

CURRENT INDUSTRIAL REPORTS SERIES

2007

MA333M — REFRIGERATION, AIR CONDITIONING, AND WARM AIR HEATING EQUIPMENT

DEFINITIONS AND SPECIAL INSTRUCTIONS

1. Scope of survey

This survey covers firms engaged in the manufacture of refrigeration, air conditioning equipment, and nonelectric warm air furnaces.

2. Figures to be reported

Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate form for each of your establishments, please call the contact listed on the report form or write to the U.S. Census Bureau for additional forms.

a. Quantity and value of shipments

The figures on quantity and value of shipments should include the physical shipments of all products sold, transferred to other establishments within your company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to your own branches should be assigned the same value as comparable sales to unaffiliated customers, i.e., the value includes an appropriate allocation of company overhead and profit. Products bought and resold without further manufacture should not be included in shipments.

For each product shipped, enter the exact description and the four-digit item code number as indicated in the product reference list. Each code should be reported separately. Do not combine product lines.

b. Columnar structure of report

When posting your figures to the original report, please be sure to report information in the correct columns. These are:

Column 1 — Shipments, quantity

Column 2 — Shipments, value

Except:

Item codes 5135—5145 — Report column 2; value only.

Miscellaneous heat transfer equipment shipments should be reported as value only.

Item codes 9905—9990 — Report column 1; quantity only.

Production of compressor bodies assembled include manufactured and remanufactured units. Compressor bodies should be reported only by companies that assemble the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Compressor bodies which may be used with more than one size of motor should be reported on the basis of your best estimate of the motor horsepower with which they will be used.

3. Definitions

HEAT TRANSFER EQUIPMENT — A device for the transfer of heat from warmer to cooler regions.

Packaged terminal air-conditioners (*item code 5101*) — Packaged terminal air-conditioners are a wall sleeve and a separate unencased combination of heating and cooling assemblies intended for mounting through the wall. It includes a prime source of refrigeration, separable outdoor louvers, forced ventilation, and heating availability.

Packaged terminal heat pumps (*item code 5103*) — Packaged terminal heat pumps are a separate unencased refrigeration system installed in a cabinet of similar function and configuration to that of a packaged terminal air-conditioner. It utilizes reverse cycle refrigeration as its prime heat source and should have other supplementary heat source availability.

Evaporative condensers (*item codes 5104—5107*) — Condensing coil, spray system and pump (if furnished), a means for air circulation (including drive if furnished), and frame and enclosure. Report units on basis of refrigeration condensing tonnage at 40 degrees Fahrenheit suction, 105 degrees Fahrenheit condensing temperature, and 78 degrees Fahrenheit wet bulb entering air temperature, with normal air quantity through unit.

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

3. Definitions — Continued

HEAT TRANSFER EQUIPMENT — Continued

Room fan-coil air-conditioning units (*item codes 5108—5110*) — Room fan-coil air-conditioning units which are factory-made assemblies providing the functions of circulation, cooling, or cooling and heating, and filtering of air, but which do not include the source of cooling or heating. These devices are normally designed for free delivery of air into a room, but may be applied with minimal duct work having a static resistance generally not exceeding 1/4" of water. These devices may be designed for furred-in application, within the conditioned space. These devices are generally designed in sizes of less than 1500 CFM air delivery.

Room air-induction units (*item codes 5111*) — Room air-induction units consist of a cooling coil, or cooling and heating coil, and means for delivering preconditioned air (received under pressure from an external source, mixed with recirculated air) to the space being conditioned.

Central station air-handling unit (*item codes 5113—5117*) — A factory-made, encased assembly consisting of a fan or fans and the other necessary equipment to perform one or more of the functions of circulating, cleaning, heating, cooling, humidifying, dehumidifying, and mixing of air, but which does not include a source of heating or cooling. This device is capable of use with duct work of total static resistance of at least 1/4" of water. Include both indoor and outdoor units.

Unit coolers, refrigeration, all types (*item codes 5119—5125*) — Equipment in suitable enclosures with refrigerant or brine coils, fans, fan motor and drive, with or without refrigerant control, with or without sprays, pump, and defroster. This unit is also known as a forced air evaporator.

Report units based on normal air quantity at 10 degrees Fahrenheit temperature difference.

Air-cooled refrigerant condensers, remote-type (*item codes 5130—5134*) — Condensing coil, a means for air circulation (including drive if furnished), frame, and enclosure. Report the number and value of all condensers shipped, including those shipped with unitary air-conditioners and reciprocating liquid-chilling packages.

Report units based on normal air quantity at 30 degrees Fahrenheit temperature difference.

MISCELLANEOUS HEAT TRANSFER EQUIPMENT

Shell-and-tube, shell-and-coil, shell-and-U-tube, tube-in-tube condensers (*item code 5135*)

General — A water-cooled refrigerant condenser is a factory-made assembly of elements by which the flows of refrigerant vapor and water are maintained in such heat transfer relationship that the refrigerant vapor is condensed into a liquid.

Shell-and-tube refrigerant condenser — Refrigerant vapor is condensed either on the inside or on the outside of a group of straight parallel tubes within a closed shell, with the tubes terminating at each end in a tube sheet.

Shell-and-U-tube refrigerant condenser — Refrigerant vapor is condensed in a closed shell, with the cooling water circulated through a tube bundle consisting of U-tubes terminating in a single tube sheet.

Tube-in-tube refrigerant condenser — Consists of one or more assemblies of two tubes, one within the other, in which the refrigerant vapor is condensed either in the annular space or in the inner tube.

Shell-and-coil refrigerant condenser — Refrigerant vapor is condensed in a closed shell, with the cooling water circulated through one or more continuous or assembled coils contained within the shell.

Shell-and-tube, shell-and-coil, shell-and-U-tube, tube-in-tube liquid coolers (*item code 5136*)

General — A refrigerant-cooled liquid cooler is a factory-made assembly of elements in which the liquid and the refrigerant are in heat transfer relationship, causing the refrigerant to evaporate and the liquid to be cooled.

Shell-and-tube liquid cooler — Heat transfer is effected through a group of straight parallel tubes within a closed shell, the tubes terminating at both ends of the cooler.

Shell-and-U-tube liquid cooler — Heat transfer is effected through a U-tube bundle in a closed shell, the U-tubes terminating at one end of the cooler.

Tube-in-tube liquid cooler — Consists of one or more assemblies of two tubes, one within the other, in which the heat transfer is effected through the inner tube or tubes.

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

3. Definitions — Continued

MISCELLANEOUS HEAT TRANSFER EQUIPMENT — Continued

Shell-and-coil liquid cooler — Heat transfer is effected through one or more continuous or assembled coils contained within a closed shell.

Liquid-suction heat exchangers and refrigerant liquid receivers (*item code 5137*)

Liquid-suction heat exchanger — A device used to transfer heat from the refrigerant liquid to the suction gas. Such devices may be of the following types: shell-and-coil, tube-in-tube, finned-tube-in-tube, etc.

Refrigerant liquid receiver — Vessel, permanently connected to a refrigerant system by inlet and outlet pipes, for storage of a liquid refrigerant.

Central system finned coils, air-conditioning and refrigeration type, used with but not including means for air circulation (*item codes 5138—5140*) — One or two row coils are considered as "heating only" coils. Three or more row coils are considered as "cooling and/or heating" coils. Report those central system finned cooling and heating coils that are intended for field installations and are used with, but not including, air circulation means. Do not report the value of those coils included in central station air-conditioning units.

OEM coil sales intended for resale or assembly into equipment by other manufacturers (all types) (*item codes 5142—5144*) — Report shipments of coils to "private-branders" and OEM accounts. Report those finned coils that are intended for resale or for assembly into equipment by other manufacturers. *Do not report* the value of those coils that are *manufactured by you* and are (1) included in a central station unit, or (2) incorporated into another product of your manufacture. Essentially, you should report the shipment of a coil, when it has left your factory as a coil.

Factory-assembled, refrigeration type, finned gravity coils including wetted-surface dehumidifiers (*item code 5145*) — Report all types of (a) flat or shaped plate surface-type heat exchangers for use with volatile refrigerants, eutectic solutions, or brine, and (b) extended surface heat exchangers consisting of tube or pipe prime surface and finned secondary surface, generally used for refrigeration in either frosted or not frosted operation, and usually without forced circulation of the substance being refrigerated. These include bunker and gravity-type

evaporators. *Do not report* steel pipe fin coils that are sold in lengths for field assembly.

Wetted-surface dehumidifiers — Dehumidifiers consisting of a suitable enclosure containing cooling coils, means for liquid spray over the cooling coils and tank, but without means for air circulation provided as an integral part of the unit. The unit may include a recirculating water pump, eliminator plates and inlet deflectors.

Centrifugal liquid-chilling packages (*item codes 5147—5153*) — Factory-made assemblies of one or more centrifugal or screw compressors, condensers, liquid coolers, controls, component parts, with motor compressor (if hermetic), or without drive or prime mover (if open).

The hermetic centrifugal horsepower should be the maximum brake horsepower for which the motor is rated. Report according to the maximum horsepower for which it is rated for water-chilling or brine-chilling.

The open centrifugal horsepower should be the maximum brake horsepower for which the motor or turbine drive, to which the machine is intended to be connected, is rated.

Include the following items in your reported sales price — motor-compressor (if hermetic), motor or turbine (if shipped with open-type), cooler, economizer, condenser, water connections and water passes, control console, purge, fastenings, and couplings, freight, and initial charge of refrigerant and oil.

Do not include the following items in your reported sales price — engineering and drafting time, time and expense of person to advise on testing and instruction, main electric starter, main disconnect switch, starter for oil pump, insulation, water pressure gauges and thermometers, and digging and labor.

Ice-making machines (*item codes 5162—5172*) — A factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice. It may also include means for storing or dispensing ice, or both.

Self-contained model (*item codes 5162—5170*) — A model in which the ice-making mechanisms and storage compartment are in an integral cabinet.

Absorption refrigeration and dehydration systems (*item code 5174*)

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

3. Definitions — Continued

MISCELLANEOUS HEAT TRANSFER EQUIPMENT — Continued

Absorption liquid-chilling systems — Report only those systems of 25 tons and over which cool and dehumidify the air by means of cold contact surface in the same manner as a compression system. (This is the closed-type absorption system.)

Absorption refrigeration cycles usually include a generator, condenser, evaporator, and absorber, and solution pump or equivalent.

Absorption system — A system utilizing the process by which gas is taken up by the capillaries and extended surface of a porous material. Report each factory-made or factory-assembled system or any elements purchased and included in a system for dehydration or absorption by chemical or physical absorption means, except duct work such as may be installed for circulation of the dehydrated air. The open-type absorption system dehumidifies by bringing the air into direct contact with the absorbent. Do not include refrigeration systems for drying by means of heat.

Mechanical refrigeration systems (*item code 5178*) — Mechanical refrigeration systems consist of an assembly of refrigeration compressor apparatus with suitable power source for use when the vehicle is in motion or not in motion; means for air-cooling and dehumidification; means for air circulation, ventilation, and air-cleaning; interconnecting refrigerant piping; and refrigerant and temperature control apparatus, for mounting on the vehicle. The system may or may not have provision for heating.

Reciprocating liquid-chilling packages (*item codes 5187—5190*) — Reciprocating liquid-chilling package is a factory-made assembly of one or more reciprocating compressors, condensers, and water or brine coolers, with interconnections, base, and accessories, and may be furnished with or without refrigerant, drive, and prime mover.

Factory fabricated water-cooling towers (*item code 5192*) — Factory fabricated cooling towers are those towers which are prefabricated by the manufacturers, and shipped either as a factory-assembled section (i.e., cell) or as major components (e.g., casing, fan, precut fill) for assembly at the site of the installation. In cases where sections (i.e., cells or modules) are combined to form a single larger tower, report as one tower in the size classification that pertains to the total capacity of the tower. Report based on nominal tons according to the catalog ratings by your company.

Mechanical drinking water cooler (*item code 5343*) — A factory-made assembly, in one structure, which includes a complete mechanical refrigerating system, and which has the primary function of cooling potable water, and also provides for dispensing such water, by either integral or remote means, or both.

REFRIGERATION CONDENSING UNITS (COMPLETE) (*item codes 5520—5580*) — Include units for household refrigerators and freezers.

Hermetic-type condensing unit — A hermetic-type (sealed) condensing unit is a specific refrigerating combination for a given refrigerant, consisting of a compressor and a motor, both of which are enclosed in the same housing, with no external shaft or shaft seal, the compressor motor operating in the refrigerant atmosphere, a condenser, a liquid receiver (when required), and the regularly furnished accessories.

The compressor and compressor motor housing may be either the fully welded or brazed type, or of the service-sealed type.

Report units for all refrigerants except ammonia. Report each unit according to the maximum horsepower for which it is cataloged corresponding to ARI group's 1 to 9 conditions. Combination air- and water-cooled condensing units should be reported as water-cooled condensing units. Evaporatively-cooled condensing units should be reported as air-cooled condensing units.

Open-type condensing unit — A specific refrigerating combination for a given refrigerant, consisting of a compressor with an extended shaft for an external drive, a condenser, a liquid receiver (when required), and the regularly furnished accessories. Report units for all refrigerants, except ammonia, shipped with or without a motor. Report each unit according to the maximum horsepower for which it is cataloged, corresponding to ARI group's 1 to 9 conditions. Combinations of air- and water-cooled condensing should be reported as water-cooled condensing units. Evaporatively-cooled condensing units should be reported as air-cooled condensing units.

ROOM AIR-CONDITIONERS AND DEHUMIDIFIERS (*All types, including consoles*)

Electrically operated dehumidifiers, mechanically refrigerated, self-contained (*item code 5611*) — A dehumidifier of this type is a factory-made assembly of a condensing unit and means for air-circulation, dehumidification, and condensate collection. Exclude absorption systems.

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

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3. Definitions — Continued

ROOM AIR-CONDITIONERS AND DEHUMIDIFIERS (All types, including consoles) — Continued

Packaged room air-conditioners (all types, including consoles) (*item codes 5639—5670*) — Report quantity and value of shipments of all types of room air-conditioners by Btu/hr rating. Exclude unitary air-conditioners.

Motor vehicle air-conditioning systems (*item codes 5701—5703*) — Report all types of units and systems which are intended for installation in passenger automobiles in item code 5701. Report all types of units and systems which are intended for installation in buses in item code 5702. Report all types of units and systems which are intended for installation in other vehicles (including trucks, construction and agricultural machinery) in item code 5703.

COMPRESSORS AND COMPRESSOR UNITS (*item codes 5815—5858*) — Includes units for household refrigerators and freezers. Include manufactured and remanufactured units. Report the number of compressors shipped only if they are shipped separately and not incorporated into a condensing package or unitary end-use product (such as a single package air-conditioner, display case, freezer, or commercial refrigerator). Also include shipments of replacement units that are not in warranty.

Compressors which may be used with more than one size of motor should be reported on the basis of your best estimate of the motor horsepower with which they will be used.

Hermetic-type motor compressor — A hermetic-type (sealed) motor compressor and/or power unit consists of a mechanical compressor and a motor, both of which are enclosed in the same housing with no external shafts or shaft seals, the motor operating in the refrigerant atmosphere, and using a refrigerant other than ammonia.

Open-type compressor — An open-type compressor (with or without motor) is a specific machine for compressing a given refrigerant vapor consisting of a compressor with an extended shaft for an external drive.

Ammonia compressor — A compressor in which increase in ammonia vapor pressure is attained by changing the internal volume of the compression chamber.

Report units with or without base and accessories, but not including condenser or refrigerant receiver. Report

each unit according to the maximum horsepower for which it is cataloged corresponding to ARI group's 1 to 10 conditions.

Do not report motor compressors used in your condensing units or in your unitary equipment (e.g., room air-conditioners, freezers, and water coolers).

WARM AIR FURNACES AND HUMIDIFIERS

Warm air furnaces (*item codes 6104—6119*)

Warm air furnace — A device for the transfer of heat, generated by the combustion of fuel within the device, or by radiation from an electric heating element, to air that flows between the combustion chamber and an outer enclosure to pipes or ducts that carry the heat to the desired location. In a gravity air flow furnace the warm air rises by gravity. In a forced air furnace the warm air is circulated by a motor-driven blower.

In reporting value, accessory equipment shipped with the furnace, such as blowers, burners, etc., should be included in the value of the furnace.

Exclude oil or gas-fired furnaces sold as component parts of "year-round air-conditioning units." Such units should be included in item codes 6250—6262.

Humidifiers (*attachments to warm air furnaces*) (*item code 6120*) — Furnace or duct-mounted humidifiers may be installed in the supply or return-air plenum of a residential warm air furnace or in a supply or return-air duct of a warm air heating system. *Include* power, nonpower and self-contained types. *Exclude* portable as these are classified in industry 3634, electric housewares and fans.

UNITARY AIR-CONDITIONERS

Recreational vehicle air-conditioners (*item code 6210*) — An air-conditioner designed for application to a recreational vehicle, as defined in American National Standard for Recreational Vehicles (American National Standards Institute Standard A119.2) (NFPA 501C), and which consists of one or more factory-made assemblies which normally include an evaporator or cooling coil, a compressor and condenser combination, and may include a heating function as well. Where such equipment is provided in more than one assembly, the separated assemblies shall have been designed to be used together, and the requirements of rating outlined in this standard are based upon the use of matched assemblies.

3. Definitions — Continued*UNITARY AIR-CONDITIONERS — Continued*

Air-conditioners, except room, including remote condenser type (*item codes 6231—6249*) — Report as single package air-conditioners, factory-made assemblies of one or more condensing units or absorption refrigeration units having means for air circulation, ventilation, air-cleaning, air-cooling, and dehumidification. These units may include or have provision for the addition of heating coils and means for humidifying and control of temperature. Exclude year-round single package air-conditioners and single package air source heat pumps.

Year-round air-conditioners, single package and remote condenser type, except heat pumps (*item codes 6250—6262*) — Factory-made assemblies of one or more condensing units or absorption refrigeration units, a heat-generating unit (such as electric, gas, or oil-fired furnace), and means for air-cooling, dehumidifying, heating, cleaning, and forced circulation of air through a duct system, which may also have means for humidifying and control of temperature. Report only those units that are assembled or are designed to be assembled in a single unit (within a single factory-made enclosure). Do not report equipment having separate cooling and heating units connected only by duct work. Do not report heat pumps or air-conditioners designed for "free-air" delivery such as room air-conditioners and packaged terminal air-conditioners. Report year-round roof-top units in this category. Do not report "cooling only" roof-top units which are to be reported under the single package air-conditioner category.

Water source heat pump (*item code 6271*) — Is typically one of multiple units using fluid circulated in a common piping loop as a heat source/heat sink. It consists of one more factory-made assembly which normally includes an indoor conditioning coil with air moving means, compressor(s), including means to provide both cooling and heating functions. When such equipment is provided in more than one assembly, the separate assemblies shall be designed to be used together, and the requirements of rating outlined in the standard are based upon the use of matched assemblies.

Split system air-conditioning condensing units (*item codes 6272—6287*) — Units which are assembled in factory-made enclosures and consist of a motor-driven compressor, a condenser, and may include a liquid receiver. Report only those units which are intended for air-conditioning purposes and will be installed remotely

from the evaporator and require field connection of refrigerant lines. Also report those factory-charged units in which the condensing unit and the evaporator coil are connected by flexible tubing. Report the evaporator coil in the appropriate coil section.

Split system air-conditioning coil with blower (*item code 6288*) — Factory-made assemblies of a coil (supplied with cooling media from an external source) with means for air circulation, and those which may have provision for the introduction of outside air.

Split system air-conditioning coil without blower (*item code 6289*) — Factory-made assemblies which include only a coil (supplied with cooling media from an external source) without circulating fan, for use with heating equipment incorporating a fan. Include coils used in either a split air-conditioning or a split heat pump section.

HEAT PUMPS

Air source heat pumps, except room air-conditioners — A heat pump that transfers heat from outdoor air to an indoor air circulation system.

Single package (*item codes 6301—6304*) — Report as single package air source heat pumps, factory-made assemblies of one or more condensing units and evaporators and means for air circulation, ventilation, and cleaning with provision for modifying the performance so that either heating or cooling and dehumidification may be produced. Report in this category only those units that are assembled in a single unit (within a single factory-made enclosure). Report those room air-conditioners which embody the heat pump principal under room air-conditioners.

Split systems (*item codes 6305—6308*) — Report as split systems air source pumps all of those units which have the coil located remotely from the equipment described above. Report the indoor coil in the appropriate coil section below.

Ground and ground water source heat pumps (*item code 6319*) — Typically uses water pumped from a well, lake, or stream as a heat source/heat sink. It consists of one or more factory-made assemblies which normally include an indoor conditioning coil with air moving means, compressor(s), and refrigerant-to-water or refrigerant-to-fluid heat exchanger(s) including the means to provide both cooling and heating, cooling only, or heating only functions.

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

4. Comparability

Data reported in this survey should correspond to data reported in the Economic Census - Manufacturing Sector form. The sum of values for item codes shown in column (a) should correspond to dollar values reported under product codes indicated in column (b) below.

Current Industrial Reports (Form MA333M) Item code (a)	Economic Census - Manufacturing Sector Product codes (b)
5199	3334152100
5343	3334153146
5599	3334155100
5699	3334156100
5705	3363917100
5859	333415A100
5869	336391B100
6199	333415C100
6299	333415E100
6309	333415F100
6319	333415G100

CURRENT INDUSTRIAL REPORTS SERIES
REFERENCE LIST

FORM MA333M		
REFRIGERATION, AIR CONDITIONING, AND WARM AIR HEATING EQUIPMENT		
Product code	Item code	Item description
		HEAT TRANSFER EQUIPMENT
3334152101	5101	Packaged terminal air-conditioners
3334152103	5103	Packaged terminal heat pumps
		Evaporative condensers
3334152105	5104	100 tons and under
3334152107	5107	Over 100 tons
		Room fan-coil air-conditioning units
3334152109	5108	Vertical stack
3334152111	5109	Vertical
3334152113	5110	Horizontal
3334152115	5111	Room air-induction units
		Central station air-handling units (motor-driven fan-type)
3334152117	5113	Draw through
3334152119	5115	Blow through
3334152121	5117	Heating and ventilating
		Coolers (refrigeration)
		Ceiling, wall-mounted, and floor-mounted unit coolers
3334152123	5119	4,000 Btuh and below
3334152125	5121	4,001–6,000 Btuh
3334152127	5122	6,001–8,000 Btuh
3334152129	5123	8,001–12,000 Btuh
3334152131	5124	12,001–18,000 Btuh
3334152133	5125	Over 18,000 Btuh
		Air-cooled refrigerant condensers (remote-type)
3334152135	5130	Under 30 tons
3334152137	5132	30 to 50 tons
3334152139	5134	Over 50 tons
		Miscellaneous heat transfer equipment
		Shell-and-tube, shell-and-coil, shell-and-U-tube, tube-in-tube
3334152141	5135	Condensers
3334152143	5136	Liquid coolers
3334152145	5137	Liquid-suction heat exchangers and refrigerant liquid receivers
		Central system finned coils, air-conditioning and refrigeration type, used with but not including means for air circulation
3334152147	5138	Standard steam and steam distributing tube
3334152149	5139	Standard water cooling and/or heating and cleanable tube water
3334152151	5140	Volatile refrigerant cooling
		OEM coil sales intended for resale or assembly into equipment by other manufacturers (all types)
3334152153	5142	Copper and aluminum
3334152155	5143	Aluminum (only)
3334152157	5144	Other (including steel, copper)
3334152159	5145	Factory-assembled, refrigeration type, finned gravity coils including wetted-surface and dehumidifiers (Do not duplicate coils)

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REFERENCE LIST — Continued

FORM MA333M		
Product code	Item code	Item description
HEAT TRANSFER EQUIPMENT — Continued		
Centrifugal liquid-chilling packages, hermetic and open types		
3334152161	5147	200 hp and under
3334152163	5149	201–300 hp
3334152165	5150	300–400 hp
3334152167	5153	Over 400 hp
Ice-making machines		
Self-contained ice-cube maker		
3334152169	5162	Automatic, under 200 lbs.
3334152171	5164	Automatic, 200 lbs. and over
Self-contained flake or chip machines		
3334152173	5168	300 lbs. and under
3334152175	5170	Over 300 lbs.
3334152177	5171	Not self-contained
3334152179	5172	Combination ice makers and ice/drink dispensers
3334152181	5174	Absorption refrigeration and dehydration systems
3334152183	5178	Mechanical refrigeration systems used on all types of vehicles
Reciprocating air and reciprocating water cooled, air cooled screw, air cooled scroll, and water cooled scroll machines:		
3334152185	5187	20 hp and under
3334152187	5188	21–49 hp
3334152189	5189	50–75 hp
3334152191	5190	Over 75 hp
3334152193	5192	Factory-fabricated water-cooling towers
3334152100	5199	Total Heat Transfer Equipment (Sum of item codes 5101–5192)
3334153146	5343	COMMERCIAL MECHANICAL REFRIGERATED DRINKING WATER COOLERS (INCLUDING BOTTLE DRINKING WATER COOLERS)
REFRIGERATION CONDENSING UNITS (COMPLETE) (for all refrigerants excluding ammonia, including units for household refrigerants and freezers)		
Air-cooled hermetic-type		
3334155123	5520	1 hp and under
3334155125	5525	1.5 hp
3334155128	5528	2 hp and 2.5 hp
3334155130	5530	3 hp
3334155132	5532	Over 3 hp but under 15 hp
3334155144	5544	Water-cooled hermetic-type, under 15 hp
Water or air-cooled hermetic type		
3334155161	5561	15 hp
3334155163	5562	20 hp
3334155165	5563	25 hp
3334155167	5564	30 hp
3334155170	5570	40 hp and over
3334155180	5580	Water or air-cooled open-type (all sizes)
3334155100	5599	Total Refrigeration Condensing Units (Sum of item codes 5520–5580)

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REFERENCE LIST — Continued

FORM MA333M		
Product code	Item code	Item description
3334156111	5611	ROOM AIR-CONDITIONERS AND DEHUMIDIFIERS (including consoles; excluding portable dehumidifiers) Electrically operated dehumidifiers mechanically refrigerated, self-contained
3334156139	5639	Room air conditioners (excluding unitary air conditioners) 7,999 Btuh and under
3334156142	5642	8,000–8,999 Btuh
3334156154	5654	9,000–12,999 Btuh
3334156160	5660	13,000–19,999 Btuh
3334156170	5670	20,000 Btuh and over
XXX	5691	Of total room air conditioners, how many were designed to operate on 115 volt circuits?
3334156100	5699	Total Room Air-Conditioners and Dehumidifiers (excluding portable dehumidifiers) (Sum of item codes 5611–5670)
3363917110	5701	MOTOR VEHICLE AIR-CONDITIONING SYSTEMS Air-conditioning units and systems for passenger automobiles
3363917120	5702	Air-conditioning units and systems for buses
3363917130	5703	Other motor vehicle air-conditioning systems (including trucks, construction, and agricultural machinery.
3363917100	5705	Total motor vehicle air-conditioning systems (Sum of item codes 5701–5703)
COMPRESSORS AND COMPRESSOR UNITS, All Refrigerants (excluding Automotives)		
Refrigerants other than ammonia		
Hermetic-type motor compressors		
333415A125	5815	Under 10 hp
333415A130	5830	15 hp
333415A132	5832	20 hp
333415A134	5834	25 hp
333415A136	5836	30 hp
333415A139	5839	40 hp and 50 hp
333415A144	5844	60 hp and over
333415A152	5852	Open-type compressors (with or without motors), all sizes
333415A154	5854	Screw type
333415A158	5858	Ammonia refrigerants, (all types)
333415A100	5859	Total compressors and Compressor Units (Sum of item codes 5811–5858)
336391B100	5869	Automotive air-conditioning compressors (open-type, with or without motor)

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REFERENCE LIST — Continued

FORM MA333M		
Product code	Item code	Item description
WARM AIR FURNACES (INCLUDING DUCT FURNACES AND HUMIDIFIERS, AND ELECTRIC COMFORT HEATING).		
Oil, forced air		
333415C101	6104	150,000 Btuh Bonnet output and under
333415C105	6105	150,001 Btuh Bonnet output and over
Gas, forced air		
333415C107	6107	150,000 Btuh Bonnet output and under
333415C109	6108	150,001–400,000 Btuh Bonnet output
333415C111	6109	Over 400,000 Btuh Bonnet output
333415C179	6119	All other electric warm air furnaces
333415C181	6120	Humidifiers (attachments to warm air furnaces) all types (including central system and self-contained; excluding portable humidifiers)
333415C100	6199	Total Warm Air Furnaces and Humidifiers (Sum of item codes 6104–6120)
UNITARY AIR CONDITIONERS (EXCLUDING AIR SOURCE HEAT PUMPS)		
333415E105	6210	Recreational vehicle air-conditioners
Single package air-conditioners, with or without evaporator fan (including chassis and remote condenser type)		
Horizontal		
333415E107	6231	Under 27,000 Btuh
333415E109	6232	27,000–32,999 Btuh
333415E111	6233	33,000–53,999 Btuh
333415E113	6234	54,000–64,999 Btuh
333415E115	6235	65,000–96,999 Btuh
333415E117	6236	97,000–134,999 Btuh
333415E119	6237	135,000–184,999 Btuh
333415E121	6238	185,000–249,999 Btuh
333415E123	6239	250,000–319,999 Btuh
333415E135	6240	320,000–379,999 Btuh
333415E141	6241	380,000 Btuh and over
Other than horizontal		
333415E142	6242	Under 64,999 Btuh
333415E147	6245	65,000–96,999 Btuh
333415E149	6246	97,000–134,999 Btuh
333415E151	6247	135,000–184,999 Btuh
333415E153	6249	185,000 Btuh and over

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REFERENCE LIST — Continued

FORM MA333M		
Product code	Item code	Item description
UNITARY AIR CONDITIONERS (EXCLUDING AIR SOURCE HEAT PUMPS) — Continued		
Year-round air-conditioners, single package and remote-condenser type (excluding heat pumps)		
333415E155	6250	Under 33,000 Btuh
333415E157	6251	33,000–38,999 Btuh
333415E159	6252	39,000–43,999 Btuh
333415E161	6253	44,000–53,999 Btuh
333415E163	6254	54,000–64,999 Btuh
333415E165	6255	65,000–134,999 Btuh
333415E167	6256	135,000–184,999 Btuh
333415E169	6257	185,000–249,999 Btuh
333415E171	6258	250,000–319,999 Btuh
333415E173	6259	320,000–379,999 Btuh
333415E175	6260	380,000–539,999 Btuh
333415E177	6261	540,000–639,999 Btuh
333415E179	6262	640,000 Btuh and over
333415E181	6271	Water source heat pumps (excluding room air-conditioners)
Split system air-conditioning condensing units		
333415E182	6272	Under 22,000 Btuh
333415E183	6273	22,000–26,999 Btuh
333415E185	6274	27,000–32,999 Btuh
333415E187	6275	33,000–38,999 Btuh
333415E189	6276	39,000–43,999 Btuh
333415E191	6277	44,000–53,999 Btuh
333415E193	6278	54,000–64,999 Btuh
333415E195	6279	65,000–64,999 Btuh
333415E197	6280	97,000–134,999 Btuh
333415E199	6281	135,000–184,999 Btuh
333415E19A	6282	185,000–249,999 Btuh
333415E19C	6283	250,000–319,999 Btuh
333415E19E	6284	320,000–379,999 Btuh
333415E19G	6285	380,000–539,999 Btuh
333415E19J	6286	540,000–639,999 Btuh
333415E19L	6287	640,000 Btuh and over
333415E19M	6288	Split system air-conditioning coils With blower
333415E19P	6289	Without blower
333415E100	6299	Total Unitary Air-Conditioners, (excluding air source heat pumps) (Sum of item codes 6210–6289)
HEAT PUMPS		
Air source heat pumps (excluding room air-conditioners)		
Single package		
333415F123	6301	Under 27,000 Btuh
333415F134	6302	27,000–41,999 Btuh
333415F145	6303	42,000–64,999 Btuh
333415F156	6304	65,000 Btuh and over

CURRENT INDUSTRIAL REPORTS SERIES

REFERENCE LIST — Continued

FORM MA333M

Product code	Item code	Item description
		HEAT PUMPS — Continued
		Air source heat pumps (excluding room air-conditioners) – Continued
		Split systems
333415F167	6305	Under 27,000 Btuh
333415F178	6306	27,000–41,999 Btuh
333415F189	6307	42,000–64,999 Btuh
333415F195	6308	65,000 Btuh and over
333415F100	6309	Total air source heat pumps (sum of item codes 6301–6308)
333415G100	6319	Ground and ground water source heat pumps (single and split systems)
		COMPRESSOR BODIES ASSEMBLED (Report quantity only for item codes 9905–9951; report number of items whether shipped separately or incorporated into a condensing package or unitary end-use product)
		For all refrigerants other than ammonia (including units for household refrigerators)
XXX	9905	Under 2 hp
XXX	9908	2 hp
XXX	9909	3 hp
XXX	9910	4 hp
XXX	9911	5 hp
XXX	9912	7.5 hp
XXX	9913	10 hp
XXX	9914	15 hp
XXX	9915	20 hp
XXX	9916	25 hp
XXX	9917	30 hp
XXX	9918	40 hp
XXX	9919	50 hp
XXX	9920	60 hp
XXX	9921	75 hp
XXX	9922	100 hp and over
XXX	9931	Total all refrigerants other than ammonia (Sum of item codes 9905–9922)
XXX	9941	Ammonia refrigerants
XXX	9951	Automotive air-conditioning (including passenger automobiles, trucks, buses, and construction and agriculture machinery)
XXX	9990	Total Compressor Bodies Assembled (Sum of item codes 9931–9951)

NOTES: