Figure 1: Air chamber if the pneumatic comfort system. © 2012 Lantal

Brushless DC motors power air cushion systems.

Achieving the pinnacle of relaxation in aviation, Swiss company Lantal designed the air cushion system. This product supersedes the traditional foam supports with motor controlled pneumatic chambers. Small powerful maxon brushless flat motors (pancake motors) facilitate pressurising the sections with air.

International flights can be very arduous for travelers. Aircraft seats offering superior levels of comfort are therefore highly preferred. Lantal, a Swiss textile manufacturer, produce a pneumatic comfort system filled with air chambers. Pneumatic cushioning provides superior comfort levels in sleeping and sitting arrangements. It automatically senses the passenger's body shape and pneumatically adjusts the chambers to adapt to the different postures of the passenger. The softness of the cushion is independently controllable. This highly flexible system eliminates any pressure points.

The system has demonstrated effectiveness with over ten million flying hours over a three year period and on twenty seven aircraft. All Swiss International Air long distance business and first Class seats from 2009 have used the system. Recently many other carriers have also adopted the pneumatic system. Inbuilt massagers increase the relaxation levels even further for passengers. The air cushion system also saves costs because it is also up to 5kg lighter than standard foam cushions.

making the pressure perfect are maxon brushless motors.

Every airline air cushion unit is fitted with a maxon brushless DC motor. An electronically commutated (EC) 45mm flat motor powers a vane pump. Filling and adjusting the air chambers, each person can infinitely adjust from soft to firm settings. There are also adjustable lumbar supports that contain programmable

maxon motor
driven by precision

massage routines. Additionally a major benefit is that the pneumatic systems have a longer life than ordinary seats. The small brushless motors in the comfort system have 30 watt rated power weighing only 75 grams each which is a critical factor for airlines. maxon DC motors are used because of their power density and additionally for reliability and accuracy.

The comfort system is also sought after for very unique aircraft. Lantal are a supporter and official supplier of the Solar Impulse Project of Bertrand Piccard and André Borschberg.

Author: Anja Schütz ¦ © 2013 maxon motor ¦ Local edit for maxon motor Australia 19/03/13

Contact maxon motor Australia for further information +61 2 9476 4777

Application report: 2426 signs, 436 words, 6 figures

Figure 2: The air cushions, with individually adjustable firmness, offer high comfort for aircraft seat. © 2012 Lantal

Figure 3: Each aircraft seat with the Lantal air cushion system is equipped with a maxon EC45 flat motor. © 2012 maxon

Figure 4: The vane pump of the air cushion, with integrated motor. © 2012 Lantal

maxon motor
driven by precision

Figure 5: Replacing plastic foam with air cushions saves up to 5 kg of weight per seat. © 2012 Lantal

Figure 6: The exceptional comfort of the maintenance-free air cushions is retained throughout the life span of 6 to 8 years. © 2012 Lantal

For additional information, contact:

maxon motor Australia
Unit 4, 22 Leighton Place
Hornsby NSW 2077

Phone +61 2 9476 4777
Fax +61 2 9476 4866
Web www.maxonmotor.com.au

Lantal Textiles AG
Dorfgasse 5
Postfach 1330 CH-4901 Langenthal

Telephone +41 62 916 71 71
Fax +41 62 923 25 32
Web www.lantal.com

maxon motor
driven by precision