

Aircraft Engine Test Cell Work Platform for Maintenance of Engines

 nandan.co.in/case-study/aircraft-engine-test-cell-work-platform-for-maintenance-of-engines

The Challenges

Nandan GSE was approached by a USA based Aircraft engine test equipment Manufacturer for suitable solutions for performance checks, maintenance & repair of an aircraft engine used in long-haul to medium-sized and small aircrafts.

They were concerned about the Automated vertical parking system for a park at least 10 cars in little space.

Save time and effort by using automation and not doing it manually.

Client: Cenco International® (Safran Group)

Location: Nagpur Airport (MIHAN), Maharashtra

Product Class: Aircraft Engine Test Cell Work Platform (Test Engine Facility)

Type: Highly Customized

Nandan Impact

Solutions:

NGSE Accepted the challenge, we designed, constructed and commissioned new state-of-the-art engine test facility (Test Engine Cell) a 14 meter turnkey test facility for their Nagpur Airport (Maharashtra).

The test cell for aircraft jet engine is the equipment in which performance checks are conducted after maintenance of an engine, and checks the operating condition of each section, adjustment of each part before loading to the aircraft.

It is a 14 mtrs x 8 mtrs platform used in GE90 test cell to lift equipments and tools along with technicians/engineers to a working height of 5.5 mtrs and roller over capacity of 16 tones weight. Two identical scissor units are controlled by electro-servo hydraulic system to synchronize each other and lift the load without any deflection in structure. Unlike other platforms this has many safety features like anti-collision which prevent any crush damage to the engine on thrust stand and any toe pinch hazard of any personnel. This is driven by a 100 HP motor up function and 3 Hp for down (to save power). The WP is tested for 125% lifting capacity (6.85T). Servo proportional valve, emergency stop relay, intrinsic safety barrier, PLC logic, intrinsic safe components & sensors (Italian and Germany made) are all highlights. The lift is built to ATEX standards (<http://www.hse.gov.uk/fireandexplosion/atex.htm>), explosive atmosphere, and is placed in a zone Class I, Division 1 area as per ATEX rating.

This is one of the largest in the jet cell family, the test cell is capable of testing turbofan engines ranging from the GE90-115B to CFM56 thrust class designed by our engineering team having long history of design, develop & manufacturing of innovative customized hydraulic solutions for the industry.

Key Results

- Lifting Such a big load in just 120 sec(full height)
- Platform of 14mtrs x 8mtrs capable of testing long-haul aircraft engines
- Keeping in mind of safety and environment regulations into design, development, manufacturing and distribution processes.