



Managerial Effectiveness through Systems

‘AOS’

the “Auto tool wear Offset-correction System”

to achieve

Zero Dimensional Defect Production

on

a CNC Turning Center

by

DSS Systems and Software Technologies Pvt. Ltd.



Zero Defect Machining

Automatic immediate and accurate execution of the Tool wear-offset compensation identified during the in-process quality check of the parts being machined on the CNC Turning Machines would practically eliminate Rejections due to out-of-specs dimensional defects.

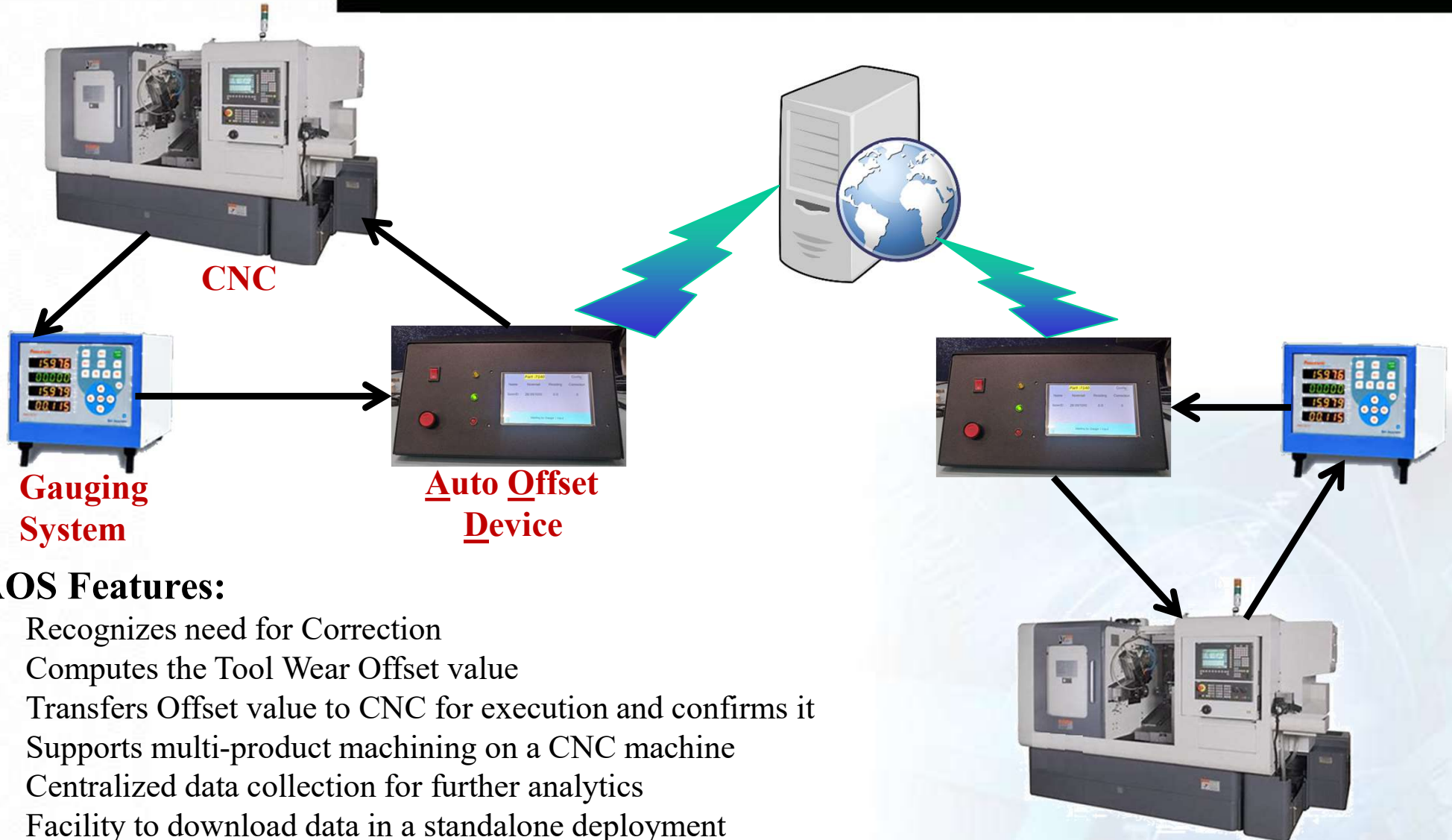
➤ We are pleased to introduce our “**Auto-Offset-Device (AOD)**” that works with the CNC Turning Machines powered by the current generation of the Fanuc Controllers. Schematic below shows the connectivity and Data Flow with both Gauges and the CNC Machine.

No change in the Controller’s Ladder Program is required.



AOS

(A Plug and Play System)



AOS Features:

- Recognizes need for Correction
- Computes the Tool Wear Offset value
- Transfers Offset value to CNC for execution and confirms it
- Supports multi-product machining on a CNC machine
- Centralized data collection for further analytics
- Facility to download data in a standalone deployment
- No change in the ladder program and no dependency on CNC Supplier



Live Picture of a working Auto Offset System





AOD Box with Wireless K/B & Mouse



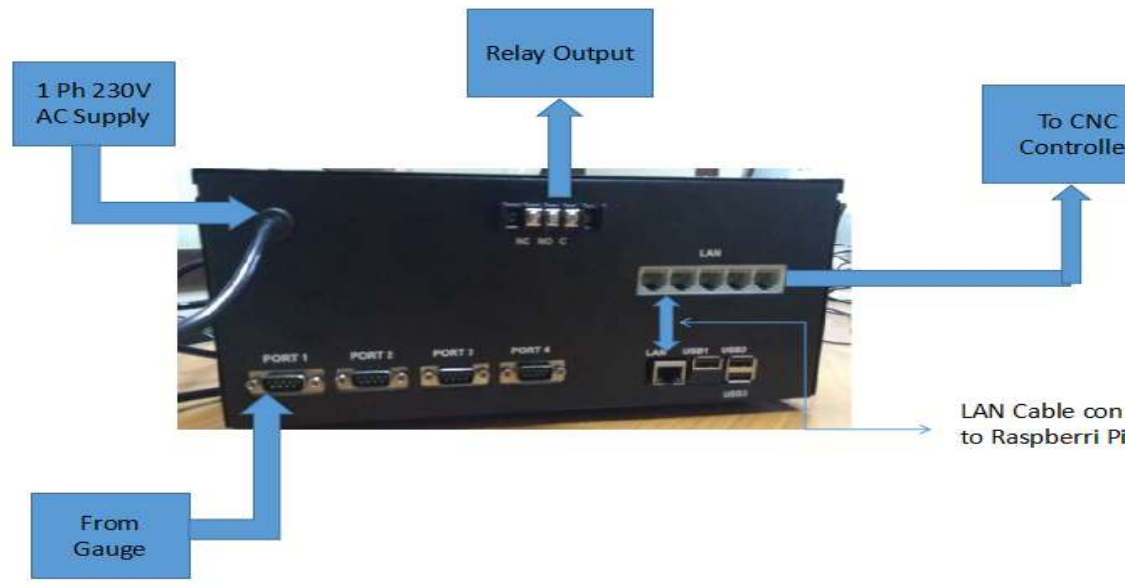


AOD Box Front Panel





AOD Box Back Panel





AOS Customers

- **Mahindra CIE**
- **Minda Corporation**
- **SPM Auto**
- **Advik Hi-Tech**
- **Zanvar Group**
- **Eibenstock**
- **Devgiri Forgings**
- **Sangkaj Group**
- **Varroc Engineering**
- **Highway Industries**
- **Avtec**
- **Uma Shakti**
- **Mantri Metallics**
- **Sansera Engineering**
- **Sona Automotives**
- **Punch Ratna Fasteners**
- **ACR Machining**
- **Many more...**



Actual Data Provided by a Customer

*Cum. Rejection Quantity of 1374, came down to 200 (extrapolated)
i.e. reduction by **85.44%***

BIG END DIAMETER SIZE AT FINAL INSPECTION		
LINE	CONNECTING ROD	
MACHINE	SVH-604	
DIAMETER	38 MM	
MODEL	BACR1079/81/15	
GAUGE USED	AUTO SIZE CORRECTION UNIT	
TRIAL BATCH STATUS		
BEFORE AUTO SIZE CORRECTION UNIT INSTALLATION (OCT-21)		
TOTAL INSPECTED QTY	NG QTY	PPM
70134	1374	19591
AFTER AUTO SIZE CORRECTION UNIT INSTALLATION (DEC-21)		
TOTAL INSPECTED QTY	NG QTY	PPM
8400	24	2857



AOS Feature List

- Multiple parts can be defined along with their limits and nominal value
- AOS automatically computes Tool wear offset compensation to be sent to CNC based on the gauge measurement data (sent over serial port) and the part's limits & nominal value. Computed value is sent to CNC directly over LAN with no need to stop machine or change mode in machine to apply the tool wear offset compensation. Correction can be sent to any axis i.e. X or Y
- Multiple parameter for a part can be measured and monitored for auto-tool wear offset compensation.
- No need for change in CNC part machining or Ladder program to enable auto-tool wear offset compensation setting
- Facility available to lock CNC in case measured value is out of specification limit defined for the parameter.
- Configurable setting to enforce 100% inspection if required.
- Configurable setting to monitor Tool INSERT change based on part produced count.
- Configurable setting to ensure Machining program currently in-use on CNC is corresponding to the Part active on AOS
- Optionally can accept component serial number.
- Facility available to store AOS data on central server for further analysis
- Last 30 days measurement data can be downloaded as CSV file on USB pen drive.
- In-built UPS to ensure graceful shutdown of the system to avoid corruption to the OS.



Our Other Offerings for the Engineering Industry

- **ProQMS → Online SPC System** CTQ data collection & Monitoring with on line Display of Control Charts, Cp/Cpk...
Linked with AOS
- **Calibration & Tool Life Monitoring System**
- **ProMIS → Online Production Monitoring System** Online data collection, Analysis and display of Count, Machine Down time, Rejection, OEE Computation, Dashboard Display in the Shop.
- **ProTrac → End-to-end Traceability.**
- **SOP Display and Line Monitoring**
- **Machine Health Availability**
- **Many More**



Introducing DSS

Prominent Milestones

- **1976: DSS founded:**
 - ❖ **Information Systems Consulting**
 - ❖ **Customized S/W Applications**
 - ❖ **Products Re-engineering, Implementation & Migration**
 - ❖ **Maintenance & Support**
- **1980: J.V. operation in Bahrain**
- **1983: DSRF: Recognized Post Graduate Institute of the Pune University**
- **1999: UK Subsidiary set up**
 - ISO 9000: 1994 Certification**
- **2000: USA Subsidiary**
- **2003: SEI CMM Level 4 Assessment; ISO 9001:2000 Certification**
- **2008: Start of operations in North Africa**
- **2015: Focus on Software Products**



Service Offerings

- Software Development services encompassing all stages of the “Life Cycle” for
 - ❖ Customized Software Development
 - ❖ Product Development & Re-engineering
 - ❖ Maintenance of Products & Application Systems
- Business Process Management Consulting
- Integrated solution for Machine and Gauges Data Capture with analysis for manufacturing industry



Thank You