

## Study on Noise Reduction for Actuator of Vehicle Doors

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1.

2.

BSR(buzz, squeak, rattle)  
(1,2)

Fig. 2  
가

1KHz

1KHz

RPM,

Fig. 3

Fig. 1

0.5mm



Fig. 1 Result of noise analysis

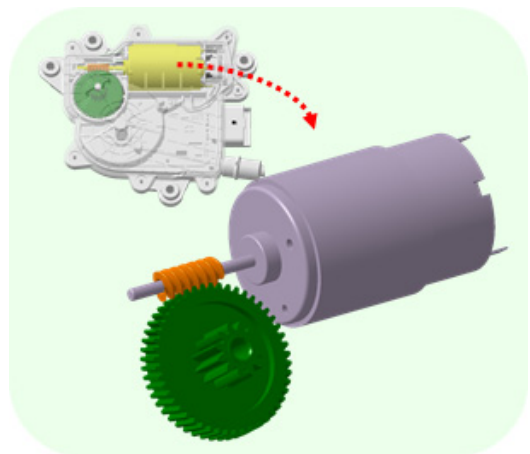


Fig. 2 Change shape for resonance avoidance

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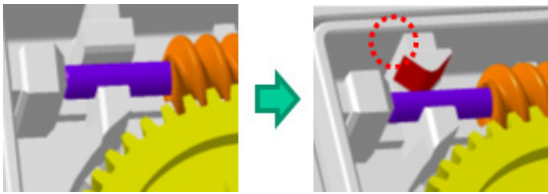


Fig. 3 Change design for gap

3.

가

가  
가

Fig. 4

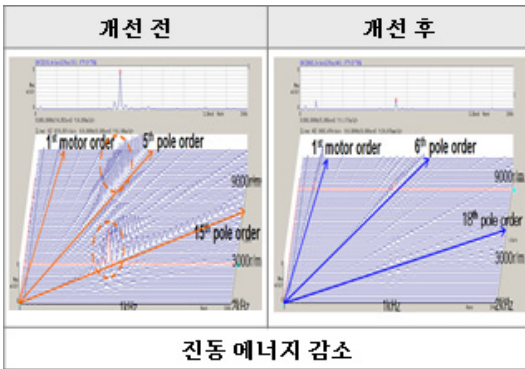


Fig. 4 Improvement result for sound pressure

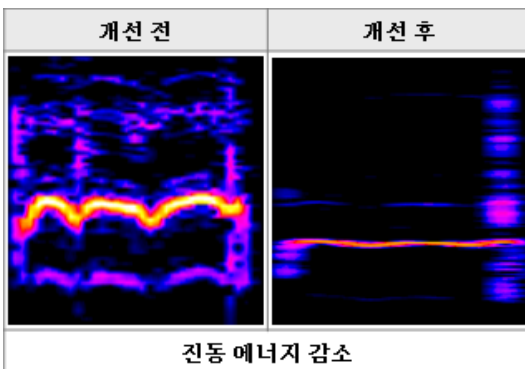


Fig. 5 Improvement result for timbre

		불량률		
개선 전	최상	양품	불량	
	4%	40%	56%	
개선 후	최상		양품	불량
	58%		35%	7%

Fig. 6 Improvement result for noise

6

가

0.15 0.08

0.8mm

Fig. 5

가

0.5mm

(gap)

(1) Shin, S. H., Cheong, C. and Jung, S. S., 2007, Experimental Evaluation of Buzz, Squeak and Rattle Noise of Vehicle Doors and Its Prevention, *Trans. of KSNVE*, Vol. 17, No. 12, pp.1217~1222.

(2) Son, I. S et al., 2013, Study on Property of NVH of Vehicle Doors Latch Part, *Proc. of the KSMPE Autumn Conference*, p. 113.