BUILD AND DESIGN OF COTTER VALVE RELEASE AND INSTALLATION TOOL ON MOTORCYCLE CYLINDER HEAD

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ABSTRACT

During cotter valve release and installation process of motorcycle cylinder head, generally workshops will found difficulties on manual release and installation, releasing process by hitting the retainer valve spring outer surface will causing damage of the retainer valve itself, while at the installation on depressed retainer valve spring the cotter valve is not accessible into spillway bar concurrently. Therefore a motorcycle cylinder head cotter valve release and installation tool is designed.

In this research the early stage was tool designing, and then the calculation of force required to release the cotter valve as work object is carried out. The tool will be made according to calculation which have been conducted then continued with the tool test. After the tool tested hence evaluation and study literature will be prepared for the material selection.

From data of calculation result, force required to depress the spring spillway till the spring deflected as far as 7 mm [is] 91,13 N. For material selection the “GRAY IRON ASTM Class 20" is used. The tool work mechanism is lever utilized to simplify the spring compression process.

Keyword : Cotter valve, Retainer valve spring, Cylinder head, ASTM Class 20.