PRODUCT SPOTLIGHT

LC-MS

Beyond possibilities

Intelligent system operation with the Vanquish Neo UHPLC system User Interface

Figure 1. The Vanquish User Interface touch screen can be used for at-system monitoring and operation.

The Thermo Scientific™ Vanquish™ Neo UHPLC system delivers uncompromised results to both novice and expert users of nano-, capillary-, and micro-flow LC-MS. An intuitive user interface and intelligent system control help make Vanquish Neo system the most user-friendly low-flow UHPLC ever built. The Vanquish User Interface (VUI) offers a broad range of features including remote instrument status monitoring and control, scripts for automated and standardized instrument processes, guided workflow setup and instrument maintenance, and multi-language support. All VUI features are available independent of any external software or PC connection.

Instrument control and system status monitoring

To ensure 24/7 productivity, the VUI is accessible at the instrument through either the touch screen or remotely, using either a direct network connection or indirectly through the instrument PC, depending on IT requirements. Both walk-up and remote system control utilize the VUI for enhanced ease-of-use. The user interface is organized into five intuitive panels to eliminate time spent searching for information or instrument commands. It also conveniently displays the system status and current operating parameters such as flow rate, pump pressure, and temperature for the autosampler and optional column compartment in the home panel. For monitoring system performance, a log of all system events and errors is found in the notifications panel.

Module parameters are settable directly from the home screen by clicking on the relevant module. For example, selecting the pump module provides options for starting pump flow, changing flow rate, and selecting solvent composition (Figure 3).

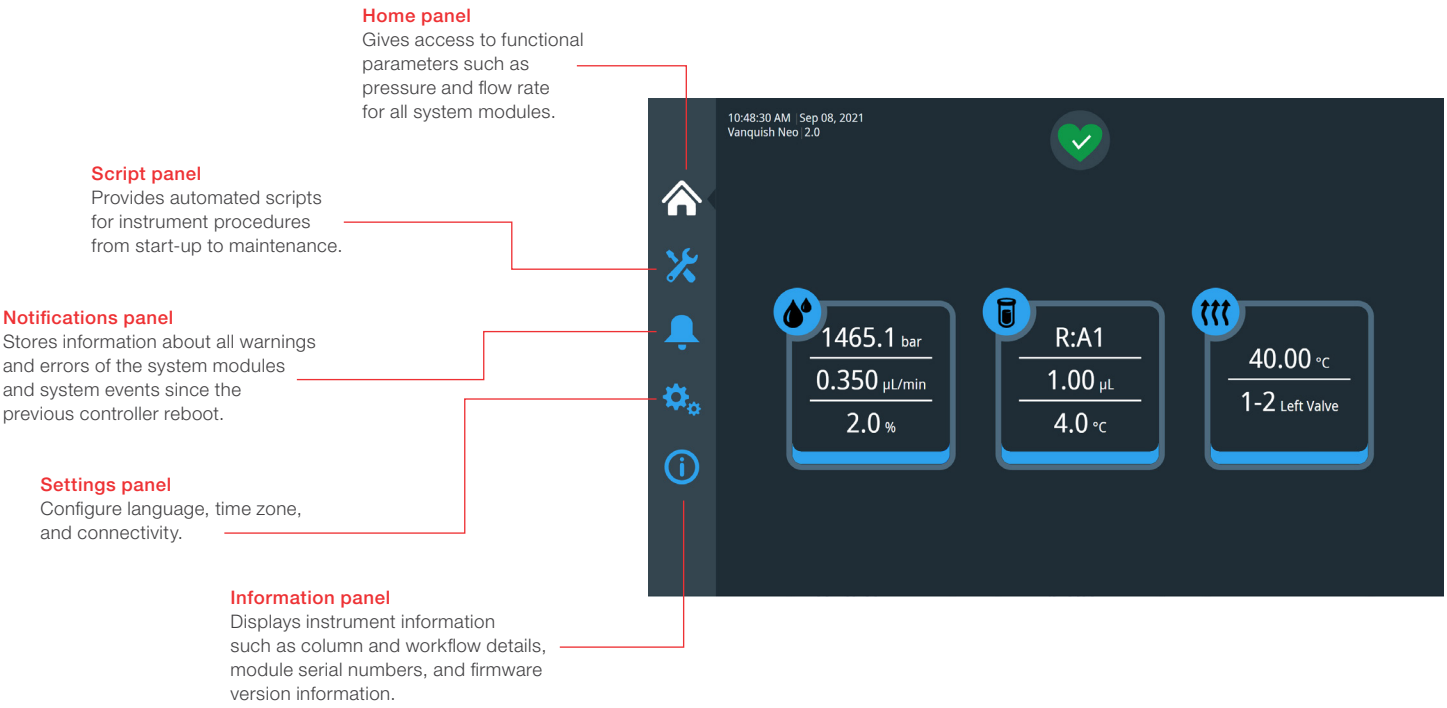

Figure 2. The Vanquish User Interface displays key instrument parameters and has five intuitive panels for simple navigation.

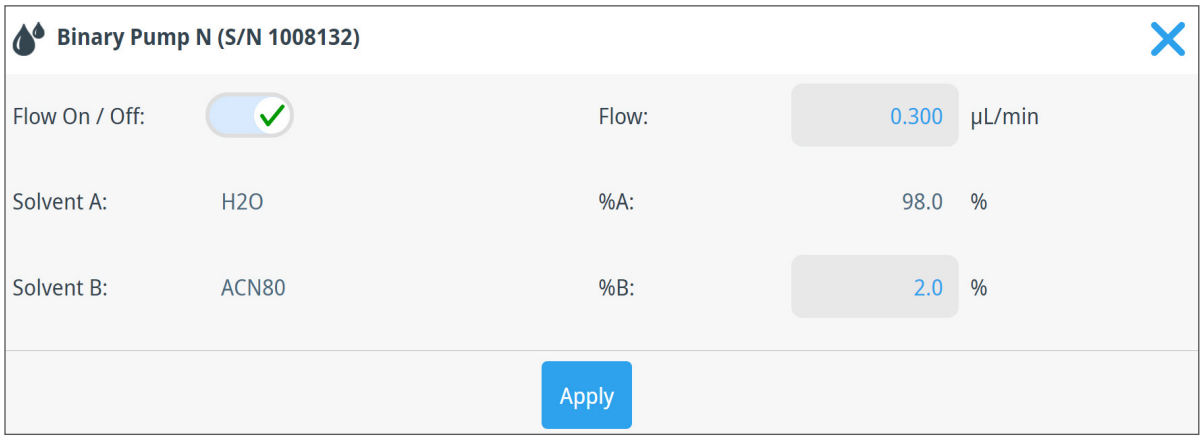

Figure 3. The pump control panel allows editing of relevant pump parameters.

Vanquish User Interface scripts

VUI scripts boost your productivity and result uniformity by automating instrument processes, thereby increasing system uptime and simplifying maintenance. Scripts are defined as automated or guided procedures supporting all aspects of instrument use from initial installation to performance checks and diagnostics. VUI scripts are supported by over 30 animations to enhance your confidence and guide you through instrument maintenance and workflow exchange procedures, such as changing from direct to trap-and-elute injection. For streamlined navigation, scripts are organized into 6 categories according to the relevant aspect of instrument operation:

- Installation
- Configuration
- Daily use
- Diagnostics
- Maintenance
- Service

Multi-scripts are also available which perform longer automated procedures involving steps from multiple scripts. Highlighted below are key script examples from each category.

Installation scripts

Installation scripts prepare the system for operation after installation or long periods of system idleness. For example, the “Auto Start-up” script executes a series of automated actions including purging the system, adjusting the sampler pressure sensor, and optional diagnostic testing including the system tightness test. The “Installation” multi-script schedules multiple scripts—including “Auto Start-up”—required for system installation.

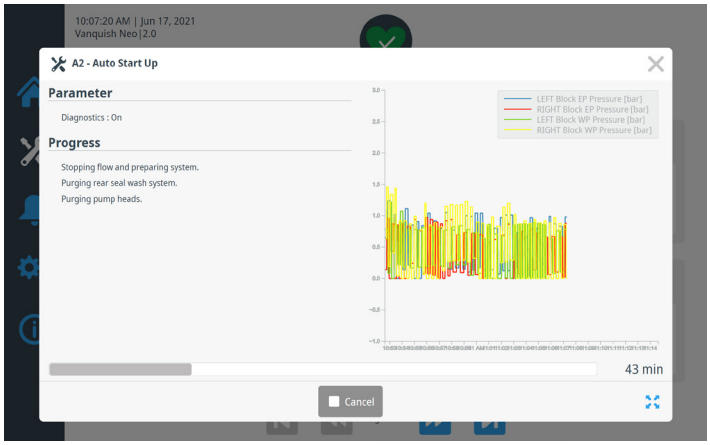

Figure 4. “Auto Start-Up” prepares the system for operation through a series of automated procedures.

Configuration scripts

Configuration scripts enable you to input the column specifications such as dimensions and maximum pressure limits into the system. This information is then incorporated in either Thermo Scientific™ Chromeleon™ Chromatography Data System or Thermo Scientific™ SII for Xcalibur™ software for guided, intelligent method creation and operation. Dedicated scripts also exist for simplifying and standardizing fluidic or workflow exchange by preparing the system and walking the user through detailed, step-by-step instructions for high system-to-system, user-to-user, and run-to-run repeatability. Illustrations and instrument schematics further ensure minimum system downtime and optimized fluidic setups.

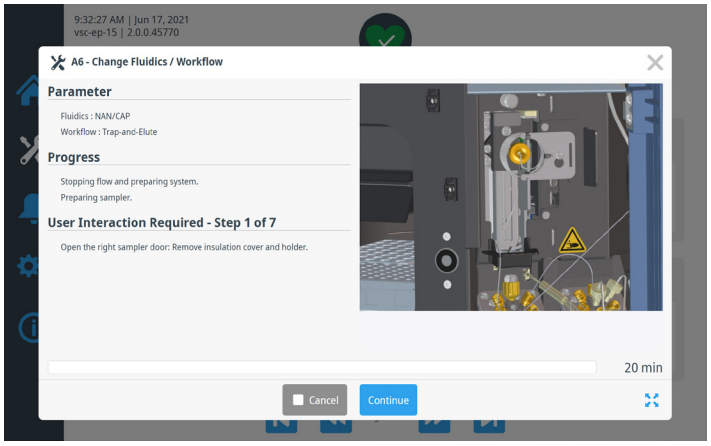

Figure 5. The “Change Fluidics/Workflow” script offers detailed descriptions and visuals for each step in the procedure.

Daily use scripts

Daily use scripts streamline tasks regularly performed to ensure optimal long term performance, like exchanging mobile phases or wash liquids. The “Change Liquids/Solvents” script for example, purges system fluidics after new mobile phases are installed. Options are available for entire system or module purging, or for selected purging of sub-systems such as the four different sampler wash liquids. For instances in which the liquid/solvent type remains the same, the “refresh only” function performs a faster and less thorough system purge, minimizing instrument downtime.

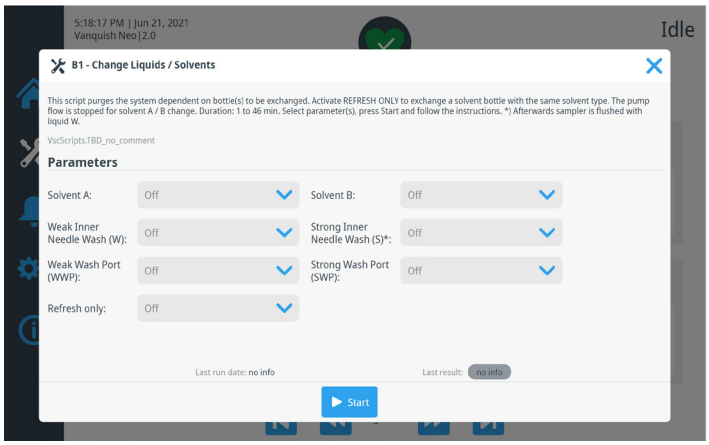

Figure 6. A variety of purge options are available in the “Change Liquids/Solvents” script.

Diagnostic scripts

Diagnostic scripts are available for performing regular checks on the system status and for resolving issues quickly and efficiently. For instance, the “Test System Back Pressure” script is intended to identify the source of blockages or defective parts in case of back pressure issues. To test for leakages, the “Test System Tightness” script offers a range of options such as which modules to test and whether the trap column should be kept in line (for trap-and-elute workflows). Users can also select the target pressure for the test to best match the analytical conditions employed.

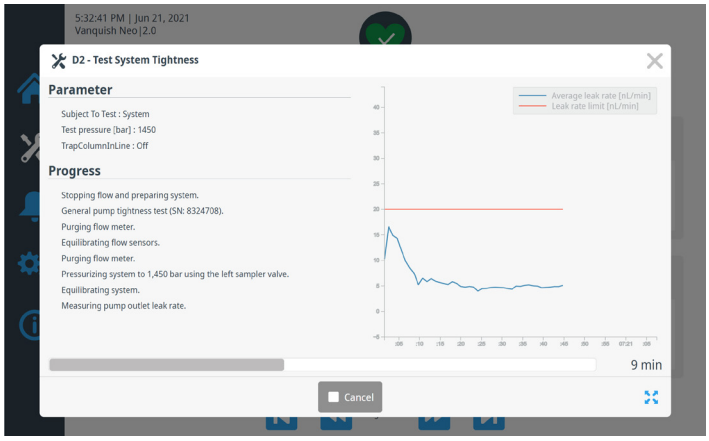

Figure 7. The “Test System Tightness” script performs a system-wide or module-specific test to check for leakages at a user defined pressure. When applicable, the trap column can also be included in the test.

Maintenance scripts

Maintenance scripts are available for automated processes such as purging and flow sensor calibration, and for guided maintenance procedures including wear part replacement. The “Purge Pump” script is used for purging both pump blocks and the flow meter while the purge autosampler script is used for purging the sampler, wash port, and both needle washes. Both scripts can be operated in normal and fast modes. The “Shutdown” script ensures instrument robustness and reduces start-up time by preparing the Vanquish Neo system for short-term or long-term storage. Options to prepare individual modules for storage and removal are also available.

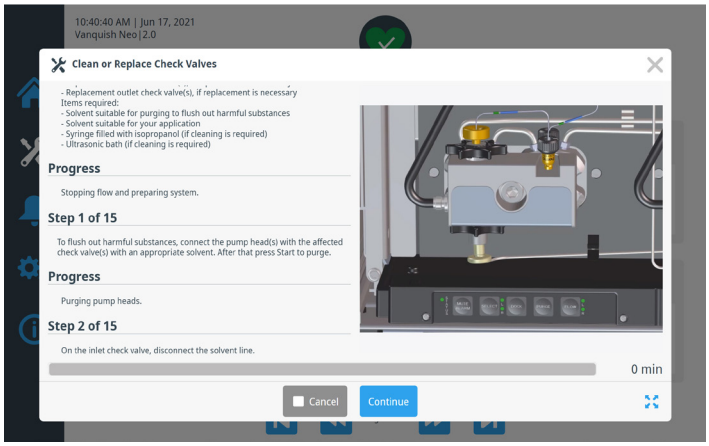

Figure 8. Guided instrument maintenance scripts improve ease-of-use and system uptime.

Service scripts

Scripts specifically related to instrument servicing streamline initial system setup and enable the resetting of factory default values by module.

Conclusion

Whether at instrument or off-site, the Vanquish User Interface provides you with convenient 24/7 monitoring and control of your Vanquish Neo UHPLC system. An intuitive touch screen user interface ensures that both novice and expert users have rapid access to instrument settings, automated procedures, diagnostics, and guided maintenance to enhance ease-of-use, instrument uptime and system robustness. Scripts for automating instrument operation save you time and guided maintenance and workflow exchange procedures with accompanying animations mean that little instrument experience is required to keep your system running at maximum performance.

Learn more at **thermofisher.com/vanquishneo**

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