84.57 - Machining centres, unit construction machines (single station) and multi-station transfer machines, for working metal.

8457.10 - Machining centres

8457.20 - Unit construction machines (single station)

8457.30 - Multi-station transfer machines

This heading applies (see Note 4 to this Chapter) only to machine-tools for working metal (other than lathes (including turning centres)) which can carry out different types of machining operations on a single workpiece either :

(a) by automatic tool change from a magazine or the like in conformity with a machining programme (machining centres);

(b) by the automatic use, simultaneously or sequentially, of different unit heads working on a fixed position workpiece (unit construction machines, single station); or

(c) by the automatic transfer of the workpiece to different unit heads (multi-station transfer machines).

(A) MACHINING CENTRES

Machining centres are individual machines, i.e., all the machining operations are performed on a single (multi-function) machine. These centres must satisfy two conditions : they must carry out several machining operations and they must have automatic tool change, from a magazine or the like in conformity with a machining programme.

Consequently, this group covers machine-tools which carry out **two** or more machining operations by automatic tool change from a magazine or the like, whereas machine-tools which carry out **one** machining operation using a single tool or several tools working simultaneously or sequentially (for example, multiple-spindle drills or multiple-cutter milling machines) are classified in **headings 84.59 to 84.61**.

The automatic tool change requirement excludes from the heading multi-function machines (for example, machines which drill, bore, tap and mill) in which the various tools are not changed automatically. Such machines are to be classified in **headings 84.59 to 84.61** in accordance with Note 3 to Section XVI or by application of Interpretative Rule 3 (c) unless, of course, they can be regarded as **multi-station transfer machines**, in which the workpiece is automatically transferred to the different unit heads (see Part (C) below).

Machining centres may also include auxiliary devices such as pallet changers, systems of pallet magazines or tool magazine changers.

(B) UNIT CONSTRUCTION MACHINES (SINGLE STATION)

Unit construction (single station) machines are multi-function machines in which the workpiece is held in a fixed position while the unit heads move relative to the workpiece to carry out the operation or the machine operations.

The unit heads are parts of the machines on which they are mounted and are used to hold, guide and actuate (rotate, advance, retract) the interchangeable tool. Rotating heads usually incorporate an electric motor, while translation heads usually incorporate a hydraulic cylinder : these two types of head may be combined.

This group covers unit construction machines (single station) carrying out two or more machining operations with the use of two or more unit heads.

However, machines carrying out one machining operation with the use of several unit heads or those carrying out several machining operations with the use of a single unit head are **excluded**.

(C) MULTI-STATION TRANSFER MACHINES

The machines of this group must satisfy three conditions : they must carry out several machining operations, they must work by the automatic transfer of the workpiece to the tool and they must be equipped with various unit heads.

A distinction is generally made between rotary transfer machines and linear transfer machines. In the former, the unit heads which perform the various operations are arranged in a circle on a common base. The workpiece travels around the circle in such a way that, at each stop (station), it is worked on by the tools of the corresponding unit head (for example, drilling, boring, tapping). In linear transfer machines, the unit heads are arranged in a line on a common base and work successively on the workpiece as it travels from one head to another, along the line.

In accordance with Chapter Note 4 (c) this heading **does not cover** transfer lines consisting of various machines linked by a conveyor carrying the workpieces.

Under the terms of the above-mentioned Chapter Note, this heading **also excludes** " flexible manufacturing systems " (FMS) which consist of several machines, generally numerically controlled, or several groups of machines, together with automatic handling facilities such as lifting frames, conveyors, unmanned trolleys, manipulators and industrial robots, for conveying the workpieces to the machines or removing them after machining. The various groups of machines and the handling facilities which constitute the flexible manufacturing system are controlled by automatic data processing machines.

PARTS AND ACCESSORIES

Subject to the general provisions regarding the classification of parts (see the General Explanatory Note to Section XVI), parts and accessories (**other than** the tools of **Chapter 82**) of the machine-tools of this heading are classified in **heading 84.66**.

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The heading also **excludes** :

(a) Machine-tools for working any material, by removal of material, by laser or other light or photon beam, ultrasonic, electro-discharge, electro-chemical, electron beam, ionic beam or plasma arc processes; water-jet cutting machines (**heading 84.56**).

(b) Lathes (including turning centres) for removing metal (**heading 84.58**).

(c) Way-type unit head machines (**heading 84.59**).

(d) Soldering, brazing or welding machines and apparatus of **headings 84.68** and **85.15**.