TECHNICAL BRIEF

Automation Considerations in New Biologics Manufacturing Facilities

As U.S. pharmaceutical manufacturing expands, upstream packaging, end-of-line systems and material handling automation is being evaluated earlier in the design cycle.

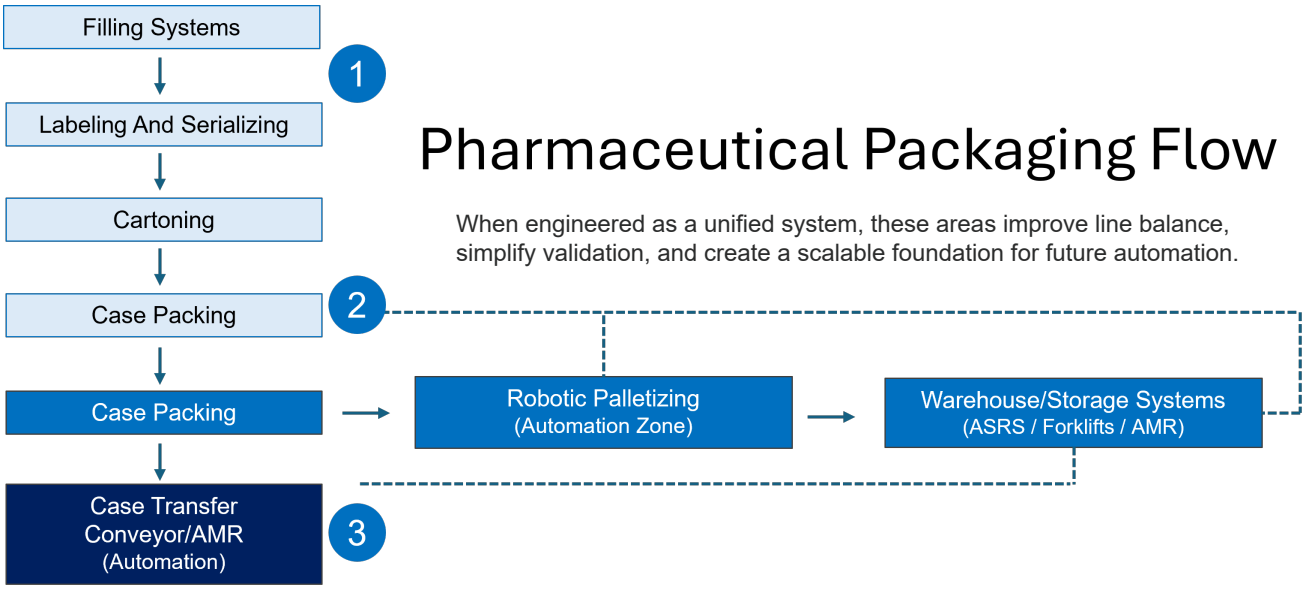
This one-page brief summarizes three common areas engineering teams review when specifying reliable automation in regulated production environments.

PREPARED BY:

MOTION CONTROLS ROBOTICS

Robotic integration for packaging automation, palletizing, and material movement.

SEE EXAMPLE SYSTEMS
https://motioncontrolsrobotics.com/about/industries/medical-and-healthcare/



Pharmaceutical Packaging Flow

When engineered as a unified system, these areas improve line balance, simplify validation, and create a scalable foundation for future automation.

Flow example: Filling → Labeling/Serialization → Cartoning → Case Packing → Case Transfer → Robotic Palletizing → Warehouse/Storage

1 Upstream Packaging Integration

Coordination of filling, labeling, serialization, and cartoning with defined interfaces, controlled product handling, and compliance-driven design to support GMP requirements and validation.

2 End-of-Line System Integration

Case packing and palletizing systems engineered for rate matching, repeatability, and load integrity, with controls integration and consistent handoff to downstream processes.

3 Material Flow & Transfers

Conveyance, transfers, and AMR/ASRS systems designed to manage accumulation, reduce manual intervention, and maintain continuous product flow across the facility.