



MATERIAL INFORMATION

STAINLESS STEEL

The material used for most surgical instruments today is stainless steel. Stainless steel is an alloy, consisting of various elements which make it extremely resistant to staining and corrosion. Despite the multitude of papers, articles, and research reports on this material, the misconception that “stainless” will not stain or corrode still lingers. Although it is strong, durable, aesthetically appealing, and ranks high among corrosion-resistant metals, stainless steel can and will corrode.

Of the many different types of stainless steel, those used for surgical instruments generally fall into two basic categories:

300 Series Steel

(austenitic) contains no carbon and is considered the most stain-resistant of all steels. However, because it doesn't contain carbon, it can't be hardened. In ophthalmology, it is typically used for making eye speculae and handles for instruments, such as hooks, retractors and knives.

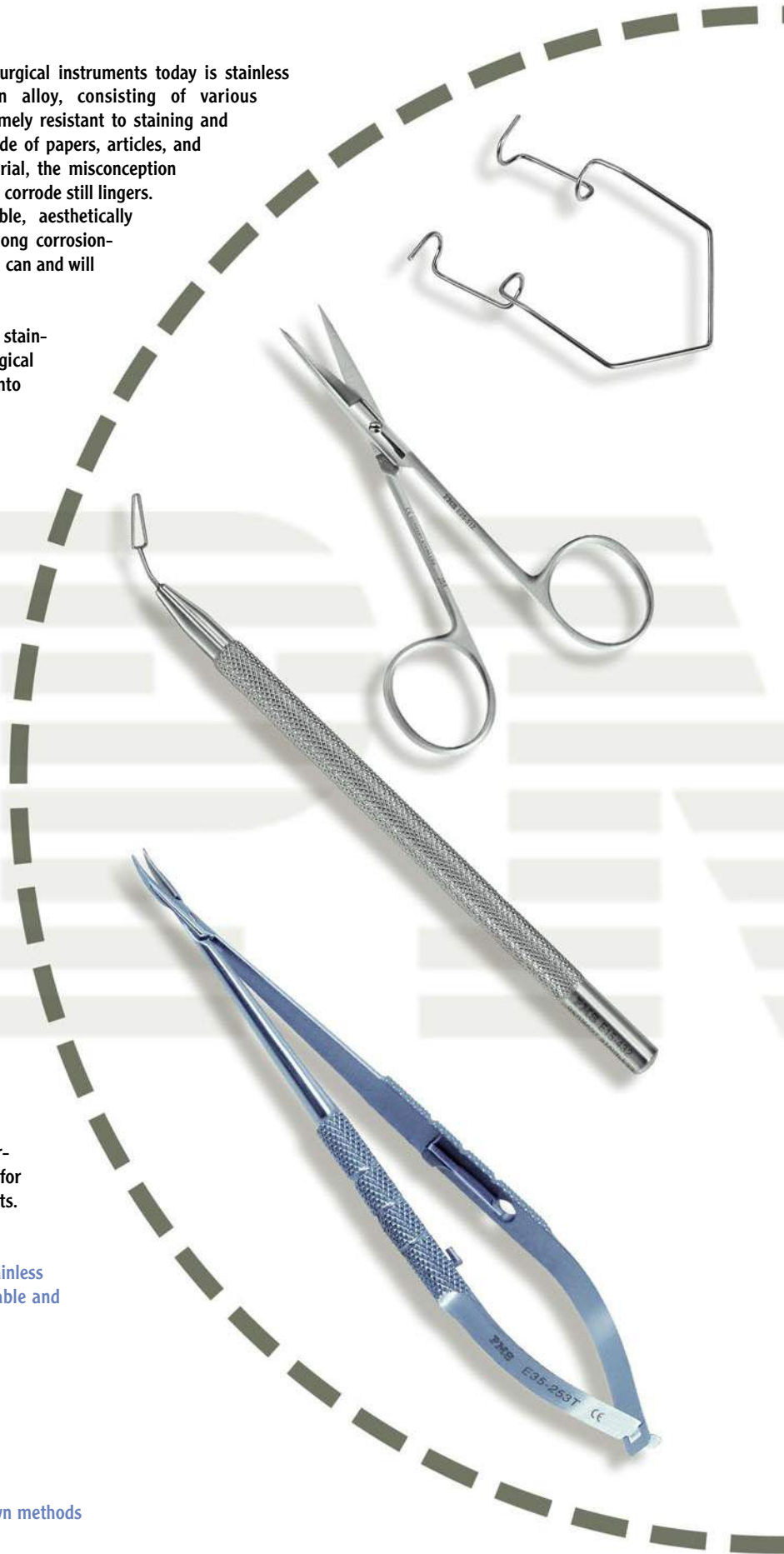
400 Series Steel

(martensitic) contains a small percentage of carbon and thus can be hardened. The percentage of carbon content determines its hardness, the more carbon, the higher the attainable hardness. Steels with a lower percentage of carbon are typically used for making forceps, needle holders and haemostats. Steels with a higher percentage of carbon are used for scissors and cutting instruments.

TITANIUM

is a natural complement to stainless steel. It is stronger, more durable and offers the following features:

- High strength
- Non toxic
- Non magnetic
- Non corrosive
- Non-glare, blue finish
- Tungsten carbide coated tips
- Can be sterilised by all known methods





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1. SELECTION AND TESTING OF MATERIAL

To meet the rigorous demands of the medical industry utmost care is given to the selection of the proper material, which is an essential prerequisite for quality and safety. Comprehensive analytical examinations and inspections of the selected materials are carried out in metallurgical test laboratories.

2. PROCESS CONTROLS

After PMS craftsmen shape stainless steel into semi-formed instruments, highly skilled instrument makers grind, file and shape each instrument by hand into the finished form. At every stage the new instrument is matched carefully to the precise specifications to avoid any deviations in regard to structure of material, true measurements, function and surface finish.

3. HEAT TREATMENT

Surgical instruments require special heat treatment for hardening. Thus, tempering furnaces are used to control the elasticity, resistance to fracture, high cutting ability, and corrosion-resistant quality.

4. SURFACE FINISH

After initial polishing, instruments are returned to the instrument maker for inspection. Then, they are exposed to an electro-polishing process which removes the loose iron and reseals the surface. This process greatly enhances the ability of the instrument surface to resist corrosion.

5. QUALITY CONTROL

A final quality control is carried out prior to packaging the instruments. Under the microscope the following is inspected: Exact product duplication, true to size, surface finish and function. This attention to detail and care assures the finest quality products and contributes to the PMS tradition of excellence and affordable quality.

Quality counts!

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