Imports for consumption <sup>2/</sup> (value)
		Quantity	Value f.o.b. plant		
1997					
36211 -	Fractional horsepower motors and generators (except hermetics).....	295,558,574	4,405,930	509,972	1,827,670
36212 -	Integral horsepower motors and generators.....	8,752,875	2,245,647	869,256	951,185
36213 -	Motors and generators for land transportation 3/.....	(S)	(D)	(D)	(D)
36214 -	Prime mover generator sets, (except steam or hydraulic and electric motor driven):				
	Gas/gasoline driven:				
	Less than 5 kVA (36214 03, 04) 4/.....	311,549	162,550	(D)	(D)
	5 kVA and over (36214 05 to 08) 4/.....	140,696	221,634	74,717	78,878
	Diesel engine-driven:				
	Less than 400 kVA (36214 41 to 45) 5/....	53,540	618,729	(D)	(D)
	400 kVA to less than 1,000 kVA (36214 46 to 48) 5/.....	5,831	330,682	(D)	(D)
	1,000 kVA and over (36214 49 to 51) 5/....	2,434	327,202	518,377	51,788
	Other (36214 75).....	46,230	30,980	420,097	19,058
36217, 8	Electric motor-driven generator sets, hermetics, other rotating equipment: Synchronous converters, double current generators, and electric motor-driven generator sets (36217 21, 36218 11, 30, 40) 6/.....	15,500	26,327	(D)	(D)
	Hermetic motors (36217 97, 36218 97) 6/...	21,916,349	737,851	(D)	(D)
	Other rotating equipment (36217 53, 57, 98, 36218 98) 6/.....	585,066	187,571	15,367	7,844
36219 -	Parts for all electric motors and generators (36219 90 to 95) 3/.....	(X)	900,951	1,015,251	741,665
1996					
36211 -	Fractional horsepower motors and generators (except hermetics).....	r/ 283,979,667	r/ 4,358,338	450,328	1,665,953
36212 -	Integral horsepower motors and generators.....	9,296,374	2,337,488	598,306	826,356
36213 -	Motors and generators for land transportation 3/.....	(S)	(D)	(D)	(D)
36214 -	Prime mover generator sets, (except steam or hydraulic and electric motor driven):				
	Gas/gasoline driven:				
	Less than 5 kVA (36214 03, 04) 4/.....	r/ 357,676	176,583	(D)	(D)
	5 kVA and over (36214 05 to 08) 4/.....	147,112	236,827	73,179	68,899
	Diesel engine-driven:				
	Less than 400 kVA (36214 41 to 45) 5/....	39,883	r/ 435,048	(D)	(D)

Continued

Table 4. Shipments, Exports, Imports, and Apparent Consumption of Motors and Generators: 1997 and 1996

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

Product code	Product description	Manufacturers' shipments		Value f.o.b. plant	Exports of domestic merchandise <sup>1/</sup> (value at port)	Imports for consumption <sup>2/</sup> (value)
		Quantity				
	400 kVA to less than 1,000 kVA (36214 46 to 48) 5/.....	5,080	r/	269,533	(D)	(D)
	1,000 kVA and over (36214 49 to 51) 5/....	2,279		303,455	624,624	52,881
	Other (36214 75)..... r/	58,376		38,909	372,987	29,741
36217,8 -	Electric motor-driven generator sets, hermetics, other rotating equipment: Synchronous converters, double current generators, and electric motor-driven generator sets (36217 21, 36218 11, 30, 40) 6/.....	13,651	r/	29,675	(D)	(D)
	Hermetic motors (36217 97, 36218 97) 6/.	23,542,069		806,022	(D)	(D)
	Other rotating equipment (36217 53, 57, 98, 36218 98) 6/.....	559,106	r/	193,949	12,436	6,039
36219 -	Parts for all electric motors and generators (36219 90 to 95) 3/.....	(X)		1,038,614	769,094	714,809

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

2/Source: Bureau of the Census 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 Standard Industrial Classification-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1997

Product code	Product description	Export number 1/		Import number 2/	
36211 --	Fractional horsepower motors and generators.....	8501.10.3000	8501.10.4040	8501.10.2000	8501.10.4020
		8501.10.4060	8501.10.4080	8501.10.4040	8501.10.4060
		8501.10.6020	8501.10.6040	8501.10.4080	8501.10.6020
		8501.10.6060	8501.10.6080	8501.10.6040	8501.10.6060
		8501.20.2000	8501.20.3000	8501.10.6080	8501.20.2000
		8501.31.2000	8501.31.3000	8501.20.4000	8501.20.5000
		8501.31.8000	8501.40.2020	8501.31.2000	8501.31.4000
		8501.40.2040	8501.40.3020	8501.31.5000	8501.31.8000
		8501.40.3040	8501.51.2020	8501.40.2020	8501.40.2040
		8501.51.2040	8501.51.3020	8501.40.4020	8501.40.4040
		8501.51.3040		8501.40.5020	8501.40.5040
				8501.51.2020	8501.51.2040
				8501.51.4020	8501.51.4040
		8501.51.5020	8501.51.5040		
36212,3	Integral horsepower motors and generators.....	8501.20.6000	8501.31.6000	8501.20.6000	8501.31.6000
		8501.32.2000	8501.32.4000	8501.32.2000	8501.32.4040
		8501.32.6000	8501.33.2000	8501.32.5520	8501.32.5540
		8501.33.3000	8501.33.4040	8501.32.6000	8501.33.2040
		8501.33.4060	8501.33.6000	8501.33.2080	8501.33.3000
		8501.34.3000	8501.34.6000	8501.33.4040	8501.33.4060
		8501.40.6020	8501.40.6040	8501.33.6000	8501.34.3000
		8501.51.6020	8501.51.6040	8501.34.6000	8501.40.6020
		8501.52.4000	8501.52.8000	8501.40.6040	8501.51.6020
		8501.53.4000	8501.53.6000	8501.51.6040	8501.52.4000
		8501.53.8040	8501.53.8060	8501.52.8020	8501.52.8040
		8501.61.0000	8501.62.0000	8501.53.4040	8501.53.4080
		8501.63.0000	8501.64.0020	8501.53.6000	8501.53.8040
8501.64.0030	8501.64.0050	8501.53.8060	8501.61.0000		
		8501.62.0000	8501.63.0000		
		8501.64.0020	8501.64.0030		
		8501.64.0050			
36214 03, 04, 05	Gas/gasoline engine-driven generator sets.....	8502.20.0040	8502.20.0080	8502.20.0030	8502.20.0060
				8502.20.0080	
36214 41, 42, 43, 44	Diesel engine-driven generator sets.....	8502.11.0000	8502.12.0000	8502.11.0000	8502.12.0000
		8502.13.0020	8502.13.0040	8502.13.0020	8502.13.0040
36214 75	Dual fuel engine-driven generator sets.....	8502.31.0000	8502.39.0000	8502.31.0000	8502.39.0000
36217,8	Electric motor-driven generator sets and other rotating equipment.....	8502.40.0000		8502.40.0000	
36219 90	Parts for motors and generators, including commutators.....	8503.00.2000		8503.00.2000	
36219 59, 95	Parts for motors and generators, excluding commutators.....	8503.00.5000	8503.00.6040	8503.00.3500	8503.00.4500
		8503.00.6060		8503.00.6500	8503.00.7500
				8503.00.9000	8503.00.9520
				8503.00.9545	8503.00.9560

1/Source: 1997 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 (1997).