

## 드래그 회전자 형상에 대한 복합분자펌프의 배기성능

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Recently, high vacuum pumps are widely used in the semi-conduction and liquid-crystal display (LCD) process<sup>(1,2)</sup>. Pumping performance of hybrid-type molecular pumps are investigated experimentally, pumping characteristics of two vacuum pumps are compared with that of hybrid molecular pump (HMP) and compound molecular pump (CMP). Both HMP and CMP are shown in Fig. 1. HMP is combined a turbomolecular pump (TMP) and disk-type molecular drag pump (DTDP), and CMP is combined a TMP and helical-type molecular drag pump (HTDP). In a DTDP, spiral channel of rotor is cut on both upper part and lower part of rotating disk, and the corresponding stator is a planar disk. In a HTDP, helical-grooved rotor has six threaded rectangular grooves. The inlet pressure is measured for the various of outlet pressure in the range of 0.4~533 Pa. Nitrogen is used the test gas. The ultimate pressure of HMP was  $2.5 \times 10^{-5}$  Pa at the outlet pressure of 0.4 Pa, and that of CMP was  $4.3 \times 10^{-5}$  Pa at the outlet pressure of 0.4 Pa. The maximum compression ratio of HMP was about 105, and that of CMP was about  $2 \times 10^4$ . The pumping speed of HMP was about 210 l/s, and that of CMP was about 102 l/s .

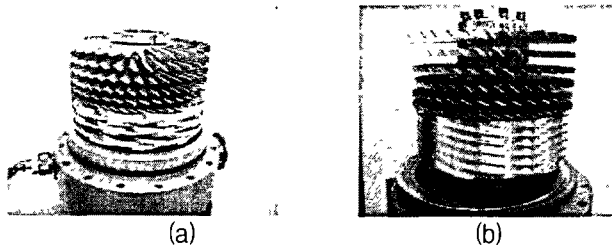


Fig. 1 Hybrid-type molecular pumps: (a) HMP, (b) CMP.

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[참고문헌]

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