CASE STUDY 4 - (Leak Test of Engine Cylinder Block)

Customer : Reputed an Engine component supplier .

Part Name : Engine three Cylinder Block – CI casting.

Machine Supplied : Two stations Fully Auto Leak Test machine for Cylinder Block .

Customer Requirements :

1. Dry Air Leak testing of cylinder block to ensure its performance specifications.
2. Single variant to be tested for water passage , Oil Gallery with continuity & Whole body leak test.
3. Full auto leak test cycle consists of load/unload powerized conveyor , Rejection powerized conveyor & leak test of water jacket , Oil gallery with continuity & Block body in a single machine.
4. Auto acceptance punch mark on all leak test passed components.

Test Criteria : 1. Water Jkt. – 6.5 scc/min @ Pr. 2 Bar.
. 2. Oil Gallery – 6.5 scc/min @ Pr. 5 Bar.
. 3. Body --------- 10scc/min @ Pr.1.5 Bar.

Our Solution :

1. As per customer demand 'Cosmo' brand - LSR700 Differential pressure decay measurement type leak tester was used for this application.
2.The machine was designed with two stations. At first station job was tested for water jkt. & Oil gallery with its continuity & at second station it was tested for its body leak. These leak tests were conducted one by one with single leak tester. The testing time can be reduced by use of two different leak testers , separate for each station so that simultaneous testing can be carried out at both stations.
3. Test job was automatically moved to test stations over powerized conveyor, get clamped , sealed & leak tested. Upon successful completion of each test, test part gets stamped with acceptance mark. If both tests get passed , test job moved to output conveyor, otherwise it moved to rejection conveyor. Automation was controlled through PLC.
4. Leak test data can be stored through USB port or through Ethernet port.
5 . The machine is running efficiently since last 5 years.

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