

Earlier  
detection for  
a healthier  
future.



revvity

GSP® Newborn screening system

Brochure not for distribution in the US

Give life an  
exceptional start.



# GSP — the most advanced solution for screening NBS disorders

Every life is exceptional and every child is unique. That's why your screening program should deliver exceptional performance when it matters most – at the beginning of a child's life.

Discover Revvity's most advanced, fully automated, high-throughput screening system with the lowest hands-on time for NBS disorders, ensuring outstanding screening accuracy.



## Intuitively simple, easy-to-use system



Fully automated solution, from plate to result, reducing error and hands-on time



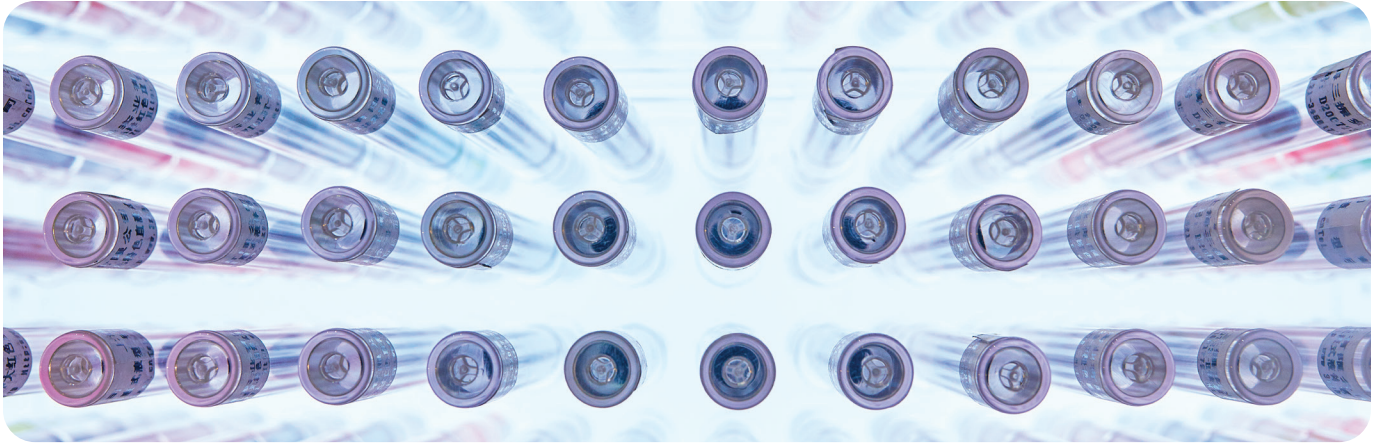
Designed for accurate and reliable dry blood spot (DBS) measurements



User friendly data management solution including quality-controlled result



Widest selection of neonatal screening assays



## An extraordinary analyzer, unmatched in performance

### Designed to enhance your screening program

#### Delivers more flexible workflows

The GSP instrument is optimized for continuous sample loading. The loaded plates are processed automatically or users can prioritize the order in which plates are processed.

#### Reduces the risk of errors

Plates, reagents, QC materials and lot specific QC certificate information are all barcoded to support improved traceability and ease of use.

#### Offers convenience of both reagent and water systems

GSP can be connected directly to a deionized water supply and waste line, so you no longer need to add water and drain the waste. The cooled reagent compartment also eliminates the need to unload reagents after assay runs and improves screening accuracy.

#### Intuitive and easy-to-operate

The GSP instrument is easy for laboratory staff to learn to use, and is controlled via an intuitive touch-screen interface. The instrument requires minimal user training and supports effective staff rotation.

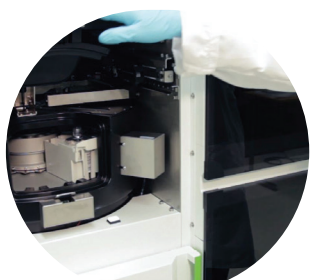
#### Reliable, quality-controlled software analysis

The GSP Workstation software tracks your laboratory workflow effectively, so you obtain reliable, quality controlled results with maximum efficiency.





## User-friendly at every stage



**1** **Loading reagents**  
Bulk reagent and kit loading on the fly



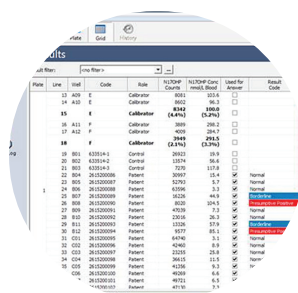
**2** **Generating worklists**  
Automated with Revvity punching device or creation on a GSP workstation computer



**3** **Plate loading and unloading**  
Automatic stacker with an auto-start procedure



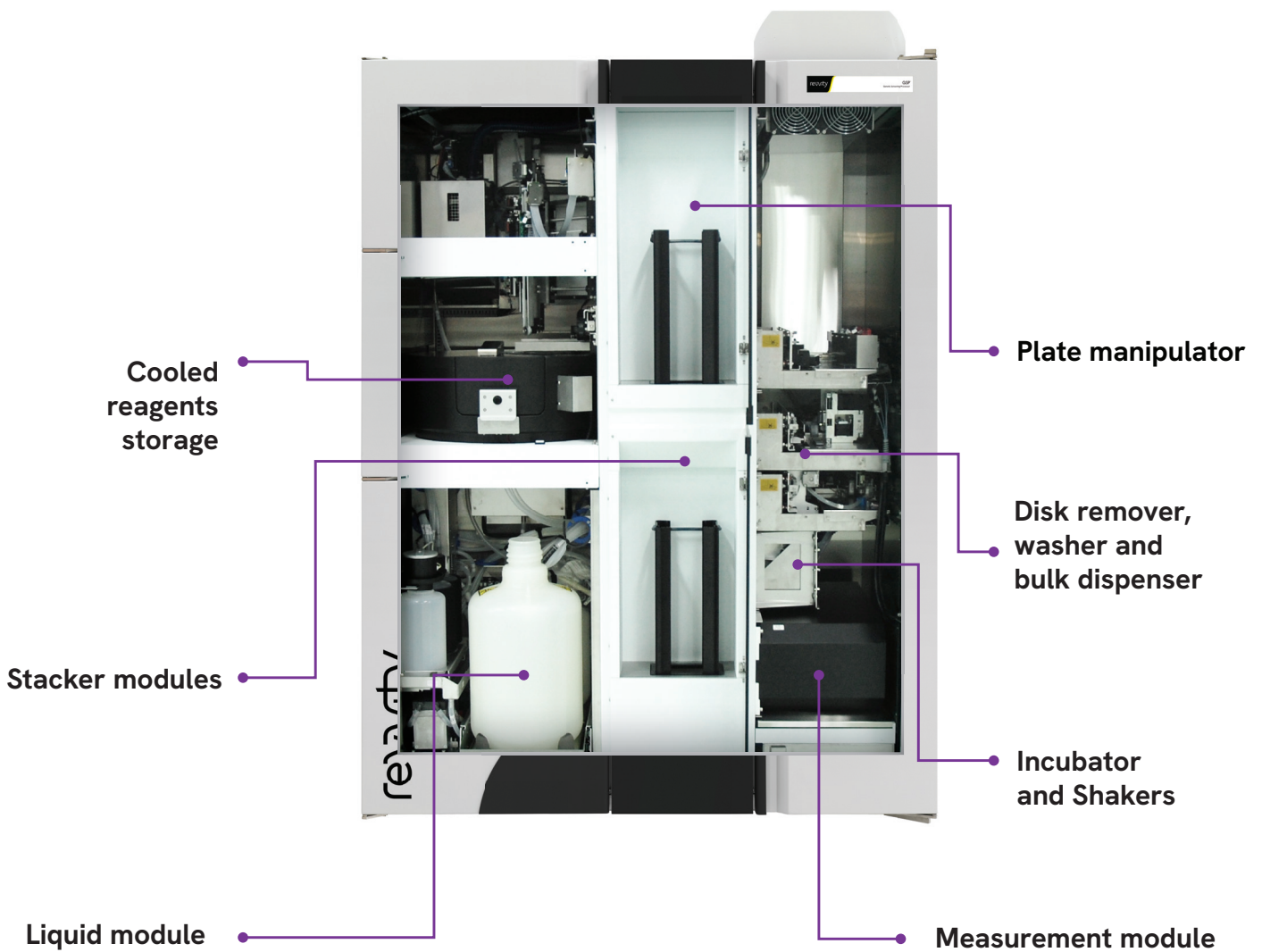
**4** **Checking instrument status**  
Touchscreen makes it easy for status checks and plate prioritization



**5** **Viewing results**  
GSP workstation provides checks on quality assurance, calibrations, notifications, and results



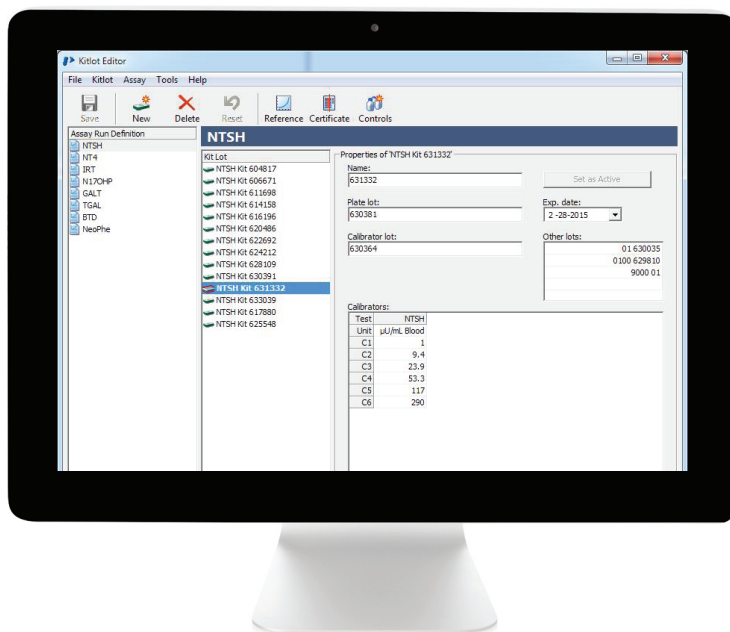
## Seamless integration in one single unit



# The GSP informatics system with four modules, improving workflow efficiency and quality management

The ISO 27001 certified GSP workstation comprises four modules, each designed to improve workflow efficiency and quality management.

- Kitlot editor
- Plate generator
- Result viewer
- Quality control program



## Designed for dbS measurement

GSP is designed to measure reliably dried blood spot samples by using several control steps. The used control steps are specified in the assay protocol. In case a control step is not passed, a notification message is reported.



### 1. Elution control

Detects missing sample or poorly eluted disks in the wells. In case a missing disk is suspected, a notification message is reported.



### 2. New measurement technology

New measurement step avoids outliers caused by unspecific fluorescence and reduces variation in results. With GSP G6PD assay results are received even with floating disks.



### 3. Floating disk control

Detects floating disks that may influence screening results.



### 4. Disk detection

Detects the removal of disks in DELFIA assays from the wells before measurement.



## Complete solution. Exceptional advantages.

### **How GSP can help integrate your entire screening process**

Neonatal screening is a highly complex workflow involving numerous process stages and continuous attention to quality control. Each link in the screening process must be as reliable and efficient as the next one.

By combining the GSP Newborn screening system with other Revvity products, you can manage your entire screening program, from sample preparation and collection to analysis and results management.





## Revvity has an answer to every stage in the screening process



The devices shown here are available as standalone products. When interfaced, the devices together offer optimum screening performance and efficiency.

### 1 Sample collection and preparation

Revvity 226 Sample Collection Device is a 100% pure cotton linter filter paper optimized for DBS sampling.

When combined with Panthera-Puncher™9 or DBS Puncher you will get automatic worklist generation and transfer to GSP.

### 2 Analysis and measurement

The GSP instrument is the device of choice for medium to large laboratories. It uses several measurement techniques for screening of NBS disorders and it supports the widest range of analytes and assay techniques.

The GSP workstation software is designed to follow laboratory workflow to obtain reliable, quality controlled results with maximum efficiency.

### 3 Result management and reporting

SpecimenGate® is Revvity's dedicated informatics for newborn screening laboratories.

- Connects punchers and analysis instruments seamlessly and gathers results into one database
- Enables punchers to identify specimen-specific requests and responds accordingly (Smart Positive ID)
- Historical result-based cutoff values (Cutoff analyzer)
- Demographic-based cutoffs (latter requires Screening Center)

# Complete range of superior screening

GSP Neonatal kits are the industry standard for analytical performance and reliability. Each kit includes reagents, QC material and specific QC certificates. Barcoding reduces the risk of errors, and all calibrators and controls come in dried blood spot format.

Automation and environmental controls ensure that screening accuracy is clearly improved when compared with manual assays. This also reduces the need for additional sample runs and allows for more effective use of laboratory resources.



## GSP Neonatal kits specifications

	GSP TSH	GSP T4	GSP 17-OHP	GSP IRT	GSP CK-MM	GSP BTD	GSP PKU	GSP TGAL	GSP GALT	GSP G6PD
Technology	DELFIA					Combination of DELFIA and Enzymatic	Enzymatic			
Assay duration	4 h 9 min	2 h 56 min	3 h 56 min	2 h 43 min	4 h 50 min	4 h 13 min	2 h 28 min	2 h 08 min	2 h 50 min	1 h 21 min
On board stability	14 days	14 days	14 days	14 days	14 days	14 days	4 days	7 days	48 hours	14 days
Measuring range	1.31 µU/mL blood (2.91 µU/mL serum) - 250 µU/mL blood (555 µU/mL serum)	0.81 µg/dL blood (1.61 µg/dL serum) - 15 µg/dL blood (30 µg/dL serum)	1.2 nmol/L blood (0.9 ng/mL serum) - 300 nmol/L blood (220 ng/mL serum)	9 ng/mL blood (20 ng/mL serum) - 500 ng/mL blood (1110 ng/mL serum)	6.8-8000 ng/mL	14.8-325 U/dL	68-1200 µmol/L blood (1.12-19.8 mg/dL)	64-2775 µmol/L blood (1.15-50 mg/dL)	2.5-25 U/dL blood	2.4-130 U/dL blood
Fully automated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Calibrators and Controls in DBS format	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Elution control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New measurement technology	*	*	*	*	*	*	✓	✓	*	✓
Floating disk control	*	*	*	*	*	*	*	*	✓	*
Disk detection control	✓	✓	✓	✓	✓	✓	*	*	*	*
Reagents, plates and QC materials barcoded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24 hrs valid calibration curve	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reagents ready-to-use	✓	✓	✓	✓	✓	✓	2 reconstitution steps	2 reconstitution steps	1 reconstitution step	1 reconstitution step
Plates included	✓	✓	✓	✓	✓	✓	Prod. No. 4091-0010	Prod. No. 4091-0010	Prod. No. 4076-0010	Prod. No. 4076-0010

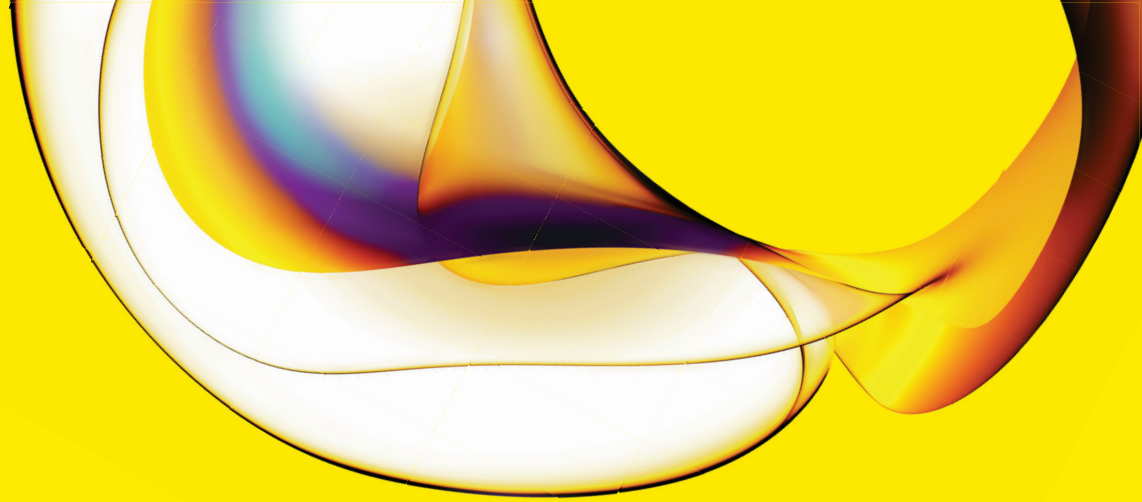
\* The measurement /control step is not required for the specific assay

## Instrument specifications

Physical dimensions	Height	1960 mm (77.2")	
	Width	1310 mm (51.6")	
	Depth	760 mm (30.0")	
	Weight	610 kg (1345 lb)	
Power requirements	Power consumption	1500 VA	
	Mains voltage	100 - 240 V, 50 - 60 Hz	
Environmental conditions	Operating Temperature	18 - 30 °C	
	Temperature range	18 - 27 °C	Relative humidity 10 - 80 %
	Temperature range	28 - 30 °C	Relative humidity 10 - 65 %
Noise	< 60 dB		
The water used for preparing wash solution and for rinsing has to be deionized.			
Samples	Sample type	Blood disks from dried blood spots punched into 96-well plates	
	Sample identification	Barcode reader or keyboard input	
Loading	Continuous sample loading		
	Continuous reagent loading		
	Continuous bulk reagent loading		
Bulk Reagents			
Washing and rinsing	Wash solution	Automatic dilution of Wash concentrate from a mains water line (deionized) or from an external bottle outside the instrument	
	Rinse water	Automatic filling from a mains water line (deionized) or from an external bottle outside the instrument	
Liquid waste	Waste capacity	Automatic disposal if connected to a waste line OR manual disposal 16 L (15 plates)	

## Performance specifications

Capacity	Sample capacity	26 plates (2496 wells)	
	Reagent capacity	up to 13 reagent cassettes	
	Heated incubator module	12 plates	
	Shaking module	3 x 6 plates	
	Wash concentrate capacity	2 liters	
	Manual water filling or waste emptying	11 plates before user intervention required	
	Automatic water filling and waste emptying	No restrictions	
Low volume reagent pipette	Volume range	5 - 50 µl	
	Precision (CV%)	< 1.5 %	
	Accuracy	within ± 8 %	
High volume reagent pipette	Volume range	25 - 200 µl	
	Precision (CV%)	< 1.5 %	
	Accuracy	within ± 4 %	
Measurement unit	Measurement modes	TRF, FI, Abs	
	Signal with 1 nM Eu	1 000 000 cps ± 17%	
Humidity	Plate storage area < 60 %		
Temperature	Temperature inside the instrument	25 ± 2 °C	
	Reagent storage temperature	10 ± 2 °C	
	Heated incubator module	37 ± 1 °C	



[www.revivity.com](http://www.revivity.com)

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