

Internal Combustion Engines

1999

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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.

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

In 1999, a total of 27,068,601 internal combustion engines (except outboard, nondiesel automotive, aircraft and military tank) were shipped or produced and incorporated at the same plant, representing a 1-percent decrease from the 27,425,062 produced in 1998. Gasoline or gas-gasoline engines totaled 25,780,935 in 1999, 2 percent below the figure of 26,254,210 for 1998. The number of nonautomotive diesel, semidiesel, and dual-fuel engines produced in 1999 amounted to 344,382, a 16-percent increase from the 296,249 reported in 1998. There were 926,791 automotive diesel, semidiesel, and dual-fuel engines produced in 1999, 9 percent more than the 850,879 produced in 1998. Production of gas engines (LPG and natural) was 16,493 in 1999, 30 percent less than the 23,724 produced in 1998.

Current
Industrial
Reports

Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call J. Stanis Batton, 301-457-4750.

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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Table 1. Internal Combustion Engines by Type of Engine: 1999 and 1998
 [Engines and quantity in units. Value in thousands of dollars]

| Product description | Engines produced 1/ | Engines produced and incorporated 2/ | Total shipments and interplant transfers | | Shipments to other companies | | Interplant transfers | |
|--|---------------------|--------------------------------------|--|--------------------|------------------------------|--------------------|----------------------|--------------------|
| | | | Quantity | Value f.o.b. plant | Quantity | Value f.o.b. plant | Quantity | Value f.o.b. plant |
| 1999 | | | | | | | | |
| Total..... | 27,068,601 | (D) | (D) | 15,221,571 | (D) | 11,621,997 | 952,305 | 3,600,078 |
| Gasoline (except automotive)..... | 25,780,935 | (D) | (D) | 3,148,447 | (D) | (D) | 650,809 | (D) |
| Nonautomotive diesel..... | 344,382 | (D) | (D) | 4,413,707 | (D) | 3,068,730 | 58,020 | 1,344,977 |
| Automotive diesel..... | 926,791 | - | 926,791 | 7,174,825 | (D) | 5,714,392 | (D) | 1,460,433 |
| Natural gas and liquefied petroleum gas..... | 16,493 | (D) | (D) | 484,592 | (D) | (D) | (D) | (D) |
| 1998 | | | | | | | | |
| Total..... | 27,425,062 | 10,854,446 | 16,570,616 | 13,219,028 | (D) | 9,765,698 | (D) | 3,453,330 |
| Gasoline (except automotive)..... | 26,254,210 | (D) | (D) | 2,770,281 | (D) | (D) | 589,298 | (D) |
| Nonautomotive diesel..... | 296,249 | (D) | (D) | 3,209,928 | (D) | 1,733,411 | 77,555 | 1,476,517 |
| Automotive diesel..... | 850,879 | - | 850,879 | 6,780,373 | (D) | 5,492,657 | (D) | 1,287,716 |
| Natural gas and liquefied petroleum gas..... | 23,724 | (D) | (D) | 458,446 | (D) | (D) | (D) | (D) |

- Represents zero. D Withheld to avoid disclosing data for individual companies.

1/Represents total number of engines shipped and total engines produced and incorporated into products at the same establishment.

2/Represents engines produced and incorporated (in same plant) into products such as construction machinery, farm machinery, tractors, engine-generator sets, and other products.

Table 2. Gasoline Engines by Horsepower Rating: 1999 and 1998
 [Engines and quantity in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | Engines produced 1/ | Engines produced and incorporated 2/ | Total shipments and interplant transfers | | Shipments to other companies | | Interplant transfers | |
|--------------|------------------------|-------------|---------------------|--------------------------------------|--|--------------------|------------------------------|--------------------|----------------------|--------------------|
| | | | | | Quantity | Value f.o.b. plant | Quantity | Value f.o.b. plant | Quantity | Value f.o.b. plant |
| 1999 | | | | | | | | | | |
| 33361810 | Gasoline engines..... | 23 | 25,780,935 | (D) | (D) | 3,148,447 | (D) | (D) | 650,809 | (D) |
| 3336181011 | Under 11 hp..... | 15 | 22,772,172 | (D) | (D) | (D) | (D) | (D) | 379,402 | 55,380 |
| 3336181013 | 11 to under 21 hp..... | 7 | 2,079,996 | (D) | (D) | 720,614 | (D) | 711,820 | 22,043 | 8,794 |
| 3336181015 | 21 to under 61 hp..... | 10 | 538,632 | (D) | (D) | 337,262 | 488,666 | (D) | (D) | (D) |
| 3336181017 | 61 hp and over..... | 7 | 390,135 | (D) | (D) | (D) | (D) | (D) | (D) | (D) |
| 1998 | | | | | | | | | | |
| 33361810 | Gasoline engines..... | 25 | 26,254,210 | (D) | (D) | 2,770,281 | (D) | (D) | 589,298 | (D) |
| 3336181011 | Under 11 hp..... | 16 | 23,514,771 | (D) | (D) | (D) | (D) | (D) | 348,272 | 48,909 |
| 3336181013 | 11 to under 21 hp..... | 7 | 1,903,343 | (D) | (D) | 637,274 | 1,860,544 | (D) | (D) | (D) |
| 3336181015 | 21 to under 61 hp..... | 10 | 480,156 | (D) | (D) | 316,100 | 432,975 | (D) | (D) | (D) |
| 3336181017 | 61 hp and over..... | 9 | 355,940 | (D) | (D) | (D) | (D) | (D) | (D) | (D) |

D Withheld to avoid disclosing data for individual companies.

1/Represents total number of engines shipped and total engines produced and incorporated into products at the same establishment.

2/Represents engines produced and incorporated (in same plant) into products such as construction machinery, farm machinery, tractors, engine-generator sets, and other products.

Note: Horsepower is defined as maximum published horsepower rating at maximum recommended revolutions per minute (rpm).

Table 3. Nonautomotive Diesel Engines by Horsepower Rating: 1999 and 1998
 [Engines and quantity in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | Engines produced 1/ | Engines produced and incorporated 2/ | Total shipments and interplant transfers | | Shipments to other companies | | Interplant transfers | |
|--------------|---------------------------------|-------------|---------------------|--------------------------------------|--|--------------------|------------------------------|--------------------|----------------------|--------------------|
| | | | | | Quantity | Value f.o.b. plant | Quantity | Value f.o.b. plant | Quantity | Value f.o.b. plant |
| 1999 | | | | | | | | | | |
| 33361830 | Nonautomotive diesel engines... | 16 | 344,382 | (D) | (D) | 4,413,707 | (D) | 3,068,730 | 58,020 | 1,344,977 |
| 3336183011 | Under 101 hp..... | 8 | (D) | (D) | (D) | 40,198 | (D) | (D) | (D) | (D) |
| 3336183013 | 101 to under 151 hp..... | 6 | (D) | (D) | (D) | (D) | (D) | (D) | (D) | (D) |
| 3336183015 | 151 to under 176 hp..... | 6 | (D) | (D) | (D) | (D) | (D) | 68,471 | (D) | (D) |
| 3336183017 | 176 to under 251 hp..... | 7 | 35,080 | (D) | (D) | 262,275 | 25,159 | (D) | (D) | (D) |
| 3336183019 | 251 to under 301 hp..... | 6 | 39,588 | (D) | (D) | 431,643 | 30,321 | (D) | (D) | (D) |
| 333618301B | 301 to under 401 hp..... | 6 | 44,679 | (D) | (D) | 537,704 | (D) | (D) | 10,446 | (D) |
| 333618301D | 401 to under 451 hp..... | 4 | (D) | - | (D) | (D) | (D) | (D) | (D) | (D) |
| 333618301F | 451 to under 601 hp..... | 4 | 24,209 | (D) | (D) | 477,068 | (D) | (D) | (D) | (D) |
| 333618301H | 601 to under 701 hp..... | 3 | 3,137 | (D) | (D) | (D) | 2,065 | 57,000 | (D) | (D) |
| 333618301J | 701 to under 801 hp..... | 4 | (D) | - | (D) | (D) | (D) | (D) | (D) | (D) |
| 333618301L | 801 to under 1,501 hp..... | 6 | 4,621 | (D) | (D) | (D) | (D) | (D) | (D) | (D) |
| 333618301M | 1,501 hp and over..... | 6 | 2,864 | (D) | (D) | (D) | 1,472 | (D) | (D) | (D) |
| 1998 | | | | | | | | | | |
| 33361830 | Nonautomotive diesel engines... | 17 | 296,249 | (D) | (D) | 3,209,928 | (D) | 1,733,411 | 77,555 | 1,476,517 |
| 3336183011 | Under 101 hp..... | 9 | (D) | (D) | (D) | 68,063 | (D) | (D) | (D) | (D) |
| 3336183013 | 101 to under 151 hp..... | 6 | (D) | (D) | (D) | (D) | (D) | (D) | (D) | (D) |
| 3336183015 | 151 to under 176 hp..... | 6 | 29,400 | (D) | (D) | (D) | (D) | 94,625 | (D) | (D) |
| 3336183017 | 176 to under 251 hp..... | 8 | 46,355 | (D) | (D) | 270,411 | 25,333 | (D) | (D) | (D) |
| 3336183019 | 251 to under 301 hp..... | 6 | 49,577 | (D) | (D) | (D) | (D) | 225,112 | (D) | (D) |
| 333618301B | 301 to under 401 hp..... | 6 | 25,721 | (D) | (D) | 326,304 | 16,709 | r/226,586 | (D) | 99,718 |
| 333618301D | 401 to under 451 hp..... | 5 | 5,569 | - | 5,569 | 87,725 | (D) | (D) | (D) | (D) |
| 333618301F | 451 to under 601 hp..... | 3 | 9,876 | - | 9,876 | 222,499 | (D) | (D) | (D) | (D) |
| 333618301H | 601 to under 701 hp..... | 3 | 2,517 | (D) | (D) | 64,598 | 1,764 | (D) | (D) | (D) |
| 333618301J | 701 to under 801 hp..... | 4 | (D) | - | (D) | (D) | (D) | (D) | (D) | (D) |
| 333618301L | 801 to under 1,501 hp..... | 4 | 6,205 | (D) | (D) | (D) | 2,576 | 125,980 | (D) | (D) |
| 333618301M | 1,501 hp and over..... | 6 | 3,830 | (D) | (D) | (D) | 1,195 | 274,351 | (D) | (D) |

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

1/Represents total number of engines shipped and total engines produced and incorporated into products at the same establishment.

2/Represents engines produced and incorporated (in same plant) into products such as construction machinery, farm machinery, tractors, engine-generator sets, and other products.

Note: Horsepower is defined as maximum published horsepower rating at maximum recommended revolutions per minute (rpm).

Table 4. Automotive Diesel Engines by Horsepower Rating: 1999 and 1998
 [Engines in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | 1999 | | 1998 | |
|--------------|--------------------------------|-------------|------------|-----------|------------|--------------|
| | | | Engines 1/ | Value 2/ | Engines 1/ | Value 2/ |
| 33361850 | Automotive diesel engines..... | 8 | 926,791 | 7,174,825 | 850,879 | 6,780,373 |
| 3336185011 | Under 226 hp..... | 8 | (D) | (D) | (D) | (D) |
| 3336185013 | 226 to under 251 hp..... | 6 | (D) | (D) | (D) | (D) |
| 3336185015 | 251 hp and over..... | 7 | (D) | (D) | r/ 306,364 | r/ 3,912,861 |

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

1/Represents total number of engines shipped, including interplant transfers.

2/Represents value of all engines shipped, including interplant transfers.

Note: Horsepower is defined as maximum published horsepower rating at maximum recommended revolutions per minute (rpm).

Table 5. Gas Engines (Except Automotive) by Horsepower Rating: 1999 and 1998
 [Engines and quantity in units. Value in thousands of dollars]

| Product code | Product description | No. of cos. | Engines produced 1/ | Total shipments including interplant transfers | | Engines produced and incorporated 2/ |
|--------------|--|-------------|---------------------|--|--------------------|--------------------------------------|
| | | | | Quantity | Value f.o.b. plant | |
| 1999 | | | | | | |
| 33361890 | Natural gas and liquefied petroleum gas engines..... | 11 | 16,493 | (D) | 484,592 | (D) |
| 3336189011 | Under 501 hp..... | 10 | (D) | (D) | (D) | (D) |
| 3336189013 | 501 hp and over..... | 5 | (D) | (D) | (D) | - |
| 1998 | | | | | | |
| 33361890 | Natural gas and liquefied petroleum gas engines..... | 12 | 23,724 | (D) | 458,446 | (D) |
| 3336189011 | Under 501 hp..... | 11 | (D) | (D) | (D) | (D) |
| 3336189013 | 501 hp and over..... | 5 | (D) | (D) | (D) | - |

- Represents zero. D Withheld to avoid disclosing data for individual companies.

1/Represents total number of engines shipped and total engines produced and incorporated into products at the same establishment.

2/Represents engines produced and incorporated (in same plant) into products such as construction machinery, farm machinery, tractors, engine-generator sets, and other products.

Note: Horsepower is defined as maximum published horsepower rating at maximum recommended revolutions per minute (rpm).

Table 6. Engines Produced by Piston Displacement and Fuel System: 1999 and 1998

| Piston displacement | 1999 | 1998 |
|----------------------------------|------------|------------|
| Total..... | 27,052,108 | 27,401,338 |
| Gasoline, total..... | 25,780,935 | 26,254,210 |
| Under 251 cc..... | (D) | (D) |
| 251 cc and over..... | (D) | (D) |
| Nonautomotive diesel, total..... | 344,382 | 296,249 |
| Under 251 cc..... | (D) | (D) |
| 251 to 3,700 cc..... | (D) | 38,517 |
| 3,701 cc and over | 216,311 | (D) |
| Automotive diesel, total..... | 926,791 | 850,879 |
| Under 251 to 3,700 cc..... | (D) | (D) |
| 3,701 cc and over | (D) | (D) |

cc Cubic centimeters. D Withheld to avoid disclosing data for individual companies.

Table 7. Engines Produced (Except Outboard, Automotive, and Aircraft) by Type of Engine and End Application: 1999 and 1998

| End application | Gasoline engines | | Nonautomotive diesel engines | |
|---|------------------|------------|------------------------------|---------|
| | 1999 | 1998 | 1999 | 1998 |
| Total..... | 25,780,935 | 26,254,210 | 344,382 | 296,249 |
| Oilfield and petroleum-related generating and stationary equipment..... | - | - | (D) | (D) |
| Other generator sets..... | (D) | (D) | 43,774 | 35,081 |
| Irrigation..... | (D) | (D) | (D) | (D) |
| Agricultural vehicular..... | (D) | (D) | (D) | (D) |
| Off-highway mobile construction equipment..... | 37,421 | 41,713 | 131,972 | 136,981 |
| Marine (except outboard)..... | (D) | (D) | 14,774 | 13,941 |
| Railroad, motive power type..... | - | - | 2,372 | 2,306 |
| Chain saws..... | 2,552,806 | 2,949,163 | - | - |
| Garden tractors..... | (D) | (D) | - | - |
| Lawn, home, and recreational equipment..... | 17,050,892 | 17,490,849 | - | - |
| Other general industrial..... | (D) | 1,853,773 | (D) | 42,495 |

- Represents zero. D Withheld to avoid disclosing data for individual companies.

Table 8. Production, Exports, and Imports of Internal Combustion Engines: 1999 and 1998
 [Quantity in units. Value in thousands of dollars]

| Product code | Product description | Manufacturers' production | | Exports of domestic merchandise 2/ | | Imports for consumption 3/ | |
|--------------|--|---------------------------|------------------------------------|------------------------------------|---------------|----------------------------|-----------|
| | | Quantity | Value of shipments f.o.b. plant 1/ | Quantity | Value at port | Quantity | Value |
| 1999 | | | | | | | |
| | Total..... | 27,068,601 | 15,221,571 | 2,385,395 | 2,840,353 | 4,967,997 | 3,022,982 |
| 3336185 | Automotive diesel engines..... | 926,791 | 7,174,825 | 94,500 | 911,263 | 37,467 | 199,975 |
| 3336183 | Nonautomotive diesel engines..... | 344,382 | 4,413,707 | 102,034 | 1,523,453 | 463,898 | 1,163,568 |
| 3336181 | Gasoline engines..... | 25,780,935 | 3,148,447 | 2,187,050 | 357,733 | 4,271,788 | 1,621,229 |
| 3336189 | Gas and liquefied petroleum gas engines..... | 16,493 | 484,592 | 1,811 | 47,904 | 194,844 | 38,210 |
| 1998 | | | | | | | |
| | Total..... | 27,425,062 | 13,219,028 | 2,061,851 | 2,590,940 | 2,571,759 | 2,002,966 |
| 3336185 | Automotive diesel engines..... | 850,879 | 6,780,373 | 81,260 | 815,651 | 18,721 | 143,697 |
| 3336183 | Nonautomotive diesel engines..... | 296,249 | 3,209,928 | 102,767 | 1,390,782 | 339,928 | 885,494 |
| 3336181 | Gasoline engines..... | 26,254,210 | 2,770,281 | 1,873,972 | 314,703 | 2,169,196 | 948,768 |
| 3336189 | Gas and liquefied petroleum gas engines..... | 23,724 | 458,446 | 3,852 | 69,804 | 43,914 | 25,007 |

1/Value of shipments f.o.b. plant of production; quantities shipped as engines, including interplant transfers.

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

3/Source: Census Bureau report IM 145, U.S. General Imports. These data include both import value and duty value.

Table 9. Comparison of North American Industry Classification System-Based Product Codes with Schedule B Export Numbers and HTSUSA Import Numbers: 1999

| Product code | Product description | Export number 1/ | Import number 2/ |
|--------------|--|------------------|------------------|
| 3336181 | Gasoline engines (except outboard marine, aircraft, automobile, highway truck, bus, and tank)..... | 8407.29.0010 | 8407.29.0010 |
| | | 8407.29.0050 | 8407.29.0020 |
| | | 8407.31.0000 | 8407.29.0030 |
| | | 8407.32.5000 | 8407.29.0040 |
| | | 8407.33.5000 | 8407.31.0040 |
| | | 8407.34.5000 | 8407.31.0080 |
| | | 8407.90.1010 | 8407.32.1000 |
| | | 8407.90.1050 | 8407.32.9040 |
| | | 8407.90.9030 | 8407.32.9080 |
| | | 8407.90.9050 | 8407.33.1030 |
| | | | 8407.33.1060 |
| | | | 8407.33.1090 |
| | | | 8407.33.9040 |
| | | | 8407.33.9080 |
| | | | 8407.34.0560 |
| | | | 8407.34.0590 |
| | | | 8407.34.1030 |
| | | | 8407.34.1060 |
| | | | 8407.34.1090 |
| | | | 8407.34.9000 |
| | 8407.90.1010 | | |
| | 8407.90.1020 | | |
| | 8407.90.1060 | | |
| | 8407.90.1080 | | |
| | 8407.90.9020 | | |
| | 8407.90.9040 | | |
| | 8407.90.9060 | | |
| | 8407.90.9080 | | |
| | 8411.99.9030 | | |
| | 8411.99.9060 | | |
| 3336183 | Nonautomotive diesel, semidiesel, and dual fuel engines..... | 8408.10.0010 | 8408.10.0005 |
| | | 8408.10.0020 | 8408.10.0015 |
| | | 8408.10.0030 | 8408.10.0020 |
| | | 8408.10.0040 | 8408.10.0030 |
| | | 8408.10.0050 | 8408.10.0040 |
| | | 8408.20.5000 | 8408.10.0050 |
| | | 8408.90.1000 | 8408.20.1040 |
| | | 8408.90.9010 | 8408.20.1080 |
| | | 8408.90.9020 | 8408.20.9000 |
| | | 8408.90.9030 | 8408.90.1040 |
| | | 8408.90.9040 | 8408.90.1080 |
| | | 8408.90.9050 | 8408.90.9010 |
| | | | 8408.90.9020 |
| | | | 8408.90.9030 |
| | 8408.90.9040 | | |
| | 8408.90.9050 | | |
| 3336185 | Automotive diesel, semidiesel, and dual fuel engines..... | 8408.20.2000 | 8408.20.2000 |
| 3336189 | Piston-type natural gas engines, including liquefied petroleum gas engines..... | 8407.90.9010 | 8407.90.9010 |

1/Source: 1999 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 (1999).