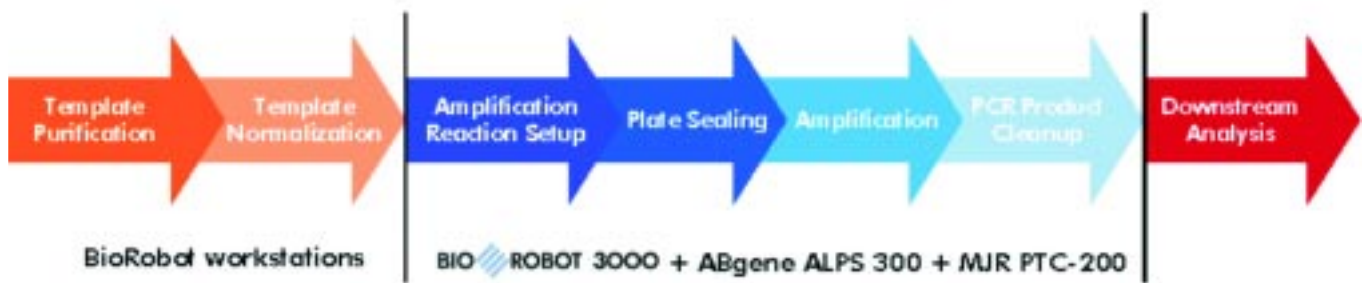


Integration of Automated systems for improved workflow in High-throughput PCR projects

High-throughput PCR projects such as genotyping and gene-expression analysis using quantitative RT-PCR require standardized and reliable front-end sample processing, including purification, liquid handling and plate handling. Integrating a variety of instruments can streamline workflow for full automation of sequential tasks (figure 1), and allow unattended overnight processing.

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Figure 1: Typical workflow of front-end tasks in high-throughput PCR projects



QIAGEN® BioRobot® 3000 extended-arm systems (figure 2) are designed for direct integration with accessory instruments placed adjacent to the worktable, including the BioRobot® RapidPlate®, the ABgene® ALPS™ 300 plate sealer and thermal cyclers. Integrating these instruments allows full automation of sequential front-end tasks in high-throughput PCR projects, such as PCR reaction setup, plate sealing, thermal cycling, and PCR product cleanup.

Integration of a BioRobot® 3000 workstation, a BioRobot® RapidPlate® and the ABgene® ALPS 300™ plate sealer provides walkaway automation of PCR setup and plate sealing for PCR and RT-PCR analysis. Reaction setup and plate sealing of up to 20 x 384-well plates can be performed in a single unattended run, resulting in a processing capacity of 40 x 384-well plates per working day. Amplification-ready plates are stored on the BioRobot® 3000 worktable.

Alternatively, integrating a BioRobot® 3000 double extended-arm workstation with an ALPS 300™ plate sealer and a thermal cycler provides fully automated PCR setup, sealing, and amplification of up to 14 x 96-well plates in less than 21 hours*. PCR reagents and mastermix vessels are stored on the

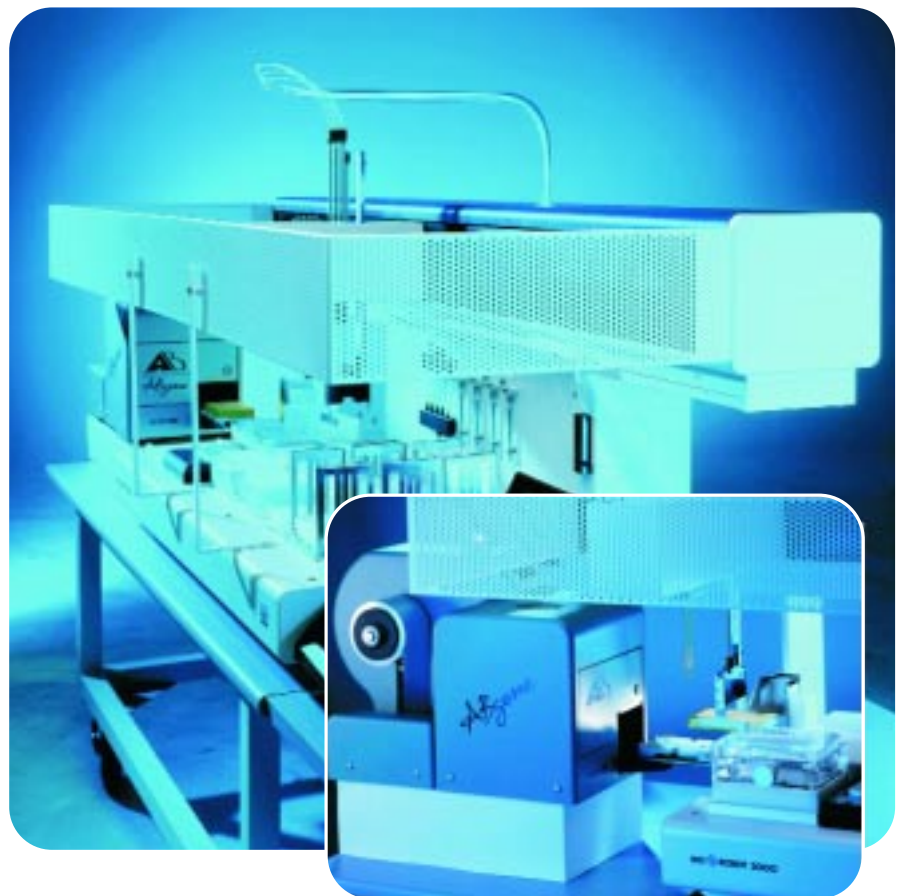


Figure 2: QIAGEN® BioRobot® 3000 double extended-arm system, integrated with an ABgene® ALPS 300™ plate sealer and a MJR thermocycler.

BioRobot® 3000 workstation cooling and heating system to avoid reagent degradation.

The workflow proceeds as follows:

1. Aliquots of purified template nucleic acid are transferred to a 96-well plate
2. Reaction mastermix is prepared by transferring reagents to a clean vessel
3. Mastermix is added to the 96-well plate containing template nucleic acid
4. The plate is transferred to the integrated ALPS 300™ plate-sealer and is sealed
5. The robotic handling system transfers the 96-well plate to an integrated thermal cycler on the opposite side of the worktable for thermal cycling
6. Once cycling is complete the 96-well plate is automatically returned to the BioRobot® worktable for storage or PCR cleanup

*Using a cycling time of 90 minutes in a single block thermocycler

Conclusions

Integration of the ABgene® ALPS 300™ plate sealer with BioRobot® 3000 workstations provides:

- Fully automated streamlined workflow and economical sample processing
- A comprehensive range of heat sealing foils and films for plate sealing, including Clear Seal for fluorescence applications
- Fast and reliable sample processing, from PCR setup to plate sealing, amplification, and cleanup

Contact QIAGEN® today and discover the benefits of integrated robotic systems for your molecular biology applications.

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Product BioRobot® 3000 **Cat No.** 900400

Content
System includes: custom-designed robotic workstation comprised of 2–4 dilutor units and selected system components; QIASoft 4.0 Operating System; installation and training; 1 year warranty on parts and labor; worktables of various sizes are available

Cat. No.	Description	Quantity
AB-0950	Automated Laboratory Plate Sealer (ALPS 300™)	1 unit
AB-3738	Easy Pierce	1 x 610m roll
AB-3739	Easy Peel	1 x 610m roll
AB-3797	Clear Seal	1 x 610m roll
AB-3798	Easy Pierce Strong	1 x 610m roll
AB-3686	Clear Seal Strong	1 x 610m roll

For information on additional integration instrumentation please see the A.S.P. 50 feature on page 14