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ADDITIVE MANUFACTURING DEVELOPMENT FOR LE-9 ENGINE

Abstract

MHI has been making IRD efforts to develop AM (Additive Manufacturing) capabilities for rocket engine parts. Based on the successful results by MHI and by JAXA itself, JAXA is researching for applying AM parts to LE-9, the next booster engine under development. Two sample parts were selected to be applied to the Engineering Model Engine firing test. Building parameter optimization, built part estimations including metallurgical observation, material properties and loading test to the part are complete, and the parts for the engine were built and are being assembled into components. Engine firing test will start soon. In the mean time, application study of the other parts was performed and more than 10 AM parts will be used in the Qualification Model. In this paper, development status of the parts for the Engineering Model and plan for the Qualification Model are reported.