90.11 - Compound optical microscopes, including those for photomicrography, cinephotomicrography or microprojection.

9011.10 - Stereoscopic microscopes

9011.20 - Other microscopes, for photomicrography, cinephotomicrography or microprojection

9011.80 - Other microscopes

9011.90 - Parts and accessories

Whereas magnifiers of **heading 90.13** have only a single stage of magnification of relatively low power, the **compound optical microscope** of this heading has a second stage of magnification for the observation of an already magnified image of the object.

A compound optical microscope normally comprises :

(I) An optical system consisting essentially of an objective designed to produce a magnified image of the object, and an eyepiece which further magnifies the observed image. The optical system usually also incorporates provision for illuminating the object from below (by means of a mirror illuminated by an external or an integral light source), and a set of condenser lenses which direct the beam of light from the mirror on to the object.

(II) A specimen stage, one or two eyepiece-holder tubes (according to whether the microscope is the monocular or binocular type), and an objective-holder (generally revolving).

The whole is fixed on a stand to which a limb or bracket and various adjusting accessories may be attached.

This heading covers microscopes as used by amateurs, teachers, etc., and those for industrial use or for research laboratories; they remain in the heading whether or not they are presented with their optical elements (objectives, eyepieces, mirrors, etc.). The heading includes universal microscopes; polarising microscopes; metallurgical microscopes; stereoscopic microscopes; phase contrast and interference microscopes; reflecting microscopes, microscopes with drawing attachments; special microscopes for examining clock or watch jewels; microscopes with heating or freezing stages.

Special purpose microscopes include :

(1) **Trichinoscopes**, a type of projection microscope, used for examining pork suspected of threadworm.

(2) **Microscopes for measuring or checking operations** in certain manufacturing processes; these may be of the conventional types or may be special models designed for fitting to machines. These appliances include comparison microscopes (for comparing the surface finish of precision articles with that of a standard article); co-ordinate reading microscopes (for locating the position of clock or watch parts); tool-makers' or other measuring microscopes (for checking threads, profiles, gear-cutters or cutting tool profiles, etc.); small portable microscopes for placing directly on the object to be examined (for the Brinell hardness test, for printers' type, printing blocks, etc.); centring microscopes (fitted on spindles of machine-tools, instead of the tool, to bring the work into the correct position before working); etc.

Some of the last mentioned instruments (e.g., those for checking the profile of worked parts), may be fitted with projection devices which are usually in the form of a small circular screen fitted on top of the microscope.

(3) **Laboratory measuring microscopes**, e.g., for measuring line separation in spectrograms.

(4) **Surgical microscopes** for use by surgeons when operating on a very small portion of the body. Their light sources result in independent light paths which provide a three-dimensional image.

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The heading also covers :

(A) **Microscopes for photomicrography and microscopes for cinephotomicrography**. In addition to the visual observation of the specimen, these also permit the photographic recording of magnified images. They may be composed either of a microscope permanently incorporating a photographic or cinematographic camera (usually specially designed for this purpose), or of a conventional microscope to which a conventional photographic or cinematographic camera can be temporarily fixed by means of a simple attachment.

Separately presented photographic or cinematographic cameras for photomicrography or cinephotomicrography are **excluded** (**heading 90.06** or **90.07**, respectively).

(B) **Microscopes for microprojection with compound magnification**. These are used for the horizontal or vertical projection of images magnified by a microscope incorporated in the apparatus. They are equipped with special microscopes enabling rapid change of focus, and are used in education, scientific and medical demonstration rooms, technical laboratories, etc.

PARTS AND ACCESSORIES

Subject to the provisions of Notes 1 and 2 to this Chapter (see the General Explanatory Note), parts and accessories identifiable as being solely or principally for use with microscopes are also classified here. These include :

Stands (brackets, bases, etc.); eyepiece-holder tubes and revolving objective-holder tubes (whether or not with lenses); specimen stages (including heating or freezing stages); specimen-guides; optical attachments enabling the image to be sketched; diaphragm-adjusting levers; etc.

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The heading also **excludes** :

(a) Specimen slides or covers, of glass (**heading 70.17**).

(b) Ophthalmic binocular-type microscopes (**heading 90.18**).

(c) Prepared slides for microscopic study (**heading 90.23**).

(d) Microtomes; refractometers (**heading 90.27**).

(e) Profile projectors and other apparatus with optical devices for checking mechanical parts, **not** being microscopes or microprojection apparatus, e.g., optical comparators, measuring benches, etc. (**heading 90.31**).