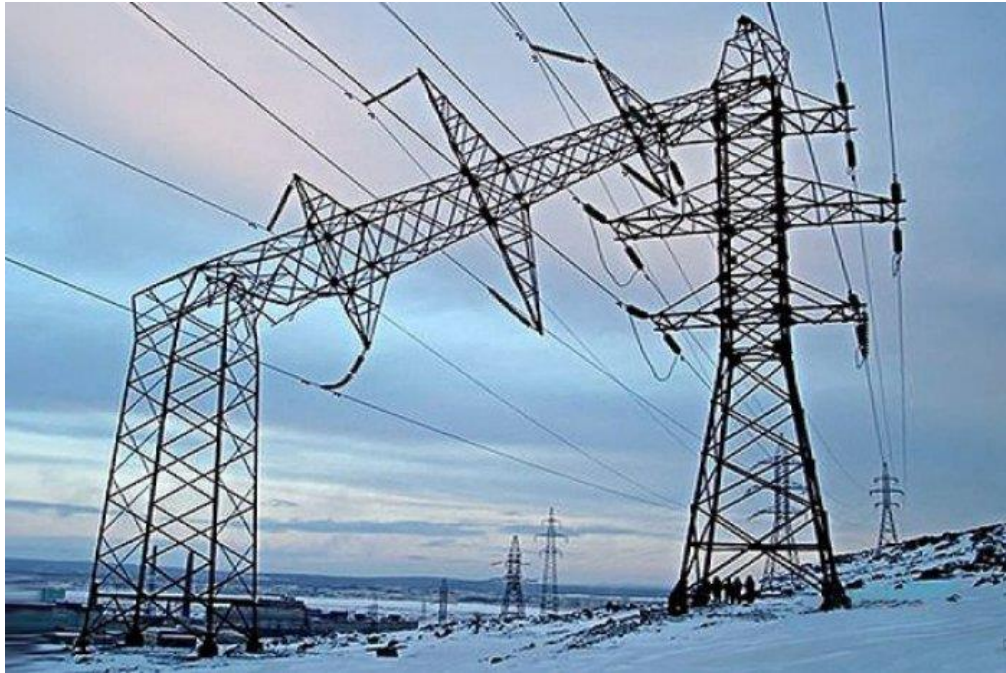


National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic
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Institute of Energy Saving and Energy Management

Development of engine diagnostic system when the starter rotates without fuel

- The only solution to provide reliable power supply in case of main network accidents is the use of power stations with internal combustion engines. The new reliable work of electrical equipment is a complex of diagnostic procedures for determining the technical condition and timely repair.



Relevance of the theme

- The performance indicators of such internal combustion engines (ICE), as well as the resource and performance depend directly on the compression properties of each of the cylinders and the wear of the crank mechanism.

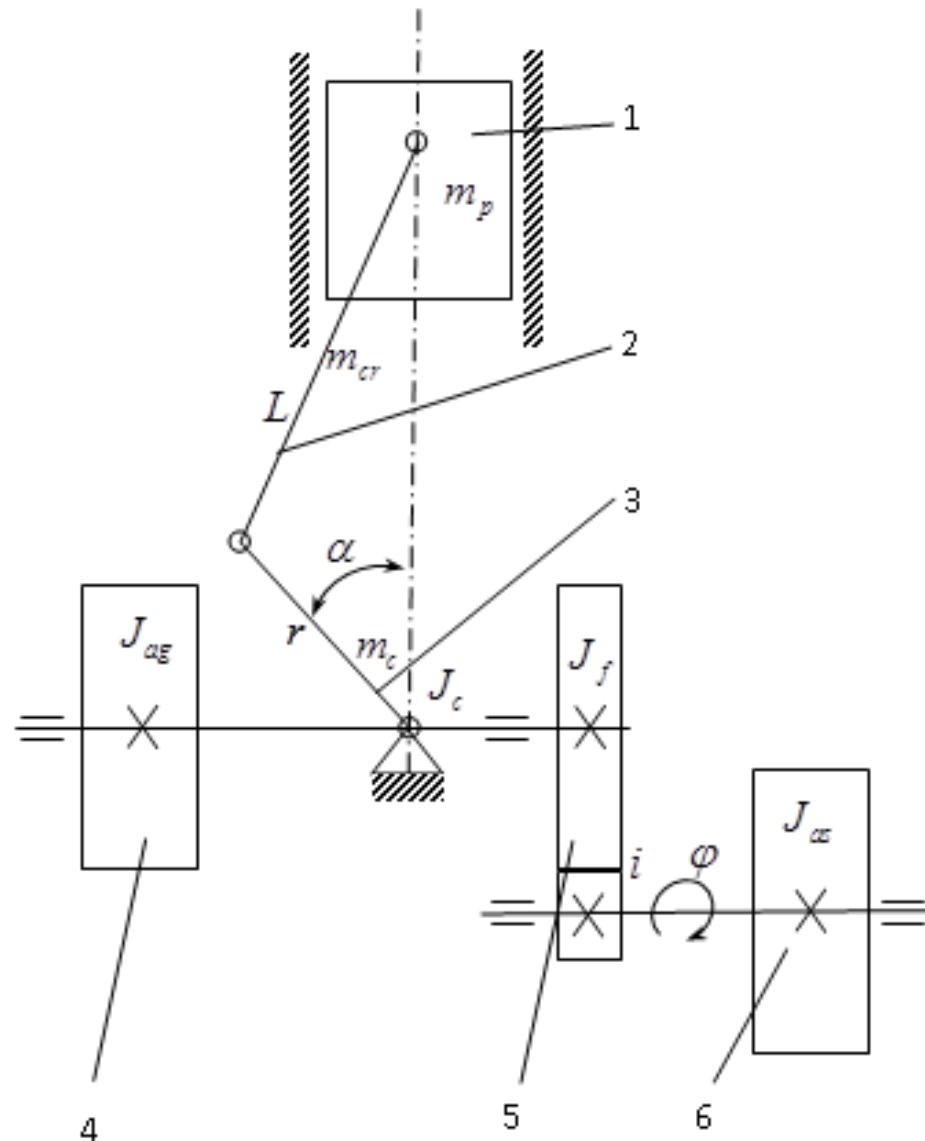
Purpose and objectives of the study

- Purpose of the study - develop a scientific basis for engine diagnostic system when the starter rotates without fuel
- Research objectives:
 1. Analysis of methods for diagnosing internal combustion engines
 2. Analysis of methods for describing the processes of the internal combustion engine
 - ✓ mechanics of the process crank mechanism.
 - ✓ compression of air in the cylinder taking into account wear.
 - ✓ analysis of DC motor
 3. Description of the diagnostic system when the starter rotates without fuel
 4. Simulated of the diagnostic system when the starter rotates without fuel
 5. Creating an experimental setup
 6. Development of guidelines for the use of the developed diagnostic system

Analysis of methods and means of diagnosing ICE

Methods	Diagnostic tool	Advantages	Disadvantages
Toxicity test	Gas analyzer	Accuracy, versatility	The difficulty of localizing the cause
Pressure drop	Postolovsky oscillograph	High sensitivity	High cost, highly qualified staff required
Engine power	Motor Tester MT-10	Universal	qualified staff
Rotation time after turning off the engine	Electromagnetic switch	Ease of use, reliability, low cost	Difficult analysis of information
Measurement starter current	amperemeter	Ease of use, reliability, low cost	it is impossible to determine the cylinder wear and wear of the crank mechanism

Scheme of diagnostic system when the starter rotates without fuel



Scheme of diagnostic system when the starter rotates without fuel

