If not shown, please enter your 11-digit Census File Number from the address label on page 1

## Item 17. CONSUMPTION OF SELECTED MATERIALS DURING 1997

## instructions

1. General - The materials, parts, and supplies listed below are those commonly consumed in the manufacture, processing, or assembly of the products listed in item 18B. Please review the entire list and report separately each item consumed. Leave blank if you do not consume the item. If you use materials, parts, and supplies which are not listed, describe and report them in the "Cost of all other materials . . . " line at the end of this section. If you consumed less than $\$ 25,000$ of a listed material, include the value with "Cost of all other materials . . .," Census material code 9700998.

Report materials, parts, and supplies purchased, transferred from other plants of your company, or withdrawn from inventory.

If quantities are requested, please use the unit of measure specified.

If the information as requested cannot be taken directly from your book records, REASONABLE ESTIMATES ARE ACCEPTABLE.
2. Valuation of Materials Consumed - The value of the materials, etc., consumed should be based on the delivered cost; i.e., the amount paid or payable after discounts and including freight and other direct charges incurred in acquiring the materials.
Materials received from other plants within your company should be reported at their full economic value (the value assigned by the shipping plant, plus the cost of freight and other handling charges).

If purchases or transfers do not differ significantly from the amounts actually put into production, you may report the cost of purchases or transfers. However, if consumption differs significantly from the amounts purchased or transferred, these amounts should be adjusted for changes in the materials and supplies inventories by adding the beginning inventory to the amount purchased or transferred and subtracting ending inventory.
3. Produced and Consumed - Forgings, foundries, and screw machine products - Report the quantities produced and used in manufacturing other products made in this establishment in item 19. Note that the materials used to produce these items should be reported in item 17.
4. Contract Work - Include as materials consumed those you purchased for use by others making products for you under contract. Amounts paid to the companies doing the contract work should be reported in item 10, line e, and should include freight in and out. On the other hand, materials owned by others but used at this establishment in making products for others under contract or on commission should be excluded.
5. Resales Including Machine Tool Subassemblies and Knockdowns - Cost for products bought and sold or transferred from other establishments of your company and sold without further manufacture, processing, or assembly should be reported in item 10, line b, not in item 17 below. The value of these products shipped by this establishment should be reported in item 18B under Census product code 9998900 6, "Resales."


Item 17. CONSUMPTION OF SELECTED MATERIALS DURING 1997 - Continued


Item 18A. INSTRUCTIONS AND INQUIRY FOR COMPANIES ENGAGED IN INSTALLATION (OR ERECTION) OF PRODUCTS OF THEIR OWN MANUFACTURE

It is preferable that you report the value of shipments for individual products excluding the amounts received for installation and erection. The installation and erection receipts (if any) should be reported on line 152 in item 18B. In order to evaluate the reporting for this item, please answer the following questions:

1a. Do the value of shipments figures for individual products include the cost of installation or erection of the product?
b. If "Yes," please estimate the total amount received for installation or erection.
2. Do the employees of this manufacturing establishment install or erect the products of your company? If "Yes," include these employees in item 2 and their wages in item 3 .
3. Does a distinct outside labor force (not attached to this manufacturing plant) erect or install the products for your establishment?
If "Yes," do not include this labor force in item 2 or their wages in item 3.
Payments made by this establishment for any work done by others should be reported as a cost of contract work in item 10. The payroll of this outside labor force should be reported by the establishment that maintains the records for them.

## If not shown, please enter your 11-digit Census File Number

 from the address label on page 1
## Item 18B. PRODUCTS AND SERVICES OF THIS ESTABLISHMENT DURING 1997

## INSTRUCTIONS

1. General - The manufactured products and services listed below are generally made in your industry. If you make products that are not listed, describe and report them in the "All other products made in this establishment" section at the end of item 18B. PLEASE DO NOT COMBINE PRODUCT LINES.

If quantities are requested, please use the unit of measure specified

If the information as requested cannot be taken directly from your book records, REASONABLE ESTIMATES ARE ACCEPTABLE.
2. Valuation of Products - Report the value of the products shipped and services performed at the net selling value, f.o.b. plant to the customer; i.e., after discounts and allowances, and exclusive of freight charges and excise taxes.

If you transfer products to other establishments within your company, you should assign the full economic value to the transferred products; i.e., include all direct costs of production and a reasonable proportion of all other costs and profits.
3. Contract Work - Report PRODUCTS MADE BY OTHERS FOR YOU FROM YOUR MATERIALS on the specific lines as if they were made in this establishment. On the other hand, do not report on the specific product lines PRODUCTS THAT YOU MADE FROM MATERIALS OWNED BY OTHERS. Report only the amount that you received for "commission or contract receipts" under Census product code 93000008.
4. Resales - Do not report on the specific product lines those PRODUCTS BOUGHT AND SOLD OR TRANSFERRED FROM OTHER ESTABLISHMENTS OF YOUR COMPANY AND SOLD WITHOUT FURTHER MANUFACTURE. Report only a value under Census product code 9998900 6, "Resales."
5. Machine Tool Subassemblies and Knockdowns Report the sale of purchased machine tool subassemblies and knockdowns under Census product code 9998900 6, "Resales," (line 156).
6. Detailed Data Reported Elsewhere - Items denoted by an asterisk (*) require totals for groups of products covered in the more frequent Current Industrial Reports (CIR). If you report on the CIR forms, the sum of the detailed CIR products should equal the total reported on this census form. For survey item codes, see paragraph 4, "comparability," of CIR Instruction Manual.
NOTE: Only CIR totals are requested; do not duplicate detail reported on the CIR.

| $\begin{aligned} & \stackrel{0}{z} \\ & \stackrel{0}{\leftrightharpoons} \\ & \hline-1 \end{aligned}$ | Products and services *Item corresponds to products reported on Current Industrial Reports <br> (A) |  | Census product code | Products shipped and other receipts |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Quantity (Number) <br> (D) | Value, f.o.b. plant <br> (E) |  |  |
|  |  |  | 584  <br> Millions  | Thousands | Dollars |
| Boring machines (excluding machining centers) and drilling machines (excluding machining centers) (corresponds to the sum of item codes 1110-1265 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) (3541D)* |  |  |  | 3541D 002 |  | \$ | 1 1 1 1 | ! |
| Gear-cutting machines (corresponds to item code 1991 as reported on CIR Form MQ35W, Metalworking Machinery, for 1997) (35413)* |  |  | 35413004 |  |  | 1 1 1 1 | 1 |
| Grinding and polishing; buffing, honing, and lapping machines (except gear-tooth grinding, lapping, polishing, and buffing machines) (corresponds to the sum of item codes 2010-2740 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) (35414)* |  |  | 35414002 |  |  | 1 1 1 1 | ! |
| Lathes (turning machines, numerically and non-numerically controlled) (corresponds to the sum of item codes 2801-2811 as reported on CIR Form MQ35W, Metalworking Machinery, for 1997) (35415)* |  |  | 35415009 |  |  | ! | I |
| Milling machines (excluding machining centers) (corresponds to the sum of item codes 3309-3675 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) (35416)* |  |  | 35416007 |  |  | ! | I |
| Machining centers (multifunction numerically controlled machines) (corresponds to the sum of item codes 3721-3736 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) (3541A)* |  |  | 3541A 008 |  |  | 1 |  |
| Station-type machines (corresponds to the sum of item codes 3821-3825 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) (3541B)* |  |  | 3541B 006 |  |  | 1 |  |
| Other metal cutting machine tools, n.e.c. (except station-type and machining centers and those designed primarily for home workshops, laboratories, etc.), including broaching machines, sawing and cut-off machines, spark erosion, ultrasonic, and electrolytic machines, rifling, centering, key seating, pointing, chamfering, facing, shaving, grooving, counter-sinking, burring, reaming, screw and nut slotting machines, threading, planers, and shapers (corresponds to the sum of item codes 3840-4630 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) (3541C)* |  |  | 3541C 004 |  |  | 1 1 1 1 1 1 1 1 | 1 1 1 1 1 1 1 |
| 10 | MACHINE <br> TOOLS <br> DESIGNED <br> PRIMARILY <br> FOR HOME WORKSHOPS LABORATORIES, GARAGES, ETC. <br> (Metalworking and primarily metalworking only) <br> (35418) | Drilling machines | 35418110 |  |  | 1 | ! |
|  |  | Grinding and polishing machines (including crankshaft regrinding and valve grinding machines) | 35418318 |  |  | ! | ! |
| 11 |  | Lathes | 35418516 |  |  | 1 | ! |
| 12 |  | Sawing and cut-off machines | 35418714 |  |  | 1 | ! |
| 13 |  | Other metalworking (or primarily metalworking) types (including automotive cylinder reboring machines) Specify kind | 35418912 |  |  | 1 | ! |

Item 18B. PRODUCTS AND SERVICES OF THIS ESTABLISHMENT DURING 1997 - Continued



Item 18B. PRODUCTS AND SERVICES OF THIS ESTABLISHMENT DURING 1997 - Continued


| If not shown, please enter your 11-digit Census File Number from the address label on page 1 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Item 18B. PRODUCTS AND SERVICES OF THIS ESTABLISHMENT DURING 1997 - Continued |  |  |  |  |  |  |  |  |  |  |
| ¢ <br> 乙 <br> $\stackrel{ \pm}{J}$ | Products and services <br> *Item corresponds to products reported on Current Industrial Reports |  |  |  | Census <br> product <br> code <br> 581 <br> (B) | Unit of measure for quantities <br> (C) | Products shipped and other receipts |  |  |  |
|  |  |  |  |  | Quantity |  | Value, | f.o.b. pla (E) |  |
|  |  |  |  |  | (D) |  | $\begin{array}{\|l\|} \hline 584 \\ \hline \end{array}$ <br> Millions | Thousands |  |
| 75 | Special Dies and Tools, Die Sets, Jigs, and Fixtures (35441) Continued | DIES, METALWORKING ONLY Continued | Forging dies (Including cold forging and heading | Open-die type |  | 35441336 |  |  | \$ | $\begin{array}{ll} 1 & 1 \\ 1 & 1 \\ 1 & 1 \end{array}$ |  |
| 76 |  |  |  | Closed-die type |  | 35441351 |  |  |  | $\begin{array}{ll} 1 & 1 \\ 1 & 1 \\ 1 & 1 \end{array}$ |  |
| 77 |  |  | Extrusion and wiredrawing and straightening dies | High-speed steel | 35441435 |  |  |  | $\begin{array}{ll} 1 & 1 \\ 1 & 1 \end{array}$ |  |
| 78 |  |  |  | Carbide | 35441450 |  |  |  | $1 \begin{array}{ll}1 \\ 1 & 1 \\ 1\end{array}$ |  |
| 79 |  |  |  | Ceramic and ceramic composite | 35441427 |  |  |  | 1 |  |
| 80 |  |  |  | Other | 35441443 |  |  |  | $\begin{array}{ll} 1 & 1 \\ 1 & 1 \end{array}$ |  |
| 81 |  |  | All other dies | High-speed steel | 35441468 |  |  |  | $1 \begin{array}{ll}1 \\ 1 & 1 \\ 1\end{array}$ |  |
| 82 |  |  |  | Carbide | 35441476 |  |  |  |  |  |
| 83 |  |  |  | Other | 35441484 |  |  |  | $1$ |  |
| 84 |  |  | Standard and special components and parts for dies | Die sets | 35441732 |  |  |  | 1 |  |
| 85 |  |  |  | Standard punches: <br> - Steel | 35441757 |  |  |  | $\begin{array}{ll}1 & 1 \\ 1 & \\ 1 & 1 \\ 1\end{array}$ | ! |
| 86 |  |  |  | - Carbide | 35441773 |  |  |  | 1 |  |
| 87 |  |  |  | Other | 35441781 |  |  |  | $\begin{array}{ll} 1 & 1 \\ 1 & 1 \end{array}$ |  |
| 88 |  | Industrial models and prototypes |  |  | 35441831 |  |  |  | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |  |
| 89 |  | Other specially designed tooling |  |  | 35441898 |  |  |  | 1 |  |
| 90 | SMALL <br> CUTTING <br> TOOLS FOR <br> MACHINE TOOLS AND <br> METAL WORKING MACHINERY | Broaches (excluding holders and burnishing bars) |  |  | 35451145 |  |  |  |  |  |
| 91 |  | Gear shaper cutters and gear shaving cutters |  |  | 35451475 |  |  |  | $\begin{array}{ll} 1 & 1 \\ i & 1 \\ \hline \end{array}$ |  |
| 92 |  | High-speed steel milling cutters, n.e.c. (except end mills and inserted blade cutters) |  |  | 35451624 |  |  |  | $\begin{array}{ll}1 & 1 \\ 1 & 1 \\ 1\end{array}$ |  |
| 93 |  | Chasers, single edge thread-cutting, circular blade and tangent types for mounting into or onto holders, die heads, and tap bodies (excluding all die heads, tap bodies, and chaser holders) |  |  | 35451756 |  |  |  | $1$ | 1 1 1 1 |
| 94 |  | Other small cutting tools for machine tools and metalworking machinery - Specify kind |  |  | 35451004 |  |  |  | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ | 1 |
| 95 | WORK HOLDING DEVICES | Rotary tables, including numerically controlled |  |  | 35454461 |  |  |  |  | ! |
| 96 |  | Indexing work holders, excluding rotary tables (corresponds to item code 8006 as reported on CIR Form MQ35W, Metalworking Machinery, for 1997)* |  |  | 35454479 |  |  |  | , | ! |
| 97 |  | Collets, jaws, vises (corresponds to the sum of item codes 8002, 8003, 8005 as reported on CIR Form MO35W, Metalworking Machinery, for 1997) * |  |  | 35454578 |  |  |  | , | ! |
| 98 |  | Other than collets, jaws or vises such as mandrels, feeding fingers clamps, stops, etc. |  |  | 35454586 |  |  |  | 1 | ! |
|  |  |  |  | CONTINUE WITH IT | TEM 18B ON | PAGE 12 |  |  |  |  |



Item 18B. PRODUCTS AND SERVICES OF THIS ESTABLISHMENT DURING 1997 - Continued

 from the address label on page 1

## Item 19. SELECTED PRODUCTS PRODUCED IN THIS ESTABLISHMENT AND USED IN MANUFACTURING OTHER PRODUCTS MADE IN THIS ESTABLISHMENT

## INSTRUCTIONS

1. Report below the quantity of each listed item produced in this establishment and used in manufacturing other products made in this establishment.
2. Materials used to produce the items specified below should be reported in item 17.
3. Quantities produced for sale as such and not for incorporation in other products should be reported in item 18B.
4. Purchases or receipts of the items specified below should be reported only in item 17.
5. Report quantities in the unit of measure specified in column (D).

|  | Item <br> (A) |  | Census <br> code <br>  <br> 591 | Was this operation performed at this establishment during 1997? |  | Unit of measure for quantities <br> (D) | Quantities produced in this establishment and used in manufacturing other products made in this establishment |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Yes | No | 593 |  | (E) |
| 1 | Ferrous foundries |  |  | 10017 | $1 \square$ | ${ }_{2} \square$ | Short tons |  |  |
| 2 | NONFERROUS FOUNDRIES (Except die-casting) | Aluminum | 10025 | $1 \square$ | $2 \square$ | Thousand pounds |  |  |
| 3 |  | Copper | 10033 | $1 \square$ | $2 \square$ |  |  |  |
| 4 |  | Zinc | 10041 | $1 \square$ | $2 \square$ |  |  |  |
| 5 |  | Other | 10058 | $1 \square$ | $2 \square$ |  |  |  |
| 6 | Nonferrous die-casting foundries |  | 10066 | $1 \square$ | $2 \square$ |  |  |  |
| 7 | Precision turned products (on screw machines, turning centers, and CNC equipment) |  | 10074 | $1 \square$ | $2 \square$ |  |  |  |

Items 20 and 21 - Not applicable to this report
REMARKS - Please use this space for any explanations that may be essential in understanding your reported data.

Item 22. CERTIFICATION - This report is substantially accurate and has been prepared in accordance with instructions.


