

드럼형 세탁기의 구조 방사 소음과 투과 소음의 분석 Analysis of Vibro-acoustic and Transmission Noise in Drum Type Washer

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Key Words : Drum Type Washer(드럼형 세탁기), Spin-drying Stage(탈수 행정), Vibro-acoustic Noise(구조 방사 소음), Transmission Noise(투과 소음)

Abstract : The noise becomes more important factor for the demand of industrial products, especially the home appliances. The noise of almost all products consists of vibro-acoustic and transmission noises. The noise identification gives engineers information about whether the dominant noise components are induced mainly by vibro-acoustic or transmission noise. Consequently, the design variable and parameters for noise reduction can be easily selected. This paper focuses on the noise identification of a drum type washer during steady state spin-drying stage. The vibro-acoustic noise is analyzed by the commercial boundary element method code with the measured vibration data using laser scanning vibrometer. The transmission noise is estimated by using acoustic reciprocity and sound reproduction procedure with measured data in specially designed experimental setup. Consequently, the contributions of vibro-acoustic and transmission noises to the total noise are analyzed and discussed for further investigation.