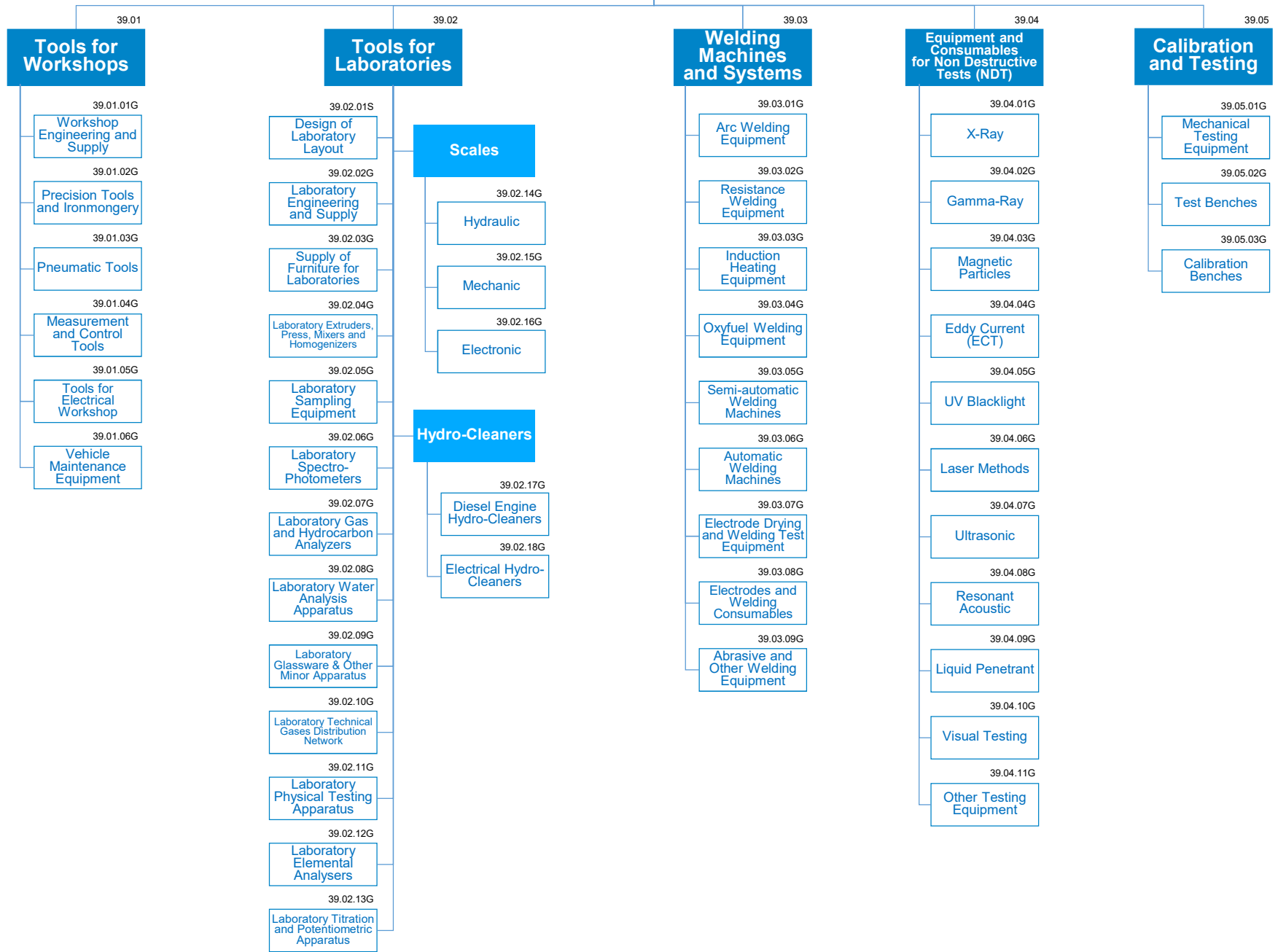


Workshop and Laboratory Tools



Workshop and Laboratory Tools

Workshops and Laboratories are required in each manufacturing plant in the industrial world. They vary in magnitude based on the size of the plant and of the activities, frequently linked to the Operations and Maintenance needs.

Laboratory design and procurement guidance is required by organisations seeking to establish new or ancillary facilities to support and enhance their exploration and production assignments.

MAIN RATIONALES BEHIND THE STANDARD CATEGORIZATION

Tools for Workshops

- The market is characterized by the presence of service providers that act as global, single-source supplier of workshops for Oil&Gas and Power plants.
- Precision Tools and Ironmongery refers to the manufacture of iron and other precision measurement tools, such as steel rule, tape measure, protractor, micrometer, height gauge, various calipers and dial indicators.

Tools for Laboratories

- The basic design of a Laboratory typically includes layout, furniture planning, fume extraction, solvent and chemical storage, waste management, equipment selection, legislative and environmental requirements, specification for utilities and safety apparatus.
- The market is characterized by the presence of service providers that act as global, single-source supplier of laboratory packages, handling the purchasing of test equipment, laboratory furniture, work benches, storage cabinets, fume cupboards, start-up chemicals, consumables, pressure-control and heating, ventilation and air-conditioning systems.
- Frequent is also the sourcing two-year operating spares, devising operating and procedures manuals and planning for modular laboratories.
- The categories within this family should not be confused with the plant instrumentation comprised under Group 06 (“Control Systems and Instrumentation”)
- “Laboratory Sampling Equipment” refers to tools used to extract a small portion of a substance or material for testing and analysis.
- Laboratory scales are split into 3 different categories based on their function and application.

Welding Machines and Systems

- Welding Machines and systems includes the main types of welding equipment in addition to the various consumables and accessories used in the welding process.
- Arc Welding Equipment refers to the equipment using an electric arc between an electrode and a workpiece or between two electrodes.
- Resistance Welding Equipment is the process joining metals by the heat obtained from resistance of the work to the electric current, and by pressure.
- Induction Heating Equipment refers to the equipment that imply heating of an electrically conducting object by electromagnetic induction.
- Oxyfuel Welding Equipment are the equipment that use gases or Oxygen in the welding process.
- Semi-Automatic Welding Machines refers to the machines that need an operator to complete the work of pre-programmed automatic welding machine.
- Consumables and accessories used in the welding processes can be found in the categories 39.03.07G, 39.03.08G, 39.03.09G.

Equipment and Consumables for Non-Destructive-Tests

- Nondestructive testing (NDT) or Nondestructive evaluation (NDE) is a method of materials testing to assess the characteristics of a component without altering or destroying it. NDT is important in the materials testing industry where quick, dependable information on finished or raw material is needed. This may occur during the production stage, during the service life of a material or product, or as a diagnostic tool in the event of material failure.
- Resonant Acoustic (Acoustic Emissions Testing) refers to the equipment used while testing and analysing a deformation of a material.

Calibration and Testing

- Mechanical testing equipment covers devices used for adhesion, compression, drop (shock), tensile, vibration, and fatigue testing.
- Benches are built to cover core parameters most common to industrial sectors. These include electrical, pressure, temperature, loop and frequency. The modules integrated into the consoles are made to optimise calibration work and increase output.