

ACCELERATE ASRS READINESS THROUGH EXPERT COMMISSIONING & QUALIFICATION

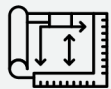
Automated Storage and Retrieval Systems (ASRS) are complex, modular solutions that must integrate seamlessly into cGMP manufacturing and distribution workflows. Expert commissioning and qualification accelerates readiness while ensuring compliance, security, and operational efficiency.

BUSINESS NEEDS



COMPLIANCE & SAFETY

- Environmental control, traceability, and security.
- cGMP compliance of a complex system with multiple modules.



SPACE OPTIMIZATION



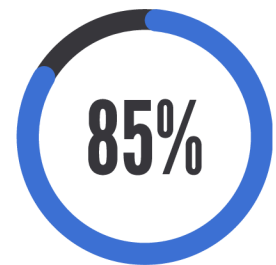
LABOR COST REDUCTION



IMPROVED SPEED & PICK ACCURACY

KEY OUTCOMES

**REDUCE
FOOTPRINT**
BY UP TO



**FULFILLMENT
ACCURACY**
UP TO



**CONTINUOUS
OPERATION**



WHAT'S AT STAKE IF YOU DON'T ACT
WITHOUT THE RIGHT ASRS STRATEGY, YOU RISK:



**BIG INVESTMENT BUT
DELAYED RETURN**



**RISING LABOR &
WAREHOUSE COSTS**



**LOST TIME FROM ERRORS
& MANUAL PROCESSES**



**COMPROMISED PRODUCT
QUALITY OR SECURITY**

YOUR WAREHOUSE FACES GROWING DEMANDS FOR COMPLIANCE, SECURITY, AND EFFICIENCY

Performance Validation accelerates ASRS implementation by collaborating in real time with your vendors and internal engineering teams to safeguard accuracy and provide CQV expertise, ensuring a successful project tailored to your warehouse and regulatory needs.

OUR EXPERTISE

cGMP

- Deep understanding of business and quality drivers, collaborating effectively across multi-functional teams.
- Knowledge of global regulatory frameworks including EN 2500 and GAMP.

WAREHOUSE & ASRS

- Experience with both high-volume/low-mix and low-volume/high-mix storage environments.
- Insight into how ASRS systems integrate across the manufacturing workflow.
- Expertise in integrating ASRS with AGVs and within existing manual or hybrid warehouse ecosystems.

CQV & OT-CSV

- Expertise in commissioning warehouses, including envelope security and supporting utilities.
- Qualification of SRMs, auxiliary units, and AGVs.
- Understanding the role of various control systems for AGVs and SRMs, including BMS, WMS, WCS, and WES.

ENVIRONMENTAL

- Expertise in managing environmental conditions for new unloaded and fully loaded stores.

"I always request to have PV involved in our ASRS projects. They understand the intricacies of the system and are very thorough in their testing. We have a high level of trust in the work that they do, and they consistently deliver."

— ASRS PROJECT LEAD, GLOBAL PHARMA MANUFACTURER

OUR SERVICES



REGULATORY & CONSULTING

- Regulatory framework consulting
- Risk-based strategies



TESTING & QUALIFICATION

- FAT support and engineering shakedown testing
- CQV of modules, complete systems, and supporting utilities
- IT-CSV of ERP systems and OT-CSV of control systems, including risk assessments, documentation, and execution



ENVIRONMENTAL & COMPLIANCE

- BCx including envelope integrity
- Environmental mapping with a fleet of >1,000 calibrated data loggers
- Deviation investigation
- Maintenance and turnover package (TOP) creation

Let's talk about how PV can help bring your system online -
WITH SPEED, ACCURACY, AND COMPLIANCE AT EVERY STEP.

