

Design and Development of Broach Cleaning Mechanism

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Abstract: Broaching is most commonly used in industries for rapid and correct profiling of metal work piece. Broaching can be used to generate any desired shape by means of tool called broach. The profile that is largely produced is keyway and Splines. The keyways and splines are required in automotive components such as gears and pulleys. The closure relates to Design and development device used for cleaning broach tool comprising of a circular brush that rotate around the broach through a compressed air (Pelton Wheel turbine Like Mechanism) designed specifically for broaching machine to remove the metal chips accommodated in-between broach tool tooth and thus improve productivity of the broaching machine. A basic overview of burr formation and removal is presented in this paper. The main advantages, disadvantages, limitations, part quality and precision of these operations are presented.

Keywords: Broach, Cleaning Mechanism, Productivity, Cycle Time.

REFERENCES

- [1]. Broach Tool Chip Remover, United States Patent, Patent Number: 5,197,837, US005197837A, Date of Patent: 9/1988, Inventor: Paul Brown, Columbus, Ohio
- [2]. Broach Cleaner. Application Filed: June 8, 1922. Serial No. 566,777. Inventor: W. Ferris, 1,507,111,
- [3]. Mayank Dev Singh, Shah Saurabh K, Patel Sachin B, Patel Rahul, "To improve productivity by using work study and design a fixture in small scale industry", International Journal on Theoretical and Applied Research in Mechanical Engineering 2319 – 3182, Volume-1, Issue-2, 2012.
- [4]. Khalid S. Al-Saleh, "Productivity improvement of a motor vehicle inspection station using motion and time study techniques", Journal of King Saud University – Engineering Sciences (2011) 23, 33–41.
- [5]. Hannu Rantanen, "Internal obstacles restraining productivity improvement in small Finnish industrial enterprises", Int. J. Production Economics 69 (2001) 85-91.