

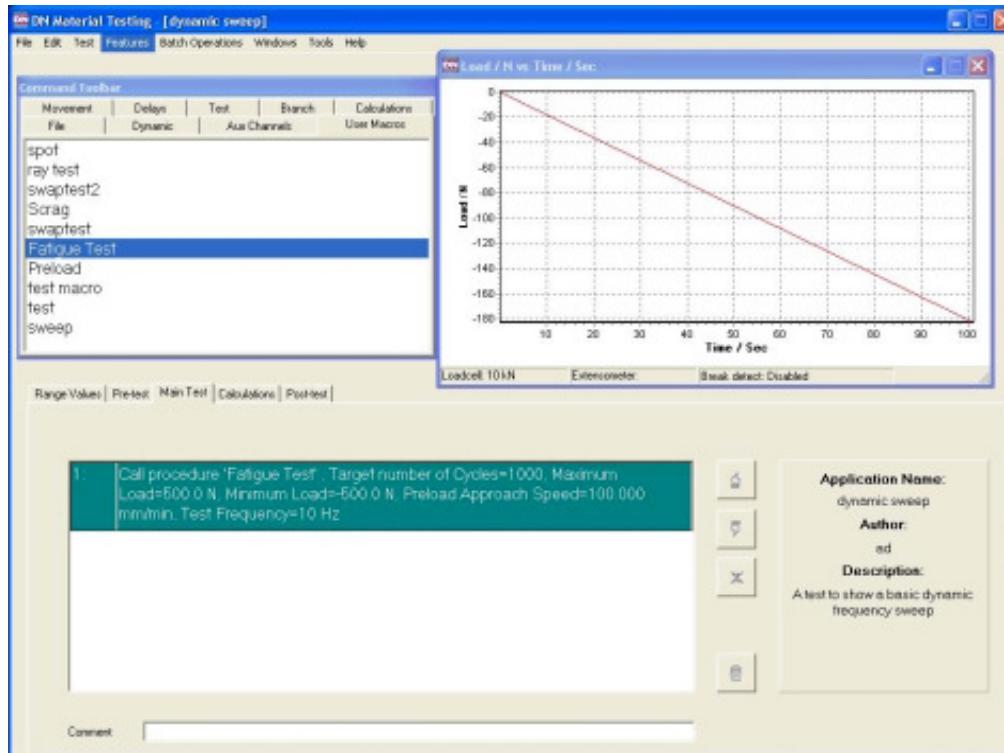
COMPACT - Servo-Hydraulic Control and Analysis Software

A versatile and easy to use DN software package to enable machine control functions, peripheral device control and integration, static and dynamic testing, real time calculations, statistical process control and multi-axis support.

Key Features

- Sequence programmable and software configurable
- Continuous real time adaptive control eliminating tuning, even for highly non-linear specimens in load control
- Real time calculation of derived parameters e.g. dynamic stiffness, loss angle, tan delta
- Advanced adaptive control based on derived parameters (i.e. feedback from derived parameters)
- Displacement control - periodic waveforms
- Load control - periodic waveforms
- Actuator frequencies up to 1000Hz
- Compact Controller sampling frequency up to 25 KHz
- Compact Controller output resolution 24 bit
- Remote browser viewing
- Windows XP Pro / 2000 compatible
- HTML Help

Machine and Test Definitions	Facilities are provided to define the following: <ul style="list-style-type: none">• Transducer ranges• Measurement units• Test documentation references• Automatic facilities (e.g. integration with automatic handling systems)• Test procedure• Calculations• Format of test screen display
Test Phase	The test is performed in accordance with the test program defined in the machine and test definitions section. The test conditions are continuously monitored and the selected parameters displayed in graphical form.
Analysis	Results may be displayed, printed or plotted either graphically or numerically. Results may also be sent to other software packages for additional processing. The software is designed for operation from an IBM compatible PC, which, can be supplied with the software pre-loaded or supplied by the customer. Specification available on request. No manual controls or displays are provided.
Control Facilities	The control software provides full direct proportional servo control of the system displacement and utilises the intelligence of the computer system to control all other parameters. This technique eliminates the need for control loop gain adjustments and ensures precise control, even when specimen stiffness in non-linear or changes during a test. The user-friendly language developed and used, facilitates the preparation of a wide range of test procedures, which can be saved and recalled from file. The software is fully menu driven and supported by comprehensive on screen HTML instructions. A selection of standard test waveforms are available for machine control (sine, triangular, square and saw-tooth).



Modes of Test

Tension, compression, through zero loading, fatigue and impact. All control and user input is from the computer keyboard.

Test Signal Generation and Machine Control

All via test procedure programs prepared on-screen by the user, using the user-friendly programming language, or from pre-defined user macros.

Supervision

Monitors feedback signals, provides real time displays of both primary and derived parameters during the test and saves the data for post-test analysis.

Calculations

Calculations may be carried out on stored data or in real time to modify the test procedure.

The software enables the following to be carried out:

- Static Testing
- Dynamic testing using area method analysis (DIN / BS techniques)
- Dynamic testing using Fourier transform analysis
- Fatigue testing with block programmed sequences in load or displacement control,
- Fully programmable test sequences
- Display of graphs and results
- Printing of results

- Statistical analysis of batch test results, including:
 - Mean
 - Median
 - Standard Deviation
 - Maximum
 - Minimum
 - Upper confidence limit
 - Lower confidence limit
 - Coefficient of variant
 - Exporting of results in CSV format to SPC or spreadsheet packages via disk transfer
 - Pass / Fail test limits
- Youngs Modulus
- Secant Modulus
- Area under the curve / energy per cycle or strain energy
- Phase Angle
- Dynamic Stiffness
- Tan Delta
- Average Load
- Load at yield, peak load, end of test
- Displacement at yield, peak load, end of test, given load
- Cycles to failure
- Programmable calculations

Note: The above is a précis of available calculations

Both on- screen and automatic calculation procedures are included as standard. Graphical details and tabulated results can be downloaded to a wide range of printers and plotters.

All results may be saved in ASCII format and therefore suitable for export to available spreadsheets, databases and SPC packages .

Graphs available in linear or logarithmic scales, dual and user defined

Ability to work in Load Units of

N, DaN, g, kg, kPa, MPa, GPa, lb, kip, N/mm
Alternative torque units are available

Displacement Units of

mm, %, inches

Diagnostics and Adjustments

Run-time display of hydraulic system faults Semi-automatic tuning of actuator dynamic response
Automatic iterative tuning of dynamic response

Real Time Calculations

Real Time calculation is useful for dynamic fatigue and endurance testing. It allows the user to view the evolution of a derived (calculated) parameter while the test is progressing. A menu allows the displayed parameters to be viewed. The non-selected displays continue to be updated and can be re-selected at any time.

SPC

Statistical Process Control is a real time SPC package useful for production or QA testing.

Miscellaneous features

"Fast Tune" for dynamic testing of highly non-linear components in load control. Target test conditions are normally achieved in 3 to 5 cycles.

"Restart" provides the facility to restart a fatigue / endurance test after an interruption, either power failure or operator intervention.

Foreign language support is available.

Test End Limits may be applied to derived (calculated) parameters, which may be used for end of test criteria.

