

# Pumps and Compressors: 2005

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### SUMMARY OF FINDINGS

For 2005, the value of shipments for the types of pumps and compressors included in this report increased by 13 percent, from \$8,675.6 million in 2004 to \$9,836.2 million. Value of shipments for pumps (except vacuum pumps), including parts, rose from \$5,720.2 million in 2004 to \$6,367.3 million in 2005, an increase of 11 percent. Vertical

turbine pumps (except drivers) increased in value of shipments in 2005 by 7 percent, from \$244.3 million in 2004 to \$260.6 million.

Domestic water systems, including drivers, decreased 18 percent in value of shipments for 2005, from \$463.3 million in 2004 to \$379.6 million.

Domestic sump pumps, including drivers, increased in value of shipments by 11 percent in 2005, from \$200.9 million in 2004 to \$222.6 million.

Oil-well and oil-field pumps greatly increased in value of shipments for 2005, from \$366.2 million in 2004 to \$448.0 million, an increase of 22 percent. The value of shipments of parts for pumps made by manufacturers of complete pumps increased 10 percent in 2005, from \$1,131.2 million in 2004 to \$1,242.4 million.

Compressors, including vacuum pumps and parts, increased in value of shipments for 2005 by 17 percent, from \$2,955.4 million in 2004 to \$3,468.8 million.

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

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Keeley Voor, 812-218-3341.

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

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Table 1. Summary of Shipments of Pumps and Compressors: 2005 and 2004  
 [Quantity in number of units. Value in thousands of dollars]

Product description	2005		2004	
	Quantity	Value	Quantity	Value
Industrial pumps.....	(X)	3,665,875	(X) r/	3,192,376
Value of drivers.....	(X)	482,122	(X) r/	439,126
Centrifugal pumps (except drivers).....	8,136,664	1,884,188	8,702,724	1,640,297
Vertical turbine pumps (except drivers).....	46,929	260,565	r/ 59,758	r/ 244,333
Reciprocating pumps (except drivers).....	442,041	315,168	r/ 450,807	r/ 281,711
Diaphragm pumps (except drivers).....	1,870,561	310,185	1,750,536	233,652
Rotary pumps (except drivers).....	1,105,509	353,697	r/ 1,109,789	r/ 301,660
Other industrial pumps (except drivers).....	607,644	59,950	525,079	51,597
Domestic systems and pumps, including drivers.....	5,590,050	602,225	5,851,740	664,208
Water systems.....	2,168,163	379,607	2,647,685	463,321
Sump pumps.....	3,421,887	222,618	3,204,055	200,887
Oil-well and oil-field pumps.....	62,993	447,961	53,070	r/ 366,206
Other pumps, including drivers.....	6,798,307	408,856	r/ 6,205,232	r/ 366,272
Parts and attachments for pumps and pumping equipment.....	(X)	1,242,431	(X)	1,131,171
Air and gas compressors.....	(X)	2,830,153	(X)	2,404,644
Value of drivers.....	(X)	206,307	(X)	178,493
Air compressors, new.....	3,874,022	1,665,632	r/ 4,208,874	1,503,212
Gas compressors, new.....	4,578	925,122	3,823	691,286
Other compressors.....	5,477	33,092	4,705	31,653
Vacuum pumps, excluding laboratory.....	(X)	215,989	(X)	193,754
Parts and attachments for air and gas compressors and vacuum pumps.....	(X)	422,671	(X) r/	356,983

r/Revised by 5 percent or more from previously published data. X Not applicable.

Table 2. Quantity and Value of Shipments of Selected Pumps and Compressors: 2005 and 2004  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2005		2004			
			Quantity	Value	Quantity	Value		
3339111 pt.	Pumps and compressors 1/.....	(X)	(X)	9,836,161		(X)	8,675,614	
	Industrial pumps (except hydraulic fluid power pumps).....	(X)	(X)	3,665,875		(X)	r/ 3,192,376	
3339111401	Value of drivers 2/.....	103	(X)	a/ 482,122		(X)	b/r/ 439,126	
	Centrifugal pumps:							
	Sewage type (nonsubmersible), vertical or horizontal with nonclog impeller.....	(X)		11,215	104,665		9,632	82,325
3339111411	12" and under.....	25	b/	9,400	a/ 83,274	a/	8,098	64,312
3339111412	Over 12".....	7	c/	1,815	b/ 21,391		1,534	c/ 18,013
	Submersible effluent pumps (less than 1" solids handling capacity).....	(X)		353,043	71,917		353,982	70,728
3339111424	Less than 1 hp.....	15		342,805	44,193		329,462	44,110
3339111425	1 hp and over.....	15	a/	10,238	c/ 27,724		24,520	c/ 26,618
	Submersible solids handling pumps (solids 1" to 2" inclusive).....	(X)		540,325	117,112		516,239	111,384
3339111428	1/2 hp and under.....	13	a/	486,773	86,754		466,878	82,756
3339111429	Over 1/2 hp.....	20		53,552	30,358		49,361	28,628
	Submersible nonclog pumps (greater than 2" solids handling capacity).....	(X)		24,366	65,138		25,805	51,427
333911142C	3" discharge and under.....	15		6,326	10,364		13,702	14,017
333911142E	Discharge more than 3" but less than 7".....	19	b/	17,224	a/ 47,390		11,796	33,585
333911142G	7" and over discharge.....	11	a/	816	a/ 7,384	a/	307	a/ 3,825
	Submersible grinder pumps (incorporating a hardened stainless steel cutter mechanism to macerate the solids into a fine slurry).....	(X)		88,848	104,336		74,441	88,589
333911142K	2 hp and below.....	9		75,014	83,351		66,931	73,664
333911142M	Over 2 hp.....	8	a/	13,834	b/ 20,985		7,510	14,925
3339111448	Single and two stage, single and end suction, close coupled with driver.....	54		922,844	203,507		963,783	209,639
3339111450	Single and two stage, single suction, in-line, close coupled with driver.....	19	c/	1,009,144	b/ 23,767		1,105,842	a/r/ 24,398
333911144E	Single stage, single suction, vertical, in-line frame.....	14	c/	423,600	c/ 37,321	c/	459,893	c/ 40,994
333911144H	Single stage, single suction, frame or foot mounted, metallic pumps (built to National or International Standards ANSI B73.1 or ISO 2858).....	32	a/	70,769	a/ 175,984	r/	59,593	r/ 141,904
333911144L	Single stage, single suction, frame or foot mounted, nonmetallic pumps (built to National or International Standards ANSI B73.1 or ISO 2858).....	7	c/	3,392	c/ 13,472	b/	3,384	b/r/ 15,143
	Single stage, single suction, frame or foot mounted, non-ANSI, non-ISO, with or without recessed impeller.....	(X)		403,545	113,001	r/	597,437	r/ 96,149
333911144M	1" discharge and under.....	13		325,949	16,511	r/	526,095	r/ 14,126
333911144N	Discharge more than 1", up to 2".....	22	a/	22,885	b/ 15,524	r/	26,619	r/ 15,529
333911144R	Over 2" discharge.....	27	a/	54,711	a/ 80,966	r/	44,723	r/ 66,494
3339111455	Single stage, single suction, replaceable elastomer lined or hard metal, frame or foot mounted.....	7		4,274	40,952		4,387	35,218
3339111458	Single stage, single suction, centerline mounted.....	11		72,937	b/ 40,982	c/r/	60,982	b/r/ 35,479
	Single stage, axially split, double suction.....	(X)		16,584	149,916	r/	13,219	r/ 107,125
3339111459	4" discharge and under.....	14	b/	4,639	b/ 21,871	r/	3,950	r/ 15,934
333911145A	Discharge more than 4", up to 8".....	17	b/	9,478	b/ 71,546	a/r/	7,379	a/r/ 47,768
333911145C	Over 8" discharge.....	16	b/	2,467	b/ 56,499		1,890	b/r/ 43,423
333911145G	Single stage, radially split, double suction impeller pumps, API-610 compliant.....	5		(D)	(D)		61	10,186
333911145M	Single stage, radially split, double suction impeller pumps, non-API compliant.....	5		(D)	(D)		9,527	b/r/ 5,189
3339111468	Multistage, single or double suction, diffuser design, radially split case.....	20		22,360	b/ 59,450		44,099	b/r/ 58,895
333911146F	Multistage, single or double suction, volute or diffuser design, axially split case.....	16	c/	4,091	c/ 112,908	b/	2,327	b/r/ 72,486
3339111478	Sealless centrifugal pumps, magnetic drive.....	15		257,226	a/ 48,196		232,834	a/ 45,522
333911147D	Sealless centrifugal pumps, canned motor.....	8	a/	4,462	c/ 18,435		4,705	r/ 20,962
	Propeller and mixed flow, horizontal and vertical including vertical turbine over 36".....	(X)		961	37,757	r/	982	34,115
3339111481	36" and under.....	17	b/	845	b/ 31,890	b/r/	763	c/r/ 22,174
3339111484	Over 36".....	12	b/	116	b/ 5,867	a/r/	219	a/t/ 11,941
333911148N	All other centrifugal pumps.....	40	a/	3,893,745	a/ 331,515		4,159,570	282,440
	Vertical turbine pumps not exceeding 36" discharge, including deep-well:							
	Pump with submersible motor.....	(X)		25,198	35,059	r/	33,025	r/ 38,424
3339111493	Bowl diameter 6" and under.....	19		19,755	a/ 21,358	r/	25,391	r/ 23,273
3339111498	Bowl diameter over 6".....	13		5,443	c/ 13,701	r/	7,634	b/ 15,151
333911149F	Pump and bowl assemblies through 36" (all column and shaft lengths, including FM or UL approved vertical turbine fire pumps; deep well and short coupled pumps, except can and pot type).....	17	c/	18,768	c/ 184,469	a/r/	24,231	a/r/ 172,488
333911149N	Can and pot type (pump and bowl assemblies, suction can and pot type).....	9	c/	2,963	c/ 41,037	r/	2,502	33,421
	Reciprocating pumps:							
33391114C7	Driven by electric motor, engine, or steam turbine: Reciprocating piston, plunger or diaphragm (not air operated) pumps.....	32		442,041	a/ 315,168	r/	450,807	a/r/ 281,711

Table 2. Quantity and Value of Shipments of Selected Pumps and Compressors: 2005 and 2004  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2005		2004	
			Quantity	Value	Quantity	Value
33391114D5	Diaphragm pumps (air operated).....	22	b/ 1,870,561	b/ 310,185	b/ 1,750,536	b/ 233,652
	Rotary pumps:					
	100-PSI and under, designed pressure.....	(X)	792,372	196,676	r/ 805,615	186,098
33391114R1	10 GPM and under, designed capacity.....	31	656,965	82,276	r/ 660,197	r/ 77,845
33391114R3	11 to 99 GPM, designed capacity.....	24	120,644	49,620	r/ 133,018	48,770
33391114R5	100 to 299 GPM, designed capacity.....	15	13,269	31,357	(D)	(D)
33391114R7	300 GPM and over, designed capacity.....	10	b/ 1,494	33,423	(D)	(D)
	101 to 249 PSI, designed pressure.....	(X)	144,314	86,564	147,132	69,650
33391114RA	10 GPM and under, designed capacity.....	12	90,072	19,420	r/ 95,196	r/ 19,919
33391114RC	11 to 99 GPM, designed capacity.....	12	34,793	31,922	34,693	23,497
33391114RE	100 GPM, and over, designed capacity.....	12	19,449	35,222	17,243	26,234
	250 to 500 PSI, designed pressure.....	(X)	(D)	(D)	(D)	(D)
33391114RJ	10 GPM and under, designed capacity.....	13	144,478	21,439	138,971	r/ 17,813
33391114RM	11 GPM, and over, designed capacity.....	10	(D)	(D)	(D)	(D)
33391114RR	Over 500 PSI, designed pressure.....	7	(D)	(D)	(D)	(D)
33391114T5	Other industrial pumps.....	16	c/ 607,644	b/ 59,950	525,079	51,597
	Domestic water systems, including drivers.....	(X)	2,168,163	379,607	2,647,685	463,321
3339111167	Nonsubmersible pump systems (jet and nonjet, including drivers).....	12	b/ 1,341,929	a/ 194,021	1,472,967	210,054
	Submersible pump systems, including drivers.....	(X)	806,107	184,085	1,168,537	252,299
3339111172	Up to 1 hp.....	15	681,462	149,136	a/ 956,436	a/ 194,080
3339111175	Over 1 hp to 3 hp.....	9	98,359	25,013	169,570	43,748
3339111178	Over 3 hp to 5 hp.....	9	26,166	9,800	42,531	14,471
3339111179	Over 5 hp 3/.....	3	120	136	(NA)	(NA)
3339111190	Domestic hand and windmill pumps, pump jacks, and cylinders (sold separately, including drivers).....	4	20,127	1,501	6,181	968
33391111 pt.	Domestic sump pumps, 1 hp and under, including drivers.....	(X)	3,421,887	222,618	3,204,055	200,887
3339111235	Pedestal, including drivers.....	17	a/ 286,805	b/ 14,980	302,155	15,111
	Submersible, including drivers.....	(X)	3,135,082	207,638	2,901,900	185,776
3339111238	1/3 hp and under.....	14	2,017,227	130,885	1,922,584	122,448
3339111239	Over 1/3 hp.....	11	b/ 1,117,855	b/ 76,753	979,316	63,328
3339111330	Oil well and oil field pumps (except boiler feed).....	(X)	62,993	447,961	53,070	r/ 366,206
3339111335	Value of drivers 2/.....	7	(X)	202,989	(X)	(D)
3339111341	Subsurface pumps for oil-well pumping.....	7	a/ 49,473	150,951	a/ 42,092	130,264
3339111352	Mud pumps (slush pumps).....	3	(D)	(D)	(D)	(D)
3339111363	Other oil well and oil field pumps.....	8	(D)	(D)	(D)	(D)
	Other pumps, including drivers.....	(X)	6,798,307	408,856	r/ 6,205,232	r/ 366,272
	Other pumps (except vacuum pumps, automotive pumps, measuring and dispensing or service station pumps, hand pumps, and hydraulic fluid power pumps), including oil burner and appliance pumps, fire engine pumps, laboratory pumps, packaged pump units, and hot water heating circulator pumps, etc.:					
3339111580	Reported (or estimated from prior year reports).....	26	a/ 6,798,307	408,856	r/ 6,205,232	r/ 366,272
	Parts and attachments for pumps and pumping equipment whose product codes begin with 333911; made by manufacturers of complete units only.....	(X)	(X)	1,242,431	(X)	1,131,171
3339115144	Aftermarket (spare) parts for centrifugal pumps.....	73	(X)	b/ 650,156	(X)	553,625
3339115155	Aftermarket (spare) parts for vertical turbine pumps.....	16	(X)	c/ 46,525	(X)	64,170
3339115166	Aftermarket (spare) parts for reciprocating pumps.....	30	(X)	165,054	(X)	a/ 147,211
3339115199	Other.....	36	(X)	380,696	(X)	366,165
3339121 pt.	Air and gas compressors 1/.....	(X)	(X)	2,830,153	(X)	2,404,644
3339121115	Value of drivers 2/.....	28	(X)	a/ 206,307	(X)	178,493
	Air compressors, new:					
	Stationary, reciprocating, single acting.....	(X)	938,181	400,695	1,108,288	444,236
3339121121	1-1/2 hp and under.....	16	156,532	a/ 39,196	184,133	39,909
3339121124	Over 1-1/2 hp to 5 hp.....	22	538,337	185,754	651,270	228,690
3339121127	6 hp to 25 hp.....	24	(D)	(D)	(D)	(D)
333912112A	26 hp and over.....	10	(D)	(D)	(D)	(D)
3339121133	Stationary, reciprocating, double acting.....	5	501	b/ 6,578	c/r/ 531	a/r/ 14,202
	Stationary, rotary positive:					
3339121144	Discharge pressure 50 PSIG and under, all hp sizes.....	8	102,663	40,236	83,768	r/ 35,324
	Discharge pressure of 51 PSIG and over.....	(X)	23,891	351,382	r/ 20,528	r/ 286,700
3339121151	40 hp and under.....	13	a/ 11,426	74,136	r/ 9,951	r/ 71,905
3339121154	41-150 hp.....	14	c/ 10,238	c/ 179,701	b/r/ 8,663	a/r/ 134,154
3339121157	151-300 hp.....	11	c/ 1,540	c/ 58,448	a/r/ 1,179	a/r/ 42,221
333912115A	301 hp and over.....	6	a/ 687	a/ 39,097	b/ 735	a/ 38,420
3339121166	Stationary, centrifugal and axial.....	10	20,001	258,370	17,750	179,560
	Portable.....	(X)	2,798,785	608,371	r/ 2,978,009	543,190
3339121171	Under 11 CFM.....	7	2,592,888	344,555	r/ 2,845,938	342,620
3339121174	11 to 74 CFM.....	5	(D)	(D)	(D)	(D)
3339121177	75 to 124 CFM.....	5	417	c/ 3,806	b/ 380	b/ 3,559
333912117A	125 to 249 CFM.....	6	(D)	(D)	(D)	(D)
333912117E	250 to 599 CFM.....	5	1,552	a/ 32,309	1,065	24,692
333912117H	600 CFM and over.....	4	c/ 3,681	a/ 76,580	c/ 2,193	57,047

Table 2. Quantity and Value of Shipments of Selected Pumps and Compressors: 2005 and 2004  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2005		2004		Value
			Quantity	Value	Quantity	Value	
	Gas compressors, new:						
	Stationary, centrifugal and axial.....	(X)	564	452,636	r/	1,158	r/ 356,114
3339121183	Natural gas.....	5	302	287,699	r/	229	r/ 179,327
3339121188	All other gases.....	8	262	164,937	c/	929	a/r/ 176,787
	Stationary reciprocating:						
3339121199	Integral engine, including drivers.....	3	(D)	(D)		(D)	(D)
	Other than integral engine:						
33391211A1	1,000 hp and under.....	12	(D)	(D)		(D)	(D)
33391211A9	1,001 hp and over.....	7	1,441	341,753	r/	1,059	r/ 245,943
33391211CC	Stationary rotary positive.....	8	598	21,508	c/r/	346	r/ 19,771
33391211FF	Other compressors (except for refrigeration, air-conditioning, and ice-making), including rebuilt compressors, compressor packages, and packaged compressor units assembled from purchased compressors.....	7	5,477	a/ 33,092		4,705	a/ 31,653
3339121 pt.	Vacuum pumps, excluding laboratory.....	(X)	(X)	215,989		(X)	193,754
3339121225	Value of drivers 2/.....	13	(X)	36,593		(X)	r/ 34,360
	Low vacuum, 29.5" mercury vacuum and lower:						
3339121261	Under 5 hp.....	16	188,628	38,003		191,154	a/ 36,133
3339121265	5 hp and over.....	13	b/ 2,887	22,263	b/	2,165	a/ 16,457
	High vacuum, 29.6" mercury vacuum and over:						
3339121273	Under 5 hp.....	12	b/ 11,988	16,765	b/	13,609	20,708
3339121277	5 hp and over.....	8	b/ 9,337	c/ 102,365		8,082	86,096
	Parts and attachments for air and gas compressors and vacuum pumps whose product codes begin with 333912; made by manufacturers of complete units only.....	(X)	(X)	422,671		(X)	r/ 356,983
3339125111	Parts and attachments for air and gas compressors and vacuum pumps.....	45	(X)	422,671		(X)	r/ 356,983

D Withheld to avoid disclosing data for individual companies. pt. Part. r/Revised by 5 percent or more from previously published data.  
 X Not applicable.

1/For all "Pumps and compressors" product codes, value includes parts but quantity does not.  
 2/The value of drivers (electric motors, internal combustion engines, hydrostatic transmissions, steam turbines, etc.) is not included for most product categories but rather placed in one of four separate "driver" categories within the product class. Drivers may be included in values for products in product classes without separate driver categories.  
 3/New item for this year, no prior year data.

Note: 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, Exports, and Imports of Pumps and Compressors: 2005 and 2004  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments 1/		Export shipments 2/		Import shipments 4/	
		Quantity	Value f.o.b. plant	Quantity	Value 3/	Quantity	Value 5/
<b>2005</b>							
	Pumps 6/.....	(X)	5,124,917	2,626,617	1,187,079	97,800,656	1,301,154
3339111424, 425, 428, 429, 42C, 42E, 42G, 42K, 42M	Centrifugal pumps, submersible.....	1,006,582	358,503	632,173	89,092	3,006,857	171,076
3339111411, 412, 448, 44E, 44H, 44L, 44M, 44N, 44R, 450, 454, 455, 458, 459, 45A, 45C, 45G, 45M, 468, 46F, 478, 47D, 481, 484, 48N	Centrifugal pumps, other.....	7,130,082	1,525,685	195,606	431,269	14,848,559	410,450
3339111493, 498, 49F, 49N	Turbine pumps, vertical.....	46,929	260,565	18,084	39,108	27,073	3,797
33391114C3, 4C7	Reciprocating pumps.....	442,041	315,168	95,719	79,969	1,031,375	139,994
33391114D5	Diaphragm pumps.....	1,870,561	310,185	428,817	88,650	817,737	41,215
33391114R1, 4R3, 4R5, 4R7, 4RA, 4RC, 4RE, 4RJ, 4RM, 4RR	Rotary pumps.....	1,105,509	353,697	70,278	121,412	3,468,161	121,860
3339111335, 341, 352, 363	Oil well and oil field pumps (except boiler feed).....	62,993	447,961	7,015	73,357	25,692	92,659
3339111167, 172, 175, 178, 190	Domestic water systems, including windmill and hand pumps.....	2,168,163	379,607	505,027	39,995	39,221,975	56,576
33391114T5, 235, 238, 239, 580	Other pumps, including sump pumps, hot water circulator pumps, etc. ....	10,827,838	691,424	673,898	224,227	35,353,227	263,527
	Compressors 6/.....	(X)	2,623,846	1,938,003	210,800	4,699,510	129,865
	Stationary air compressors:						
3339121121, 124, 127, 12A, 133	Reciprocating, single and double acting 7/.....	938,682	407,273	(NA)	(NA)	(NA)	(NA)
3339121144, 151, 154, 157, 15A, 166	Rotary positive, centrifugal, and axial 7/.....	136,555	649,988	(NA)	(NA)	(NA)	(NA)
3339121171, 174, 177, 17A, 17E, 17H	Portable air compressors 7/.....	2,798,785	608,371	5,908	76,790	321,581	42,061
3339121183, 188, 199, 1A1, 1A9, 1CC, 1FF	Other air and gas compressors, including gas compressors, and compressor packages.....	10,055	958,214	1,932,095	134,010	4,377,929	87,804
3391110123, 3339121225, 261, 265, 273, 277	Vacuum pumps.....	(X)	215,989	660,962	145,478	5,622,912	419,873
<b>2004</b>							
	Pumps 6/.....	(X)	5,720,233	2,310,451	1,133,870	79,929,827	1,020,997
3339111424, 425, 428, 429, 42C, 42E, 42G, 42K, 42M	Centrifugal pumps, submersible.....	970,467	322,128	499,187	145,632	2,356,687	131,427
3339111411, 412, 448, 44E, 44H, 44L, 44M, 44N, 44R, 450, 454, 455, 458, 459, 45A, 45C, 45G, 45M, 468, 46F, 478, 47D, 481, 484, 48N	Centrifugal pumps, other.....	7,732,257	1,318,169	161,325	365,002	15,127,924	315,181
3339111493, 498, 49F, 49N	Turbine pumps, vertical.....	59,758	244,333	94,077	46,079	33,887	3,224
33391114C3, 4C7	Reciprocating pumps.....	450,807	281,711	75,940	84,037	830,525	111,834
33391114D5	Diaphragm pumps.....	1,750,536	233,652	304,767	71,676	265,978	26,899
33391114R1, 4R3, 4R5, 4R7, 4RA, 4RC, 4RE, 4RJ, 4RM, 4RR	Rotary pumps.....	1,109,789	301,660	71,278	114,447	3,207,208	109,813

Table 3. Shipments, Exports, and Imports of Pumps and Compressors: 2005 and 2004  
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments 1/		Export shipments 2/		Import shipments 4/	
		Quantity	Value f.o.b. plant	Quantity	Value 3/	Quantity	Value 5/
3339111335, 341, 352, 363	Oil well and oil field pumps (except boiler feed).....	53,070	366,206	7,992	75,200	9,018	40,420
3339111167, 172, 175, 178, 190	Domestic water systems, including windmill and hand pumps.....	2,647,685	463,321	473,599	35,524	40,467,409	52,550
33391114T5, 235, 238, 239, 580	Other pumps, including sump pumps, hot water circulator pumps, etc. ....	9,934,366	618,756	622,286	196,273	17,631,191	229,649
	Compressors 6/.....	(X)	2,281,195	2,341,166	196,822	4,488,000	93,769
	Stationary air compressors:						
3339121121, 124, 127, 12A, 133	Reciprocating, single and double acting 7/.....	1,108,819	458,438	(NA)	(NA)	(NA)	(NA)
3339121144, 151, 154, 157, 15A, 166	Rotary positive, centrifugal, and axial 7/.....	122,046	501,584	(NA)	(NA)	(NA)	(NA)
3339121171, 174, 177, 17A, 17E, 17H	Portable air compressors 7/.....	2,201,181	598,234	5,372	61,889	170,007	24,170
3339121183, 188, 199, 1A1, 1A9, 1CC, 1FF	Other air and gas compressors, including gas compressors, and compressor packages.....	8,528	722,939	2,335,794	134,933	4,317,993	69,599
3391110123, 3339121225, 261, 265, 273, 277	Vacuum pumps.....	(X)	193,754	760,622	122,081	5,142,358	453,949

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

1/Manufacturers' shipments generally exclude values of drivers.

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

3/Excludes the value of drivers.

4/Sources: Census Bureau report IM 145, General Imports, and IM 146, U.S. Imports for Consumption.

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

6/Manufacturers' shipments detail of quantity cannot be shown as drivers and parts where quantity is not collected; see Table 2.

7/Import and export data for three categories of compressors are combined because one harmonized code in the third category may be used interchangeably with any of several codes in the first two categories.

Note: For comparison of North American Industry Classification System (NAICS)-based codes with Schedule B export codes and HTSUSA import codes, see Table 4.

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2005

Product code	Product description	Export code 1/	Import code 2/
3339111424, 425, 428, 429, 42C, 42E, 42G, 42K, 42M	Centrifugal pumps, submersible.....	8413.70.2004	8413.70.2004
3339111411, 412, 448, 44E, 44H, 44L, 44M, 44N, 44R, 450, 454, 455, 458, 459, 45A, 45C, 45G, 45M, 468, 46F, 478, 47D, 481, 484, 48N	Centrifugal pumps, other.....	8413.70.1000 8413.70.2005 8413.70.2015 8413.70.2022 8413.70.2025 8413.70.2030 8413.70.2040 8413.70.2090	8413.70.1000 8413.70.2005 8413.70.2015 8413.70.2022 8413.70.2025 8413.70.2030 8413.70.2040 8413.70.2090
3339111493, 498, 49F, 49N	Turbine pumps, vertical.....	8413.81.0020	8413.81.0020
33391114C3, 4C7	Reciprocating pumps.....	8413.50.0090	8413.50.0090
33391114D5	Diaphragm pumps.....	8413.50.0050	8413.50.0050
33391114R1, 4R3, 4R5, 4R7, 4RA, 4RC, 4RE, 4RJ, 4RM, 4RR	Rotary pumps.....	8413.60.0070 8413.60.0090	8413.60.0070 8413.60.0090
3339111335, 341, 352, 363	Oil well and oil field pumps (except boiler feed).....	8413.50.0010 8413.60.0050	8413.50.0010 8413.60.0050
3339111167, 172, 175, 178, 190	Domestic water systems, including windmill and hand pumps.....	8413.20.0000 8413.81.0030	8413.20.0000 8413.81.0030
33391114T5, 235, 238, 239, 580	Other pumps.....	8413.81.0040	8413.81.0040
3339121121, 124, 127, 12A, 133	Stationary air compressors, reciprocating, single and double acting.....	8414.80.1018 8414.80.1042 8414.80.1055	8414.80.1505 8414.80.1515 8414.80.1525 8414.80.1535 8414.80.1540 8414.80.1545 8414.80.1555
3339121144, 151, 154, 157, 15A, 166	Stationary air compressors. rotary positive, centrifugal, and axial.....	8414.80.1060 8414.80.1067 8414.80.1075 8414.80.1080	8414.80.1560 8414.80.1565 8414.80.1570 8414.80.1575 8414.80.1580
3339121171, 174, 177, 17A, 17E, 17H	Portable air compressors.....	8414.40.0000 8414.80.1095	8414.40.0000 8414.80.1585 8414.80.1590
3339121183, 188, 199, 1A1, 1A9, 1CC, 1FF	Other compressors.....	8414.80.2010 8414.80.2050 8414.80.2060 8414.80.2070 8414.80.9000	8414.80.2010 8414.80.2050 8414.80.2060 8414.80.2070 8414.80.9000
3391110123, 3339121225, 261, 265, 273, 277	Vacuum pumps.....	8414.10.0000	8414.10.0000

1/Source: 2005 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 (2005).



# Appendix.

## General CIR Survey Information, Explanation of General Terms and Historical Note

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### GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

### NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)

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The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

## FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

## RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

## DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

## DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

## EXPLANATION OF GENERAL TERMS

**Capacity.** The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

**Consumption.** Materials used in producing or processing a product or otherwise removing the product from the inventory.

**Exports.** Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

**Gross shipments.** The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

**Interplant transfers.** Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

**Inventories.** The quantity or value of finished goods, work in progress, and materials on hand.

**Machinery in place.** The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

**Net receipts.** Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

**Production.** The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

**Quantities produced and consumed.** Quantities of each type of product produced by a company for internal consumption within that same company.

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**Quantity and value of new orders.** The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

**Quantity and value of shipments.** The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to a company's own branches are assigned the same value as comparable appropriate

allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

**Stocks.** Total quantity of ending finished inventory.

**Unfilled orders (backlog).** Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

#### **HISTORICAL NOTE**

Data on pumps and compressors have been collected by the Census Bureau since 1960. Data on hydraulic fluid power pumps and motors formerly collected on this survey are now included in the Current Industrial Report, MA333N, Fluid Power Products. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.