

ABSTRACT

Split-half crankshaft bearing is one of the mounted components on the engine, it's function are friction, heat and wear reducing (between the cylinders block to the crankshaft, rotation of the weight bearing crankshaft, withstand radial load, push the load and keep the tolerance firmness). There is a problem that was discovered after engine the assembly process of xenia, avanza and cayla car. The case the split half crankshaft bearing fall during members of the handling team so completed the installation split-half crankshaft bearing. The split-half crankshaft bearing was found one day after the engine assembly process, when it goes through the motoring bench process a day later discovered over motor engine noise standard. I indicates no good engine.

With many problems of errors that can be generated,the author has made safety system but now its not fully automated. The works of the system should be improved. Therefore it is necessary an otomation (system of false/security automated) indicating that the fraction of split-half crankshaft bearing actually is properly installed. The principle of operation needed that there is a guarantee system a five split half crankshaft bearings properly installed to the cylinder block main bearing.

Pneumatic is a system that apply air pressure as its force. With the requirement of high insurance guarantee then used concept of pneumatic system to repair the existing system. The addition proximity sensor detect the properly installed split-half crankshaft bearing on the main bearing cylinder block. The concept of this series of training kits pokayoke system guarantees the properly installation of split-half bearing crankshaft. There is five pcs every the work process takes place and there is a safety system for team member/operator. PT. Astra Daihatsu Motor has a high quality standart for every single product, therefor it can be concluded that the company improvement is expected to increase the company quality standard.

Keywords: *Split-Half Bearing Crankshaft, Pneumatic, Proximity Sensors, Cylinder Block, Pokayoke System*

INTISARI

Split-half bearing crankshaft merupakan salah satu komponen yang dipasang pada *engine* yang berfungsi untuk mengurangi gesekan, panas dan aus antara *cylinder block* dengan *crankshaft*, menahan beban putaran *crankshaft*, menahan *radial load*, *thrust load* dan menjaga toleransi kekencangan. Terdapat suatu masalah yang ditemukan setelah proses perakitan (*assembly*) *engine* mobil xenia, avanza dan cayla tersebut. Kasusny adalah *split-half bearing crankshaft* jatuh saat *handling team member* selesai proses *install split-half bearing crankshaft* menggunakan *jig install*. *Split-half bearing crankshaft* ini ditemukan sehari setelah proses *assembly engine* tersebut, saat melalui proses *motoring bench* sehari setelahnya ditemukan *engine noise* melebihi *standart*, maka mengindikasikan *engine* tersebut NG (*Noot Good*).

Dengan banyaknya masalah-masalah kesalahan yang bisa ditimbulkan, penulis sudah membuat *safety system stoper* namun belum sepenuhnya otomatis sehingga diperlukan pembaruan kedepannya pada sistem kerjanya. Oleh karena itu dibutuhkan sistem otomatis *pokayoke/anti salah/safety system* untuk menjamin bahwa *split-half bearing crankshaft* benar-benar terpasang sesuai standar. Prinsip yang dibutuhkan adalah adanya sistem kerja yang dapat menjamin terpasangnya *split-half crankshaft bearing* yang berjumlah lima pcs di area *main bearing*.

Pneumatic adalah sebuah sistem penggerak yang menggunakan tekanan udara sebagai tenaga penggeraknya. Dengan kebutuhan penjaminan pemasangan yang tinggi maka digunakan konsep *pneumatic system* untuk *improvemenet* sistem yang ada. Penambahan *proximity sensor* untuk mendeteksi terpasangnya *split-half bearing crankshaft* pada *main bearing cylinder block*. Konsep rangkaian *training kit pokayoke system* ini menjamin pemasangan *split-half bearing crankshaft* lima pcs setiap kali proses kerja berlangsung serta terdapat *safety system* untuk *team member/operator*. PT. Astra Daihatsu Motor mempunyai *quality standart* tinggi untuk produk yang dihasilkan, dapat disimpulkan *improvement system* kerja ini diharapkan dapat meningkatkan *quality standart* perusahaan.

Kata Kunci: *Split-Half Bearing Crankshaft, Pneumatic, Proximity Sensors, Cylinder Block, Pokayoke System*