

Модуль 1. Общие понятия о технологии и производстве.

Half 1. Fundamentals of technology and manufacturing

1. Stages of Product Lifecycle.
2. Concept content of the Technology. Objects of the Technologies.
3. General sequence of transformations in machine building (in industry).
4. Kinds of technological processes. Brief of main kinds of technologies.
5. Direction of the modern technology further perfection.
6. The general sequence of manufacturing of the aircraft.
7. Peculiarities of the aircraft as the object of production. Peculiarities of the aircraft manufacturing.
8. Structure of an aircraft as the production object.
9. Estimation of the technological process efficiency.
10. Structure of the aircraft building enterprise.
11. Structure of manufacturing process and technological process.
12. Concept content of the technological processes types.
13. The initial data for working technological process development.
14. Typification of technological processes (the purpose, the preferences).
15. Estimation of technological processes efficiency. Kinds of efficiency.
16. Types of production (concept content, brief characteristic).
17. Basics about the quality and the system of quality management
18. Concept content of Quality in aircraft manufacturing. The ways of quality formations.
19. The ways of quality evaluation.
20. The main parameters of aircraft quality
21. Geometrical parameters of aircraft quality.
22. Concept content of processability (technological effectiveness).
23. The ways of processability evaluation.
24. Indices of processability quantitative evaluation
25. The rules of processability insurance.

Модуль 2. Обеспечение взаимозаменяемости. Увязка. ТПП

Half 2. Interchangeability insurance. Coordination. Technological PreProduction (ТТП)

1. Concept content of technological chain of dimensions transferring (give an example of the process and corresponding chain of dimensions transferring). Brief of methods of there calculations.
2. Concept content of dimensional chain o the produced item (give the examples both for the part and the assembly). Brief of methods of their calculations.
3. Methods of dimensional chains calculations. Method of equal tolerances.
4. Methods of dimensional chains calculations. Method of equal accuracy grades.
5. Concept content of interchangeability. Kinds of the interchangeability.
6. Concept content of accuracy (accuracy, error of manufacturing, tolerance).
7. Concept content of coordination (accuracy of conjugation, coordination, error of coordination, tolerance of coordination).
8. Brief of principles of coordination insurance (providing): dependent, independent, with compensation.
9. Dependent principle of coordination insurance.
10. Independent principle of coordination insurance.
11. Principle of coordination insurance due to the compensation.
12. Specific methods of interchangeability and coordination insurance which used in the aircraftbuilding industry (the reasons of their using, the brief of them).
13. Diagrams of coordination of the blanking and assembly tooling. Kinds of primary sources of coordination and means of coordination.
14. Loft-template method of interchangeability and coordination insurance. The principle diagram of this method.
15. Standard-template method of interchangeability and coordination insurance. The principle diagram of this method.
16. Coordinate-template method of interchangeability and coordination insurance. The principle diagram of this method.
17. Program-instrumental method of interchangeability and coordination insurance. The principle diagram of this method.
18. Lofts and templates. Purposes, kinds, the sequence of their manufacturing.
19. Nomenclature of templates (their groups, names, purposes). Give the example either template of contour or template of part development.
20. Information of templates (its kinds, brief of them). Contours of templates (lines of TCO, TC, TIC). Holes in templates.
21. Technological preproduction (ТТП) of the manufacturing. Concept content of the ТТП, purpose, the executors.
22. Technological preproduction (ТТП) of the manufacturing. Tasks to be solved. Stages of the ТТП.
23. Technological preproduction (ТТП) of the manufacturing. Principles of the ТТП organization.
24. Technological preproduction (ТТП) of the manufacturing. Contents of ТТП.
25. The ways of technological preproduction (ТТП) improving (of reducing the time that necessary for ТТП, the expenses of money and labour, of increasing of ТТП quality).

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