

Selected Instruments and Related Products

2000

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Current
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Reports

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 1998 Manufacturing Profiles, issued December 2000.

Current data are released electronically on Internet for all individual surveys as they become available. Use: <http://www.census.gov/econ/www/manumenu.html>. Individual reports can be accessed by choosing "Current Industrial Reports (CIR's)," clicking on "Report Number Index;" from the "Industrial Products by Numeric Index," choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (WK format) to your personal computer.

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

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 2000, the total value of shipments of selected instruments and related products totaled \$77 billion, up almost 8 percent from the 1999 value of \$72 billion. The 2000 figure includes automatic regulating, control, and solenoid valves, \$2.8 billion, unchanged from 1999; search, detection, navigation, guidance, aeronautical, and nautical systems, instruments, and equipment, \$28.3 billion, an increase of 3 percent from 1999; laboratory apparatus and furniture, \$1.9 billion, up 10 percent from 1999; controls for monitoring residential and commercial environments, and appliance regulating controls, \$3.2 billion, up 8 percent from 1999; process control instruments, \$7.1 billion, up 5 percent from 1999; fluid meters and counting devices including motor vehicle instruments, \$4.6 billion, up 8 percent from 1999; the largest increase came in test equipment and instruments to measure electricity, \$14.9 billion, an increase of 26 percent from 1999; analytical and scientific instruments (except optical), \$6.4 billion, unchanged from 1999; optical instruments and lenses, \$3.2 billion, an increase of 13 percent from 1999; test equipment, instruments, and measuring and controlling devices, not elsewhere classified (n.e.c.), \$4.4 billion, an increase of 3 percent from 1999.

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Chris Blackburn, 301-457-4817.

For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-457-4673.

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

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U.S. Department of Commerce
Economics and Statistics Administration
U.S. Census Bureau



Table 1. Value of Shipments of Selected Instruments and Related Products: 1994 to 2000
 [Millions of dollars]

Product code	Product description	2000	1999	1998	1997	1996	1995	1994
332911F	Automatic regulating and control valves.....	2,343.9	r/ 2,347.2	2,081.9	2,097.2	1,892.6	1,860.4	1,807.1
332911H	Solenoid-operated valves (except nuclear and fluid power transfer).....	476.3	486.0	524.0	541.1	521.8	463.8	452.3
	Aeronautical, nautical, and navigational instruments.....	2,773.1	r/ 2,799.8	2,503.9	2,531.0	2,274.3	2,124.5	1,858.9
3345113	Search and detection, navigation and guidance systems and equipment	25,558.0	24,597.7	26,030.5	26,584.1	26,093.9	24,697.4	25,566.7
3391110	Laboratory apparatus and laboratory furniture....	1,963.8	1,782.1	1,843.3	1,887.5	1,799.3	1,836.9	1,811.1
3345120	Controls for monitoring residential and commercial environments and appliance regulating controls.....	3,259.1	3,013.4	2,860.3	2,717.4	2,647.5	2,533.4	2,520.9
3345130	Process control instruments.....	7,185.1	6,825.4	6,637.0	7,073.1	6,745.1	6,438.5	6,240.0
3345141	Integrating and totalizing meters for gas and liquids.....	1,062.8	1,081.0	1,147.2	1,078.7	962.8	915.2	859.1
3345143	Counting devices.....	507.1	391.3	394.0	434.5	367.0	363.8	354.9
3345145	Motor vehicle instruments.....	3,103.7	2,851.3	2,435.8	2,245.1	2,218.8	2,193.1	2,092.0
3345151	Integrating instruments, electrical.....	489.6	472.9	460.3	457.3	458.0	445.0	440.3
3345153	Test equipment for testing electrical, radio and communication circuits, and motors.....	14,017.3	11,034.0	10,453.9	11,638.6	10,389.5	9,255.0	7,582.0
3345155	Instruments to measure electricity.....	425.0	365.0	376.6	455.9	499.8	554.9	554.4
3345160	Analytical and scientific instruments (except optical).....	6,440.9	6,409.9	6,162.4	6,058.6	5,478.4	5,737.2	5,534.0
3333141	Sighting, tracking, and fire control equipment, optical type.....	475.3	534.3	509.8	574.9	612.9	655.4	652.1
3333143	Optical instruments and lenses.....	2,789.8	2,354.4	2,068.0	2,005.0	1,748.9	1,579.1	1,596.7
3345191	Aircraft engine instruments (except flight).....	694.0	657.9	656.9	520.6	529.7	429.7	430.4
3345193	Physical properties and kinematic testing equipment.....	1,742.9	1,736.4	1,728.1	1,522.8	1,368.9	1,374.4	1,199.3
3345195	Nuclear radiation detection and monitoring instruments.....	569.1	539.1	567.2	529.6	496.5	501.2	489.1
3345197	Commercial, geophysical, meteorological, and general-purpose instruments	1,139.2	1,080.7	1,533.8	1,676.7	1,451.6	1,373.2	1,344.0
3345199	Surveying and drafting instruments	326.1	313.7	297.3	359.8	364.8	355.9	324.3

r/Revised by 5 percent or more from previously published data.

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
332911F	Automatic valves (regulating and control type, except nuclear).....	135	(X) b/	2,343,879	(X) a/ r/	2,347,184
	Automated control valves:					
	Pneumatic actuated.....	(NA)	(X)	650,677	(X) r/	661,369
	Sliding stem valves.....	(NA)	(S)	375,850	(S) r/	383,533
332911F001	Globe body.....	28 a/	168,317 a/	228,765	r/ 179,074 r/	262,844
332911F003	All other types.....	24	(S) b/	147,085	(S) b/ r/	120,689
	Rotary valves.....	(NA)	(S)	141,835	(S)	138,097
332911F005	Ball.....	13	(S) a/	62,034	(S)	62,529
332911F007	Butterfly	13 a/	45,350	54,213	39,951 r/	49,774
332911F009	All other rotary valves, including eccentric disk.....	13 b/	15,305	25,588 b/	14,901	25,794
332911F011	All other pneumatic power-operated control valves.....	16	(S) a/	30,571	(S) a/ r/	29,146
332911F013	Parts for pneumatic actuated valves, sold separately.....	23	(X)	102,421	(X) r/	110,593
	All other actuation, including electric-actuated and electrohydraulic-actuated.....	(NA)	(X)	406,520	(X)	380,066
	Sliding stem valves.....	(NA)	(S)	100,648	(S)	93,622
332911F015	Globe body.....	8	8,218	5,008	(S)	4,483
332911F017	All other types.....	14	(S) c/	95,640	(S) c/	89,139
332911F022	Rotary valves, including ball, butterfly, and eccentric disk.....	11	(S) a/	70,566	(S) a/	64,357
332911F025	All other power-operated (except pneumatic) control valves 1/.....	19	4,506 a/	190,900	4,304	180,682
332911F027	Parts for all other power-operated (except pneumatic) control valves.....	14	(X)	44,406	(X)	41,405
332911F029	Valve actuators, sold separately.....	21 c/	94,308 b/	108,631 a/	157,430 a/	113,511
	Regulator valves:					
332911F031	Remote-sensing direct-actuated temperature regulators 1/.....	19	(S)	72,856	(S)	79,441
332911F033	Self-contained direct-actuated pressure regulators (except instrument type and safety relief valves) 1/.....	34 a/	4,930 a/	265,909 a/	4,845 r/	258,801
332911F035	Pilot (internal and external)-actuated pressure regulators 1/.....	30 b/	276 a/	108,041 a/	248 a/ r/	97,848
332911F037	Self-contained direct-acting precision and instrument-type pneumatic (air and gas) pressure regulators 1/.....	12 b/	436 a/	40,294 a/	420 a/	38,566
332911F039	Flow regulators for gas, vapors, or liquids 1/.....	42 a/	24,598 a/	292,564	22,515 r/	273,058
332911F041	Other regulator valves 1/.....	26 b/	(X) a/	309,709	(X) b/	365,110
332911F043	Parts for regulator valves, sold separately.....	36	(X) a/	88,678	(X) a/ r/	79,414
332911H	Solenoid-operated valves (except nuclear and fluid power transfer).....	40	(X) b/	476,346	(X)	486,022
	Solenoid-operated valves (except power transfer valves):					
	Commercial/industrial types:					
332911H001	Two-way 1/	29 a/	4,962 a/	208,945	r/ 4,897 r/	207,347
332911H003	Three-way 1/.....	17 a/	842 a/	35,040	r/ 582	32,696
332911H005	Other 1/ 2/.....	15	(D)	(D)	(D)	(D)
332911H007	Household appliance type 1/ 2/.....	2	14,265	183,280	r/ 10,970 r/	197,286
332911H009	Parts, components, and operators for solenoid-operated valves (except nuclear and fluid power transfer valves, sold separately.....	18	(X) a/	49,081	(X) r/	48,693
3345111	Aeronautical, nautical, and navigational instruments (except aircraft engine instruments).....	76	(X) b/	2,773,124	(X) a/ r/	2,799,816
	Flight and navigation sensors, transmitters, and displays:					
3345111101	Compasses (all types).....	14	(X) a/	394,047	(X)	422,112
3345111103	Altimeters (except radio and radar altimeters).....	7	(X) b/	23,132	(X)	30,280
3345111105	Airspeed indicators, including machmeters and air data computers.....	16	(X)	380,242	(X) a/	533,550
3345111107	Acceleration indicators and systems components	10 c/	9,229	83,845 c/	8,055 a/	75,742

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345111109	Rate-of-climb indicators 3/.....	3	(D)	(D)	(D)	(D)
3345111111	Angle-of-attack indicators 3/.....	8	a/ 6,763	b/ 32,068	a/ r/ 6,309	37,000
3345111113	Artificial horizon flight instruments	6	c/ 4,854	a/ 12,380	c/ 4,280	a/ 10,819
3345111115	Other aerospace and navigational instruments	26	(X)	760,641	(X) r/	626,508
	Gyroscopes, sold separately:					
3345111217	Vertical.....	4	b/ 607	b/ 5,153	b/ r/ 725	b/ 6,155
3345111219	Directional.....	6	(S) b/	3,721	(S) b/	3,618
3345111221	Free, torqued and untorqued 4/.....	2	(X)	(D)	(X)	(D)
3345111223	Rate, inertial grade 4/.....	2	(X)	46,944	(X)	57,332
3345111225	Rate, noninertial grade.....	5	(X)	29,979	(X)	54,766
	Airframe equipment instruments:					
3345111227	Position indicators (mechanical, as for landing gear, cowl flaps, stabilizers, etc.).....	13	(X) a/	30,133	(X) a/	38,630
3345111229	Hydraulic system (both electrical and mechanical measuring means, as for liquid level and temperature and pressure indicators).....	12	(X) a/	40,285	(X) a/	39,902
3345111231	Cabin environmental measuring and control instruments (air-conditioning and heating, cabin pressure, oxygen, etc.).....	11	(X) b/	80,203	(X) a/	58,523
3345111233	Other aerospace flight instruments.....	21	(X) c/	658,793	(X) b/ r/	614,528
3345111335	Nautical instruments (all types, including temperature, speed, pitch, and roll instruments and system components, etc.).....	9	c/ 168,114	c/ 50,270	c/ 170,600	b/ r/ 44,440
3345111437	Parts and components for aeronautical, nautical, and navigational instruments (except aircraft engine instruments, sold separately).....	25	(X)	141,288	(X)	145,911
33451113	Search and detection systems and navigation and guidance systems and equipment.....	181	(X) b/	25,558,039	(X) b/	24,597,742
3345113101	Light reconnaissance and surveillance electronic systems and equipment (infrared, ultraviolet, and visible light).....	31	(X) b/	1,984,139	(X) b/	1,510,425
3345113103	IFF equipment.....	10	(X) b/	194,548	(X)	222,468
3345113105	Proximity fuses.....	4	(X)	(D)	(X)	(D)
	Radar systems and equipment:					
	Search, detection, and acquisition radar systems and equipment (BMEWS, airborne and other early warning radar, air traffic control radar, air defense and fighter control radar, ship radar, harbor control radar, meteorological radar, etc.):					
3345113207	Airborne and missile/space radar.....	19	(X) c/	1,896,524	(X) c/	2,005,299
3345113209	Ship (marine) radar 5/.....	13	(X)	(D)	(X)	(D)
3345113211	Ground radar 5/.....	18	(X)	1,464,255	(X)	1,242,107
	Tracking radar systems and equipment (fire control, bombing, bombing-navigational radar, aircraft and missile tracking radar, etc.):					
3345113313	Airborne and missile/space radar.....	8	(X)	(D)	(X)	(D)
3345113315	Ship (marine) radar.....	9	(X)	(D)	(X)	(D)
3345113317	Ground radar.....	14	(X)	483,440	(X) r/	531,826
	Instrumentation radar systems and equipment altimeters, highway speed control radar, missile and space satellite tracking range radar, GCA and other precision approach radar, etc.):					
3345113319	Airborne, missile/space and ship (marine) radar.....	6	(X) b/	74,554	(X) b/	70,771
3345113321	Ground radar.....	7	(X) c/	58,463	(X) a/	98,349
3345113323	Electronic checkout, monitoring, evaluation, and other electronic support equipment radar systems.....	12	(X) b/	166,093	(X) b/ r/	134,720

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
	Sonar search, detection, tracking and communication systems and equipment, including ASW (sonar telephone communication equipment, depth finding, fire control, fusing, guidance, hydrophones, mapping, sonabuys, navigation, sonar fish finders, sonar range instrumentation, and other):					
3345113425	Surface ship applications (destroyers, destroyer escorts, etc.).....	20	(X) a/	412,391	(X) r/	392,620
3345113427	Submarine applications.....	14	(X) a/	731,108	(X)	632,661
3345113429	Airborne.....	11	(X) b/	251,475	(X)	233,609
3345113431	Electronic checkout, monitoring, evaluation, and other electronic support equipment for sonar systems and submerged fixed systems.....	5	(X)	(D)	(X)	(D)
3345113433	Specialized command and control data processing and display equipment, sold separately from complete systems.....	16	(X) a/	550,304	(X) a/	595,021
3345113435	Search, detection, identification, and tracking systems and equipment, n.e.c.	23	(X)	1,237,963	(X) r/	960,478
	Electronic warfare systems and equipment: Countermeasures equipment:					
3345113437	Jamming equipment, communications, and radar.....	17	(X) a/	1,222,053	(X)	1,435,445
3345113439	Underwater countermeasures equipment.....	5	(X)	(D)	(X)	77,837
3345113441	Other active countermeasures equipment, excluding passive materials such as chaff, window, needles, and rope, etc.	12	(X) b/	215,459	(X)	180,174
3345113443	Specialized electronic and communication intelligence equipment, including specially designed DF equipment, signal reduction and processing equipment, and signal analyzers and display equipment.....	25	(X) a/	2,031,690	(X) a/ r/	1,828,037
	Missile and space vehicle systems and equipment (beam riders, command guidance, inertial systems, infrared homing systems, radar systems, stellar trackers, television systems, combination systems, etc.):					
3345113545	Missile-borne and space-vehicle-borne equipment.....	33	(X) b/	3,134,274	(X) b/	3,297,811
3345113547	Nonmissile and space vehicle guidance equipment (ground, ship, or airborne command guidance systems, etc.).....	13	(X)	508,815	(X)	523,031
3345113549	Electronic checkout, launching, and other missile and space vehicle support systems (ground, ship, and air).....	19	(X)	517,983	(X) r/	797,349
	Navigation systems and equipment, navigational aids for aircraft, ship, and ground navigation (auto pilots, beacons, transponders, collision warning devices, DECCA, DME, ILS, Doppler navigation systems, inertial navigation systems, optical/laser LORAN, radio compasses and direction finders, SHORAN, TACAN, VOR, VORTAC equipment, etc.):					
	Airborne navigational systems:					
3345113651	Radio navigation receivers and displays, including OMNI, radio magnetic, glide slope/localizer, and DME, etc.	20	(X) c/	749,975	(X) b/	788,393
3345113653	Airborne integrated data systems/flight recorders.....	9	(X)	176,802	(X) r/	171,008
3345113655	Distance measuring equipment (DME).....	4	(X)	(D)	(X)	(D)
3345113657	Flight directors/situation display.....	6	(X) c/	492,252	(X) b/	477,111
3345113659	Heads-up display (HUD) systems.....	7	(X) b/	200,868	(X)	164,486

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Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345113661	Inertial navigation systems.....	7	(X)	660,207	(X) r/	635,639
3345113663	Proximity warning/collision avoidance equipment.....	4	(X) a/	350,148	(X) a/ r/	304,761
3345113665	Complete automatic pilots.....	5	(X) b/	445,523	(X)	477,897
3345113667	Other airborne navigational systems.....	23	(X) c/	1,622,082	(X) c/	1,442,643
3345113669	Surface (ship and ground) navigational systems.....	32	(X) a/	325,607	(X) a/ r/	284,985
3345113671	Underwater navigational systems.....	5	(X)	(D)	(X)	(D)
3345113673	Electronic checkout, monitoring, evaluation, and other electronic evaluation, and other electronic systems and equipment.....	33	(X) c/	871,249	(X) c/	811,815
3391110	Laboratory apparatus and laboratory furniture.....	135	(X) a/	1,963,845	(X) a/	1,782,135
3391110112	Laboratory balances and scales.....	10	(S)	55,206	(S)	60,560
3391110115	Laboratory furnaces and ovens.....	19	(X) b/	32,917	(X) a/	29,841
3391110118	Laboratory centrifuges.....	13	b/ 28,598 a/	103,629 b/ r/	28,155 a/	98,192
3391110121	Laboratory distillation apparatus and rectifying apparatus 6/.....	5	(X)	(D)	(X)	(D)
3391110123	Laboratory vacuum pumps 6/.....	1	(S)	6,547	(S)	7,160
3391110125	Laboratory sterilizers and autoclaves.....	12	(X) a/	207,186	(X) a/	188,608
3391110127	Laboratory filtering or purifying apparatus 7/.....	3	(X)	(D)	(X)	(D)
3391110129	Laboratory burners and hotplates.....	8	(X)	9,000	(X)	7,814
3391110131	Laboratory heat exchangers.....	-	(X)	-	(X)	-
3391110133	Laboratory granulators, mills, and other particle size reduction apparatus.....	7	(X)	2,309	(X)	2,368
3391110135	Laboratory drying and evaporation apparatus.....	10	(X)	31,277	(X)	28,318
3391110137	Laboratory blenders, mixers, shakers, dispensers, fraction collectors, and other liquid sample preparation apparatus.....	26	(X) b/	150,013	(X) b/	132,449
3391110139	Laboratory incubators.....	12	b/ 32,591 b/	57,521 c/	32,436 b/	55,631
3391110141	Environmental test chambers.....	19	(S) a/	144,826	(S) r/	132,385
3391110143	Laboratory freezers.....	7	12,453 (S)	54,579 c/	10,901	50,020
3391110145	Microtomes 7/.....	1	(D)	(D)	(D)	(D)
3391110231	Laboratory furniture, including cabinets, cases, benches, tables, stools, reagent shelves, etc. 8/.....	18	(X) a/	309,985	(X) a/	277,615
3391110233	Parts and components for laboratory furniture, sold separately 8/.....	3	(X)	(D)	(X)	5,161
3391110151	All other laboratory apparatus, n.e.c. 7/.....	70	(X)	663,786	(X) a/	584,727
3391110155	Components, parts and accessories for laboratory and scientific apparatus, sold separately.....	46	(X)	135,064	(X)	121,286
3345120	Controls for monitoring residential and commercial environments and appliance regulating controls.....	99	(X) a/	3,259,132	(X) a/	3,013,406
	Automatic controls of the type principally used as components of air-conditioning, refrigeration, and comfort heating, including pneumatic controls:					
3345120102	Temperature responsive (thermostats).....	34	b/ 52,637 a/	372,614 b/	51,558 a/	374,934
3345120105	Pressure responsive (pressurestats) 1/.....	12	a/ 2,565 a/	26,131 a/	2,461 a/	27,884
3345120107	Hydronic responsive 1/.....	6	2,802	54,969	2,397	52,161
3345120109	Humidity responsive (humidistats) 1/ 9/.....	6	(D)	(D)	(D)	(D)
3345120111	Light responsive 1/ 9/.....	2	6,722	25,343	7,707	42,267
3345120113	Liquid level 1/.....	10	(S) c/	38,921	(S) b/ r/	42,986
3345120115	Igniters 1/ 10/.....	7	(D)	(D)	(D)	(D)
3345120117	Inherent motor protectors 1/ 10/.....	4	b/ 154,720	534,322 c/	161,636	315,720
3345120219	Microprocessor-based load programmers for buildings energy control 1/.....	11	(S) b/	64,279	(S) a/	59,665
3345120221	Computerized energy control systems for buildings.....	12	(S) a/	588,972	(S) a/	512,232
3345120223	Other.....	25	(X) a/	711,970	(X) r/	769,419
	Controls for major appliances such as domestic laundry and cooking appliances, refrigerators and freezers, vending machines, air-conditioners, etc.:					
3345120225	Temperature responsive 1/.....	14	268,515 a/	361,120	241,200	318,260
3345120227	All other controls for appliances 1/.....	13	56,153	320,064	(S)	332,853

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345120229	Parts and components for controls monitoring residential and commercial environments and for appliance regulating controls, sold separately.....	24	(X)	160,427	(X)	165,025
3345130	Process control instruments.....	489	(X) b/	7,185,134	(X) b/	6,825,427
	General-purpose control system instruments (commonly call receiver-type), operating from standardized transmission signals (electrical types ac or dc milliampere, millivolt, or telemetering signals; pneumatic types, 3 to 15 and 3 to 27 p.s.i. signals): Electronic systems--unified architecture type:					
3345130101	Controllers (recording, indicating, or blind).....	32	b/	176,617	b/	182,144
3345130103	Recorders, with or without self-contained set-point stations.....	14	(S) b/	123,095	(S) b/	121,974
3345130105	Indicators, with or without self-contained set-point stations.....	24	b/	98,524	a/	23,855
3345130107	Auxiliary stations and analog computing devices associated with the above, including manual loaders, auto-to-manual stations, ratio stations, adders, multipliers, integrators, etc.	9	(S) c/	88,894	(S) a/	85,735
3345130109	Electronic systems--nonunified architecture type.....	60	(X) b/	1,493,386	(X) b/	1,484,252
3345130111	Industrial multifunction process computers.....	56	(X) a/	476,093	(X) r/	479,620
	Pneumatic systems, including all system-type control, display and computing instruments actuated from standardized pneumatic transmission signals:					
3345130113	Controllers (recording, indicating, or blind) 11/.....	12	(S) a/	49,344	(S) a/ r/	57,336
3345130116	Recorders and indicators, with or without self-contained set-point stations 11/.....	8	(D)	(D)	(D)	(D)
3345130119	Auxiliary stations and analog computing devices associated with the above, including manual loaders, auto-to-manual stations, ratio stations, adders, multipliers, integrators, etc.	4	(S) c/	6,119	(S) c/	6,411
3345130121	Receiver-type gauges, analog and digital 11/.....	8	(S)	(D)	(S)	(D)
3345130123	Annunciators, industrial; electromechanical and solid-state types.....	7	a/	31,509	b/	23,229
	Temperature measuring instruments, excluding general-purpose receiver-type instruments:					
	Electrical and electronic measuring types (thermocouple, resistance temperature detector, radiation, optical, thermistor, and other electrical sensors):					
3345130225	Direct-deflecting types (controllers for all types of electrical temperature sensors).....	7	(S) c/	10,912	(S) r/	13,977
3345130227	Direct-deflecting types (indicators and recorders for all types of electrical temperature sensors).....	8	(S)	5,058	(S)	4,666
3345130229	Electromechanical self-balancing types (electric or pneumatic controllers for all types of electrical temperature sensors) 12/.....	2	(D)	(D)	(D)	(D)
3345130231	Electromechanical self-balancing types (indicators, recorders, and integrators for all types of electrical temperature sensors) 12/.....	3	(S)	6,728	(S)	6,930

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000			1999				
			Quantity		Value	Quantity	Value			
3345130233	Electronic controllers for all types of electrical temperature sensors.....	23	c/	459,879	a/	120,932	c/	510,889	a/	134,585
3345130235	Digital indicators for all types of electrical temperature sensors, excluding data loggers.....	29	b/	74,753	b/	16,850	b/	59,690	b/	17,821
	Transmitters, producing standardized electric or pneumatic analog transmission signals for all types of electrical temperature sensors:									
3345130237	Electric.....	18	c/	132,642	a/	41,165	c/	126,803	a/	37,442
3345130239	Pneumatic.....	4	b/	352	c/	553	b/	394	c/	585
	Mechanical measuring types, filled systems (liquid filled, vapor pressure, gas filled, and mercury filled types):									
3345130241	Indicating or recording controllers.....	9		(S)		14,506		(S)		17,331
3345130243	Recorders, noncontrol.....	12		(S)	c/	12,853		(S)		14,173
3345130245	Indicators only, excluding indoor-outdoor and other household or appliance type thermometers.....	14		501,447	a/	11,388	a/	501,497	a/	13,037
3345130247	Transmitters producing standardized electric or pneumatic analog transmission signals.....	11	b/	16,934	a/	13,671	c/	22,848	b/	7,709
	Primary temperature sensors, excluding aircraft types:									
3345130249	Thermocouples and thermocouple lead wire.....	58		(X)		248,285		(X)		219,580
3345130251	All other types (resistance temperature detectors, radiation and optical sensors, thermistors, etc.).....	48		(X)		169,287		(X)	r/	162,245
	Pressure (gauge, absolute vacuum) and draft measuring instruments, excluding general-purpose receiver-type instruments:									
3345130253	Indicating or recording controllers.....	15		841,883	c/	56,015		816,459	c/	56,028
3345130255	Recorders, noncontrol.....	9	b/	9,458	b/	4,417	b/	7,329	b/	3,371
	Indicators only, excluding receiver-type gauges:									
3345130257	3-inch diameter and over 1/.....	18		3,728		136,572	b/	3,712		113,319
3345130259	Under 3-inch diameter 1/.....	15		28,397		101,470		28,418	r/	89,308
	Transmitters producing standardized analog transmission signals:									
3345130261	Transmitters producing standardized electronic analog transmission signals 1/.....	28		(S)		281,249		(S)	a/	188,723
3345130263	Transmitters producing standardized pneumatic analog transmission signals.....	7	c/	21,323	c/	3,026		(S)	c/	3,270
	Flow and liquid level measuring instruments, excluding general-purpose receiver-type instruments:									
	Differential pressure types:									
3345130265	Indicating or recording controllers.....	10		168,632	b/	18,311		164,048	a/	35,270
3345130267	Recorders, noncontrol, and indicators, noncontrol.....	13		64,669		26,247	a/	46,945		24,336
	Transmitters producing standardized analog transmission signals:									
3345130269	Transmitters producing standardized electronic analog transmission signals.....	22	c/	268,446	a/	305,338	c/	252,830	a/	289,583
3345130271	Transmitters producing standardized pneumatic analog transmission signals.....	8	c/	16,048	c/	9,312	c/	15,392	c/	9,057
3345130273	Primary pressure sensors (load cells, strain gauges, etc.).....	8		49,575		22,802	r/	40,859		19,038
3345130275	Primary flow elements, including orifice plates, venturi tubes, low tubes, flow nozzles, pitot tubes, etc.	17	a/	284,013		67,770	a/	264,683	r/	60,346
	Electromagnetic flowmeters:									
3345130277	Primary device (magnetic flow tube).....	10	c/	104,562	c/	102,455	c/	86,425	c/	90,753
3345130279	Secondary device (magnetic transmitter, recorder, indicator or controller which receives signal directly from primary device).....	10	c/	42,923	a/	29,402	c/	38,356	b/	25,684

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345130281	Capacitance, ultrasonic, and other electronic types, including magnetic resonance, vortex-precession, and vortex-shedding type elements.....	39	b/ 197,736	a/ 161,984	b/ 189,557	b/ 156,426
3345130283	Variable area-controlling, recording, indicating, and transmitting instruments and associated primary flow elements 1/.....	14	(S)	101,464	(S)	90,585
3345130285	Float and displacement (controlling, recording, indicating, and transmitting instruments and associated primary flow elements) 1/.....	24	a/ 1,694	100,366	a/ r/ 1,541	97,727
3345130287	Turbine and propeller: controlling, recording, indicating, and transmitting instruments and associated primary flow elements.....	12	a/ 94,655	b/ 38,195	c/ 70,483	b/ r/ 24,799
3345130289	Mass flow, i.e., controlling, thermal-controlling, recording indicating, and transmitting instruments and associated primary flow elements.....	17	(S)	333,981	(S)	r/ 306,574
3345130291	Other types: controlling, recording, indicating, and transmitting instruments and associated primary flow elements.....	16	b/ 436,448	67,390	b/ r/ 477,118	r/ 72,800
3345130293	Humidity instruments (controlling, recording, indicating, and transmitting, and associated primary humidity elements, excluding home general-purpose type).....	11	(S)	a/ 33,068	(S)	a/ 24,993
	Continuous process instruments for on-stream gas and liquid analysis, including indicators, recorders, controllers, and analysis electrodes and cells, excluding laboratory analysis types:					
3345130295	Chromatographic analyzers.....	10	c/ 4,626	b/ 95,857	c/ r/ 4,557	a/ r/ 96,717
3345130297	Infrared analyzers.....	14	b/ 11,377	c/ 45,218	b/ 9,120	c/ 53,399
3345130299	Oxygen analyzers.....	18	b/ 36,073	75,233	b/ 31,874	58,474
334513021A	Other gas analyzers.....	26	c/ 57,278	b/ 148,301	a/ 53,522	a/ 114,038
334513021C	Ph analyzers.....	16	a/ 80,458	a/ 42,425	a/ 76,523	a/ 37,521
334513021E	Other liquid analyzers.....	25	c/ 105,622	b/ 79,700	c/ 100,101	a/ 77,844
	Instruments for all process variables not listed above (speed, weight, position, sequence, density, specific gravity, mechanical load, electrical load, millivolts):					
	Electrical and electronic measuring types:					
334513011G	Direct-deflecting type controllers, indicators, and recorders 13/.....	3	(S)	(D)	(S)	(D)
334513011J	Electromechanical self-balancing electric or pneumatic controllers, indicators, recorders, integrators 13/.....	3	(S)	c/ 14,895	(S)	c/ r/ 14,791
334513021L	Digital indicators.....	17	c/ 167,715	b/ 52,471	c/ r/ 140,756	b/ r/ 42,215
334513021M	Transmitters producing standardized electric or pneumatic analog transmission signals.....	9	a/ 30,548	a/ 6,933	a/ 35,828	a/ 11,161
	Mechanical measuring types:					
334513021P	Indicating or recording controllers and recorders, noncontrol.....	4	5,684	2,724	r/ 5,977	2,969
334513021R	Indicators only.....	5	(S)	c/ 12,350	(S)	13,189
334513021T	Transmitters producing standardized electric or pneumatic analog transmission signals.....	14	(S)	a/ 62,766	(S)	a/ 52,684
	All other industrial process instruments:					
334513022A	Other temperature instruments.....	27	(X)	a/ 166,634	(X)	a/ r/ 142,804
334513022C	Other flow and liquid level instruments.....	27	(X)	a/ 148,904	(X)	a/ r/ 156,105
334513022E	Other continuous process instruments.....	34	(X)	b/ 297,095	(X)	b/ 277,554
334513022G	Other industrial type instruments.....	57	(X)	b/ 449,085	(X)	a/ r/ 447,562
	Parts, supplies, accessories, other primary sensors, n.e.c., panelboards, and other equipment associated with process control instrumentation:					
334513032J	Primarily designed for temperature instruments.....	18	(X)	a/ 46,896	(X)	a/ 49,850

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Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
334513032L	Primarily designed for flow and liquid level instruments.....	30	(X) b/	99,615	(X) b/	90,245
334513032N	Primarily designed for continuous process instruments.....	25	(X) b/	130,592	(X) b/	128,060
334513032P	Primarily designed for industrial type instruments.....	36	(X) b/	68,259	(X) b/ r/	68,548
3345141	Integrating and totalizing meters for gas and liquids.....	42	(X) a/	1,062,764	(X) a/	1,080,968
	Gas meters, consumption registering: Diaphragm type; positive displacements; aluminum, iron, and tin case:					
3345141001	Residential size (up to 400 cu. ft/hr of 0.64 specific gravity gas, at 0.5 inches water drop) 1/.....	4	b/	2,519	b/	113,917
3345141003	Other sizes, including commercial and industrial.....	6	(S) b/	45,827	a/	173,447
3345141005	Turbine type (all sizes) 14/.....	6	(D)	(D)	(D)	(D)
3345141007	Other gas meters, consumption registering 14/.....	4		63,866		70,560
	Liquid meters, positive displacement with registers and counters:					
	Water meters, consumption registering:					
3345141009	Small meters, up to and including 1 inch 1/.....	9		4,576		231,542
3345141011	Intermediate meters, over 1 inch, up to and including 2 inches.....	9		164,099		42,210
3345141013	Large meters, over 2 inches.....	9		486,051		100,837
3345141015	Liquid fuel dispensing meters, excluding service station dispensing pumps 15/.....	9	(D)	(D)	(D)	(D)
3345141017	Other liquid meters; industrial bulk plants, pipeline, batching, and treatment facilities 15/..	14	c/	952,982	c/	214,359
3345141019	Parts, components, and accessories for gas and liquid meters, sold separately.....	28	(X)		(X)	243,512
3345143	Counting devices, excluding motor vehicle instruments.....	36	(X)		(X)	507,063
3345143001	Mechanical input 1/.....	7	(S)		(S)	33,297
3345143003	Electrical input 1/.....	11	b/	911	b/	25,259
3345143005	Electronic input	13	b/	2,182,511	b/ r/	207,873
3345143007	All other counting devices not specified above, including toll meters, fare collection equipment (systems), and parking lot systems, etc., but excluding parking meters.....	11	(X)		(X) r/	235,795
3345143009	Components and parts for counting devices (except parking meters), sold separately.....	5	(X)		(X) a/ r/	4,839
3345145	Motor vehicle instruments.....	31	(X)		(X)	3,103,728
3345145001	Speedometers (speedometers, including odometers are classified as speedometers).....	11	(X)		(X)	41,646
3345145003	Tachometers.....	9	(X) b/		(X) c/	23,089
3345145005	Odometers (speedometers, including odometers are classified as speedometers).....	4	(X)		(X)	1,073
3345145007	Fuel level gauges 16/.....	8	(X)		(X)	(D)
3345145009	Water temperature gauges.....	11	(X) a/		(X) b/	26,878
3345145011	Ammeters.....	9	(X)		(X) c/	5,425
3345145013	Oil pressure gauges.....	7	(X) a/		(X) b/	12,040
3345145015	Instrument panels, including cluster modules.....	17	(X)		(X)	2,791,547
3345145017	Other motor vehicle instruments 16/.....	19	(X)		(X) a/ r/	202,030
3345151	Integrating instruments, electrical.....	18	(X)		(X) a/	489,612
	Ac watt-hour meters:					
3345151001	Single phase 1/.....	7	c/	5,510	a/	175,704
3345151003	Polyphase.....	6	b/	316,729	b/	32,775
3345151005	Demand meters (kW and kVA), combined watt-hour and demand meters (single phase and polyphase), and combined watt-hour and time switch meters.....	7	c/	690,369	b/	139,420

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Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345151007	Other electrical integrating meters, including dc watt-hour meters, ampere-hour meters, and other miscellaneous integrating instruments not included in the above classifications 17/.....	9	(X)	(D)	(X) a/	75,279
3345151009	Parts and accessories for electric integrating meters, including meter mountings and registers, sold separately 17/.....	8	(X)	141,713	(X)	91,100
3345153	Test equipment for testing electrical, radio and communication circuits, and motors.....	344	(X) b/	14,017,282	(X) b/	11,033,955
	Voltage, current, and resistance measuring equipment (except multimeters):					
	Electronic:					
3345153001	Digital 18/.....	25	(X)	(D)	(X)	346,130
3345153003	Analog 18/.....	26	(X)	577,776	(X)	67,284
3345153005	Electrical, excluding panel meters.....	14	(X)	123,419	(X)	103,633
	Multimeters:					
3345153007	Electronic, digital and analog 19/.....	11	(X)	(D)	(X)	(D)
3345153009	Electrical 19/.....	6	(X)	154,394	(X)	162,449
	Power and energy measuring equipment:					
	Electronic:					
3345153011	Analog 20/.....	4	(X)	(D)	(X)	(D)
3345153013	Digital 20/.....	14	(X) a/	70,031	(X) b/ r/	44,359
3345153015	Electrical power measuring equipment, excluding electrical integrating instruments, sold separately.....	3	(X)	(D)	(X)	854
3345153018	Frequency counters, timers, and other frequency and time measuring equipment, excluding standards.....	18	(X)	119,737	(X) r/	101,913
3345153026	Waveform measuring and/or analyzing equipment, including oscilloscopes and spectrum analyzers.....	24	(X)	1,022,560	(X) b/	989,712
	Signal generating equipment:					
3345153031	Audio.....	13	(X) a/	20,143	(X) a/ r/	19,453
3345153033	RF (over 20 KHz to 890 MHz) 21/.....	14	(X)	(D)	(X)	(D)
3345153035	Microwave (890 MHz and above) 21/.....	10	(X)	557,448	(X)	284,806
	Field strength and intensity measuring equipment, including RFI measuring equipment:					
3345153037	Electronic 22/.....	13	(X)	452,885	(X)	274,104
3345153039	Electrical field measuring equipment 22/.....	3	(X)	(D)	(X)	(D)
	Impedance and standing wave ratio measuring equipment (transfer function measuring equipment):					
3345153043	Electronic impedance and related measuring equipment.....	7	(X) b/	18,263	(X) b/	20,267
3345153045	Standing wave measuring equipment (slotted lines, sliding shorts, reflectometers, and other SWR equipment).....	4	(X)	(D)	(X)	(D)
3345153047	X-Y plotters (recorders), electronic.....	1	(X)	(D)	(X)	(D)
	Automatic test and measuring equipment:					
3345153049	Combination and/or group test sets.....	37	(X)	1,679,764	(X) a/ r/	1,663,497
	Component part test sets:					
3345153051	Electron tube test equipment.....	3	(X)	146	(X) r/	215
	Semiconductor component test equipment:					
3345153053	Memory.....	13	(X)	73,648	(X) r/	159,231
3345153055	Linear 23/.....	8	(X)	(D)	(X)	(D)
3345153057	Microprocessor.....	14	(X)	1,417,989	(X) r/	843,771
3345153059	Other semiconductor component test equipment 23/.....	39	(X)	2,215,076	(X) r/	1,669,753
3345153061	Circuit board loaded test equipment.....	14	(X)	388,374	(X)	286,370
3345153063	Other component part test sets and equipment.....	27	(X) c/	400,065	(X) c/	332,958
3345153065	Equipment and subassembly test equipment, n.e.c., including disc drive testers, power supply testers, etc.	18	(X) b/	204,675	(X) a/ r/	182,986
3345153068	Standards and calibration equipment for test measuring equipment, including laboratory types (metered benchtop, rack mountable, or plug-in equipment).....	25	(X) a/	171,805	(X) a/	139,495

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Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
	Analyzers for testing characteristics of internal-combustion engines, excluding aircraft:					
3345153071	Portable 24/.....	5	(X) b/	258,533	(X) b/	505,422
3345153073	Other 24/.....	5	(X) c/	32,820	(X)	(D)
	Communications test equipment, n.e.c.:					
3345153075	Network analyzers.....	15	(X)	957,409	(X)	600,513
3345153077	Cable backplane and other continuity testers.....	11	(X)	100,502	(X)	98,283
3345153079	Fiber optics test equipment (OTDR, optical S/N meters, etc.).....	11	(X)	478,342	(X) a/	265,758
3345153081	Other communications test, monitoring, and control equipment (except microwave).....	32	(X) a/	827,875	(X) b/ r/	619,466
3345153083	Microwave test equipment, n.e.c., (1,300 MHz and above).....	8	(X) c/	96,822	(X) r/	64,519
	Logic test, development, and analysis equipment:					
3345153085	Logic analyzers, and similar logic state, timing, and signature analyzers 25/.....	4	(X)	(D)	(X)	(D)
3345153087	Microprocessor development systems 25/.....	7	(X)	309,595	(X)	230,865
3345153089	Pulse, function, and data generators and similar metered frequency synthesizers.....	11	(X)	220,389	(X) r/	184,780
3344160041	Portable instrument transformers.....	7	(X)	(D)	(X)	(D)
3345153091	Other field service test and measurement equipment, logic probes, clips, and pulsers 26/.....	5	(X)	(D)	(X)	(D)
3345153093	Other measuring and checking instruments for testing electrical, radio, and communication circuits, and motors.....	30	(X)	274,396	(X) b/	259,357
3345153095	Other analyzing instruments for checking electrical quantities 26/.....	9	(X)	300,826	(X) r/	180,911
3345153097	Parts and components for test equipment for testing electrical, radio and communication circuits, and motors, sold separately.....	42	(X)	387,800	(X)	281,892
3345155	Instruments to measure electricity.....	81	(X) a/	425,013	(X) a/	364,969
	Electrical indicating instruments:					
	Panel type instruments:					
3345155001	Digital panel meters (DPMs) between 0.05 percent and 1 percent, plus or minus one-digit accuracy, excluding precision DVMs and electronic counters.....	21	a/	1,226,825	87,061 b/ r/	738,503
3345155003	Analog solid state panel meters (generally of plus or minus 2-percent accuracy) with LED, LCD, or neon gas discharge display.....	8	c/	36,544	a/	5,350
	Panel types other than ruggedized or sealed (generally of 2-percent accuracy):					
3345155005	Ac, including moving iron vane and dynamometer types.....	9	c/	120,011	b/	5,283 b/ r/
3345155007	Dc, including rectifier and self-contained thermocouple types 1/.....	13	c/	1,043	b/	28,772 c/ r/
3345155009	Panel types ruggedized or sealed (generally of 2-percent accuracy) 27/.....	8	c/	66,061	a/	9,887 b/
3345155011	Panel types with control or signal initiating means, including instrument relays 27/.....	4		(D)		(D)
3345155013	All other panel type instruments, including ammeters and volt-meters for motor vehicles 1/.....	12		1,888		36,444 a/
	Switchboard instruments which are generally of 1-percent accuracy:					
3345155015	Ac, including moving iron vane and dynamometer types 28/.....	2		(D)		(D)
3345155017	Dc, including rectifier and thermocouple types 28/.....	5		17,382		2,152 r/
3345155019	Elapsed time meters (with and without reset) 1/.....	7		(S)		18,767 (S)
3345155021	Portable instruments which are generally capable of accuracies within plus or minus 2-percent of full scale indication, and can be enclosed in a case so that they can be moved and used at various locations, and that are an end product.....	15	c/	602,034		90,035 c/
						385,437
						51,605

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Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
Electrical recording instruments (portable and for panel mounting):						
3345155023	Direct deflecting (direct acting) (except temperature calibrated instruments) 29/.....	2	(D)	(D)	(D)	(D)
3345155025	Oscillographic recorders, pen or stylus, and light beam type 29/.....	2	(X)	(D)	(X)	(D)
3345155027	Other electrical recording instruments 29/.....	19	(X) a/	63,196	(X)	55,569
Parts and accessories for indicating and recording instruments:						
3345155029	Transducers for volts, amperes, watts, vars, frequency, temperature, and power factor.....	15	(X) b/	31,677	(X) r/	35,629
3345155031	Tachometer generators (except aerospace types) 30/.....	3	(X)	(D)	(X)	(D)
3345155033	Other, including instrument shunts 30/.....	14	(X)	46,389	(X)	39,357
3345160	Analytical and scientific instruments (except optical).....	271	(X) b/	6,440,881	(X) b/	6,409,913
Electrochemical instruments:						
3345160001	Ph electrodes and meters.....	19	(X)	61,085	(X)	62,363
3345160003	Ion selective electrodes and meters.....	13	(X) b/	38,226	(X) a/	39,195
3345160007	Electrophoresis instruments.....	10	(X) a/	128,611	(X) a/ r/	82,422
3345160009	Other (except process type), including photometers.....	11	(X) b/	8,277	(X) b/	10,069
3345160012	Chromatographic instruments, including gas, liquid, paper, gel, and thin layer.....	35	b/ 330,754	1,025,897	a/ 349,117 a/	1,027,975
Spectrophotometric instruments:						
3345160017	Atomic absorption 31/.....	4	(X)	(D)	(X)	(D)
3345160019	Optical emission, including spark, arc, and glow, spectrographs, all other (except ICP).....	8	(X)	25,975	(X)	22,114
3345160021	Optical emission, including laser excited source, which includes laser microprobe source emission, laser source Raman, and laser microprobe source Raman spectrometers 31/.....	6	(X)	(D)	(X)	(D)
3345160023	Optical emission with inductively coupled plasma, ICP 31/.....	4	(X)	164,123	(X) c/ r/	161,748
3345160025	Infrared, including Fourier transfer methods.....	17	(X)	140,110	(X) a/	137,002
3345160027	Ultraviolet, visible and colorimeters.....	18	(X)	128,294	(X) b/	132,224
3345160029	Fluorescent instruments, including fluorometers (except chemicals).....	13	(X)	52,993	(X)	56,848
3345160031	Color measuring devices.....	9	(X)	78,839	(X) r/	85,640
3345160033	Other, including vacuum ultraviolet, Raman, light scattering reflectors, helium glow, and light measuring.....	12	(X) b/	23,130	(X) b/	28,313
3345160035	Thermal analysis instruments, including thermogravimetric analyzers (TGA), quantitative thermal analyzers (QTA), and differential thermal analyzers (DTA).....	10	(X)	134,801	(X) a/	136,446
3345160037	Nuclear magnetic resonance spectrometers, including electron paramagnetic spin types (EP) 32/.....	3	(D)	(D)	(D)	(D)
3345160039	Microscopes, scanning type, including electron and proton.....	5	879 a/	127,924	710 a/ r/	92,670
3345160041	Particle beam excitation instruments, including electron microprobes, augers, energy ion spectrometers, secondary ion mass spectrometers (SIMS), and ion microprobes 32/.....	3	(D)	(D)	(D)	(D)
3345160043	Photon excitation analyzers, including: X-ray fluorescence, simultaneous; X-ray fluorescence, sequential; X-ray fluorescence, sequential with diffraction; X-ray fluorescence, diffraction; X-ray diffraction; and energy dispersive systems (EDSs).....	9	b/ 1,670	60,861	c/ 2,033 b/	75,343
3345160045	Mass spectroscopy instrumentation.....	18	(X)	300,071	(X)	354,921
	Clinical laboratory instrumentation, including instruments used in the clinical laboratory for measuring, analyzing, and processing clinical specimens.....	(NA)	(X)	1,045,346	(X)	1,171,292

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345160047	Chemistry (measure and identify substances, e.g., metabolites, enzymes, and drugs).....	10	(S)	351,763	(S)	375,511
3345160049	Hematology (measure and identify substances or cells contained in blood or substances influencing the development and clotting of blood, e.g., cell counting coagulation factors).....	10	19,590	310,005	r/ 18,062	r/ 319,997
3345160051	Microbiology (enumerate or identify pathogenic organisms or measure their susceptibility to anti-microbial agents).....	5	1,876	19,190	(S)	21,619
3345160053	Histology (process tissue and cells, e.g., tissue processors and cell stainers) 33/.....	2	(D)	(D)	(D)	(D)
3345160055	Blood bank and immunology (process blood and specimens for testing; measure and identify, using immunoassay, substances in clinical specimens) 33/.....	9	(S)	235,640	(S)	r/ 315,170
3345160057	Other clinical laboratory instrumentation not specified above.....	16	c/ 20,006	a/ 128,748	c/ 25,844	138,995
3345160059	Organic elemental analysis instruments, including carbon, hydrogen, nitrogen, oxygen, and sulphur.....	11	31,962	72,826	35,519	69,210
3345160061	Amino acid, protein and/or peptide, including chromatographic type 32/.....	6	(D)	(D)	(D)	(D)
3345160063	Gas detectors.....	20	401,585	a/ 115,574	r/ 441,558	a/ r/ 121,357
3345160065	Other analytical and scientific instruments, n.e.c., including molecular weight, monochrometers (analytical type), nephelometers (except meteorological), osmometers, particle size analyzers, photo multipliers, surface area analyzers, turbidimeters, and breatholyzers 32/.....	96	(X)	1,444,577	(X)	r/ 1,471,999
3345160067	Parts, components, and accessories for analytical and scientific instruments, sold separately, including photo tubes, thermal conductivity sensors, thermopiles, etc.	104	(X)	a/ 1,263,341	(X)	1,070,762
3333141	Sighting, tracking, and fire control equipment, optical type.....	38	(X)	a/ 475,283	(X)	a/ 534,287
3333141001	Made from lenses, prisms, etc., produced in the same plant.....	10	(X)	115,564	(X)	97,355
3333141003	Made from purchased lenses, prisms, etc.	23	(X)	b/ 323,720	(X)	b/ 400,691
3333141005	Parts and accessories.....	14	(X)	a/ 35,999	(X)	a/ 36,241
3333143	Optical instruments and lenses.....	155	(X)	a/ 2,789,826	(X)	a/ 2,354,387
3333143111	Binoculars, prismatic and nonprismatic, terrestrial and celestial telescopes.....	10	(X)	96,234	(X)	68,195
3333143113	Other astronomical instruments, excluding radio astronomy 34/.....	5	(X)	(D)	(X)	(D)
3333143115	Parts and accessories, including mountings for binoculars, optical telescopes and other astronomical equipments.....	14	(X)	b/ 22,857	(X)	r/ 25,654
3333143231	Optical test and inspection equipment, including standard sources, modulators, optical comparators, interferometers (except optical microscopes)...	41	(X)	280,888	(X)	r/ 221,274
3333143233	Optical microscopes.....	14	(X)	b/ 76,511	(X)	a/ 59,077
3333143235	Optical components: Filters, including parts and accessories thereof.....	29	(X)	a/ 159,291	(X)	r/ 133,838
3333143237	Lenses (except ophthalmic focus lenses): Unmounted lenses.....	41	(X)	a/ 312,200	(X)	r/ 254,469
3333143242	Mounted lenses, including photographic.....	16	(X)	224,018	(X)	r/ 249,744
3333143243	Other (prisms, mirrors, etc.).....	49	(X)	a/ 251,322	(X)	r/ 180,775
3333143245	Other optical instruments, including optical alignment and display instruments; excluding analytical instruments and binoculars and astronomical instruments listed above, and sighting and fire control equipment.....	39	(X)	a/ 846,393	(X)	a/ 827,264
3333143247	Parts and accessories for other optical microscopes 34/.....	11	(X)	(D)	(X)	(D)
3333143249	Parts and accessories for other optical instruments 34/.....	18	(X)	520,112	(X)	r/ 334,097

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345191	Aircraft engine instruments (except flight).....	39	(X)	693,959	(X)	657,936
3345191001	Temperature sensors, transmitters, and displays.....	25	(X)	204,453	(X)	234,724
3345191003	Pressure ratio sensors, displays, and controls 35/.....	5	(X)	(D)	(X)	(D)
3345191005	Pressure and vacuum sensors, transmitters, and displays 35/.....	11	(X) a/	61,208	(X) a/	86,268
3345191007	Fuel and oil flow rate sensors, transmitters, and displays, including mixture controls 36/.....	8	(X)	(D)	(X)	(D)
3345191009	Fuel and oil quantity sensors, transmitters, and displays, including densitometers 36/.....	8	(X)	152,904	(X)	156,608
3345191011	Tachometer generators and indicators.....	8	(X)	7,688	(X) r/	5,903
3345191013	All other not specified above.....	14	(X) b/	251,358	(X) b/	160,008
3345191015	Parts and components for aircraft engine instruments (except flight), sold separately.....	11	(X) b/	16,348	(X)	14,425
3345193	Physical properties testing and inspection equipment and kinematic testing and measuring equipment.....	162	(X) a/	1,742,856	(X) a/	1,736,352
	Physical properties testing equipment, including hardness, tensile, stress, strain, abrasion, strength, torsion, wear, and similar testing equipment; including components and parts, sold separately:					
3345193001	For testing of metals.....	25	(X)	414,346	(X) r/	426,459
3345193003	Other.....	47	(X)	389,923	(X) r/	377,255
3345193005	Parts for physical properties testing equipment, sold separately.....	29	(X) c/	76,083	(X) c/	71,498
	Physical properties inspection equipment, including flaw detection, thickness measuring, and similar inspection equipment, including components and parts, sold separately:					
3345193007	For testing of metals.....	22	(X) a/	201,681	(X) a/	221,542
3345193009	Measuring and checking flow of fluids.....	13	(X)	73,350	(X)	72,859
3345193011	Other.....	42	(X) a/	310,272	(X) a/ r/	277,065
3345193013	Parts for physical properties inspection equipment, sold separately 37/.....	23	(X)	(D)	(X)	(D)
3345193015	Kinematic testing and measuring equipment, including vibration, acceleration, and other motion testing equipment.....	30	(X)	210,991	(X)	224,888
3345193017	Parts for kinematic testing and measuring equipment, sold separately 37/.....	5	(X)	66,210	(X) r/	64,786
3345195	Nuclear radiation detection and monitoring instruments.....	50	(X) a/	569,079	(X) a/	539,100
3345195001	Radiation detecting elements, including ion chambers.....	16	b/	108,289	a/	59,467
3345195003	Solid state detectors 38/.....	6	(D)	(D)	b/ r/	89,933
3345195005	Nuclear monitoring instruments, including environmental, personal dosimetry, and medical monitors, both stationary and portable types.....	14	(S) b/	176,290	(S) a/ r/	151,776
3345195007	Sample and flow counting systems, manual and automatic.....	8	(X) a/	22,655	(X) a/ r/	21,277
3345195009	Scalers.....	6	(S)	956	(S) a/ r/	1,130
3345195011	Special amplifiers for nuclear applications 39/.....	3	(D)	(D)	(D)	(D)
	Pulse analyzers, including nuclear spectrometers:					
3345195013	Single channel pulse height analyzers 39/.....	3	(D)	(D)	(D)	(D)
3345195015	Multichannel pulse height analyzers 39/.....	3	(D)	(D)	(D)	(D)
3345195017	Count rate meters 39/.....	9	(D)	(D)	(D)	(D)
3345195019	Measurement and control devices using beta, gamma, or neutron gauge technology.....	12	(X)	89,122	(X)	97,386
3345195021	Nuclear power supplies.....	6	(X)	11,332	(X)	9,536
3345195023	Neutron and photon activation analysis systems 39/.....	4	(X)	13,002	(X) r/	16,210
3345195025	Nuclear instrument modules, n.e.c.	12	(X)	41,052	(X) r/	40,220
3345195027	Other nuclear radiation detection and monitoring instruments 38/.....	12	(X)	105,014	(X)	106,783
3345195029	Parts and components for nuclear radiation detection and monitoring instruments, sold separately.....	16	(X)	50,189	(X) a/ r/	47,628

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345197	Commercial, geophysical, meteorological, and general-purpose instruments	145	(X) a/	1,139,230	(X)	1,080,748
3345197001	Barometers and barographs, aneroid and mercurial types, including recorders, wall, pendant, meteorological, hygrometers, barometer-thermometer-humidity combinations....	14	(X)	3,680	(X) b/	4,962
3345197003	Hydrometers, glass, all types, including thermo-hydrometers 1/.....	5 c/	177 a/	1,603 c/	181 a/	1,639
3345197005	Liquid-in-glass thermometers: Engraved (etched) stem, thermoregulators, deep-sea reversing, laboratory, encased glass, ASTM standards, pocket case, maximum registering (except clinical thermometers)...	12	(X) a/	4,976	(X) a/	5,172
3345197007	Threaded and flanged types, fixed and adjustable angle, inline and duct installations, for process, food, air-conditioning, and refrigeration installations 1/.....	11 c/	597 c/	10,307 c/	522 c/	9,010
3345197009	Household and commercial thermometers such as wall, outdoor, domestic science, cupcase, filled systems, and indoor-outdoor 1/ 40/.....	10	3,333	8,110 a/	3,551	8,597
3391121656	Medical thermometers 1/ 40/.....	1	(D)	(D)	(D)	(D)
3345197011	Bimetal thermometers: Threaded and flanged types, for pipeline and duct installations, including general and pocket test 1/.....	15 b/	1,022 a/	22,115 b/ r/	991 b/ r/	21,040
3345197013	Domestic science, commercial general test, indoor, outdoor, desk models, oven, refrigerator 1/.....	9	(S)	14,591	6,300	16,146
3345197015	Humidity indicating and recording instruments such as bi-hygroscopic and hygroscopic element, indicators, psychrometers, wet and dry bulb, hygrometers, and indicating hygrometers.....	19	(X) a/	11,112	(X) r/	10,422
3345197017	Other thermometers (infrared, meteorological, commercial, and industrial).....	20	(X) a/	175,627	(X) r/	164,753
3345197023	Meteorological electronics equipment and radio astronomy equipment (automatic weather stations and weather tracking equipment, ceilometers, transitometers, space satellite meteorological systems, and specialized meteorological telemetering equipment).....	18	(X)	170,580	(X)	192,987
3345197025	Other meteorological instruments, including speed and direction instruments, rain gauges, thermographs, and parts, sold separately.....	18	(X) b/	31,797	(X) a/ r/	36,328
3345197027	Seismic instruments.....	8	(X)	133,039	(X)	107,156
3345197029	All other geophysical instruments and equipment....	15	(X)	89,004	(X) r/	67,959
3345197031	Other commercial and industrial instruments (except aircraft), including compasses, altimeters, test equipment for hydraulic and pneumatic systems and controls, and environmental gas detectors, sold separately.....	39	(X) a/	431,074	(X) r/	405,973
3345197033	Parts and accessories for meteorological and commercial and industrial instruments.....	22	(X) b/	31,615	(X)	28,604
3345199	Surveying and drafting instruments and associated equipment.....	30	(X) a/	326,083	(X) b/	313,745
3345199001	Surveying instruments, including alidades, transits, plumb bobs, sextants, theodolites, surveyors, compasses, surveyors levels, tapes, etc.	19	(X) a/	281,041	(X) b/	267,523
3345199003	Parts and components for surveying instruments, sold separately.....	5	(X)	(D)	(X)	(D)
3345199005	Drafting instruments and machines, manual and automatic, drafting tables, plotting instruments, slide rules, T-squares, drafting templates, rules, etc.	11	(X) c/	21,034	(X) c/	23,863
3345199007	Parts and components for drafting instruments and machines, sold separately.....	2	(X)	(D)	(X)	(D)

Continued

Table 2. Quantity and Value of Shipments of Selected Instruments and Related Products: 2000 and 1999
 [Quantity in number of units. Value in thousands of dollars.]

Product code	Product description	No. of cos.	2000		1999	
			Quantity	Value	Quantity	Value
3345199009	Photogrammetric and geodetic equipment, excluding cameras.....	1	(X)	(D)	(X)	(D)
3345199011	Parts and components for photogrammetric and geodetic equipment, sold separately.....	1	(X)	(D)	(X)	(D)

- Represents zero. D Withheld to avoid disclosing data for individual companies. NA Not available. n.e.c. Not specified by kind.
 r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

- 1/The quantity for this product code is in thousands of units.
- 2/Product code 332911H005 is combined with product code 332911H007 to avoid disclosing data for individual companies.
- 3/Product code 3345111109 is combined with product code 3345111111 to avoid disclosing data for individual companies.
- 4/Product code 3345111221 is combined with product code 3345111223 to avoid disclosing data for individual companies.
- 5/Product code 3345113209 is combined with product code 3345113211 to avoid disclosing data for individual companies.
- 6/Product code 3391110121 is combined with product code 3391110123 to avoid disclosing data for individual companies.
- 7/Product codes 3391110127 and 3391110145 are combined with product code 3391110151 to avoid disclosing data for individual companies.
- 8/For 2000, product code 3391110233 is combined with product code 3391110231 to avoid disclosing data for individual companies.
- 9/Product code 3345120109 is combined with product code 3345120111 to avoid disclosing data for individual companies.
- 10/Product code 3345120115 is combined with product code 3345120117 to avoid disclosing data for individual companies.
- 11/Product codes 3345130116 and 3345130121 are combined with product code 3345130113 to avoid disclosing data for individual companies.
- 12/Product code 3345130229 is combined with product code 3345130231 to avoid disclosing data for individual companies.
- 13/Product code 334513011G is combined with product code 334513011J to avoid disclosing data for individual companies.
- 14/Product code 3345141005 is combined with product code 3345141007 to avoid disclosing data for individual companies.
- 15/Product code 3345141015 is combined with product code 3345141017 to avoid disclosing data for individual companies.
- 16/For 2000, product code 3345145007 is combined with product code 3345145017 to avoid disclosing data for individual companies.
- 17/For 2000, product code 3345151007 is combined with product code 3345151009 to avoid disclosing data for individual companies.
- 18/For 2000, product code 3345153001 is combined with product code 3345153003 to avoid disclosing data for individual companies.
- 19/Product code 3345153007 is combined with product code 3345153009 to avoid disclosing data for individual companies.
- 20/Product code 3345153011 is combined with product code 3345153013 to avoid disclosing data for individual companies.
- 21/Product code 3345153033 is combined with product code 3345153035 to avoid disclosing data for individual companies.
- 22/Product code 3345153039 is combined with product code 3345153037 to avoid disclosing data for individual companies.
- 23/Product code 3345153055 is combined with product code 3345153059 to avoid disclosing data for individual companies.
- 24/For 1999, product code 3345153073 is combined with product code 3345153071 to avoid disclosing data for individual companies.
- 25/Product code 3345153085 is combined with product code 3345153087 to avoid disclosing data for individual companies.
- 26/Product code 3345153091 is combined with product code 3345153095 to avoid disclosing data for individual companies.
- 27/Product code 3345155011 is combined with product code 3345155009 to avoid disclosing data for individual companies.
- 28/Product code 3345155015 is combined with product code 3345155017 to avoid disclosing data for individual companies.
- 29/Product codes 3345155023 and 3345155025 are combined with product code 3345155027 to avoid disclosing data for individual companies.
- 30/Product code 3345155031 is combined with product code 3345155033 to avoid disclosing data for individual companies.
- 31/Product codes 3345160017 and 3345160021 are combined with product code 3345160023 to avoid disclosing data for individual companies.
- 32/Product codes 3345160037, 3345160041, and 3345160061 are combined with product code 3345160065 to avoid disclosing data for individual companies.
- 33/Product code 3345160053 is combined with product code 3345160055 to avoid disclosing data for individual companies.
- 34/Product codes 3333143113 and 3333143247 are combined with product code 3333143249 to avoid disclosing data for individual companies.
- 35/Product code 3345191003 is combined with product code 3345191005 to avoid disclosing data for individual companies.
- 36/Product code 3345191007 is combined with product code 3345191009 to avoid disclosing data for individual companies.
- 37/Product code 3345193013 is combined with product code 3345193017 to avoid disclosing data for individual companies.
- 38/Product code 3345195003 is combined with product code 3345195027 to avoid disclosing data for individual companies.
- 39/Product codes 3345195011, 3345195013, 3345195015, and 3345195017 are combined with product code 3345195023 to avoid disclosing data for individual companies.
- 40/Product code 391121656 is combined with product code 3345197009 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 has been estimated.
 b/26 to 50 percent of this item has been estimated. c/Over 50 percent of this item has been estimated.

Table 3. Shipments, Exports and Imports of Selected Instruments and Related Products: 2000
 [Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments (value of f.o.b. plant)	Exports of domestic merchandise (value at port) 1/	Imports for consumption (value) 2/ 3/
332911F001, 003, 005, 007, 009, 011, 013	Pneumatic actuated automatic valves.....	650,677	73,900	75,368
332911F015, 017, 022, 025, 027, 029	All other control valves including electric and electrohydraulic.....	515,151	606,387	638,794
332911F031, 033, 035, 037, 039, 041	Self-generating power-actuated regulator valves.....	1,089,373	191,112	476,595
332911H001, 003, 005, 007, 009	Solenoid-operated valves (except nuclear and fluid transfer).....	476,346	170,152	544,061
3345111101	Compasses (magnetic and gyroscopic).....	394,047	61,496	27,429
3345111103, 105, 107, 109, 111, 113, 115, 217, 219, 221, 223, 225, 227, 229, 231, 233, 335, 437, 3345113 101, 103, 105	Search, detection, aeronautical, nautical, and navigational and guidance systems, equipment, and instruments, n.e.c. (except aircraft engine instruments) 4/.....	4,557,764	909,581	373,114
3345113207, 209, 211, 313, 315, 317, 319, 321, 323	Radar systems and equipment 5/.....	4,143,329	376,098	118,084
3345113651	Radio navigational aid receivers and displays.....	749,975	438,194	475,020
3345113665	Automatic pilots.....	445,523	285,098	16,526
3345113425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 545, 547, 549, 653, 655, 657, 659, 661, 663, 667, 669, 671, 673	Sonar search, detection, tracking, and communication systems and equipment, including ASW (sonar telephone, communication equipment, depth finding, fire control, fusing guidance, hydrophones, mapping, sonabuys, navigation, sonar fish finders, sonar range instrumentation, and other).....	16,057,513	108,394	118,351
3345120102, 225	Temperature responsive automatic controls (thermostats).....	733,734	162,235	333,189
3345120105, 107, 109, 111, 113, 115, 117, 219, 223, 227	Pressure responsive automatic, hydraulic automatic, pneumatic automatic, and automatic control, n.e.c.	1,775,999	1,755,458	1,402,665
3345120229	Parts and components for automatic controls, sold separately.....	160,427	688,902	492,186
3345130	Process control instruments.....	7,185,134	609,854	742,598
3345141001, 003, 005, 007	Gas meters, consumption registering (except parts).....	230,304	32,926	10,796
3345141009, 011, 013, 015, 017	Liquid meters (except parts).....	588,948	63,213	8,030
3345141019	Parts, components, and accessories for gas and liquid meters, sold separately.....	243,512	93,390	80,245
3345143001, 003, 005, 007, 3345145, 3345191, 3345155	Counting devices, n.e.c., including taxi meters and parts, parking meters and parts, aircraft engine and motor vehicle instruments.....	4,724,924	406,460	1,081,889
3345151	Electricity meters.....	489,612	90,777	27,796
3345153001, 003, 005	Voltage, current, and resistance measuring equipment (except multimeters).....	701,195	254,616	124,041
3345153011, 013, 015	Power and energy testing equipment 6/.....	70,031	378,421	111,623
3345153071, 073	Analyzers for testing characteristics of internal-combustion engines (except aircraft).....	291,353	222,663	96,294

Continued

Table 3. Shipments, Exports and Imports of Selected Instruments and Related Products: 2000
 [Value in thousands of dollars]

Product code	Product description	Manufacturers' shipments (value of f.o.b. plant)	Exports of domestic merchandise (value at port) 1/	Imports for consumption (value) 2/ 3/
3345153031, 033, 035	Signal generating equipment.....	577,591	116,734	44,347
3345153007, 009, 018, 026, 037, 039, 043, 045, 047, 049, 051, 053, 055, 057, 059, 061, 063, 065, 068, 075, 077, 079, 081, 083, 085, 087, 089, 093	Test equipment for testing multimeters, electrical, radio and communication circuits, and motors, n.e.c.	11,588,895	3,382,262	1,138,268
3391110, 3345160	Laboratory, analytical, and scientific instruments	8,404,726	1,927,197	1,039,563
3333141	Sighting, tracking, and fire control equipment, optical type.....	475,283	24,253	87,890
3333143111, 113, 115	Binoculars and astronomical instruments and parts and accessories 7/.....	119,091	101,267	318,806
3333143231, 235, 237, 242, 243, 245, 247, 249	Optical instruments and lenses, n.e.c. 8/.....	2,594,224	1,936,762	272,706
3333143233	Microscopes, optical.....	76,511	73,230	255,511
3345193	Physical properties testing and inspection equipment and kinematic testing and measuring equipment	1,742,856	625,235	113,322
3345195	Nuclear radiation detection and monitoring instruments and equipment.....	569,079	298,073	43,912
3391121656	Liquid-in-glass thermometers, clinical 9/.....	(D)	1,329	2,776
3345197005, 007, 009	Liquid-in-glass thermometers, n.e.c. 9/.....	23,393	7,132	28,694
3345197011, 013, 017	Thermometers (except liquid-in-glass type).....	212,333	18,938	211,355
3345197029	Geophysical instruments and equipment.....	89,004	180,204	103,480
3345197027	Seismic instruments.....	133,039	9,269	8,875
3345197001, 015, 023, 025	Commercial, geophysical, meteorological, and general-purpose instruments, n.e.c.	217,169	191,018	171,029
3345199001, 003	Surveying instruments (except photogrammetrical and geodetic equipment).....	(D)	62,758	120,014
3345199005	Drafting instruments and machines, manual and automatic.....	21,034	77,720	37,465

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

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

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

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

4/Product code 3345113105 is excluded from manufacturers' shipments to avoid disclosing data for individual companies.

5/Product codes 3345113313 and 3345113315 are excluded from manufacturers' shipments to avoid disclosing data for individual companies.

6/Product code 3345153015 is excluded from manufacturers' shipments to avoid disclosing data for individual companies.

7/Product code 3333143113 is excluded from manufacturers' shipments to avoid disclosing data for individual companies.

8/Product code 3333143113 is included with manufacturers' shipments to avoid disclosing data for individual companies.

9/Product code 3345197009 is combined with product code 3391121656 to avoid disclosing data for individual companies.

Table 4. Comparison of North American Industry Classification-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

Product code	Product description	Export number 1/	Import number 2/
332911F001, 003, 005, 007, 009, 011, 013	Pneumatic actuated automatic valves.....	8481.80.9035	8481.80.9035
332911F015, 017, 022, 025, 027, 029	All other control valves, including electric and electrohydraulic.....	8481.80.9020 8481.80.9030 8481.80.9045 8481.80.9050	8481.80.9020 8481.80.9030 8481.80.9045 8481.80.9050
332911F031, 033, 035, 037, 039, 041	Self-generating power-actuated regulator valves.....	8481.80.9015	8481.80.9015
332911H001, 003, 005, 007, 009	Solenoid-operated valves (except nuclear and fluid transfer).....	8481.80.9005	8481.80.9005
3345111101	Compasses (magnetic and gyroscopic).....	9014.10.1040 9014.10.1080 9014.10.6040 9014.10.6080 9014.10.7040 9014.10.7080 9014.10.9040 9014.10.9080	9014.10.1000 9014.10.6000 9014.10.7030 9014.10.7060 9014.10.9000
3345111103, 105, 107, 109, 111, 113, 115, 217, 219, 221, 223, 225, 227, 229, 231, 233, 335, 437, 3345113101, 103, 105	Search, detection, aeronautical, nautical, and navigational and guidance systems, equipment, and instruments, n.e.c. (except aircraft engine instruments).....	9014.20.2000 9014.20.6000 9014.20.8040 9014.20.8080 9014.90.0000	9014.20.2000 9014.20.6000 9014.20.8040 9014.20.8080 9014.90.2040 9014.90.2080 9014.90.6000 9014.80.1000
3345113207, 209, 211, 313, 315, 317, 319, 321, 323	Radar systems and equipment.....	8526.10.0010 8526.10.0020 8526.10.0070	8526.10.0020 8526.10.0040
3345113651	Radio navigational aid receivers and displays.....	8526.91.0010 8526.91.0030 8526.91.0070	8526.91.0020 8526.91.0040
3345113665	Automatic pilots.....	9014.20.4000 9014.90.0000	9014.20.4000 9014.90.1000
3345113425, 427, 429, 431, 433, 435, 437, 439, 441, 443, 545, 547, 549, 653, 655, 657, 659, 661, 663, 667, 669, 671, 673	Sonar search, detection, tracking, and communication systems and equipment, including ASW (sonar telephone, communication equipment, depth finding, fire control, fusing guidance, hydrophones, mapping, sonabuys, navigation, sonar fish finders, sonar range instrumentation, and other).....	9014.80.2000 9014.80.6000	9014.80.2000 9014.80.4000 9014.80.5000
3345120102, 225	Temperature responsive automatic controls (thermostats).....	9032.10.0000	9032.10.0030 9032.10.0060 9032.10.0090

Continued

Table 4. Comparison of North American Industry Classification-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

Product code	Product description	Export number 1/	Import number 2/
3345120105, 107, 109, 111, 113, 115, 117, 219, 223, 227	Pressure responsive automatic, hydraulic automatic, pneumatic automatic, and automatic controls, n.e.c.	9032.20.0000	9032.20.0000
		9032.81.0080	9032.81.0080
		9032.89.6020	9032.89.6015
		9032.89.6085	9032.89.6025
			9032.89.6085
3345120229	Parts and components for automatic controls, sold separately.....	9032.90.0000	9032.90.2000
			9032.90.4000
			9032.90.6020
			9032.90.6040
			9032.90.6060
	9032.90.6080		
3345130	Process control instruments.....	9032.81.0040	9032.81.0020
		9032.81.0080	9032.81.0060
		9032.89.6030	9032.89.6030
		9032.89.6040	9032.89.6040
		9032.89.6050	9032.89.6050
		9032.89.6060	9032.89.6060
		9032.89.6070	9032.89.6070
	9032.89.6075		
3345141001, 003, 005, 007	Gas meters, consumption registering (except parts)	9028.10.0000	9028.10.0000
3345141009, 011, 013, 015, 017	Liquid meters (except parts).....	9028.20.0000	9028.20.0000
3345141019	Parts, components, and accessories for gas and liquid meters, sold separately.....	9028.90.0080	9028.90.0080
3345143001, 003, 005, 007, 3345145, 3345191, 3345155	Counting devices, n.e.c., including taxi meters and parts, parking meters and parts, and motor vehicle instruments.....	9106.20.0000	9106.20.0000
		9028.90.0040	9029.10.4000
		9029.10.0000	9028.90.0040
		9029.20.4040	9029.10.8000
		9029.20.5000	9029.20.4040
		9029.90.0000	9029.20.4080
			9029.90.2000
	9029.90.8040		
	9029.90.8080		
3345151	Electricity meters.....	9028.30.0000	9028.30.0000
3345153001, 003, 005	Voltage, current, and resistance measuring equipment (except multimeters).....	9030.39.0040	9030.39.0040
3345153011, 013, 015	Power and energy testing equipment.....	9030.39.0080	9030.39.0080
3345153071, 073	Analyzers for testing characteristics of internal-combustion engines (except aircraft).....	9031.80.8060	9031.80.8060
		9031.80.8070	9031.80.8070
3345153031, 033, 035	Signal generating equipment.....	8543.20.0000	8543.20.0000

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Table 4. Comparison of North American Industry Classification-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

Product code	Product description	Export number 1/	Import number 2/
3345153007, 009, 018, 026, 037, 039, 043, 045, 047, 049, 051, 053, 055, 057, 059, 061, 063, 065, 068, 075, 077, 079, 081, 083, 085, 087, 089, 093	Test equipment for testing multimeters, electrical, radio and communication circuits, and motors, n.e.c.	9029.20.6000	9029.20.6000
		9030.31.0000	9030.31.0000
		9030.82.0000	9030.82.0000
		9030.20.0000	9030.90.4500
		9030.90.8010	9030.90.8400
		9030.90.8020	9030.90.8810
		9030.90.8030	9030.90.8820
		9030.90.8040	9030.90.8830
		9030.90.8050	9030.90.8840
		9030.90.8060	9030.90.8855
			9030.90.8860
3391110, 3345160	Laboratory, analytical, and scientific instruments.....	9027.50.5000	9027.20.5030
		9027.50.2000	9027.20.5050
		9027.20.2000	9027.20.5060
		9027.20.6050	9027.20.5080
		9027.20.5030	9027.20.8030
		9027.20.9000	9027.20.8060
		9027.30.4040	9027.20.8090
		9027.30.4080	9027.30.4040
		9027.80.2000	9027.30.4080
		9027.80.3100	9027.50.4015
		9027.80.3200	9027.50.4020
		9027.80.3500	9027.80.4520
		9027.80.8000	9027.80.4530
		9027.90.2000	9027.80.4560
		9012.10.0000	9027.80.4590
			9027.90.8400
			9027.90.8800
	9012.10.0000		
	9027.80.8030		
	9027.80.8060		
	9027.80.8090		
3333141	Sighting, tracking, and fire control equipment, optical type.....	9013.10.2000	9013.10.1000
		9013.10.4000	9013.10.3000
			9013.10.4000
3333143111, 113, 115	Binoculars and astronomical instruments and parts and accessories.....	9005.10.0020	9005.10.0020
		9005.10.0040	9005.10.0040
		9005.10.0080	9005.10.0080
		9005.80.4020	9005.80.4020
		9005.80.4040	9005.80.4040
		9005.80.6000	9005.80.6000
		9005.90.0000	9005.90.4000
	9005.90.8000		
3333143231, 235, 237, 242, 243, 245, 247, 249	Optical instruments and lenses, n.e.c.	9031.41.0000	9031.41.0020
		9031.90.0000	9031.41.0040
			9031.41.0060
			9031.90.4500
			9031.90.5400
	9031.90.5800		

Table 4. Comparison of North American Industry Classification-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 2000

Product code	Product description	Export number 1/	Import number 2/
3333143233	Microscopes, optical.....	9011.10.0000	9011.10.4000
		9011.20.0000	9011.10.8000
		9011.80.0000	9011.20.4000
		9011.90.0000	9011.20.8000
			9011.80.0000
			9011.90.0000
3345193	Physical properties testing and inspection equipment and kinematic testing and measuring equipment.....	9024.10.0000	9024.10.0000
		9024.80.0000	9024.80.0000
		9024.90.0000	9024.90.0040
			9024.90.0080
3345195	Nuclear radiation detection and monitoring instruments and equipment.....	9030.10.0000	9030.10.0000
		9030.90.4000	
3391121656	Liquid-in-glass thermometers, clinical.....	9025.11.2000	9025.11.2000
3345197005, 007, 009	Liquid-in-glass thermometers, n.e.c.	9025.11.4000	9025.11.4000
3345197011, 013, 017	Thermometers (except liquid-in-glass type).....	9025.19.4000	9025.19.8040
		9025.19.8040	9025.19.8080
3345197029	Geophysical instruments and equipment.....	9015.80.8040	9015.80.8040
3345197027	Seismic instruments.....	9015.80.6000	9015.80.6000
3345197001, 015, 023, 025	Commercial, geophysical, meteorological, and general purpose instruments, n.e.c.	9025.80.1500	9025.80.1500
		9025.80.5050	9025.20.8000
		9015.80.8080	9025.80.1000
		9025.90.0000	9025.80.2000
			9025.80.3500
			9025.80.4000
			9025.80.5000
			9025.90.0000
		9015.80.8080	
3345199001, 003	Surveying instruments (except photogrammetrical and geodetic equipment).....	9015.10.0000	9015.10.4000
		9015.20.0000	9015.10.8000
		9015.30.0000	9015.20.4000
			9015.20.8000
			9015.30.4000
			9015.30.8000
			9015.90.0010
			9015.90.0020
		9015.90.0030	
3345199005	Drafting instruments and machines, manual and automatic.....	9017.10.0000	9017.10.4000
		9017.20.4000	9017.10.8000
		9017.20.8060	9017.20.4000
			9017.20.7000
			9017.20.8080

n.e.c. Not elsewhere classified.

1/Source: 2000 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 (2000).