A big lift for the aerospace industry

Ever wondered what makes birds, planes and insects fly? Well then, the answer is “air around us”. It is the same air that makes aircrafts, missiles, satellites, and spacecrafts fly.

Today, the aerospace industry is one of the largest manufacturing industries in the world and the greatest contributor in developing contemporary manufacturing technologies and methods. Developing and manufacturing an aircraft is a very complex process. Large modern aircrafts may be designed in offices and engineering centers spread globally. Multiple production sites may also be involved, with various sections of aircraft being integrated finally.

It comes as no surprise that air compressors find several uses both in aerospace manufacturing and on aircrafts themselves. To provide some examples, compressed air is used in automatic tool changers and work holding devices in aero-manufacturing, breathing air systems and engine cranking in aircrafts etc.,

Indonesian Aerospace, a wholly owned Government sector of Indonesia, is engaged in manufacturing of CN 235 class Aircraft for civilian and military use. Air compressors find critical applications in the making of aircraft wings. The design of an aircraft is such that when it is in level flight, the lower part of the wings experiences tension and the upper part experiences compression. The oscillating / cyclic stresses termed as fatigue to which aircraft structures are subjected routinely are a great source of worry to aerospace engineers.

The fatigue life of a metal part can be improved greatly by shot peening. This is a process in which small metal balls are fired at target work material. The small metal balls impinge the target surface there by creating a permanent indentation that results in work-hardening of the metallic surface. The process creates beneficial compressive stresses on the metallic surface, thereby impeding crack formation and growth. It thus improves fatigue strength of the metallic surface.

Shot peening is a controlled surface treatment process that needs accurate control of ballast velocity and ballast size and hence compressed air is used as shot propellant. At Indonesian Aerospace, wing spars of aircrafts are subjected to shot peening after they are machined from aluminum blocks. This crucial operation improves the strength and enhances the durability of the wings. They also use compressed air to alleviate the bends caused due to very low slenderness ratio of wing spar.

All these applications required compressed air round the clock with consistent air flow and pressure. Elgi’s 250 kW air compressors are used for such critical applications at Indonesia Aerospace. Thus Elgi compressors “make flying safer for you”.

Disclaimer:
This e-mail and any attachment is intended only for the exclusive and confidential use of the addressee(s). If you are not the intended recipient, any use, interference with, disclosure or copying of this material is unauthorized and prohibited. If you have received this message in error, please notify the sender by return e-mail immediately and delete the message from your computer without making any copies. For further information, visit us at www.elgi.com. For any product related enquiries click here enquiry@elgi.com. Send us your feedback for our improvement. Click on this link to unsubscribe this mailer.