

HPLC System

LC-2030C NT





Insert columns easily with one hand

After insertion, the new slide-in column is automatically moved into place and connected to the flow line. No tools or experience are required for installation.

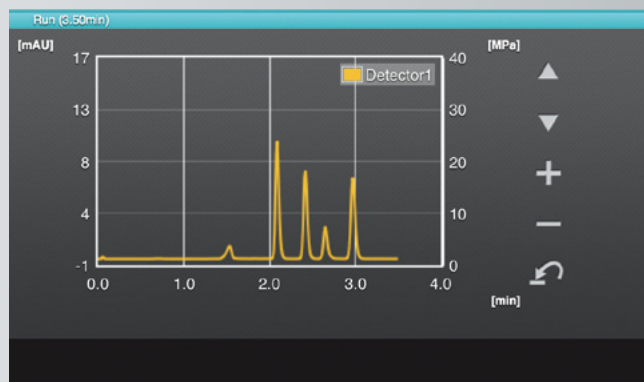


User-friendly touch controls

System preparations from startup to column equilibration are all automated. The color LCD touch panel provides user-friendly sample registration and instrument controls.

Remote monitoring

Chromatograms and system status can be remotely observed via a smart device or PC, saving your time going between the lab and the office.



Guaranteed data quality with no experience needed

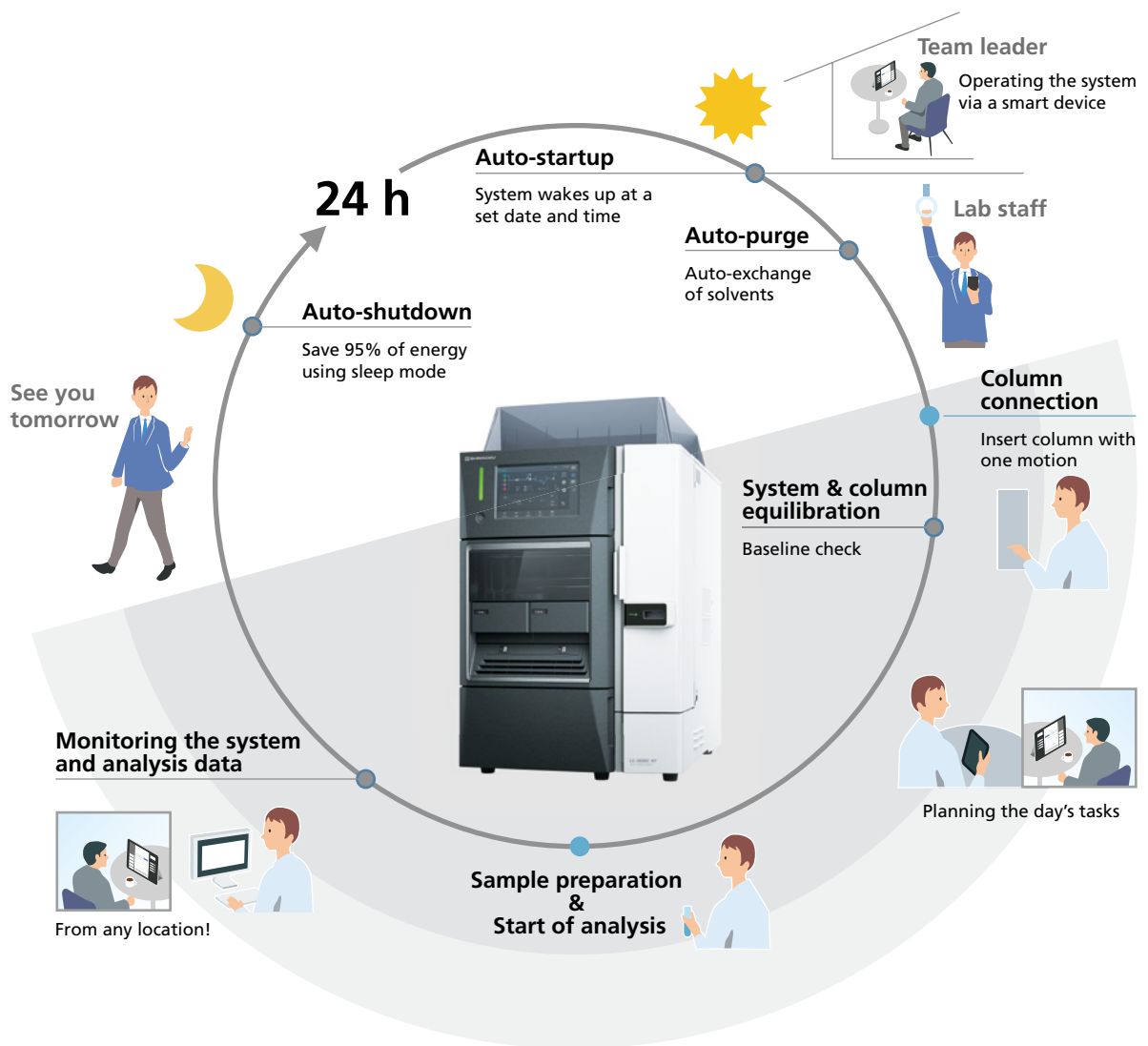
As HPLC becomes more commonplace, there is growing demand for instruments that cater to both novices and experts. The LC-2030C NT provides a simple touch-screen user interface and a workflow that requires no specialist training. The Shim-pack™ NT-ODS is a slide-in column that can be inserted in one motion, with no need for a wrench or other tools. The column is automatically connected into the flow path with no risk of human error. In this way, the LC-2030C NT enables all users to collect accurate data no matter their level of expertise.

- ▶ Intuitive to operate
- ▶ Consistent data between users
- ▶ Stable column performance over a large number of samples



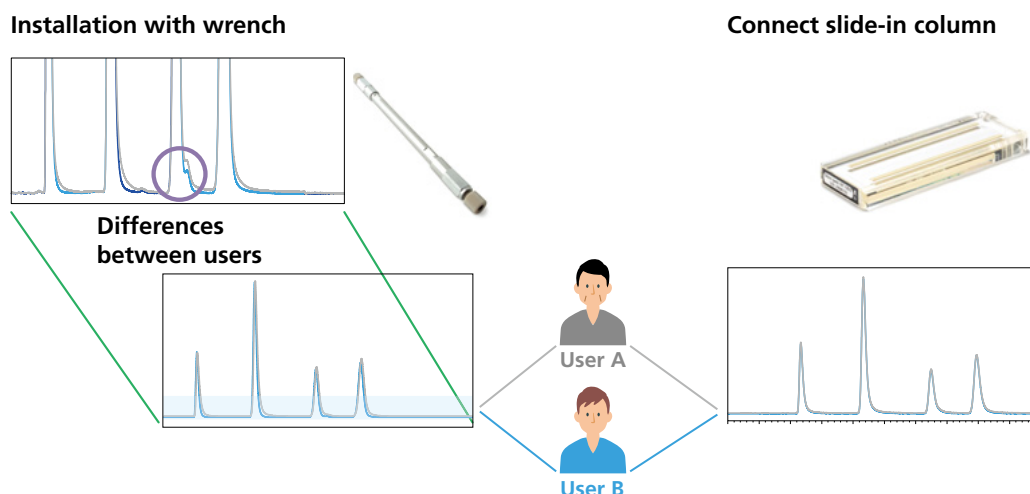
Intuitive to operate

Hardware and software advances in HPLC over recent years have led to a fully-automated analysis cycle as standard. However, column installation has remained a manual step requiring user know-how. With the LC-2030C NT we introduce a dedicated slide-in column, the Shim-pack NT-ODS. The user can simply insert this column into the front slot and it will be automatically incorporated into the flow path. Analysis can then be begun from the LCD touch panel. The whole procedure can be carried out by staff without specific training. Equipment status and chromatograms can be monitored from outside the lab during analysis, and data results can be processed remotely through a networked PC, opening up more possibilities for flexible workplace.



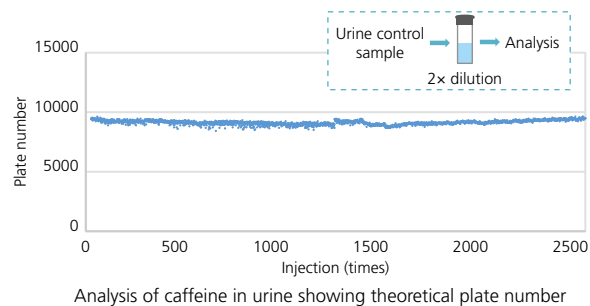
Consistent data between users

Column connections can affect the shape of chromatograms, either through small differences between users or human error. Since the Shim-pack NT-ODS is connected automatically by the instrument, there is no need to worry about these possible effects.



Stable column performance over a large number of samples

The dedicated Shim-pack NT-ODS is a monolithic-type column. The packing state of its separation medium is maintained over a long continuous analysis, whereas a particle-type column may deteriorate. The Shim-pack NT-ODS therefore provides long-term stability even over a large number of continuous injections.



Switch back to analysis with conventional methods

It is simple to switch the flow path via the touch screen if a packed-type column connection is needed.



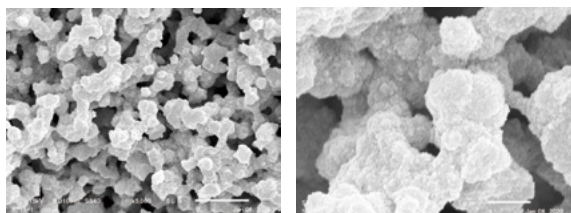
Specifications

	Model	LC-2030C NT
	P/N	S228-65808-58
Pump	Degassing unit	Five Lines: Mobile phase 4 + Rinse solution 1 (Volume 400 μ L)
	Pumping method	Parallel-type double plunger
	Pulsation	≤ 0.1 MPa (1.0 mL/min, 10 MPa, Water)
	Flow rate setting range	0.0001 to 10 mL/min
	Flow rate accuracy	$\leq \pm 1\%$ or ± 2 μ L/min, below whichever is greater (0.01 to 2 mL/min, Specified conditions) $\leq \pm 2\%$ 2 to 5 mL/min, Specified conditions)
	Flow rate precision	≤ 0.06 %RSD or ≤ 0.02 minSD, below whichever is greater
	Configuration	Four-solvent low-pressure gradient
	Gradient / range of set concentrations	0 to 100%, in 0.1% steps
	Gradient / concentration accuracy	$\pm 0.5\%$ (0.1 to 2 mL/min, 1 to 20 MPa, Specified conditions)
	Gradient / concentration precision	$\pm 0.1\%$ (1 mL/min, 10 MPa, Specified conditions)
	Maximum pressure	Packed column side 34 MPa (0.0001 to 5 mL/min) 22 MPa (5.0001 to 10 mL/min) Slide-in column side 7 MPa (0.0001 to 0.3 mL/min)
	System Delay Volume	approximately 615 μ L (Packed column side) approximately 620 μ L (Slide-in column side) (Option: none)
Autosampler	Injection method	Total-volume sample injection
	Injection volume accuracy	$\pm 1\%$ (50 μ L, N = 10)
	Injection volume setting range	0.1 to 100 μ L (Option: 0.1 to 50 μ L)
	Injection volume reproducibility	RSD $\leq 0.20\%$ (5.0 to 100 μ L), RSD $\leq 0.25\%$ (2.0 to 4.9 μ L) RSD $\leq 0.5\%$ (1.0 to 1.9 μ L), RSD $\leq 1.0\%$ (0.5 to 0.9 μ L)
	Cross-contamination	0.0025% (Caffeine, Specified conditions)
	Injection cycle time	Min. 14 sec (Specified conditions)
	Samples for processing	336 (1 mL), 216 (1.5 mL), 112 (4 mL), 4 (MTP/DWP)
	Sample cooler	4 to 45°C
Column Oven	Injection linearity	≥ 0.9999 (1 to 100 μ L, Specified conditions)
	Heating and cooling method	Forced air circulation method
	Containable column size	Slide-in column Packed column (1 pieces at 10 to 25 cm)
	Temperature control range	Room temperature -5 to 60°C, Setting range 4 to 60°C (To 50°C for slide-in column)
	Temperature control precision	$\pm 0.1^\circ\text{C}$
	Temperature stability	$\pm 0.8^\circ\text{C}$ (Specified conditions)
	Flow rate switching valve	Not available

PDA Detector	Wavelength range	190 to 800 nm
	Spectral resolution	1.4 nm (Specified condition)
	Slit width	1.2 nm, 8 nm
	Device resolution	0.6 nm/pixel
	Number of photodiode array elements	1024
	Wavelength accuracy	$\leq \pm 1$ nm
	Noise level	$\leq \pm 3 \times 10^{-6}$ AU (250 nm, reference: 350 nm, Specified conditions)
	Drift	$\leq 500 \times 10^{-6}$ AU/h (250 nm, reference: 350 nm, Specified conditions)
	Linearity	Up to 2 AU (5%)
	Sampling rate	Up to 100 Hz
	Light source	Deuterium (D ₂) lamp (Standard), tungsten (W) lamp (option)
	Flow cell	8 μ L (10mm, TC) 12 MPa
	Option cell	Conventional: 10 μ L (10 mm, TC), Semi-micro: 2.5 μ L (5 mm, TC)
Miscellaneous	Dimensions	W 410 \times H 605 \times D 500 mm
	Weight	67 kg
	Available pH range	1 to 13
	Materials for parts in contact with liquids	Stainless steel (SUS316L, SUS316), FEP, PEEK, PTFE, perfluoroelastomer, ruby, sapphire, Hastelloy [®] C, GFP, ceramic, PFA, quartz, PPS
Workstation	LabSolutions [™] LC/GC Ver. 5.92 or later, LabSolutions DB/CS Ver. 6.82 SP1 or later (Incompatible with LCsolution [™])	

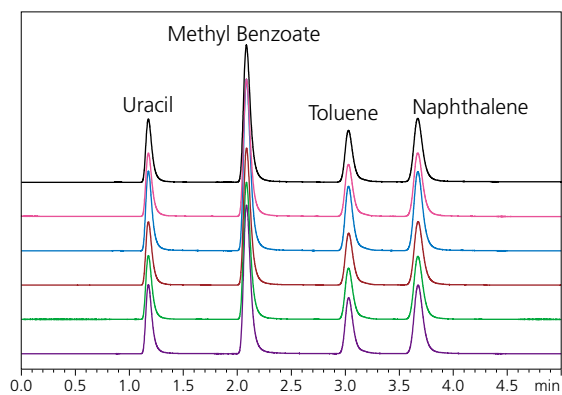
Column

Shim-pack NT-ODS is a silica-based monolithic column with both macropore (μ m) and mesopore (nm) structure. The macropore structure helps to avoid column clogging, resulting in long-term stability.



Macropore
Mesopore
SEM photograph of Monolith used for the column

The well-designed chemical structure of the stationary phase provides superior reproducibility.



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