



Selected Chapters from Textile and Single-purpose Machines

Requirements for the construction of single-purpose machines.



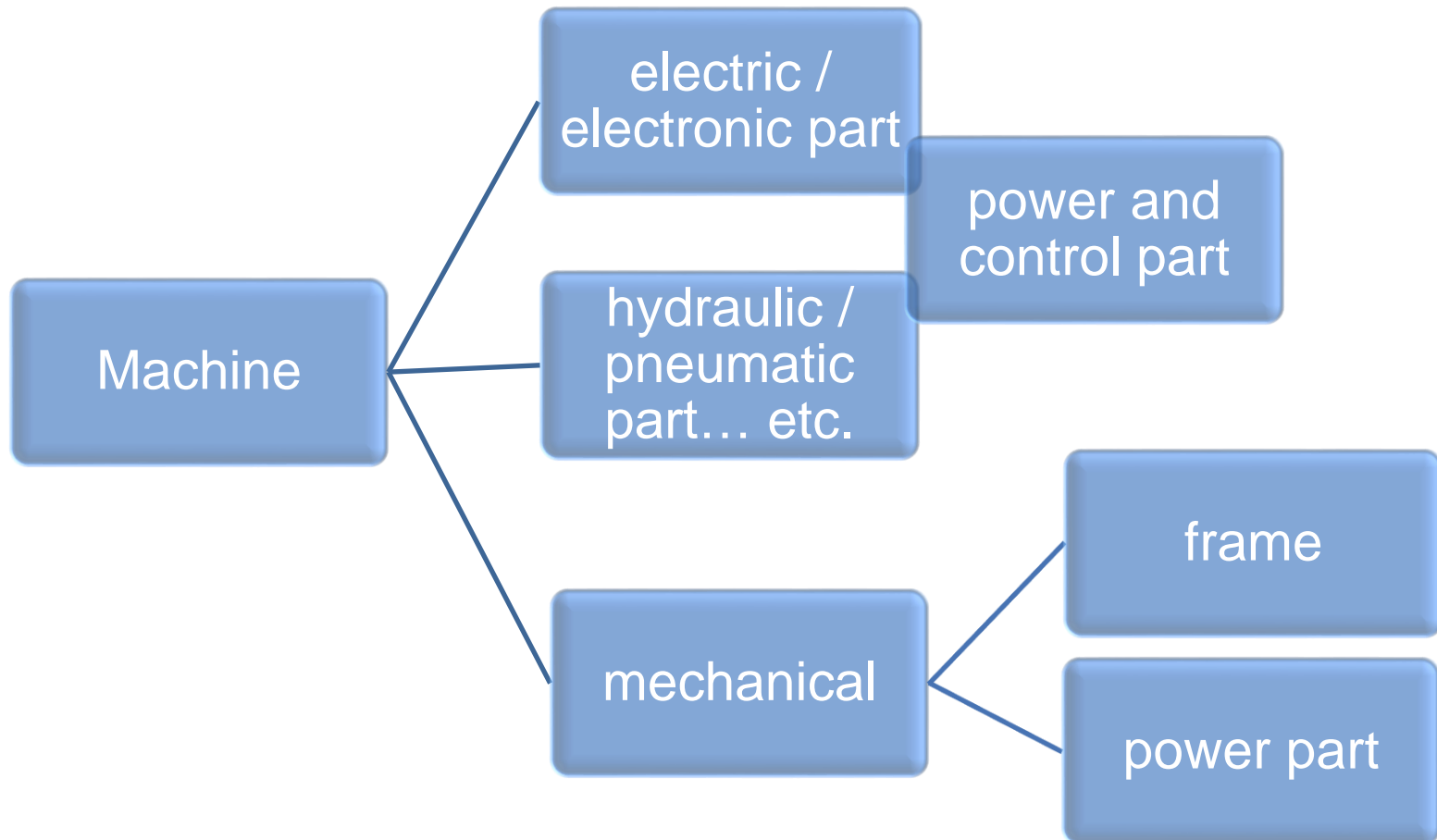
Content

- design requirements for single-purpose machines
 - general structure of single-purpose machines
 - importance
 - sorts
 - usage
- standardized components in design process of single-purpose machines**

General requirements for the design of single-purpose machines

- technical specification according to the client's requirements
- use of standardized components
- modular structure of machines from standardized nodes
- standardized structural elements and nodes
- monitoring of quality parameters during the process and the final product
- in case of processing input material - declaration of conformity + material sheet

General structure of single-purpose machine



Importance of using standardized components

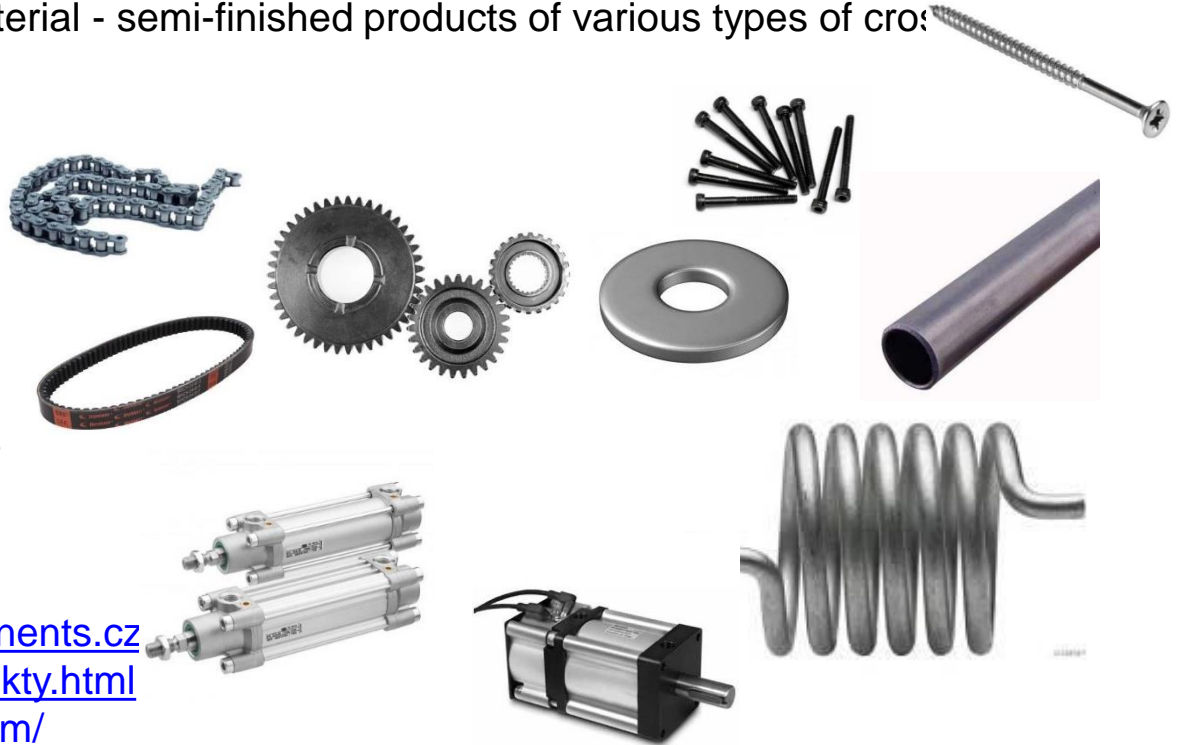
What is the importance of using standardized components?

- selecting a certain number of products -
Determining a specific type range of components / parts / products for applications
- one of the current trends in standardization in machine design product
- creation by assembling individual standard modular nodes



Standardized components

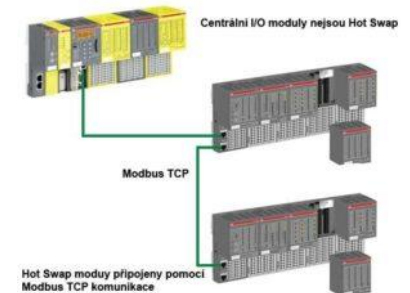
- fasteners - screws, screws, rivets, pins, washers, nuts
- metallurgical / structural material - semi-finished products of various types of cross section
- bearings
- shaft couplings
- gears
- pulleys
- sprockets / chains
- funiculars / ropes
- springs
- drives and their accessories
- and much more



- <https://uk.misumi-ec.com/>
- <https://www.essentracomponents.cz>
- <https://www.marek.eu/produkty.html>
- <https://us-product.item24.com/>

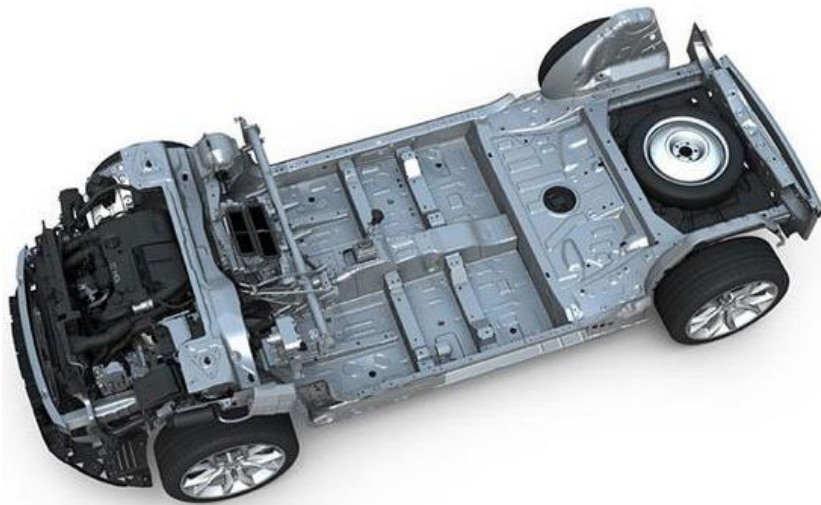
Modular systems

- product creation by assembling individual standard parts and nodes (modules)
- often used - verified units which are applicable for various technical tasks
- mechanical / pneumatic / electronic... often combinations

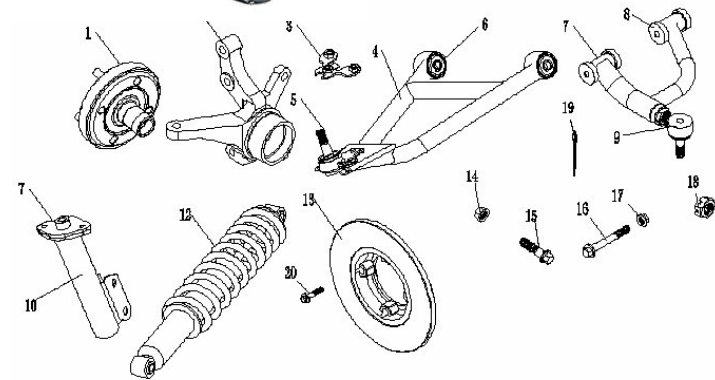
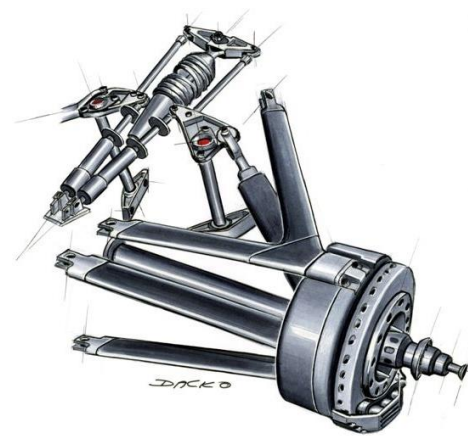


Other examples of modular systems

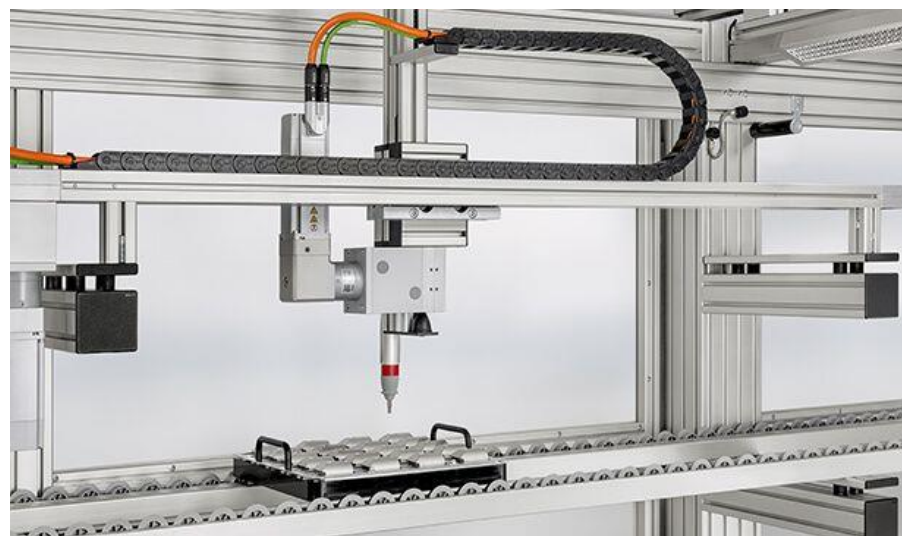
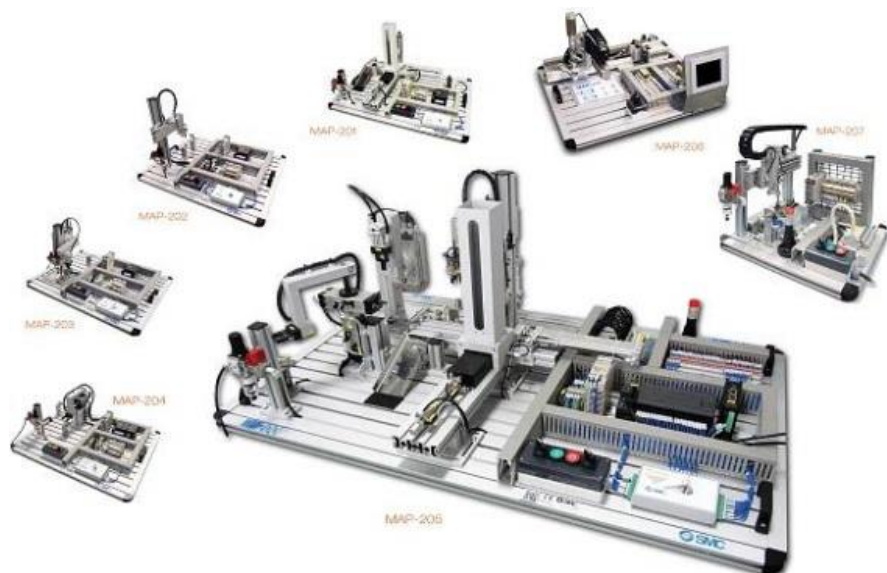
Modular platforms



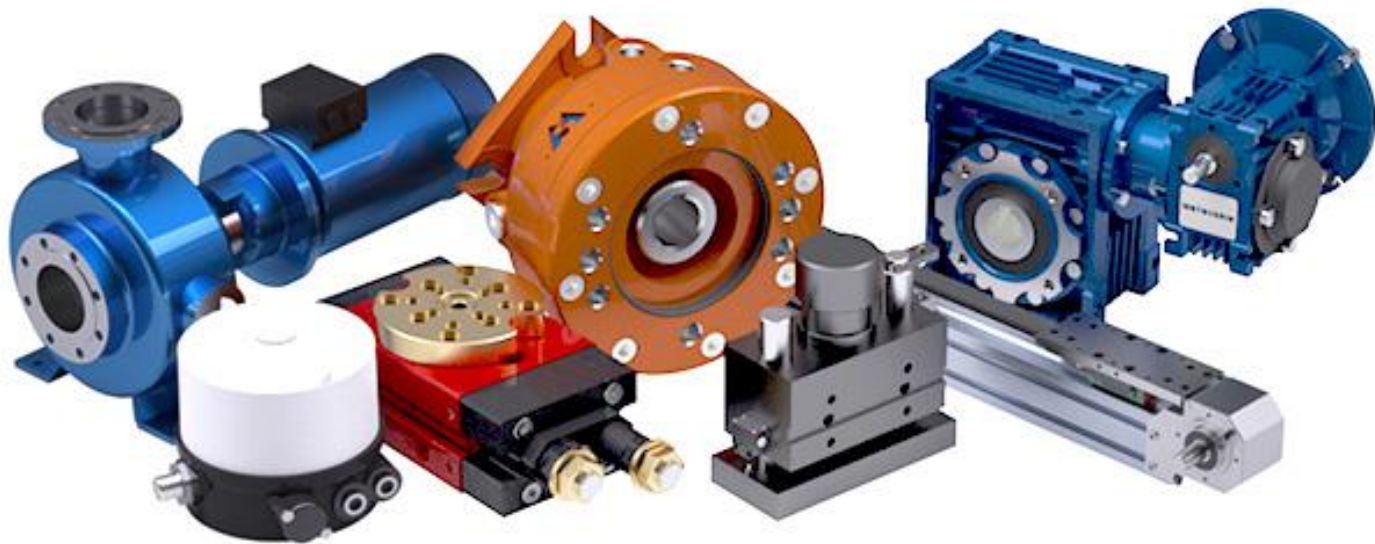
Wheel suspension



Application of standardized and components



Application of standardized and components



Where to gain information about standardized components for your design...

<https://www.traceparts.com/en>



<https://www.festo.com>



<http://b2b.partcommunity.com/community/>



<https://www.smcpneumatics.com/>



What does the term standardization mean...

- standard - rule, model, criterion
- it is: a systematic process that streamlines and reduces diversification from product design through production to sales
- it eliminates the sometimes unnecessary diversity of solutions with effects in production, circulation and consumption
- leads to optimum use of production equipment
- prerequisites for the “assembly” of production, reduction of fixed costs,
- simpler registration, planning and management, the possibility of higher automation
- standardization is carried out by specialized organizations:
 - state organizations
 - experts in the field



Main benefits of standardization

- safety factors
- compatibility
- high level of quality
- interoperability - the ability of equipment originating from different manufacturers or based on different platforms to communicate with each other
- portability - portability to another platform
- re-usability

Review

- What are the general requirements for the construction of single-purpose machines?
- Explain the general structure of single-purpose machines?
- What is the meaning of standardized components?
- What does a modular system mean?



Thanks for your attention

