

ARSCT International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

IJARSCT

Impact Factor: 6.252

Volume 2, Issue 8, June 2022

Pneumatic Gear Shifting Mechanism

Prof. Prajakta Gharge¹, Mr. Sanket Shinde², Mr. Vishal Ranjille³, Mr. Rushikesh Mugle⁴, Mr. Yogesh Kasabe⁵

Assistant Professor, Mechanical Engineering, NBNSSOE, Pune, India¹ UG Student, Mechanical Engineering, NBNSSOE, Pune, India^{2,3.4,5}

Abstract: At present due to the extended difficulties in manual operations, the technology has shifted from manual to automatic; few of them include ABS system, active steering system etc., in order to increase passenger safety and comfort. Increasing demands on performance, quality and cost are the main challenges for today's automotive industry, in an environment where movement, components and every assembly operation must be immediately and automatically recorded, checked and documented for maximum efficiency. One of the automatic applications includes a pneumatic gear changer. This study describes in detail in an understandable way how to convert the traditional manually gear shifting mechanism by using Pneumatic cylinders.

Keywords: Pneumatic Cylinders, Pneumatic Gear Changer, Active Steering System, ABS, etc.

REFERENCES

- R. Hembree, "Semi-Automatic Electric Gear Shifting Apparatus for A Motorcycle". United States 15 July 1975.
- [2] U. M. Friedrich Raff, "Shifting Arrangement," For an Automatic Transmission of a Motor Vehicle". United States 3 Sep 1991.
- [3] David G. Funk, "Pushbutton Solenoid Shifter". United States of America Patent 6070485, 6 Jun 2000.
- [4] P. Alexander M.E, "Automatic Gear Transmission in Two Wheelers," Vol. 3, No. 2, 2012.
- [5] Oliver J. Tysver, "Automatic Gear Shifting Mechanism for Multispeed Manually Powered Vehicles". United States 28 Dec 1999.
- [6] Francis G. King, "Automated Manual Transmission Shifter with Electronic Control Actuators External of The Vehicle". United States of America Patent 4554824, 26 Nov 1985.
- [7] Robert E. Lawrie, "Automated Manual Transmission Shift Sequence Controller". United States 1 Feb 2000.
- [8] Pierre A. G. Lepelletier, "Multispeed Automatic Transmission for Automobile Vehicles". United States 21 April 1992.
- [9] Luigi Glielmo, "Gearshift Control for Automated Manual Transmissions," Ieee /Asme, Vol. 1, P. 11, 2006.
- [10] Y. Huang, "Hybrid Intelligent Gearshift Control of Technical Vehicles Based on Agann," International Journal of Control and Automation, Vol. 6, No. 4, P. 14, 2013.
- [11] C. X. Zhenyu Zhu, "Experimental Study on Intelligent Gear Shifting Control System of Construction Vehicle Based on Chaotic Neural Network". China 29 Jun 2000.