

Refrigeration, Air Conditioning, and Warm Air Heating Equipment

1998

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Information about the scope of the survey, methodology, explanation of terms and historical notes for this survey may be found in the introduction of the 1997 Manufacturing Profiles, issued August 1999.

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NOTE:

Data are now published on the new North American Industry Classification System (NAICS) basis and therefore are not always comparable to the old Standard Industrial Classification (SIC) code. For further information on NAICS, see www.census.gov/epcd/www/naics.html.

Summary of Findings

In 1998, the value of shipments of heat transfer equipment increased by 6 percent to \$4,472.1 million, compared with the 1997 figure of \$4,228.5 million. The value of shipments of condensing units, refrigeration (complete), increased by 7 percent to \$339.5 million, from the 1997 level of \$317.3 million. Room air-conditioners showed an increase of 8 percent in 1998 with \$1,098.4 million shipped, compared with the \$1,020.2 million shipped in 1997. The value of shipments of motor vehicle mechanical air-conditioning systems decreased by 5 percent to \$2,099.9 million, compared with the 1997 figure of \$2,221.0. Compressors and compressor units increased by 1 percent to \$2,814.4 million, compared with \$2,795.7 million in 1997. Automotive air-conditioning compressors showed an increase of 1 percent in 1998 with \$1,976.8 million shipped, compared with the \$1,951.3 million shipped in 1997. Non-electric warm air furnaces and humidifiers had a value of shipments for 1998 of \$1,607.0 million, a 3-percent increase from the 1997 value of \$1,558.4 million. Unitary air-conditioners increased by 13 percent to \$5,229.1 million, from the 1997 level of \$4,614.6 million. The value of shipments of air source heat pumps increased by 15 percent to \$1,053.8 million, compared with the 1997 figure of \$917.2 million.

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Table 1. Summary of Shipments of Refrigeration, Air-Conditioning, and Warm Air Heating Equipment: 1998 and 1997
 [Value in thousands of dollars]

Product code	Product description	1998		1997
3334151 --	Heat transfer equipment.....	4,472,072		4,245,885
3334153 pt.	Commercial refrigeration equipment.....	234,476		246,141
3334155 --	Condensing units, refrigeration (complete).....	339,543	r/	317,273
3334156 --	Room air-conditioners and dehumidifiers.....	1,098,416		1,020,171
3363917 --	Motor vehicle mechanical air-conditioning systems 1/.....	2,099,860		2,220,957
333415A --	Compressors and compressor units.....	2,814,397	r/	2,795,669
336391B --	Automotive air-conditioning compressors 1/.....	1,976,832	r/	1,951,290
333415C --	Nonelectric warm air furnaces and humidifiers 1/.....	1,606,981		1,558,425
333415E --	Unitary air conditioners.....	5,229,123		4,614,616
333415F --	Air source heat pumps 1/.....	1,053,837	r/	917,152
333415G --	Ground and ground water source heat pumps 2/...	(D)		(D)

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

1/Data for this product was collected separately in 1997.
 2/New product introduced in 1997.

Table 2. Quantity and Value of Shipments of Refrigeration, Air-Conditioning, and Warm Air Heating Equipment: 1998 and 1997
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1998		1997	
			Quantity	Value	Quantity	Value
3334151 --	Heat transfer equipment (except room and unitary air-conditioners).....	150	(X)	4,472,072	(X)	4,245,885
3334151001	Packaged terminal air-conditioners 1/.....	10	185,745	107,771	168,084	93,399
3334151003	Packaged terminal heat pumps.....	9	156,132	82,695	130,736	70,143
	Evaporative condensers.....	(X)	2,715	68,687	2,737	67,709
3334151005	100 tons and under.....	10	556	4,854	577	4,753
3334151007	Over 100 tons.....	13	2,159	63,833	2,160	62,956
	Room fan-coil air-conditioning units.....	(X)	291,064	183,726	281,920	r/ 154,604
3334151009	Vertical stack.....	6	b/ 20,015	b/ 20,063	r/ 15,949	r/ 10,901
3334151011	Vertical.....	11	133,579	101,139	130,555	r/ 83,042
3334151013	Horizontal.....	9	137,470	62,524	135,416	r/ 60,661
3334151015	Room air induction units.....	2	(D)	(D)	(D)	(D)
	Central station air-handling units (motor-driven fan type).....	(X)	381,797	614,865	357,603	567,961
3334151017	Draw through.....	28	356,540	532,922	332,216	487,298
3334151019	Blow through.....	10	8,617	48,665	9,114	54,455
3334151021	Heating and ventilating.....	12	16,640	a/ 33,278	16,273	26,208
	Coolers (refrigeration):					
	Ceiling, wall-mounted, and floor-mounted unit coolers.....	(X)	219,943	157,967	209,686	154,152
3334151023	4,000 Btuh and below.....	10	61,365	12,676	59,202	12,281
3334151025	4,001 to 6,000 Btuh.....	10	11,967	3,616	10,685	3,512
3334151027	6,001 to 8,000 Btuh.....	10	24,390	9,329	20,419	7,871
3334151029	8,001 to 12,000 Btuh.....	10	47,885	22,478	48,138	22,039
3334151031	12,001 to 18,000 Btuh.....	12	39,179	26,363	39,161	29,476
3334151033	Over 18,000 Btuh.....	16	35,157	83,505	32,081	78,973
	Air-cooled refrigerant condensers (remote type)....	(X)	25,292	65,095	25,688	62,163
3334151035	Under 30 tons.....	15	17,656	13,578	a/ 18,194	a/ 16,090
3334151037	30 to 50 tons.....	12	2,187	8,104	2,821	8,058
3334151039	Over 50 tons.....	12	5,449	43,413	4,673	38,015
	Miscellaneous heat transfer equipment:					
	Shell-and-tube, shell-and-coil, shell-and-u-tube, tube-in-tube.....	(X)	(X)	50,982	(X)	51,706
3334151041	Condensers.....	9	(X)	26,085	(X)	26,332
3334151043	Liquid coolers.....	11	(X)	24,897	(X)	25,374
3334151045	Liquid-suction heat exchangers and refrigerant liquid receivers.....	6	(X)	11,647	(X)	(D)
	Central system finned coils (air-conditioning and refrigeration type).....	(X)	(X)	81,537	(X)	83,178
3334151047	Standard steam and steam distributing tube..	12	(X)	17,435	(X)	18,645
3334151049	Standard water cooling and/or heating and cleanable tube water.....	18	(X)	53,669	(X)	57,087
3334151051	Volatile refrigerant cooling.....	11	(X)	10,433	(X)	7,446
	Coil sales by original equipment manufacturers intended for resale or assembly into equipment by other manufacturer (all types).....	(X)	(X)	451,527	(X)	428,897
3334151053	Copper and aluminum.....	17	(X)	309,794	(X)	284,284
3334151055	Aluminum (only).....	8	(X)	b/ 69,064	(X)	65,620
3334151057	Other, including steel and copper.....	12	(X)	72,669	(X)	78,993
3334151059	Factory-assembled, refrigeration type, finned gravity coils including wetted-surface dehumidifiers.....	4	(X)	c/ 14,923	(X)	13,131
	Centrifugal liquid chilling packages, hermetic and open types.....	(X)	8,354	695,217	9,579	737,252
3334151061	200 hp and under.....	12	1,965	55,993	1,732	49,358
3334151063	201 to 300 hp.....	8	1,541	86,914	1,441	84,161
3334151065	301 to 400 hp.....	7	1,377	102,961	1,138	79,650
3334151067	Over 400 hp.....	7	3,471	449,349	5,268	524,083
	Ice-making machines.....	(X)	295,670	434,895	223,015	325,791
	Self-contained ice-cube makers.....	(X)	183,625	210,399	136,192	147,454
3334151069	Automatic, 200 lb and under.....	6	109,469	75,815	87,843	64,681
3334151071	Automatic, 201 lb and over.....	7	74,156	134,584	48,349	82,773
	Self-contained flake or chip machines.....	(X)	16,998	42,830	8,309	20,894
3334151073	300 lb and under.....	4	c/ 2,072	b/ 2,681	b/ 3,085	b/ 3,876
3334151075	Over 300 lb.....	12	14,926	40,149	5,224	17,018
3334151077	Not self-contained.....	8	59,624	a/ 95,994	48,295	83,138
3334151079	Combination ice makers and ice/drink dispensers.....	6	35,423	85,672	30,219	74,305

Table 2. Quantity and Value of Shipments of Refrigeration, Air-Conditioning, and Warm Air Heating Equipment: 1998 and 1997
 [Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1998		1997	
			Quantity	Value	Quantity	Value
3334151081	Absorption refrigeration and dehydration systems	6	(D)	(D)	(D)	(D)
3334151083	Mechanical refrigeration systems used on all types of vehicles.....	7	(D)	(D)	(D)	(D)
	Reciprocating air and reciprocating water cooled, air-cooled screw, air-cooled scroll, and water-cooled scroll machines.....	(X)	24,071	455,675	24,163	r/ 433,075
3334151085	20 hp and under.....	26	8,231	a/ 41,817	8,740	a/ 49,396
3334151087	21 to 49 hp.....	20	4,478	36,994	4,496	r/ 36,458
3334151089	50 to 75 hp.....	19	4,195	81,226	3,429	r/ 63,236
3334151091	Over 75 hp.....	19	7,167	295,638	7,498	283,985
3334151093	Factory-fabricated water cooling towers.....	16	8,859	161,608	9,006	161,273
3334153146	Commercial refrigeration equipment, mechanical drinking water coolers.....	5	1,015,578	234,476	r/ 1,023,721	r/ 246,141
3334155 --	Condensing units, refrigeration (complete).....	28	521,653	b/ 339,543	465,344	317,273
	Air-cooled hermetic-type.....	(X)	500,862	222,863	445,741	195,205
3334155023	1 hp and under.....	17	404,878	98,015	353,847	76,927
3334155025	1.5 hp.....	13	19,828	14,001	19,181	13,257
3334155028	2 and 2.5 hp.....	16	24,543	20,577	23,863	19,646
3334155030	3 hp.....	15	22,657	26,980	21,191	25,690
3334155032	Over 3 hp, but under 15 hp.....	16	28,956	63,290	27,659	59,685
3334155044	Water-cooled hermetic-type, under 15 hp.....	4	6,548	5,119	6,615	5,089
	Water or air-cooled hermetic-type.....	(X)	5,912	66,311	4,722	r/ 71,316
3334155061	15 hp.....	10	2,549	32,285	r/ 2,789	r/ 54,103
3334155063	20 hp.....	9	944	5,541	689	3,689
3334155065	25 hp.....	9	681	4,774	r/ 474	r/ 3,089
3334155067	30 hp.....	9	809	6,621	344	3,279
3334155070	40 hp.....	7	929	17,090	426	7,156
3334155080	Water or air-cooled open-type (all sizes).....	6	(D)	(D)	(D)	(D)
3334156--	Room air-conditioners and dehumidifiers.....	17	(X)	1,098,416	(X)	1,020,171
3334156011	Electrically operated dehumidifiers, mechanically refrigerated, self-contained.....	11	(X)	b/ 139,306	(X)	b/ 131,312
	Room air-conditioners.....	(X)	3,223,981	959,110	2,838,381	888,859
3334156031	5,999 Btuh and under.....	8	a/ 855,326	b/ 158,955	b/ 649,840	b/ 129,527
3334156034	6,000 to 6,999 Btuh.....	7	b/ 88,419	b/ 19,878	b/ 98,858	b/ 23,859
3334156038	7,000 to 7,999 Btuh.....	7	395,704	97,169	304,344	a/ 77,048
3334156042	8,000 to 8,999 Btuh.....	6	c/ 141,450	c/ 38,617	b/ 191,233	b/ 54,586
3334156046	9,000 to 9,999 Btuh.....	6	c/ 115,675	c/ 36,842	61,642	20,589
3334156052	10,000 to 10,999 Btuh.....	8	437,488	128,185	a/ 359,399	a/ 110,192
3334156056	11,000 to 12,999 Btuh.....	9	542,990	176,047	504,149	170,646
3334156061	13,000 to 14,999 Btuh.....	7	b/ 62,453	b/ 25,824	b/ 69,985	b/ 29,572
3334156063	15,000 to 16,999 Btuh.....	6	c/ 71,114	c/ 29,119	99,715	41,153
3334156065	17,000 to 19,999 Btuh.....	7	311,437	129,980	b/ 302,935	b/ 114,954
3334156067	20,000 to 22,999 Btuh.....	6	b/ 26,892	b/ 13,405	b/ 22,643	b/ 11,523
3334156071	23,000 to 25,999 Btuh.....	9	a/ 152,437	a/ 76,911	b/ 143,716	b/ 73,122
3334156075	26,000 Btuh and over.....	9	b/ 22,596	b/ 28,178	b/ 29,922	b/ 32,088
3363917--	Motor vehicle mechanical air-conditioning systems...	(X)	(X)	2,099,860	(X)	2,220,957
3363917010	Air-conditioning units and systems for passenger automobiles 2/.....	21	10,376,957	1,476,079	10,452,110	1,544,766
3363917020	Air-conditioning units and systems for buses.....	10	257,637	109,686	350,684	134,525
3363917030	Other motor vehicle mechanical air-conditioning systems.....	7	3,151,793	514,095	3,275,347	541,666
333415A --	Compressors and compressor units 3/ 4/.....	32	(X)	b/ 2,814,397	(X)	2,795,669
	All refrigerants (except ammonia).....	(X)	23,918,501	2,699,397	23,411,295	2,696,380
	Hermetic-type motor compressors.....	(X)	23,842,842	2,495,021	23,333,320	2,507,259
333415A011	Under 3 hp.....	10	18,040,357	1,272,792	17,898,968	1,306,660
333415A023	3 to 10 hp.....	11	5,611,915	999,658	5,263,330	975,437
333415A030	15 hp.....	11	26,517	31,225	29,072	33,864
333415A032	20 hp.....	12	21,025	32,130	24,034	36,162
333415A034	25 hp.....	11	15,473	25,781	17,731	29,399
333415A036	30 hp.....	12	34,696	38,814	26,714	31,047
333415A039	40 and 50 hp.....	11	46,767	64,477	37,736	64,825
333415A042	60 hp.....	9	43,697	21,067	33,181	20,130
333415A046	75 hp.....	9	2,395	9,077	2,554	9,735
333415A049	100 hp and over.....	8	(D)	(D)	(D)	(D)
333415A052	Open-type compressors (with or without motor--all sizes).....	13	a/ 68,011	69,253	69,494	58,754

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			Quantity	Value	Quantity	Value
333415A054	Screw type.....	6	(D)	(D)	(D)	(D)
333415A058	Ammonia refrigerants (all types).....	9	2,936	114,825	2,746	99,289
336391B000	Automotive air-conditioning compressors (open-type, with or without motor)	8	18,218,457	1,976,832	r/ 17,792,735	r/ 1,951,290
333415C pt--	Nonelectric warm air furnaces and humidifiers.....	(X)	(X) b/	1,606,981	(X)	1,558,425
	Oil, forced air:					
333415C001	150,000 Btuh bonnet output and under.....	18	b/ 135,011	b/ 95,278	152,728	106,031
333415C005	150,001 Btuh bonnet output and over.....	16	b/ 6,571	b/ 9,021	6,945	a/ 10,215
	Gas, forced air:					
333415C007	150,000 Btuh bonnet output and under.....	21	3,025,498	1,260,708	2,707,851	1,197,014
333415C009	150,001-400,000 Btuh bonnet output.....	17	c/ 14,392	a/ 18,256	10,470	7,313
333415C011	Over 400,000 Btuh bonnet output.....	9	369,484	156,059	398,634	165,486
333415C079	All other nonelectric warm air furnaces.....	5	c/ 1,489	c/ 2,160	1,336	2,072
333415C081	Humidifiers (attachments to warm air furnaces) (all types), including central systems and self-contained (except portable humidifiers).....	19	633,800	65,499	r/ 652,408	r/ 70,294
333415E --	Unitary air-conditioners.....	63	(X) b/	5,229,123	(X)	4,614,616
333415E005	Recreational vehicle air-conditioners.....	6	(D)	(D)	(D)	(D)
	Single package air-conditioners, with or without evaporator fans, including refrigeration chassis and remote-condenser type.....	(X)	265,546	617,025	241,584	520,927
	Horizontal.....	(X)	265,546	617,025	241,584	520,927
333415E007	Under 27,000 Btuh.....	19	b/ 22,336	25,085	b/ 19,408	21,567
333415E009	27,000 to 32,999 Btuh.....	17	a/ 31,341	33,032	a/ 37,454	42,943
333415E011	33,000 to 53,999 Btuh.....	20	a/ 94,045	90,878	r/ 86,704	r/ 80,617
333415E013	54,000 to 64,999 Btuh.....	18	a/ 51,063	64,429	40,296	51,216
333415E015	65,000 to 96,999 Btuh.....	14	21,680	a/ 51,726	a r/ 19,157	r/ 45,092
333415E017	97,000 to 134,999 Btuh.....	14	16,695	54,600	15,060	50,470
333415E019	135,000 to 184,999 Btuh.....	12	10,873	47,152	9,477	40,527
333415E021	185,000 to 249,999 Btuh.....	10	6,847	46,599	5,358	37,595
333415E023	250,000 to 319,999 Btuh.....	8	5,108	40,970	4,499	35,724
333415E035	320,000 to 379,999 Btuh.....	9	1,150	16,540	1,017	13,792
333415E041	380,000 Btuh and over.....	8	a/ 4,408	146,014	3,154	101,384
	Other than horizontal.....	(X)	(D)	(D)	(D)	(D)
333415E043	Under 54,000 Btuh.....	6	(D)	(D)	(D)	(D)
333415E045	54,000 to 64,999 Btuh.....	5	b/ 4,727	c/ 11,951	r/ 6,474	r/ 15,537
333415E047	65,000 to 96,999 Btuh.....	4	a/ 487	a/ 1,822	r_a/ 568	a r/ 2,028
333415E049	97,000 to 134,999 Btuh.....	4	615	2,994	r/ 639	r/ 2,895
333415E051	135,000 to 184,999 Btuh.....	4	771	5,110	r/ 678	r/ 4,422
333415E053	185,000 Btuh and over.....	5	(D)	(D)	(D)	(D)
	Year-round air-conditioners, single package and remote-condenser type (except heat pumps).....	(X)	649,764	1,425,791	567,157	1,280,158
333415E055	Under 33,000 Btuh.....	21	148,741	135,484	128,238	119,690
333415E057	33,000 to 38,999 Btuh.....	22	118,405	125,277	r/ 104,402	110,164
333415E059	39,000 to 43,999 Btuh.....	16	39,511	42,878	32,263	34,572
333415E061	44,000 to 53,999 Btuh.....	19	70,850	92,234	59,175	78,174
333415E063	54,000 to 64,999 Btuh.....	19	102,907	160,052	88,951	138,043
333415E065	65,000 to 134,999 Btuh.....	14	109,653	313,294	99,888	286,559
333415E067	135,000 to 184,999 Btuh.....	11	31,447	155,363	28,220	144,300
333415E069	185,000 to 249,999 Btuh.....	12	13,890	109,275	12,905	104,329
333415E071	250,000 to 319,999 Btuh.....	9	7,080	66,828	6,210	59,440
333415E073	320,000 to 379,999 Btuh.....	9	2,015	30,049	2,169	32,668
333415E075	380,000 to 539,999 Btuh.....	7	1,800	35,238	1,767	33,891
333415E077	540,000 to 639,999 Btuh.....	8	a/ 1,252	a/ 43,198	1,127	39,923
333415E079	640,000 Btuh and over.....	7	2,213	116,621	1,842	98,405
333415E081	Water source heat pumps (except room air-conditioners).....	9	120,080	129,668	112,052	116,280
	Split system air-conditioning condensing units.....	(X)	4,465,836	2,168,059	3,810,178	1,879,622
333415E082	Under 22,000 Btuh.....	15	a/ 363,464	a/ 114,849	r/ 306,721	r/ 97,524
333415E083	22,000 to 26,999 Btuh.....	17	930,517	317,102	796,691	272,568
333415E085	27,000 to 32,999 Btuh.....	19	888,608	354,077	764,763	309,400
333415E087	33,000 to 38,999 Btuh.....	16	895,784	401,393	778,932	356,410
333415E089	39,000 to 43,999 Btuh.....	16	438,753	232,181	374,237	202,181
333415E091	44,000 to 53,999 Btuh.....	16	468,134	275,339	394,611	234,770
333415E093	54,000 to 64,999 Btuh.....	14	404,316	275,513	328,262	227,685
333415E095	65,000 to 96,999 Btuh.....	7	30,364	38,874	25,200	32,878
333415E097	97,000 to 134,999 Btuh.....	8	21,411	39,347	18,411	34,885

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

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			Quantity	Value	Quantity	Value
333415E099	135,000 to 184,999 Btuh.....	8	11,244	32,993	10,099	29,839
333415E09A	185,000 to 249,999 Btuh.....	7	5,989	24,734	5,476	22,796
333415E09C	250,000 to 319,999 Btuh.....	3	1,899	10,458	1,672	9,244
333415E09E	320,000 to 379,999 Btuh.....	4	2,051	13,137	1,882	11,898
333415E09G	380,000 to 539,999 Btuh.....	5	1,475	12,789	1,476	13,155
333415E09J	540,000 to 639,999 Btuh.....	4	742	7,912	670	7,313
333415E09L	640,000 Btuh and over.....	4	1,085	17,361	1,075	17,076
	Split system air-conditioning coils.....	(X)	3,226,276	666,305	r/ 2,946,522	r/ 616,439
333415E09M	With blower.....	15	1,521,713	435,716	1,341,524	389,252
333415E09P	Without blower.....	18 a/	1,704,563	230,589	r/ 1,604,998	r/ 227,187
333415F --	Air source heat pumps (except room air-conditioners).....	24	1,326,736	1,053,837	r/ 1,179,930	r/ 917,152
	Single package:					
333415F023	Under 27,000 Btuh.....	20 b/	42,284 a/	33,343	r/ 34,564	r/ 26,217
333415F034	27,000 to 41,999 Btuh.....	19 b/	146,547 a/	139,897	r/ 123,822	r/ 112,290
333415F045	42,000 to 64,999 Btuh.....	18 a/	94,319	119,504	r/ 81,897	r/ 98,310
333415F056	65,000 Btuh and over.....	11	14,610	50,884	12,889	44,162
	Split system:					
333415F067	Under 27,000 Btuh.....	18	339,436	168,415	r/ 299,827	r/ 145,805
333415F078	27,000 to 41,999 Btuh.....	16	448,299	306,067	r/ 414,701	r/ 282,096
333415F089	42,000 to 64,999 Btuh.....	15	223,220	202,904	r/ 198,100	r/ 177,201
333415F095	65,000 Btuh and over.....	7	18,021	32,823	14,130	31,071
333415G --	Ground and ground water source heat pumps 5/.....	4	(D)	(D)	(D)	(D)
	Single and split systems:					
333415G010	Under 27,000 Btuh.....	2	(D)	(D)	(D)	(D)
333415G020	27,000-41,999 Btuh.....	1	(D)	(D)	(D)	(D)
333415G030	42,000-64,999 Btuh.....	2	(D)	(D)	(D)	(D)
333415G040	65,000 Btuh and over.....	1	(D)	(D)	(D)	(D)

Btuh British thermal units-per hour. D Withheld to avoid disclosing data for individual companies. pt. Partial. r/Revised by 5 percent or more from previously published data. X Not applicable.

1/Defined as factory-selected combinations of heating and cooling components or assemblies intended to serve an individual room and comprising: (1) hearing assembly available with element for use with hot water, steam, and electricity; means for forced heated air circulation and distribution; integral or remote temperature controls; (2) slide-in cooling section with complete refrigerant cycle; (3) room cabinet; (4) provision for outdoor air intake and discharge and accessories as required for mounting in a building wall; (5) provisions for air filtration and ventilation; (6) permanent individual branch circuit wiring with a suitable line cord or terminating at a junction box within the room cabinet; and (7) provision for free conditioned air distribution, or when forced circulation is employed for minimal duct work having a total external static resistance not exceeding 1/10 inch of water.

2/Data exclude systems assembled from purchased components and installed at passenger automobile assembly lines. The values are understated for some systems because of exclusion of compressors.

3/Represents only those compressors and compressor units produced and shipped separately, including interplant transfers.

4/Includes units shipped for household refrigerators.

5/New product in 1997; therefore no previous year data available.

Note: The percent of estimation for each item is indicated as follows: a/15 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Quantity of Assembled Compressor Bodies: 1998 and 1997
[Quantity in number of units]

Product description	No. of cos.	1998	1997
Compressor bodies 1/ 2/.....	(X)	34,591,184	34,916,176
All refrigerants (except ammonia).....	(X)	34,590,547	34,915,482
Other than automotive air-conditioning.....	(X)	23,902,084	23,649,977
1/4 hp and under.....	5	7,182,057	7,009,406
1/3 and 1/2 hp.....	6	(D)	(D)
3/4 and 1 hp.....	5	(D)	(D)
1-1/2 hp.....	6	873,123	871,087
2 hp.....	6	4,866,483	5,217,022
3 hp.....	11	3,014,679	2,811,080
4 hp.....	5	1,112,816	931,805
5 hp.....	8	1,676,270	1,607,735
7-1/2 hp.....	11	247,944	254,211
10 hp.....	14	341,967	327,148
15 hp.....	12	136,954	129,716
20 hp.....	10	28,570	30,331
25 hp.....	11	22,966	24,589
30 hp.....	13	(D)	(D)
40 hp.....	13	(D)	(D)
50 hp.....	10	4,164	3,997
60 hp.....	11	(D)	(D)
75 hp.....	12	3,975	4,245
100 hp and over.....	11	15,623	13,975
Automotive air-conditioning, including passenger automobiles, trucks, buses, agricultural, and construction equipment.....	4	(D)	(D)
Ammonia refrigerants.....	3	(D)	(D)

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

1/Includes units for household refrigerators.

2/Represents total number of compressor bodies assembled, whether shipped separately or incorporated into a condensing package or unitary end-use product such as single package air-conditioners, freezers, and refrigerators (manufactured and remanufactured units).

Table 4. Comparison of Values of Shipments of Refrigeration, Air-Conditioning, and Warm Air Heating Equipment as Reported in the MA333M, and the 1997 Census of Manufactures [Value in millions of dollars]

Product code	Product description	1997	
		MA35M	Census of Manufactures 1/
333415--	Refrigeration and heating equipment.....	(X)	21,903.0
3334151	Heat transfer equipment.....	4,245.9	4,236.5
3334153	Commercial refrigerators and related equipment 2/.....	(NA)	2,926.4
3334155	Refrigeration condensing units.....	317.3	289.7
3334156	Room air-conditioners and dehumidifiers.....	1,020.2	979.3
3363917	Motor vehicle mechanical air-conditioning systems 3/.....	2,220.9	2,309.7
3334159	Refrigeration and air-conditioning equipment, n.e.c. 2/.....	(NA)	881.1
333415A	Compressors and compressor units, all refrigerants.....	2,795.7	3,015.6
336391B	Automotive air-conditioning compressors 4/.....	1,951.3	1,937.8
333415C pt.	Nonelectric warm air furnaces and humidifiers.....	1,558.4	1,939.2
333415D	Parts for refrigeration and heating equipment 2/.....	(NA)	1,989.0
333415E	Unitary air-conditioners.....	4,614.6	4,364.8
333415F	Air source heat pumps 5/.....	917.2	872.4
333415G	Ground and ground water source heat pumps 6/.....	(D)	88.5

D Withheld to avoid disclosing data for individual companies. NA Not available.
n.e.c. Not elsewhere classified. pt. Partial. X Not applicable.

1/Source: 1997 Census of Manufactures, (Value of Product Shipments).

2/Data for this product class is collected only in the Census of Manufactures and Annual Survey of Manufactures.

3/Data for this product was collected separately from product code 35851 in 1997.

4/Data for this product was collected separately from product code 35854 in 1997.

5/Data for this product was collected separately from product code 35852 in 1997.

6/Data for this product was collected for the first time in 1997.

Table 5. Shipments, Exports, Imports, and Apparent Consumption of Air-Conditioning and Refrigeration Equipment: 1998 and 1997
[Value in thousands of dollars]

Product code 1/	Product description	Manufacturers' shipments (value f.o.b. plant)	Exports of domestic merchandise 1/		Imports for consumption 4/ 5/
			Value at port 2/	Estimated producers' value 3/	
1998					
3334151	Heat transfer equipment, excluding room and unitary air-conditioners and dehumidifiers.....	4,472,072	337,882	253,479	91,626
3334153146	Commercial refrigeration equipment, mechanical drinking water coolers.....	234,476	15,567	11,678	10,269
3334155	Condensing units, all refrigerants.....	339,543	29,089	21,823	18,047
3334156	Room air-conditioners and dehumidifiers.....	1,098,860	125,391	94,068	366,950
3363917	Motor vehicle mechanical air-conditioning systems 6/.....	2,099,860	(NA)	(NA)	(NA)
333415A	Compressors and compressor units, all refrigerants.....	2,814,397	939,405	704,742	743,445
336391B	Automotive air-conditioning compressors 7/.....	1,976,832	(NA)	(NA)	(NA)
333415C pt.	Nonelectric warm air furnaces and humidifiers.....	1,606,981	(NA)	(NA)	(NA)
333415E	Unitary air-conditioners.....	529,123	373,425	280,143	62,913
333415F	Air source heat pumps 8/.....	1,053,837	(NA)	(NA)	(NA)
333415G	Ground and ground water source heat pumps 9/.....	(D)	(NA)	(NA)	(NA)
1997					
3334151	Heat transfer equipment, excluding room and unitary air-conditioners and dehumidifiers.....	4,245,885	421,233	316,009	70,754
3334153146	Commercial refrigeration equipment, mechanical drinking water coolers.....	r/ 246,141	29,980	22,491	4,910
3334155	Condensing units, all refrigerants.....	r/ 317,273	31,338	23,510	29,285
3334156	Room air-conditioners and dehumidifiers.....	1,020,171	117,444	88,106	404,098
3363917	Motor vehicle mechanical air-conditioning systems 6/.....	2,220,957	(NA)	(NA)	(NA)
333415A	Compressors and compressor units, all refrigerants.....	r/ 2,795,669	1,102,224	826,888	611,160
336391B	Automotive air-conditioning compressors 7/.....	r/ 1,951,290	(NA)	(NA)	(NA)
333415C pt.	Nonelectric warm air furnaces and humidifiers.....	1,558,425	(NA)	(NA)	(NA)
333415E	Unitary air-conditioners.....	4,614,616	348,456	261,412	78,499
333415F	Air source heat pumps 8/.....	r/ 917,152	(NA)	(NA)	(NA)
333415G	Ground and ground water source heat pumps 9/.....	(D)	(NA)	(NA)	(NA)

D Withheld to avoid disclosing data for individual companies. NA Not available. pt. Partial. r/Revised by 5 percent or more from previously published data.

1/Source: Census Bureau report EM 545, U.S. Exports (see Table 6 for a comparison of North American Industry Classification System-Based codes and import and export numbers).

2/Dollar value represents c.i.f. (cost, insurance, and freight) value at port of export.

3/Values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to port of export. Adjustment is made to convert values to an approximation of the producers' value of exported goods. Current adjustment factors are based on data for 1992 which are published in "Exports from Manufacturing Establishments, AR92-1, Appendix B". The adjustment factor for this report is 0.7502.

4/Source: Census Bureau report IM 145, U.S. Imports for Consumption. Figures include both import value and duty value.

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

6/Data for this product is collected separately from product code 35851 in 1997.

7/Data for this product is collected separately from product code 35854 in 1997.

8/Data for this product is collected separately from product code 35852 in 1997.

9/Data for this product was collected for the first time in 1997.

Table 6. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers, and HTSUSA Import Numbers: 1998

Product code	Product description	Export number /1	Import number /2
3334151	Heat transfer equipment.....	8415.82.0030	8415.82.0030
		8415.82.0035	8415.82.0035
		8415.83.0040	8415.83.0040
		8418.69.0010	8418.69.0010
		8418.69.0015	8418.69.0015
		8418.69.0045	8418.69.0045
		8418.69.0050	8418.69.0050
		8418.69.0055	8418.69.0055
3334153146	Mechanical drinking water coolers.....	8418.69.0020	8418.69.0020
		8418.69.0020	8418.69.0020
		8418.99.0005	8418.99.8005
		8418.99.0010	8418.99.8010
		8418.99.0015	8418.99.8015
		8418.99.0020	8418.99.8020
		8418.99.0025	8418.99.8025
		8418.99.0025	8418.99.8025
3334156	Room air-conditioners and dehumidifiers.....	8415.10.0040	8415.10.0040
		8415.10.0060	8415.10.0060
		8415.10.0080	8415.10.0080
		8415.82.0050	8415.82.0055 8415.82.0060
3363917	Motor vehicle mechanical air-conditioning systems 3/.....	(X)	(X)
333415A	Compressors and compressor units, all refrigerants.....	8414.30.4000	8414.30.4000
		8414.30.8010	8414.30.8010
		8414.30.8020	8414.30.8020
		8414.30.8030	8414.30.8030
		8414.30.8050	8414.30.8050
		8414.30.8060	8414.30.8060
		8414.30.8070	8414.30.8070
		8414.30.8080	8414.30.8080
8414.30.8090	8414.30.8090		
336391B	Automotive air-conditioning compressors 3/.....	(X)	(X)
333415C	Nonelectric warm air furnaces and humidifiers 3/.....	(X)	(X)
333415E	Unitary air-conditioners (except room).....	8415.81.0010	8415.81.0010
		8415.81.0020	8415.81.0020
		8415.81.0030	8415.81.0030
		8415.82.0005	8415.82.0005
		8415.82.0010	8415.82.0010
		8415.82.0015	8415.82.0015
		8415.82.0020	8415.82.0020
		8415.82.0025	8415.82.0025
8415.83.0050	8415.83.0050		
8415.83.0060	8415.83.0060		
333415F	Air source heat pumps 3/.....	(X)	(X)
333415G	Ground and ground water source heat pumps 3/.....	(X)	(X)

X Not applicable.

1/Source: Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States, 1998.

2/Source: Harmonized Tariff Schedule of the United States, 1998.

3/Import-Export classification not directly comparable.