

고성능 Sealless Cylinder 최적설계 기술 개발

김동수[†] · 배상규* · 김영철*(한국기계연구원)**Development of the optimal design technology on the high performance Sealless Cylinder**

Dong-Soo Kim, Sang-Kyu Bae and Young-Cheol Kim

Key Words: Sealless Piston(씰리스 피스톤), Pneumatic Cylinder(공압실린더), Reynolds Equation (레이놀즈방정식), Self-Centering Force(자기부상력), Leakage Flow(누설유량)

Abstract : This paper shows a performance analysis for conical type sealless cylinders and rod bearings. The pistons without seal have partly cylindrical and conical shapes. 2 dimensional Reynolds equation and FD(finite differential) numerical techniques are utilized for the performance analysis. The relationship among self-centering forces and leakage flows are investigated. Also, optimal design values for a sealless cylinder are presented. A prototype of sealless cylinder which had rod bearing with four pockets, five pockets, and six pockets was manufactured respectively. Leakage flow test is conducted to evaluate performance of piston and rod bearing in sealless cylinder. And the optimal technology for the high performance sealless cylinder has developed through various tests.

FARE TOOL의 저 유량 특성 분석 및
최적화 설계에 따른 유동 특성 개선이한희[†](한국원자력연구소) · 이선기*(한전전력연구원)**The analysis about Low flux characteristics of the FARE TOOL and
The flow characteristics improvement according to an optimizing design**

Han-Hee LEE, Sun-Ki LEE

Key Words: Flow Assist Ram Extension(FARE), Fuel Separator(핵연료분리기),
Optimizing Design (최적화 설계)

Abstract : If a fare tool is to be used in the reactor for the purpose of nuclear fuel exchange, low flux signals will be sensed. so the performance test equipment of the fare is developed for the simulation of wolsong nuclear plant. the purpose of this study is to improve the design of FARE tool for the utilization in the korea nuclear plants. Especially, it was appeared that the advanced FARE tool has more improved the flow characteristics rather than those of the existing FARE tool.