[1]年岗,顾晓辉,成凤生,等.平板封头圆柱形爆炸容器振动特性分析[J].弹箭与制导学报,2011,6:105-108.

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平板封头圆柱形爆炸容器振动特性分析(PDF)

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Title: The Research on Vibration Characteristic of Cylindrical Explosive Vessel with Flat End Plate

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关键词: 爆炸容器; 平板封头; 振动特性

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摘要: 通过监测3个测点的振动加速度，并结合固有振动模态对容器振动特性进行分析。结果表明，容器振动频率主要在前11阶以内；中环面处壳体振动以高阶频率为主，并随着载荷的增大有向呼吸振动频率靠近的趋势，工程实际中可在中环面外侧焊接加强层来避免谐振；远离中环面的壳体振动以低阶频率为主，且低药量时更易被激发，工程实际中通过减少壳体上非对称结构，将孔或盘类结构开设在中环面附近，从而减少低频谐振的影响。

Abstract: The vibration characteristic of vessel was analyzed by measuring acceleration signal of three measuring points on the vessel and cylindrical shell mode analysis. Theory analysis and experiment data indicates: within quantity explosive of the experiment, vibration frequency primarily distributes within 11 order dominant frequency; High order frequency chiefly distributes in vibration frequency of the vessel，s center section, and with the increase of internal blast loading, dominant frequency is inclined to breathing frequency. In order to avoid resonance and increase safety of the vessel, we can raise breathing frequency by welding reinforce layer on the vessel，s center section; Far from vessel，s center section, the primary vibration frequency of the vessel is low order frequency. The low order frequency is excited easily in the small quantity experiment. We can reduce asymmetric structure and hole near the vessel，s center section for the safety of the vessel.

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