

## **An Improvement of Flow Forming Process for Pressure Vessels by Four Rollers Machine**

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**Abstract :** Flow forming is widely used in many industries, especially in defence technology industries. Pressure vessels requirements are high precision, light weight, seamless and optimum strength. For large pressure vessels, flow forming by 3 rollers machine were used. In case of long range rocket motor case flow forming and welding of pressure vessels have been used for manufacturing. Due to complication of welding process, researchers had developed 4 meters length pressure vessels without weldment by 4 rollers flow forming machine. Design and preparation of preform work pieces are performed. The optimization of flow forming parameter such as feed rate, spindle speed and depth of cut will be discussed. The experimental result shown relation of flow forming parameters to quality of flow formed tube and prototype pressure vessels have been made.

**Keywords :** flow forming, pressure vessel, four rollers, feed rate, spindle speed, cold work

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