



## What Are The Current Industry Issues & How Can We Help?

Within all industries there are thousands of control valves that have operational/efficiency issues that are causing the end user unexpected shutdowns or profit reductions. Some of the main examples of these issues are as follows:-

- Actuator failures
- Valve trim failures
- Instrumentation Issues
- Calibration anomalies
- And many more

Score's Control Valve experts are available to perform either reactive or preventative diagnostics on all control valve types, irrespective of their manufacturer. Utilising the V-Scan system, Score can assist operators in increasing their production levels and profit margins.

The diagnostic tool will provide detailed analysis of the valves performance and highlight any issues that are restricting the valves from performing at their full potential. Score's fleet of highly trained offshore technicians are available 24/7, 365 days a year to assist with unexpected issues that are faced with control valves.

The graphs that are generated during the diagnostics campaigns are followed up by formal engineering reports that are created by our Valve Diagnostic Engineers to ensure that a high competence is maintained. Within this report will be a full breakdown of the following:-

- Valve Details
- Pre-Diagnostic Test Results (with appropriate graphs)
- Fault Analysis
- Post-Repair Test Results (with appropriate graphs)
- Conclusions & Recommendations

Score have the capabilities of using both the V-Scan unit and various manufacturers' specific diagnostic tools which can communicate with all communication protocols.



## Advantages of V-Scan Diagnostics

Whilst more than 60 percent of installed control valves have performance problems, many can be resolved without the need for removal from the production line. V-Scan provides a non-intrusive diagnostic tool that can be used as part of a condition based monitoring programme. This can assist in developing a detailed scope for pending shutdowns and will provide clients with an efficient and cost effective way of determining what repairs are actually required.

The V-Scan system was developed to operate independently of all manufacturers in order to provide unbiased and efficient results. It is a system that generates reliable and easy to interpret results, in the form of concise reports, whether it is being used in-house or on site. It is also flexible enough to allow for non-generic tests as required for industry critical applications.

## The Benefits of Using Score Group Limited

- World leader in independent control valve engineering
- Extensive experience in shutdown planning using V-Scan
- More than 30 years of experience in valve and actuator technology, design, repair and problem solving. V-Scan
- Used within various industries to complete diagnostic analysis of critical control valves
- Specialist engineers available worldwide with the backing of an employee base of over 1800
- Independent, privately owned company
- Able to provide complete diagnostic strategies written specifically for each client

## The Benefits of Using V-Scan

- Reduces downtime
- Fault finding within critical control valves
- Shutdown planning
- No need to reduce valves from line
- Significant time and cost savings can be achieved
- Implementation of maintenance strategy / benchmarking of control valves
- Carry out in line advanced diagnostics of any control valve products
- Intrinsically safe and supports all Hart and Foundation Fieldbus devices

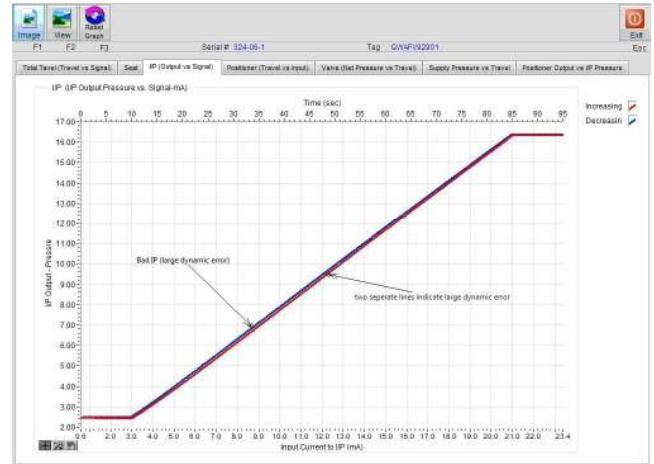


## Score Control Valve Diagnostics Capabilities

The offered V-Scan™ Control Valve Diagnostics Tool introduces and offers a wide range of diagnostic capabilities. The tool can be used on valves both in-service (isolated), or out of service pre and post repair. Full diagnostics is conducted on the assembly and can identify some common problems as follows:-

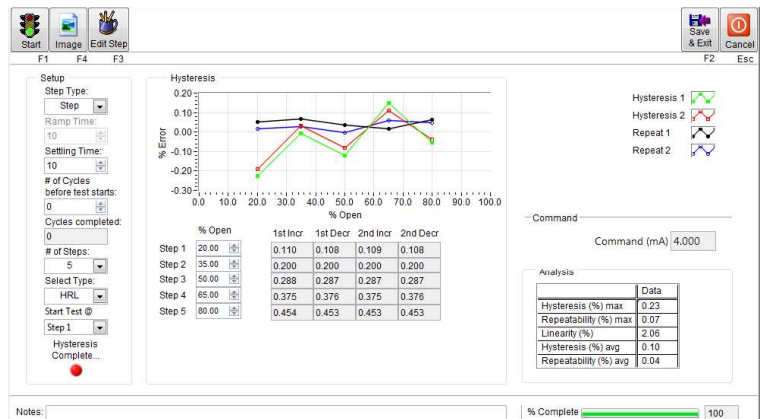
- Leaks from Actuators
- Total Valve Friction
- Miss-Alignment of the Valve Plug / Seat
- Seat Loading
- Tubing and Fitting Issues
- Instrumentation calibration anomalies
- I/P Convertor failures (example to the right)
- Regulator Failures
- And many more

The diagnostic tool will create a digital valve footprint using real-time data which can be used to determine whether the performance of an assembly is deteriorating over time. This can then lead to enhanced maintenance strategies and targets for predictive / preventative maintenance.



The tool creates the digital valve footprint and trend using multiple graphs and data. These tests include the following:-

- Calibration
- Positioner Tuning
- Profile (Ramp Test)
- Sensitivity
- Resolution
- Multi-Step
- Step Response
- Stroke Speed
- Hysteresis (example to the right)
- I/P Hysteresis
- Deadband
- Frequency Response



## Case Study – Australian LNG Site

It was identified by our client that 68 control valves were required to be removed from line and overhauled. Prior to removing the valves from line, Score attended site and completed pre-diagnostic testing which highlighted that only 2 valves were to be re-worked at Score. A full breakdown can be seen to the right.

With completing pre-diagnostics; Score were able to provide the customer significant cost savings due to lifting, transportation, overhaul and spares procurement not being required.

For any further details relating to Control Valve Diagnostics; please contact: [ControlValveSupportTeam@score-group.com](mailto:ControlValveSupportTeam@score-group.com)

