

CASE STUDY 5 - (Leak Test of Flywheel Housings)

Customer : Well-known automotive parts supplier .

Part Name : Flywheel Housing

Machine Supplied : Semi auto Leak Test machine for Flywheel Housings.

Customer Requirements :

1. Dry Air Leak testing of flywheel housing to ensure its performance specifications.
2. **Eighteen number of part varieties** to be tested on single machine.
3. Electric crane to load test job on pallet.
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 office PC.
7. Data logging system should be compatible for IOT network.
8. Two number of cavities to be tested.

Test Criteria : Test Pressure -0.35 Bar & Leak Rate – 5 scc/min.

. Test Volume - Approximate 3000 ml.

Our Solution :

1. Our 'SHANTI' brand Differential pressure decay measurement type leak tester was used for this application.
2. Simple fixture changeover was given to accommodate all eighteen varieties in a single machine. In Fixture changeover only job resting sealing plate have to be changed , which takes place in less than 15 minutes.
3. The machine was designed with reciprocating dual job resting pallets by pneumatic cylinder so as when one pallet was at test station , other one was at job load/unload station. So operator can load/unload test job at one end simultaneously with conducting leak test at test station. So there was no downtime for load/unload of test jobs.
4. Except manual job loading with the help of provided crane ,the loaded job was automatically moved, clamped , sealed & leak tested. Upon successful completion of the test, test part gets stamped with acceptance mark & the tooling clamps & seals were automatically retracted & pallet moved to load/unload station, where test part was removed manually with the help of crane. Automation was controlled through PLC.
5. Our leak tester was loaded with self designed, user friendly data logging software which enables our customer to store all leak test results data in PC.
6. Customer's IOT based requirements were fulfilled.

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