

Turbo Blower for POWER LASERS

Trumpf Lasertechnik GmbH

Active Magnetic Bearing Applications



«Once installed in the machine, the turbo blower can be forgotten for its lifetime, thanks to the maintenance-free Active Magnetic Bearing from Mecos.»

MECOS
LEADERS IN MAGNETIC BEARINGS

Application

High-power CO₂ lasers need a blower for process gas circulation. Cleanness and reliability are of very high importance.

Solution

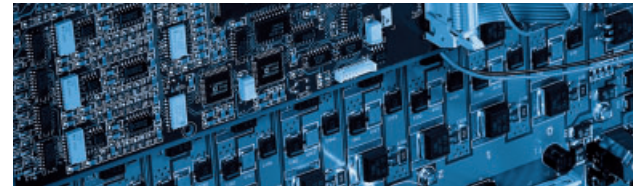
The contact-free AMB (Active Magnetic Bearing) need no lubrication and eliminate the risk of laser contamination. The AMBs are maintenance-free, allow high speeds and provide a compact design. For mass production, the digital control system allows the use of the same control hardware for two blower types. The unbalance force rejection control system (UFRC) ensures vibration-free operation.

Implementation

The suspension system for the turbo blower features full five-axis magnetic bearings. Close team cooperation with our OEM customer has allowed rapid and efficient development. Series production started in 1999 and during the first year of full production, more than 1000 units were installed world wide.

We have put a great deal of effort into optimising series production. We supply our customer with magnetic bearing electronics and bearing sets ready for assembly. The start-up of the turbo blower after assembly is highly automated and is performed by the customer's personnel. Our supervisory software automatically checks and records the turbo blower data for quality assurance. Then, the operator has only to select the blower type at start-up.

Motor power: 10 kW/8,5 kW
Rotation speed: 54 000 rpm/46 000 rpm
Rotor mass: 3,6 kg
Bearing diameter: 48 mm



Our industrially proven magnetic bearings are the result of extensive technical research, opening up possibilities of application unknown with traditional bearings. Mecos offers you viable and flexible solutions – whatever your market needs may be.