

# CURRENT INDUSTRIAL REPORTS SERIES

2008 MA333P — PUMPS (EXCEPT HYDRAULIC) AND COMPRESSORS (SHIPMENTS)

## DEFINITIONS AND SPECIAL INSTRUCTIONS

### 1. Scope of survey

This survey includes firms engaged in manufacturing industrial pumps, (reciprocating, turbine, centrifugal, rotary, diaphragm, and other pumps); domestic water systems; domestic sump pumps; oil well and oil field pumps; hot water heating circulator pumps, and other pumps; air compressors; gas compressors; and vacuum pumps. Excluded from this survey are hand pumps; measuring and dispensing pumps; automotive circulating pumps; hydraulic fluid power pumps; paint-spraying equipment; and compressors for ice making, refrigeration equipment, and air-conditioning units.

### 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 shown on the report form or write to 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.

Report all driven units, such as pump-driven sets and compressor-driven sets, and pumps and compressors sold without drivers. In column 1, report the number of pumps and compressors shipped; in column 2, report the value of the units in column 1. This value should represent the value of the pump or compressor only and should not include the value of the driver. The exceptions to this are domestic water system and sump pumps and integral diesel-or gas-engine powered gas compressors. The value of shipments figure for these items should include the value of the driver.

For item codes representing value of drivers, do not report quantities.

#### b. Columnar structure of report

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

For item codes 1098, 1698, 3298, and 3398:

Column 2 — Value of shipments of drivers sold with driven units. (Column 1 is not used.)

For item codes 1911, 1922, 1933, and 1995:

Column 2 — Value of shipments of parts and attachments sold separately. (Column 1 is not used.)

For other item codes:

Column 1 — Quantity (Number of pumps or compressors shipped).

Column 2 — Value of shipments of driven units, excluding value of drivers (see instructions, item 2a).

### 3. Definitions

Pump — Device for raising, transferring, moving, or pressurizing fluids.

Compressor — Device for compressing gases, such as air for motive power or natural gas for the transfer of gas or for the recovery of liquid hydrocarbons.

Driver — An electric motor, or a prime mover, such as a steam engine, steam or gas turbine, or internal combustion engine.

#### CENTRIFUGAL PUMPS (item codes 1127–1278)

Centrifugal pump — A pump in which the pressure is developed principally by the action of centrifugal force. Pumps in the class with single inlet impellers usually have a specific speed below 4200; with double suction impellers, below 6000. In pumps of this class the liquid normally enters the impeller at the hub and flows radially to the periphery.

Single stage pump — A pump in which the total head is developed by one impeller.

Single suction pump — A pump equipped with one or more single suction impellers.

Close coupled pump — A design in which the impeller is mounted on the motor shaft.

Frame mounted pump — A pump design in which the impeller is mounted on a shaft, held in a bearing frame, and coupled to a motor with a flexible coupling.

Double suction pump — A pump equipped with one or more double suction impellers.

Multistage pump — A pump having two or more impellers acting in series in one casing.

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DEFINITIONS AND SPECIAL INSTRUCTIONS – Continued

Definitions – Continued

Propeller (or axial flow) pump — A pump which develops most of its head by the propelling or lifting action of the vanes on the liquid. It has a single inlet impeller with the flow entering axially and discharging nearly axially. Pumps of this type usually have a specific speed above 9000.

Mixed flow pump — A pump in which the head is developed partly by centrifugal force and partly by the lift of the vanes of the liquid. This type of pump has a single inlet impeller with the flow entering axially and discharging in an axial and radial direction. Pumps of this type usually have a specific speed from 4200 to 9000.

VERTICAL TURBINE PUMPS (item codes 1281–1284) — Include submersible pump systems over 5 hp. Report submersible pump systems, 5 hp and under, as domestic water systems, item codes 1376–1378.

RECIPROCATING PUMPS (item code 1286)

Direct-acting steam-driven — A reciprocating pump and a steam engine built together as a unit. The power to drive the pump is furnished by the steam engine.

ROTARY PUMPS — item codes 1288–1298

Rotary pump — A positive displacement pump, consisting of a fixed casing containing gears, cams, screws, vanes, plungers, or similar elements actuated by rotation of the drive shaft. These pumps are characterized by their close running clearances and the absence of suction and discharge valves.

DOMESTIC WATER SYSTEMS (item codes 1367–1390) — Include submersible pump systems 5 hp and under. Report submersible pump systems over 5 hp as vertical turbine pumps, item codes 1281–1284. (See also submersible centrifugal pumps, item codes 1132–1178.) Exclude irrigation pumps; report them under industrial pumps by class and type of pump.

Domestic water system — A complete water supply pump system for household and farm use, containing driver, tank, and fittings.

Jet pump — A pump with built-in jet (ejector) assembly for either shallow or deep well use.

Non-jet pump — An electrical reciprocating piston pump for shallow or deep well use.

Submersible pump — A pump completely submerged in water (well, pond, reservoir, etc.) which uses a series of impellers and diffusers (stages) on a single shaft or a helical rotor positive displacement design propelled by an oil-filled or water-lubricated motor.

Domestic hand pumps, etc. — Hand, windmill, or engine-driven well pumps not electrically powered.

OIL-WELL AND OIL-FIELD PUMPS (item codes 1701–1720) — Include pumps specially designed for oil-well and oil-field applications (except boiler feed).

AIR COMPRESSORS (item codes 3300–3340)

Stationary air compressor — An air compressor which is intended for permanent installation and is typically not mobile.

Portable air compressor — An air compressor which is mountable on wheels, a skid, or a motor truck so as to be typically mobile.

Gas compressors (item codes 3342–3356) — Include engine-compressor units which generally consist of an integral engine compressor block that houses both the engine and compressor. (In such machines the engine pistons and compressor pistons are mounted on a common crankshaft.)

VACUUM PUMPS (item codes 3398–3477)

Vacuum pump — A device for withdrawing air, gas, or air and gas mixtures from piping systems, enclosed vessels, or enclosed spaces, discharging the air to atmosphere, and removing the moisture.

## 4. Standard abbreviations

hp — Horsepower

ANSI — American National Standards Institute

API — American Petroleum Institute

ISO — International Organization for Standardization

FM — Factory Mutual Insurance Certification

UL — Underwriters' Laboratories

PSI — Pounds per square inch

GPM — Gallons per minute

PSIG — Pounds per square inch gauge (represents the differential between atmospheric pressure and output pressure of compressors).

C.F.M. — Cubic feet per minute

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## DEFINITIONS AND SPECIAL INSTRUCTIONS – Continued

### 5. Comparability

Data reported in this survey should correspond to data reported in the Annual Survey of Manufactures form. The sum of values for item codes shown in column (a) should correspond to dollar values reported under product class codes indicated in column (b) below.

Current Industrial Reports (Form MA333P)  Item codes (a)	Annual Survey of Manufactures  Product class codes (b)
1300, 1399, 1440, 1730, 1800	3339111
3390, 3480	3339121
3900	3339125
1999	3339115

# CURRENT INDUSTRIAL REPORTS SERIES

## REFERENCE LIST

FORM MA333P		
PUMPS (EXCEPT HYDRAULIC) AND COMPRESSORS (SHIPMENTS)		
Product code	Item code	Item description
3339111		TOTAL SHIPMENTS (Domestic and export) (Report value in thousands of dollars)
		INDUSTRIAL PUMPS (Excluding hydraulic fluid power pumps, automotive circulating pumps, measuring and dispensing pumps)
3339111401	1098	VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc.), sold with driven units reported elsewhere in product class 3339111, on this line — do not report the values of drivers within the values for the driven units
		Centrifugal pumps
		Sewage type (non-submersible), vertical or horizontal with non-clog impeller:
3339111411	1127	12" and under
3339111412	1128	More than 12"
		Submersible effluent pumps (less than 1" solids handling capacity):
3339111424	1132	Less than 1 hp
3339111425	1134	1 hp and over
		Submersible solids handling pumps (solids 1" to 2" inclusive):
3339111428	1136	½ hp and under
3339111429	1138	More than ½ hp
		Submersible nonclog pumps (greater than 2" solids handling capacity):
333911142C	1142	3" discharge and under
333911142E	1144	Discharge more than 3" but less than 7"
333911142G	1147	7" and over discharge
		Submersible grinder pumps (incorporating a hardened stainless steel cutter mechanism to macerate the solids into a fine slurry):
333911142K	1177	2 hp and below
333911142M	1178	More than 2 hp
3339111448	1209	Single and two stage, single and end suction, close coupled with driver
3339111450	1219	Single and two stage, single suction, in-line, close coupled with driver
333911144E	1224	Single stage, single suction, vertical, in-line frame
333911144H	1228	Single stage, single suction, frame or foot mounted, metallic pumps (built to National or International Standards ANSI B73 1 or ISO 2858)
333911144L	1232	Single stage, single suction, frame or foot mounted, non-metallic pumps (built to National or International Standards ANSI B73 1 or ISO 2858)
		Single stage, single suction, frame or foot mounted, non-ANSI, non-ISO, with or without recessed impeller:
333911144M	1233	1" discharge and under
333911144N	1235	Discharge more than 1", up to 2"
333911144R	1237	Over 2" discharge

# CURRENT INDUSTRIAL REPORTS SERIES

## REFERENCE LIST — Continued

FORM MA333P		
Product code	Item code	Item description
		TOTAL SHIPMENTS (Domestic and export) — Continued (Report value in thousands of dollars)
		INDUSTRIAL PUMPS (Excluding hydraulic fluid power pumps, automotive circulating pumps, measuring and dispensing pumps) — Continued
		Centrifugal pumps — Continued
3339111455	1240	Single stage, single suction, replaceable elastomer lined or hard metal, frame or foot mounted
3339111458	1244	Single stage, single suction, centerline mounted
3339111459	1248	Single stage, axially split, double suction: 4" discharge and under
333911145A	1249	Discharge more than 4", up to 8"
333911145C	1250	Over 8" discharge
333911145N	1252	Single stage, radially split, double suction impeller pumps
333911145M	1259	Single stage, radially split, double suction impeller pumps, non-API compliant
3339111468	1260	Multistage, single or double suction, diffuser design, radially split case
333911146F	1267	Multistage, single or double suction, volute or diffuser design, axially split case
3339111478	1268	Sealless centrifugal pumps, magnetic drive
333911147D	1269	Sealless centrifugal pumps, canned motor
333911148N	1270	All other centrifugal pumps
3339111481	1277	Propeller and mixed flow, horizontal and vertical (includes Vertical Turbine over 36"): 36" and under
3339111484	1278	Over 36"
		Vertical Turbine Pumps not exceeding 36" discharge (including deep-well; see item code 1278 for > 36")
3339111493	1281	Pump with submersible motor Bowl diameter 6" and under
3339111498	1282	Bowl diameter over 6"
333911149F	1283	Pump and bowl assemblies through 36" (All column and shaft lengths, including Factory Mutual Insurance Certification or Underwriters' Laboratories approved vertical turbine fire pumps; deep well and short coupled pumps included; except can and pot type)
333911149N	1284	Can and pot type (pump and bowl assemblies, suction can and pot type)

# CURRENT INDUSTRIAL REPORTS SERIES

## REFERENCE LIST — Continued

FORM MA333P		
Product code	Item code	Item description
		TOTAL SHIPMENTS (Domestic and export) — Continued (Report value in thousands of dollars)
		INDUSTRIAL PUMPS (Excluding hydraulic fluid power pumps, automotive circulating pumps, measuring and dispensing pumps)— Continued
		Reciprocating Pumps
33391114C7	1286	Driven by electric motor, engine, or steam turbine: Reciprocating piston, plunger or diaphragm (not air operated) pumps; including power-pumps for water flooding.
33391114D5	1287	Diaphragm Pumps (air operated)
		Rotary Pumps
		100 PSI and under designed pressure:
33391114R1	1288	10 GPM and under, designed capacity
33391114R3	1289	11 to 99 GPM, designed capacity
33391114R5	1290	100 to 299 GPM, designed capacity
33391114R7	1291	300 GPM and over, designed capacity
		101 to 249 PSI, designed pressure:
33391114RA	1292	10 GPM and under, designed capacity
33391114RC	1293	11 to 99 GPM, designed capacity
33391114RE	1294	100 GPM, and over, designed capacity
33391114RN	1298	250 PSI and over, designed pressure
33391114T5	1299	Other Industrial Pumps
3339111440	1300	Total Industrial Pumps (Excluding hydraulic fluid power pumps, automotive circulating pumps, measuring and dispensing pumps) (Item codes 1098— 1299)
3339111		DOMESTIC WATER SYSTEMS (including drivers) — Include the value of drivers (motors, pumps for farm and home use), excluding irrigation pumps.
3339111101	1367	Nonsubmersible pump systems (jet and non-jet; including drivers)
		Submersible pump systems, (including drivers):
3339111103	1376	Up to 1 hp
3339111104	1377	1 hp to 3 hp
3339111105	1378	3 hp to 5 hp
	1379	Over 5 hp
3339111106		
3339111107	1390	Domestic hand and windmill pumps, pump jacks, and cylinders (sold separately; including drivers)
	1399	Total Domestic Water Systems (including drivers) (pumps for farm and home use), excluding irrigation pumps. (Sum of item codes 1367— 1390)
3339111110		

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## REFERENCE LIST — Continued

FORM MA333P		
Product code	Item code	Item description
		TOTAL SHIPMENTS (Domestic and export) — Continued (Report value in thousands of dollars)
3339111		DOMESTIC SUMP PUMPS, 1 hp or less, including the value of drivers if shipped as complete unit—Include the value of drivers (motors, engines, etc), sold with shipments of driven units reported in product class 3339111, within the values of shipments of products with which they are sold.
3339111235	1435	Pedestal, including drivers
3339111238	1438	Submersible, including drivers: 1/3 hp and under
3339111239	1439	Over 1/3 hp
3339111220	1440	TOTAL DOMESTIC SUMP PUMPS, 1 hp or less, including the value of the driver if shipped as complete unit (Sum of item codes 1435—1439)
		OIL-WELL AND OIL-FIELD PUMPS (excluding boiler feed) (including the value of the driver if shipped as a complete unit)
3339111335	1698	VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc), sold with driven units reported elsewhere in product class 3339111, on this line — do not report the values of drivers within the values for the driven units.
3339111341	1701	Subsurface pumps for oil well pumping
3339111364	1720	Other oil well and oilfield pumps, including mud pumps (slush pumps) — specify kind
3339111330	1730	TOTAL OIL-WELL AND OIL-FIXED PUMPS (excluding boiler-feed) (Sum of items codes 1698—1720)
3339111590	1800	OTHER PUMPS (including drivers) excluding packaged pumps, hard pumps, automotive circulating pumps, locomotive pumps, hydraulic fluid power pumps, measuring dispensing pumps, and industrial spraying equipment.
3339115		PARTS AND ATTACHMENTS FOR PUMPS AND PUMPING EQUIPMENT whose product codes begin with 333911
3339115144	1911	Aftermarket (spare) parts for centrifugal pumps
3339115155	1922	Aftermarket (spare) parts for vertical turbine pumps
3339115166	1933	Aftermarket (spare) parts for reciprocating pumps
3339115199	1995	Other
3339115133	1999	TOTAL PARTS and attachments for pumps and pumping equipment, excluding hydraulic fluid power and air and gas compressors, (including packaged pumps) (Sum of item codes 1911—1995)

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## REFERENCE LIST — Continued

FORM MA333P		
Product code	Item code	Item description
		TOTAL SHIPMENTS (Domestic and export) — Continued (Report value in thousands of dollars)
		AIR AND GAS COMPRESSORS
3339121115	3298	<p>VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc ), sold with driven units reported elsewhere in product class 3339121, on this line — do not report the values of drivers within the values for the driven units. Exception: Report drivers for integral engine stationary reciprocating gas compressors (item code 3345) on the line for that product, not on this line.</p> <p>Air Compressors, new</p> <p>Stationary:</p> <p>Reciprocating, single acting:</p>
3339121121	3300	1 ½ hp and under
3339121124	3301	Over 1 ½ hp to 5 hp
333912112B	3302	6 hp and over
3339121133	3305	<p>Reciprocating, double acting</p> <p>Rotary positive:</p>
3339121144	3307	<p>Discharge pressure 50 PSIG and under, all hp sizes</p> <p>Discharge pressure of 51 PSIG and over:</p>
3339121151	3311	40 hp and under
3339121154	3312	41–150 hp
3339121157	3313	151–300 hp
333912115A	3315	301 hp and over
3339121166	3316	<p>Centrifugal and axial</p> <p>Portable:</p>
3339121171	3329	Under 11 C.F.M
333912117B	3335	11–249 C.F.M
333912117E	3337	250–599 C.F.M
333912117H	3340	600 C.F.M. and over



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## REFERENCE LIST — Continued

FORM MA333P		
Product code	Item code	Item description
		TOTAL SHIPMENTS (Domestic and export) — Continued (Report value in thousands of dollars)
		AIR AND GAS COMPRESSORS — Continued
		Gas Compressors, new
		Stationary, centrifugal and axial
3339121183	3342	Natural gas
3339121188	3343	All other gases
3339121198	3354	Stationary reciprocating
33391211CC	3356	Stationary rotary positive
33391211FF	3388	Other compressors (excluding refrigeration, air-conditioning, and ice making), including air motors, rebuilt compressors, compressor packages, and packaged compressor units assembled from purchased compressors — specify kind
3339121110	3390	Total air and gas compressors (excluding refrigeration, air-conditioning, and ice making), including air motors, rebuilt compressors, compressor packages, and packaged compressor units assembled from purchased compressors — specify kind (Sum of item codes 3298—3388)
3339121225	3398	VACUUM PUMPS (excluding laboratory)
		VALUE OF DRIVERS — Include the value of drivers (motors, engines, etc. ), sold with driven units reported elsewhere in product class 3339121, on this line — do not report the values of drivers within the values for the driven units
		Low vacuum, 29.5 in mercury vacuum and lower:
3339121261	3461	Under 5 hp
3339121265	3465	5 hp and over
		High vacuum, 29.6 in mercury vacuum and over:
3339121273	3473	Under 5 hp
3339121277	3477	5 hp and over
3339121220	3480	Total Vacuum Pumps (excluding laboratory) (Sum of item codes 3398—3477)
3339125		PARTS AND ATTACHMENTS FOR AIR AND GAS COMPRESSORS AND VACUUM PUMPS
3339125100	3900	Parts and attachments for air and gas compressors and vacuum pumps (excluding laboratory)

3/4/09