

CURRENT INDUSTRIAL REPORTS SERIES

2008

MQ333W — METALWORKING MACHINERY

DEFINITIONS AND SPECIAL INSTRUCTIONS

1. Scope of survey

This survey covers all United States companies engaged in the manufacture of new and remanufactured industrial type metal cutting/removal and metal forming types of metalworking machinery, including numerical control type (Sections I and II). Rebuilt machines are not collected on this survey.

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, call the contact shown on the report form or write to the U.S. Census Bureau for additional forms.

QUANTITY AND VALUE OF SHIPMENTS

The figures on quantity and value of shipment 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. Assign shipments to your own branches the same value as comparable sales to unaffiliated customers, i.e., the value includes an appropriate allocation of company overhead and profit. Do not include in shipments products bought and resold without further manufacture.

VALUE OF EXPORT SHIPMENTS

For purposes of this report, domestic includes shipments to destinations within the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands, as well as to the U.S. Armed Forces abroad for their own use. All other shipments are exports. Report the value of export shipments by type of machine.

VALUE OF UNFILLED ORDERS

Report the dollar value of orders received (for domestic and export) which have not passed through your sales accounts at the end of each quarter. Unfilled orders at the end of the quarter are equal to unfilled orders at the beginning of the quarter, plus net new orders received during the quarter, minus net sales.

BY VALUE OF MACHINE

Separate machines which are valued at less than \$3,025 each from machines valued at \$3,025 or more.

EXAMPLE:

Report all drilling machines valued at less than \$3,025 each with item code 1205, "All drilling machines valued under \$3,025 each."

Report drilling machines valued at \$3,025 or more each by the specific type of machine designated under item codes 1215 through 1265.

See Reference List, page 3. Do not combine machines valued at less than \$3,025 with machines valued at \$3,025 or more.

SHIPMENTS OF MACHINES EQUIPPED WITH NUMERICAL CONTROLS (NC)

In addition to including the shipments of metalworking machines equipped with numerical controls with total machines shipped, also report data on numerical control type machines separately in columns 4 and 5 immediately following the total for each type of machine. The value of machine tools equipped with numerical controls should include the value of the controls.

LEASED MACHINES

For products leased or rented by your company, report the number and estimated values. The estimate should approximate the value of the products sold outright. If no such prices exist, base the value on the assessment placed on these items for tax, insurance, or similar purposes.

SUBCONTRACT WORK

Include in the report complete products manufactured for you by others on a subcontract basis. Exclude complete machines produced by you for others on a subcontract basis, unless manufactured for an affiliated company.

IMPORTED OR ASSEMBLED COMPONENTS

Do not report on this survey if:

a. The products you shipped were imported complete or machined for assembly.

b. The products you shipped were imported as subassemblies purchased and not machined further or large parts which required minimal assembly with hand tools and no metalworking.

Report on this survey if:

a. Parts for your products were imported and the assembly and fabrication consisted of metal working or further machining.

b. Your establishment possesses the complete product design and performs in-house machining.

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DEFINITIONS AND SPECIAL INSTRUCTIONS — Continued

3. Definitions

MACHINE TYPES

Metal cutting/removal type machine tools — These are defined as new, power driven, complete machine tools, not supported in the hands of an operator when in use. They are used for removing metal in the form of chips, vapor, or slag. Also included are honing machines, lapping machines, grinders, and machines which cut using electrical, laser, or waterjet techniques.

Exclude small, low-priced, machine tools of light construction such as lathes; drilling, grinding, and milling machines; and polishing and buffing machines designed primarily for home workshops, etc. Also exclude all woodworking or primarily woodworking type machines.

Metal forming type machine tools — These are defined as new, power driven, complete machine tools, not supported in the hands of an operator when in use. They are used to press, forge, emboss, hammer, extrude, blank, spin, shear, die cast, bend metal, compacting powdered metal, tape laying, and printing metal.

"ALL OTHER" CLASSIFICATIONS

The last item of most major product categories is an "all other" or "miscellaneous" group. Whenever possible, classify your products under the more specific heading which most nearly describes them. Classify them as "all other" only when a more specific description does not apply. Describe the products that you classify as "all other" in sufficient detail to permit identification. This may be done on a separate sheet of paper.

TYPES OF NUMERICALLY CONTROLLED MACHINES

Positioning — These are defined as machines equipped with "positioning" numerical control systems activated by direct data input (DNC) or manual data input (MDI).

Report in this group all machines that have been equipped with control systems in which point-to-point positioning and cutting or forming (regardless of the number of movement "axes" or auxiliary functions) are controlled automatically by means of numerical programs inserted into the systems.

Classify as "continuous path," machines equipped with a control system that permits "positioning" and "continuous path" operations.

Continuous path or computer numerical control — These are defined as machines equipped with "continuous path" numerical program control systems activated by direct data input (CNC) or manual data input (MDI).

Report in this group all machines equipped with control systems in which, in addition to point-to-point positioning, the path of cutting is also automatically controlled by means of numerical programs inserted into the systems.

Classify as "continuous path," machines equipped with a control system that permits "positioning" and "continuous path" operations.

Digital readout systems including dial or plugboard — These are defined as machines equipped with digital readout systems or dial or plugboard type of prerecorded motion programs control systems.

Report in this group all machines equipped with control systems in which "positioning" or "continuous path" are automatically commanded by numerical programs fed into the system by an operator through dials, plugs, switches, or any other numerical method.

REMANUFACTURED MACHINE TOOLS

The basic machine carcass is reused with most of the iron retained. All possible modern improvements are incorporated. Ball screws and servo drives replace gear boxes and lead screws. Headstocks are driven by AC vector drive motors, and gears and range changes are reduced or eliminated. Position feedback may be added, as may CNC or PC controls. All of the electrics are replaced. The end product is superior to the original product when it left the factory as new.

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4. Comparability

If you also report in the Annual Survey of Manufactures (Form MA-10000), the sum of values for item codes shown in column (a) should correspond to the dollar values reported under product class codes indicated in column (b) below:

Current Industrial Reports (Form MQ333W) Item code (a)	Annual Survey of Manufactures Product class code (b)
1125 through 1265	333512A pt
1991	3335121 pt
2010 through 2740	3335122
2801 through 2812	3335123
2920 through 3102	
3309 through 3500	3335124
3721 through 3736	3335127
3820	3335128
3840 through 4630	3335129
5009 through 5270	3335131
5409 through 6305	3335133
6625 through 7173	3335135
4700	3335126
7200	3335137

pt = part

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REFERENCE LIST

FORM MQ333W		
METALWORKING MACHINERY		
Product code	Item code	Item description
		SECTION I – METAL CUTTING/REMOVAL TYPE MACHINE TOOLS
		BORING MACHINES (excluding Machining Centers) and DRILLING MACHINES (excluding Machining Centers)
		Machines valued at \$3,025 each or more (excluding laser type)
333512A103	1125	Horizontal boring, drilling, and milling machines. Includes floor, table and rail mounted, and all other boring machines (excluding boring lathes)
333512A105	1140	Precision and jig boring machines (including horizontal and vertical boring machines)
333512A111	1205	All drilling machines valued under \$3,025 each
		Machines valued at \$3,025 each or more (excluding laser type)
333512A113	1215	Vertical – (upright) drilling machines (including plain-upright and heavy duty)
333512A117	1235	Deep hole drilling machines
333512A120	1250	Multiple spindle drilling machines (cluster of spindles driven from one central power unit)
333512A123	1265	All other drilling machines (including sensitive, vertical and radial)
XXX	1295	Total boring and drilling machines (Sum of item codes 1125–1265)
		GEAR CUTTING MACHINES
3335121200	1991	Gear cutting machines includes: gear hobbers, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines
		GRINDING, POLISHING, BUFFING, HONING, AND LAPPING MACHINERY (excluding gear-tooth grinding, lapping, polishing, honing, and buffing machines)
3335122101	2010	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each
		Machines valued at \$3,025 each or more
3335122110	2050	External cylindrical grinding machines
3335122120	2100	Internal cylindrical grinding machines
3335122122	2146	Surface grinding machines
3335122136	2225	All other disc grinders, bench, floor, snag, double spindle grinders, and abrasive belt grinders
3335122142	2328	Tool, cutter, and drill point grinding machines (including universal and special)

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REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
Section I — METAL CUTTING/REMOVAL TYPE MACHINE TOOLS — Continued		
GRINDING, POLISHING, BUFFING, HONING, AND LAPPING MACHINERY (excluding gear-tooth grinding, lapping, polishing, honing, and buffing machines)– Continued		
Machines valued at \$3,025 each or more – Continued		
3335122151	2430	All other grinding machines (including planer type, thread grinding, and deburring machines)
3335122156	2530	Honing and lapping machines except gear-tooth honing and lapping Internal (including combination bore-hone and external) (excluding flat surface lapping machines)
3335122161	2579	Flat surface lapping machines (excluding gear lapping)
3335122166	2740	Polishing and buffing machines including speed lathes and multi-station type
XXX	2790	Total grinding, polishing, buffing, honing, and lapping machines (excluding gear-tooth, grinding, lapping, polishing, and buffing machines) (Sum of item codes 2010–2740)
LATHES (TURNING MACHINES)		
3335123131	2801	All lathes valued under \$3,025 each Machines valued at \$3,025 each or more
NUMERICALLY CONTROLLED TURNING MACHINES:		
Horizontal Spindle		
Single spindle:		
PLEASE NOTE: Each machine may not conform to all the criteria of any one subgroup. The criteria are ranked in order of importance to help indicate the proper subgroup classification. Determine horsepower by name plate listing.		
3335123107	2807	Chuck size: Less than 10" Horsepower: 25 and under Swing: 18" and under Spindle nose: A-8" and under
3335123116	2809	Chuck size: 10" to less than 15" Horsepower: 25–50 Swing: 18"–25" Spindle nose: A-8"–11"
3335123127	2812	Chuck size: 15" and over Horsepower: 50 and over Swing: 25" and over Spindle nose: 15" and over And all multiple spindle NC turning machines (excluding those with opposing powered subspindles) (classified as single spindle)

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REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
XXX	2815	Section I — METAL CUTTING/REMOVAL TYPE MACHINE TOOLS — Continued Machines valued at \$3,025 each or more—Continued NUMERICALLY CONTROLLED TURNING MACHINES—Continued: Horizontal Spindle—Continued Total horizontal NC turning machines (Sum of item codes 2807–2812) Vertical Spindle
3335123126	2920	Vertical spindle lathes, boring, and turning machines
3335123134	3102	NON-NUMERICALLY CONTROLLED TURNING MACHINES VALUED AT \$3,025 EACH OR MORE
3335124101 3335124125 XXX	3309 3500 3691	MILLING MACHINES (excluding "Machining Centers") All milling machines valued under \$3,025 each All milling machines valued at \$3,025 each or more Total milling machines (Sum of item codes 3309–3500)
3335127101 3335127106 3335127111 3335127112 3335127113 3335127114 3335127146 XXX	3721 3722 3723 3724 3725 3726 3736 3737	OTHER METAL CUTTING/REMOVAL MACHINE TOOLS Machining Centers (Multi-function NC Machines) Drill, Mill, Bore — VERTICAL (Automatic Tool Change) "Y" axis travel less than 20" "Y" axis travel 20" through 26" "Y" axis travel over 26" Drill, Mill, Bore — HORIZONTAL (Automatic Tool Change) Under 500mm pallet 500mm-800mm pallet Over 800mm pallet All other machining centers (including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret) Total machining centers (Sum of item codes 3721–3736)
3335128101 3335128106 3335128111 XXX	3821 3823 3825 3831	Station Type Machines Dial or rotary, trunnion, and center column Transfer (free, palletized, shuttle) Other station type Total station type machines (Sum of item codes 3821–3825)

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FORM MQ333W		
Product code	Item code	Item description
Section I – METAL CUTTING/REMOVAL TYPE MACHINE TOOLS–Continued		
OTHER METAL CUTTING/REMOVAL MACHINE TOOLS–Continued		
3335129101	3840	Other metal cutting machine tools valued under \$3,025 Machines valued at \$3,025 each or more
3335129106	3850	Broaching machines (including internal surface and all other broaching machines) Sawing and cut-off machines
3335129122	4181	Band saws
3335129123	4183	Vertical
3335129126	4196	Horizontal
All other sawing and cut-off machines (including contour sawing and filing)		
3335129131	4619	Spark erosion, ultrasonic, and electrolytic machines
3335129134	4628	Water Jet cutting machines
3335129135	4629	Laser cutting machines
3335129136	4630	All Other metal cutting machine tools (including rifling, centering, key-seating, pointing, chamfering, facing, shaving, grooving, counter-sinking, skiving, reaming, screw and nut slotting machines, threading, tapping, planers, shapers, and plasma cutting machines.
XXX	4691	Total other metal cutting machine tools (excluding station type and machining centers) (Sum of item codes 3840–4630)
3335126111	4700	REMANUFACTURED METAL CUTTING MACHINE TOOLS
Section II – METAL FORMING TYPE MACHINE TOOLS		
PUNCHING AND SHEARING MACHINES		
3335131101	5009	All punching and shearing machines valued under \$3,025 each Machines valued at \$3,025 each or more
POWER OPERATED ONLY		
3335131106	5019	Punches (including combination punching and shearing machines)
3335131111	5025	Punching machines (fixed position and two axes positioning table) Plate shearing machines (squaring, slitting, etc.)
3335131116	5031	Mechanical
3335131121	5032	Hydraulic
3335131126	5085	Other power operated punching and shearing machines

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FORM MQ333W		
Product code	Item code	Item description
		Section II — METAL FORMING TYPE MACHINE TOOLS—Continued
		BENDING AND FORMING MACHINES — Power operated
3335131131	5109	All bending and forming machines valued under \$3,025 each
		Machines valued at \$3,025 each or more
3335131136	5112	Press brakes
3335131145	5222	Roll bending machines (including sheet, plate, angles, bars, shapes, and tubes) rotary bending and forming machines
3335131161	5270	Other bending and forming machines (including folders, slide bending machines, and hydroforming machines).
XXX	5291	Total punching, shearing, bending, and forming machines (Sum of item codes 5009–5270)
		PRESSES (excluding forging presses and die stamping presses)
3335133101	5409	All presses valued under \$3,025 each
		Machines valued at \$3,025 each or more
		MECHANICAL PRESSES
3335133109	5427	Gap or C-frame
3335133136	5830	Presses, strip or coil fed
3335133143	5865	Vertical, automatic, and other mechanical presses (including end wheel type, bulldozer, double and triple action, and transfer fed presses, four point and knuckle joint) (excluding automated lines of standard equipment)
		HYDRAULIC PRESSES (metalworking only)
		Vertical single action, all tonnages
3335133146	5961	Housing or straight side type
3335133151	5962	Column type (open rod)
		Gap or C-frame
3335133156	6131	15 tons and under
3335133161	6132	16 tons–35 tons
3335133166	6133	Over 35 tons
3335133171	6305	Other hydraulic and pneumatic presses (including horizontal)
XXX	6321	Total presses, excluding forging (Sum of item codes 5409–6305)
		ALL OTHER METAL FORMING TYPE MACHINE TOOLS
3335135101	6540	All other metal forming type machine tools valued under \$3,025

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FORM MQ333W

Product code	Item code	Item description
		Section II – METAL FORMING TYPE MACHINE TOOLS – Continued
		Machines valued at \$3,025 each or more
3335135118	6625	Forging machines (including forging presses and die stamping presses), and die casting machines
3335135121	6779	Riveting machines (excluding hand held portable types)
3335135126	7173	All other metal forming type machine tools (including spin forming, stretch forming, extrusion, compacting powdered metal, tape laying, and printing metal).
XXX	7191	Total all other metal forming type machine tools (Sum of item codes 6540–7173)
3335137121	7200	REMANUFACTURED METAL FORMING MACHINE TOOLS

NOTES: