DESIGH OF LIFTING RIGS

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ABSTRACT

The work that follows, deal with the desigh of the "birdcage" and the"umbrella" tent types of lifting rigs. When a heavy product is lifted it is important that the lifting rig be stable.

The criterion of stability is explained in terms of the pick up point, the combined load - center of gravity and the center of curvature of the trajectory of the center of gravity.

A derivation of geometrical construction for the stability of the birdcage and the umbrella tent types of lifting rigs was carried out (always in the symmetry position) based on Bobillier's Theorem.

With the help of the Euler's savary theorem a derivation of an analytical expression (inequality) for stablility was achieved.

Furthermore a development of a computer - aided desigh procedure for selecting stable hitch proportions was suceeded so that the user can conveniently determine a suitable, stable hitch configuration.

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