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Automobile Transmission Lift

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MET (IET) 497
SENIOR DESIGN PROJECTS
PROFESSOR DONALD J. MC ALEECE
SPRING 1984

AUTOMOBILE TRANSMISSION LIFT

by

JOHN ZIMMER

AUTOMOBILE TRANSMISSION LIFT

For

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PROFESSOR OF MECHANICAL ENGINEERING TECHNOLOGY
INDIANA UNIVERSITY-PURDUE UNIVERSITY
FORT WAYNE, INDIANA

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APRIL 17, 1984

ABSTRACT

This report presents the Transmission Lift. It explains the design, establishes the market, lists the criteria, presents technical assurance, lists materials, summarizes costs both for the prototype and estimates for production, presents testing procedures and results, and fabrication.

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TECHNICAL ABSTRACT

The Transmission Lift is a screw operated mechanical device consisting of four components: the top plate, the base, the scissors mechanism, and the drive train. Tests on a full scale prototype verified all criteria: The Lift will lift 900 lbs. The Lift weighs 22.56 lbs. The Lift operates at 45 ft/lbs. The Lift raises the removed transmission 10 inches. When mass produced in 1000's, the Lift will cost \$58.00. Testing was divided into three sections: lifting capability, workability, and gross weight. The Lift prototype cost was \$23.16. Fabrication of the prototype took place at Auburn Gear Inc., and the designers shop. Before actual construction, design features were supported by technical calculations, with special attention given to connecting pins. Upon completion the Lift possessed the following dimensions (collapsed state): 18 x 12 x 7 inches high. When fully elevated the Lift measured 21 inches high with all other dimensions remaining constant.