

ForenSeq® PrepStation

Generate high-quality ForenSeq libraries while minimizing hands-on time.

Highlights:

- **Reduced hands-on time**
Eliminate manual pipetting and bead-based cleanup.
- **Growing suite of pre-programmed protocols**
Qualified and supported ForenSeq workflows.
- **Cost effective**
High-quality results across batch sizes.

The Verogen PrepStation is a high-precision liquid handler that includes preprogrammed protocols accessible through the user-friendly GUI, the Verogen PrepStation, for a growing suite of ForenSeq library preparation kits. Optimized for use with the MiSeq® FGx Sequencing System and the Universal Analysis Software, this integrated workflow provides cost-effective access for laboratories of all sizes considering automating NGS for forensic applications (Figure 1).

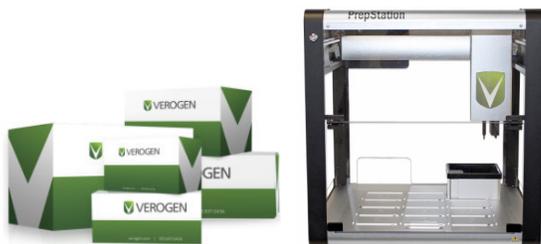
Enable immediate assay implementation with plug-and-play setup and protocol access

The Verogen PrepStation has a user-friendly, graphical interface with access to an expanding selection of protocol libraries across the Verogen library preparation portfolio.

Configurable protocols allow users to modify key variables associated with the ForenSeq workflow using a single web form format. For laboratories that are not networked, automation scripts on the UAS server can be accessed through an easy-to-use GUI called the Verogen PrepStation App. This app minimizes the likelihood of manual errors associated with the correct script identification and use. Automating the ability to enrich targets, purify, normalize, and pool libraries in a single

Next-generation sequencing (NGS) enables greater detection power and forensic insights, especially with samples that are degraded, limited, or mixtures. The NGS workflow includes preparing and sequencing of libraries consisting of small enriched, targeted regions of the genome, such as STRs, SNPs, and mtDNA. Successful sequencing requires careful preparation of high-quality DNA, mtDNA, or RNA libraries. Depending on the biomolecule and targets being sequenced, this can be a time-consuming and resource-intensive process. Automating the preparation of NGS libraries can help laboratories reproducibly generate high-quality data that maximizes the benefits of NGS. Automation can also increase the efficiency of sample processing in laboratories and help maintain turnaround times, despite expanding sample workloads.

Prepare



Sequence



Analyze



Figure 1: An Integrated end to end system, including the Verogen PrepStation, MiSeq FGx Sequencing System and Universal Analysis Software.

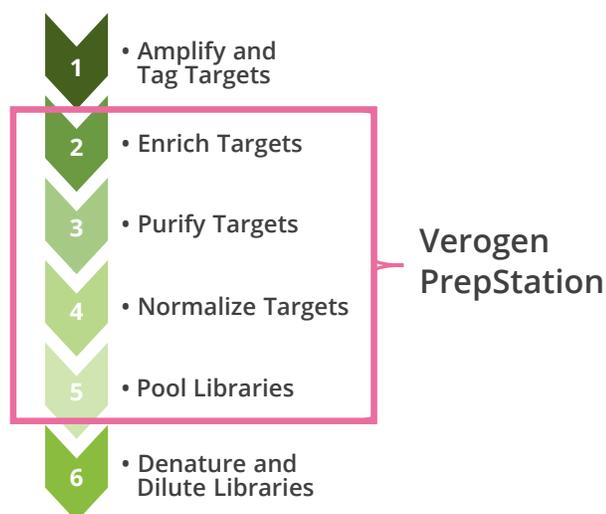


Figure 2: Steps in the ForenSeq workflow that are automated by the Verogen PrepStation.

streamlined workflow enables laboratories to go from sample to ready-to-sequence libraries in one automated run (Figure 2).

The space on the automation platform is optimized by an eleven-deck layout that includes one designated deck for the magnetic module and allocated space for labware waste. Verogen-validated labware setup and automation scripts are compatible across the target enrichment, magnetic purification, bead-based normalization, and library pooling steps. This enables out-of-the-box operation of the Verogen PrepStation with Verogen ForenSeq workflows (Figure 3, next page).

LED indicators on the automation platform provide users with timely feedback, system diagnosis, and troubleshooting aid on instrument power state, system processing, and network connectivity (Table 1).

Qualified methods for flexible batch sizes

Verogen-qualified methods allow users access to preprogrammed ForenSeq workflows, optimized to confidently prepare libraries without the risk of cross contamination. Extensive testing has demonstrated that these methods perform comparably to manually prepared libraries, while ensuring accurate, reproducible results. See the Verogen document, “TBD” for more information. A growing suite of supported applications allows users to confidently adopt Verogen workflows (Table 2).

Table 1: Specifications for Verogen PrepStation.

Dimensions (W,D,H)	63cm x 57cm x 66cm / 25in x 22.5in x 26in
Weight	40 kg or 88 lb
Compliance	Tested to UL 61010-1-safety standards CB certificate; Complies with EU directives for low voltage, machinery, ROHS, EMC
Connectivity	WiFi 2.4 GHz IEEE 802.11b/g/n, USB 2.0
A/V	Integrated A/V
Remote troubleshooting	Yes
Power requirements	100-240 VAC / 50-60 Hz 220 W MAX
USB ports	4
Frame composition	Rigid steel and CNC aluminum design
OS	Windows 10, macOS 10.10 or later, Ubuntu 12.04 or later
Pipette configurations	8-Channel
Number of decks	11
Magnetic module	Included

Table 2: Compatible workflows.

ForenSeq Kit	Batch sizes	PrepStation Compatibility
ForenSeq MainstAY product line including ForenSeq MainstAy kit and ForenSeq MainstAY SE kit	8, 16, 24, 40, or 48 reactions	Yes
ForenSeq Imagen kit	8, 16, 24, 40, or 48 reactions	Yes
ForenSeq DNA Signature Prep kit	8, 16, 24, 40, or 48 reactions	Yes*
ForenSeq Kintelligence kit	3, 6, or 12 reactions	Yes*
* In development		

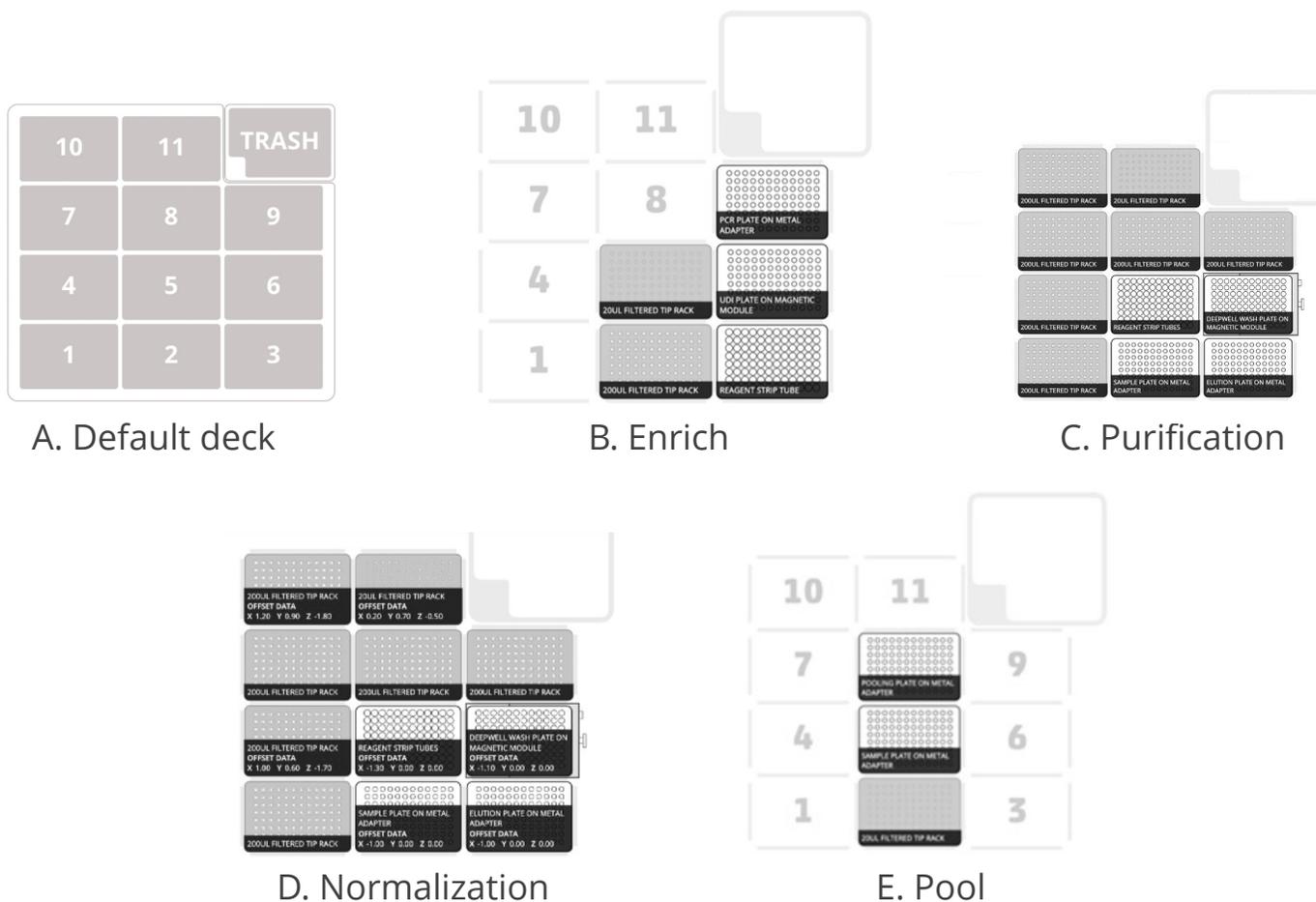


Figure 3: Validation deck layout for the Verogen PrepStation. (A) Default deck. (B) Layout for target enrichment step of the workflow. (C) Layout for bead-based purification steps of the workflow. (D) Layout for bead-based normalization steps of the workflow. (E) Layout for ForenSeq library pooling step of the workflow.

Conclusion

The Verogen PrepStation increases operational efficiency by eliminating manual pipetting and reducing variability across runs. When used in conjunction with the MiSeq FGx Sequencing System and the Universal Analysis Software, it enables forensic laboratories to adopt NGS confidently.

Product documentation is available for download at www.verogen.com/support

Ordering information

Product	Part #
Verogen PrepStation	V16000192