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Contact Problems in Roller Chain Drive Systems.

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A model of a roller chain drive is developed and applied to the simulation and analysis of roller chain drives of large marine diesel engines. The model includes the impact with guide-bars of the motion delimiter components of the roller-chain drive by the rollers and links of the chain strands between the sprockets. The main components of the model of the roller chain drive include the sprockets with different sizes and the chain made of rollers and links, which are represented by rigid bodies, mass particles and springs damper assemblies respectively. The guide-bars are modelled as rigid bodies being their contact with the rollers represented by a continuous force. The models proposed effectively represent the polygonal effect, always present in this type of drives, and therefore, all vibration dynamics associated to it.

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