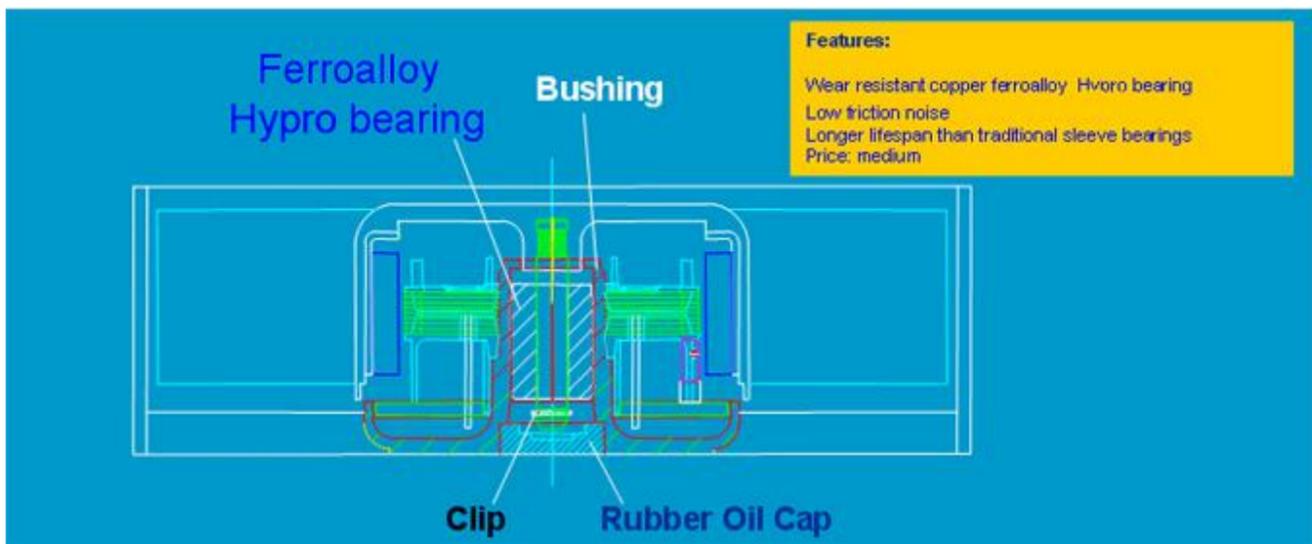


○ HYPRO structure Traditional structure

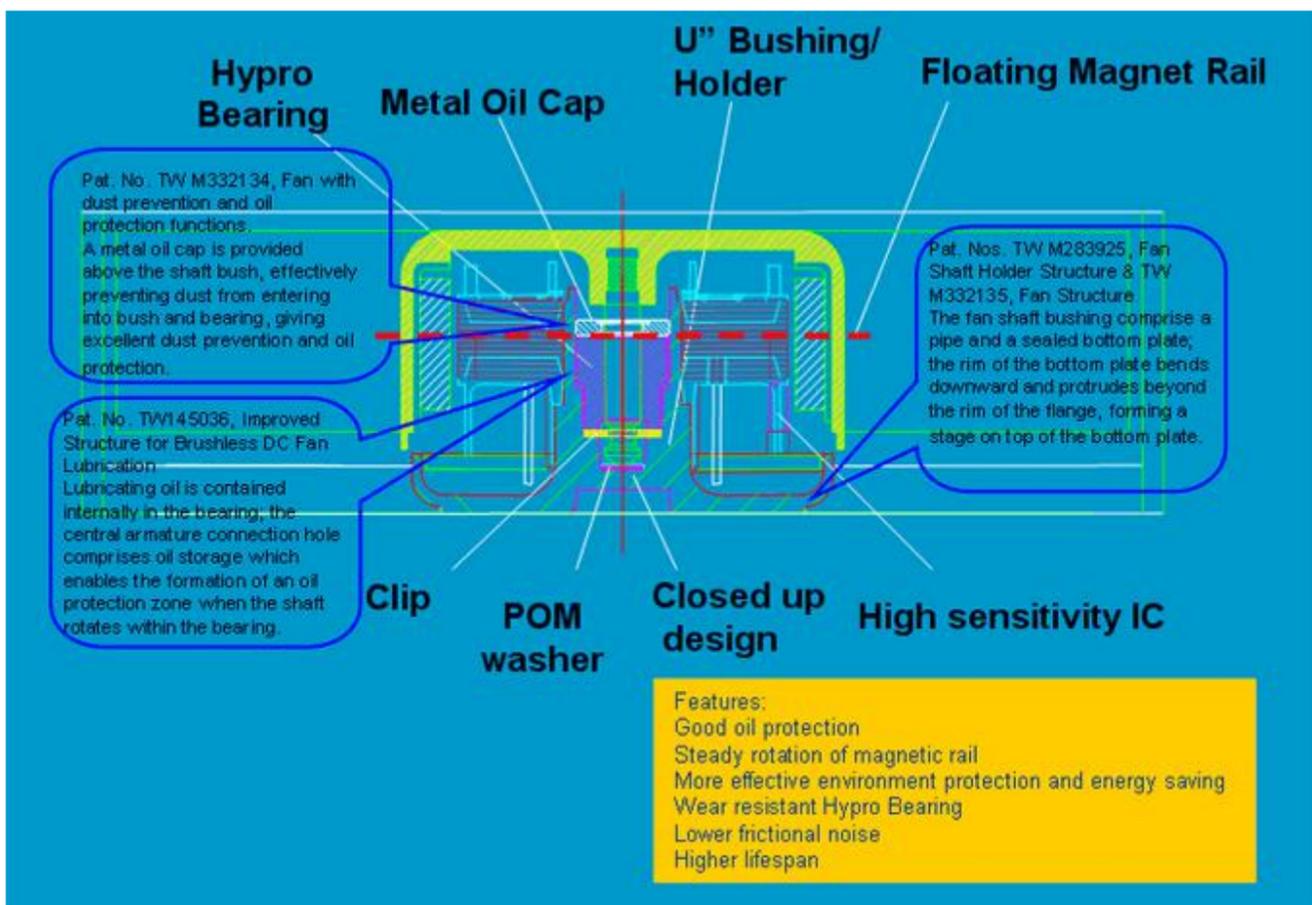


HYPRO Bearing System enhances the traditional magnetic levitation fan device and eliminates parts such as rubber O-rings and washers. In the long and continuous operation, impeller shaft is prone to seizure due to friction resulting from sulfides generated by the lubricating oil and rubber during the high temperature rotation. The HYPRO Bearing structure has improved this issue.

Although furnished with copper ferroalloy HYPRO bearing which has better friction and wear-proof, there are still fine gaps at the upper opening of shaft bush and in the rubber oil cap beside the label. The lubricating oil is vital to the bearing system, yet these fine gaps are prone to let the lubricating oil slowly seep out of the system when evaporated because the bearing runs in high temperature and heavy friction. This results in shortened service life of the fan without reaching the expected lifespan, as well as the gradually increasing noise of metallic friction.

ADDA has launched a brand new Hypro PLUS structure to tackle with this issue, providing customers with a better choice of heat dissipation fans with longer lifespan, lower price in comparison with ball bearing ones, and lower noise.

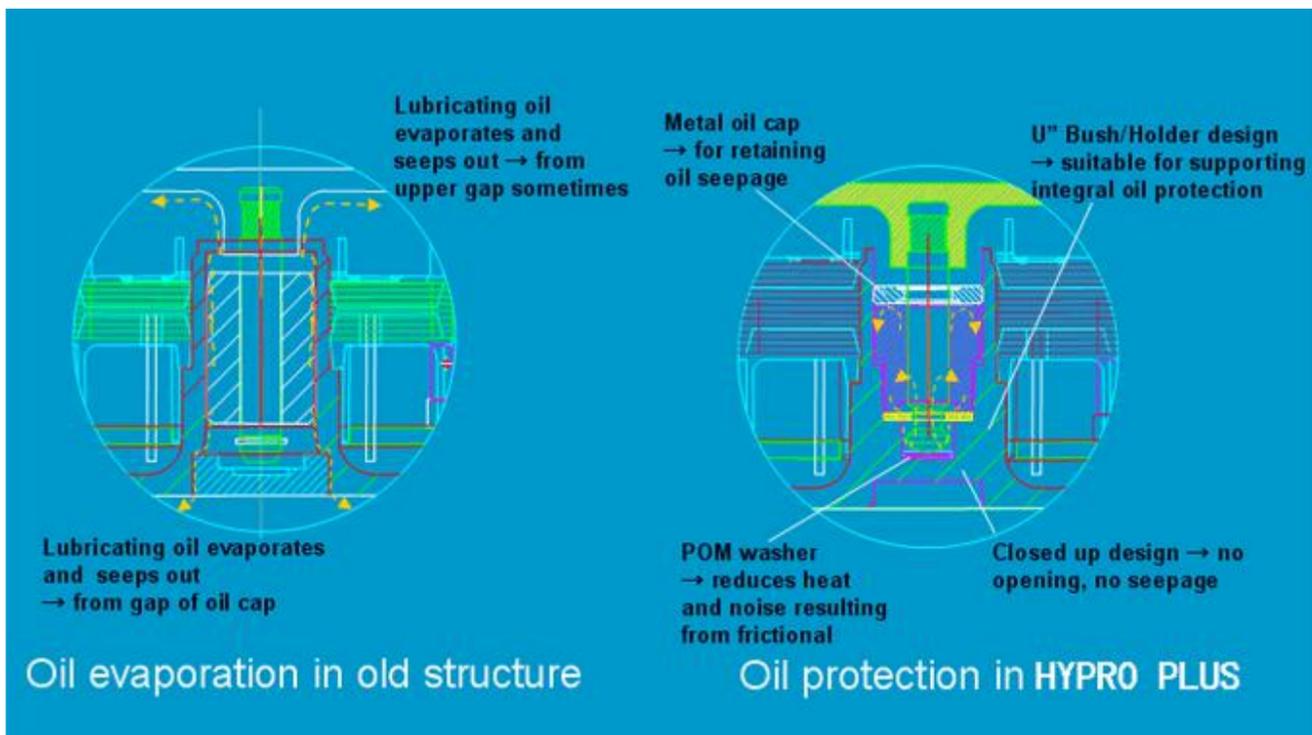
○ Hypro PLUS Structure



The innovative oil HYPRO PLUS protection system comprises long lifespan abrasion durable bearing and Closed-up single wear-washer design, together with U" Bushing/ Holder oil sealing outlet and inlet metal oil cap, eliminating seepage and evaporation of the lubricating oil and greatly enhanced oil protection and prolonged lubricant service time.

In the shaft, the closed up design structure of the wear resistant washer enabled floating magnet rail operation of fan blades and the integral oil protection design, which in turn results in substantially improved fan efficiency not only increasing the guaranteed lifespan but also greatly lowering the running noise which used to be gradually increasing due to the loss of lubricating oil.

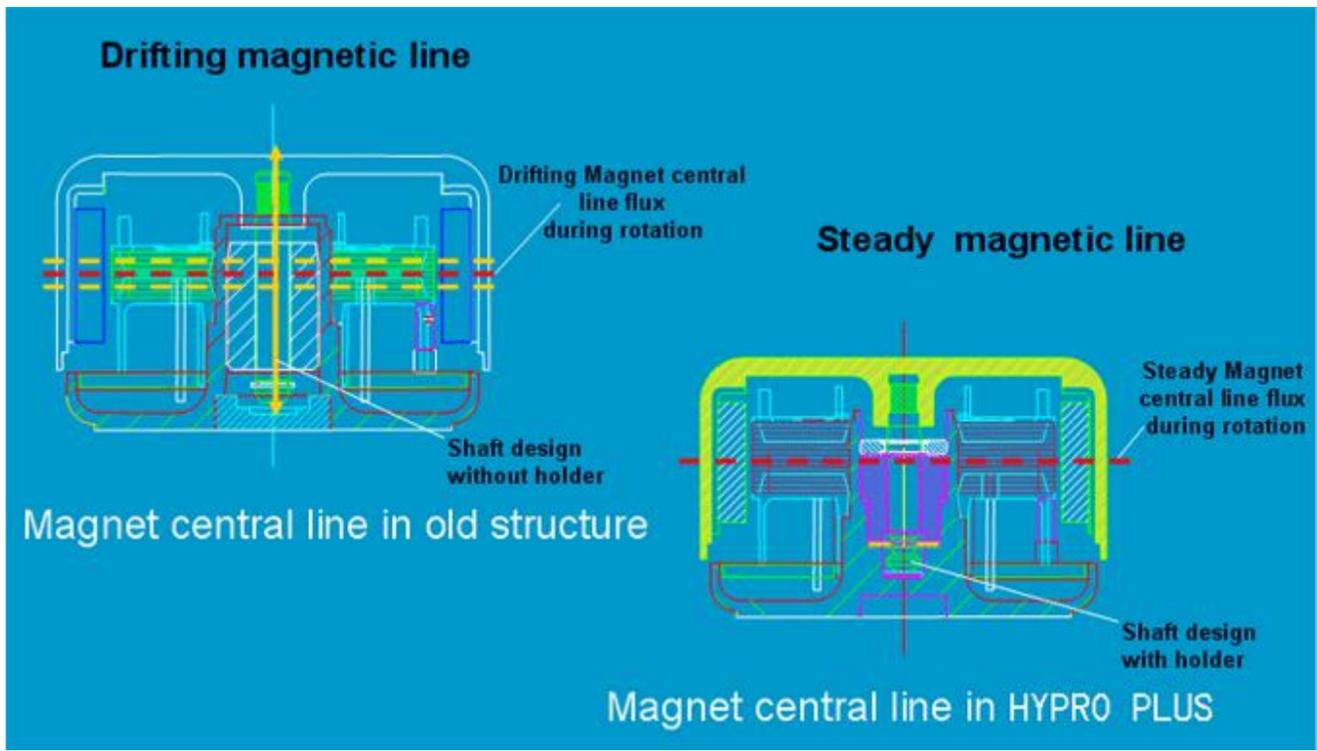
○ Oil protection - Comparison of oil protection



Under the high temperature and heavy friction rotation of the shaft, together with fine gaps on both ends of the double side structure design, the lubricating oil tends to evaporate and escape from the upper and lower ends and is difficult to remain in the bearing. This results in gradual diminishing of the lubricating oil therefore gradually increased noise and heat generation, so that the fan fails to fully/smoothly reach its expected lifespan.

Under the high temperature and heavy friction rotation of the shaft, fine gaps no longer exist in the innovative HyproPLUS structure and the lubricating oil no longer escapes from the upper and lower ends. Therefore the lubricating oil is substantially retained without evaporating and seeping, enabling the shaft to be lubricated properly with no gradual increase in friction noise, to run smoothly and successfully achieving the expected lifespan.

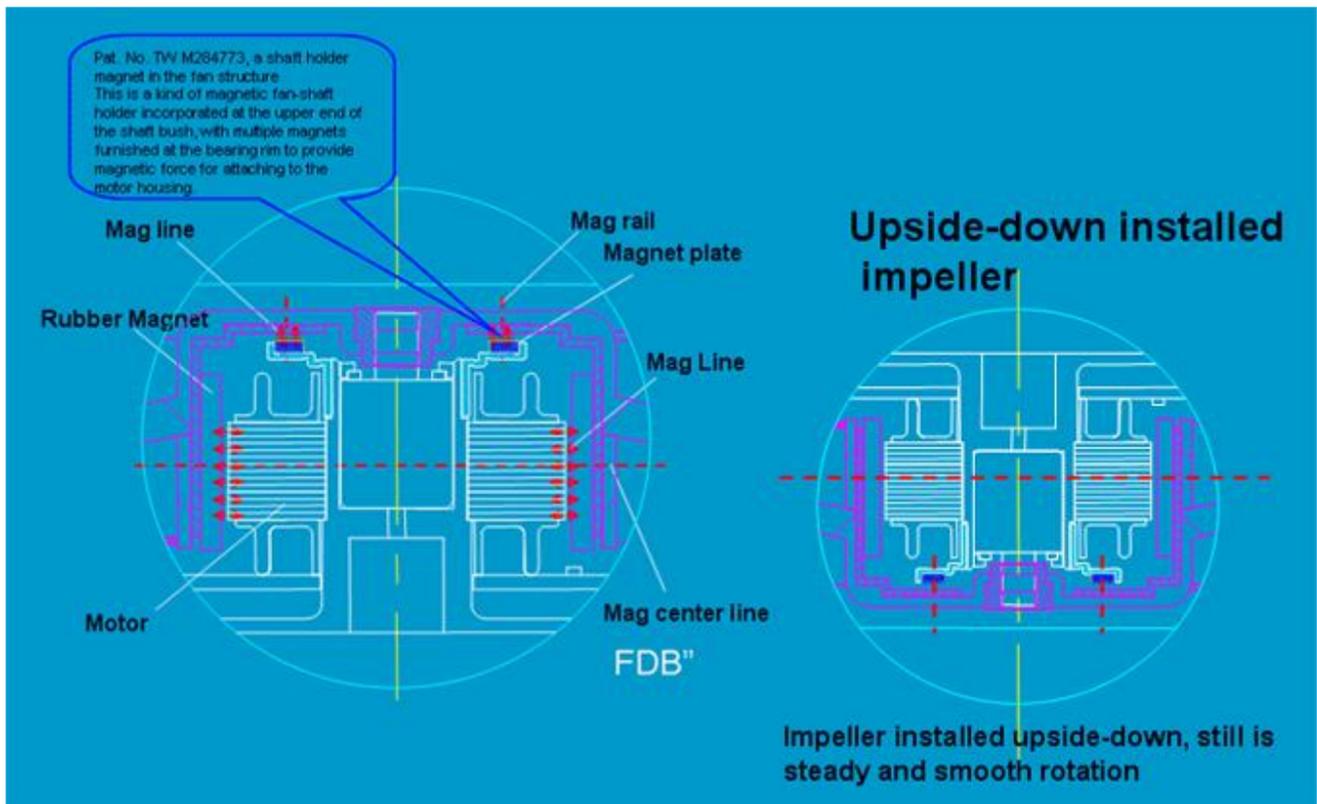
○ Magnet central line - Steady control of magnetic line



Any engineer with experience of using a fan knows that a good fan design depends on a magnet central line of magnetic flux to sustain the impeller assembly rotating naturally in a magnet levitation; this will enable high performances in power saving, less heat generation and lower noise. Therefore ADDA takes design and improvement of magnetic flux lines as crucial links in manufacturing ADDA fans.

The shaft rotates in an old structure without a sound support, therefore the magnet central line of magnetic flux is prone to drift up and down, resulting in losses in the rotating efficiency. The new design with Closed Up Design Structure offers sound support to the blade assembly to reach an optimized motor structure design.

○ Twin Mag-rail™ structure

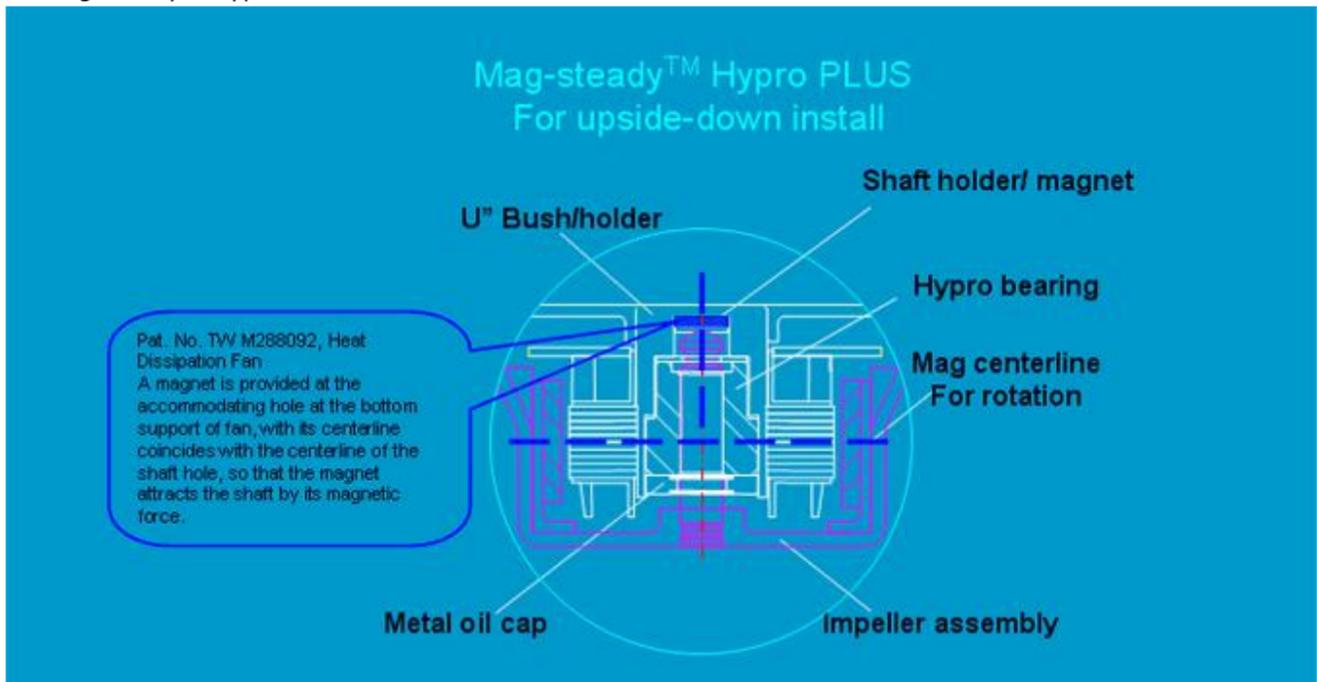


In a general structure, the windings of motor assembly continuously alter their polarities for pushing on the magnet, thus rotating the impeller with magnetic flux lines; the density of magnetic flux lines is the key for the magnitude of torque provided by the motor; the centerline of the flux lines is the main track in which the impeller rotates.

ADDA's innovative Twin Mag-rail™ structure with additional Magnet plate provides a secondary magnetic/rotation track to stabilize the spinning impeller and effectively resist unstable spin of NB caused by change of gravitational direction in the move which causes gravity that affects fan rotation, it also prevents displacement and collision of the impeller.

When ADDA's fan with innovative Twin Mag-rail™ structure is installed upside-down at the user end, the secondary magnetic/rotation track can still provide more balanced and stabilized rotation of the impeller, effectively resisting unstable spin of NB caused by change of gravitational direction in the move which causes gravity that affects fan rotation, and prevents displacement and/or collision of the impeller.

○ Mag-steady™ Hypro PLUS



Magnet central line is the major rotation track of impeller. Configuration of the Hypro PLUS structure can be adjusted while designed for upside-down installation in accordance with customer needs based on structural dimensions to comprise the newly developed Mag-Steady™ structure, which incorporates additional Shaft Holder/ Magnet provided at the shaft center and U-Bush/Holder for maintaining magnetic force, therefore providing better concentricity to the motor assembly.

Shaft Holder/Magnet provides impeller assembly with better adhesion/fixation to the magnetic rotation track, which enables the impeller assembly to have more balanced and better stabilized rotation, effectively preventing impeller displacement and collision while moving the NB.