CASE STUDY 2 – (Leak Test of Automotive Al. Pump cover)

Customer : Automotive pump parts supplier.

Part Name : Automotive Aluminum pump covers.

Machine Supplied : Auto Dry Leak Test Two stations machine for pump cover.

Customer Requirements :

1. Dry Air Leak testing of components to ensure its performance specifications.
2. Two number of part varieties to be tested on a single machine with high productivity.
3. Quick fixture changeover.
4. Full auto testing cycle except manual loading/unloading of test parts.
5. Auto acceptance punch mark on all leak test passed components.
6. Test result records to be stored on PC.

Test Criteria : Test Pressure - 4 Bar & Leak Rate – 0.1 scc/min.

Our Solution :

1. Test criteria was very stringent. So our 'SHANTI' brand Differential pressure decay measurement type leak tester was used for this application.
2. Simple & Quick fixture changeover was given to accommodate both varieties in a single machine.
3. To fulfill high productivity demand, the machine was designed as two test stations machine with two separate leak testers & common PLC controller.
4. Except manual job loading ,clamping & sealing with pneumatic cylinders and leak testing was carried out automatically . Upon successful completion of the leak test, test part gets stamped with acceptance mark & the tooling clamps & seals were automatically retracted .Then part was removed manually.
5. Our leak tester was loaded with self designed, user friendly data logging software which enables our customer to store all his test results data on PC.
6. To achieve such stringent test criteria , we have carried out leak testing in a controlled atmosphere which was very essential to reduce the temperature variation effects on leak test results.
7. Cycle time achieved was nearly 1 min. But due to double station machine , testing rate was doubled.


Leak Test
Equipment
Station A
Station B