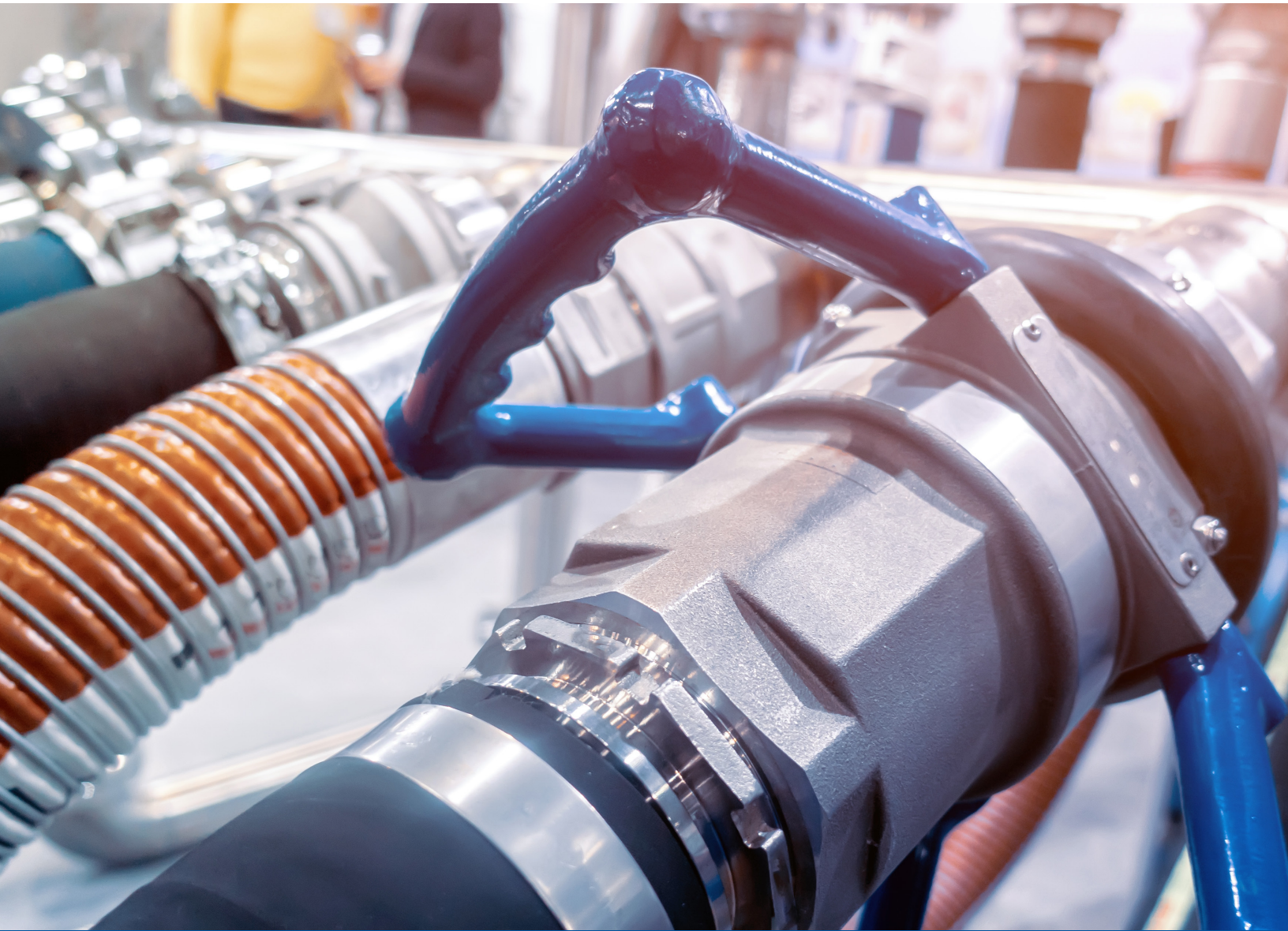




Hose Program



Engineered Hose Assemblies for the Safe Transfer of Goods

8140 Quality Drive, Prince George, VA 23875
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Hose Program

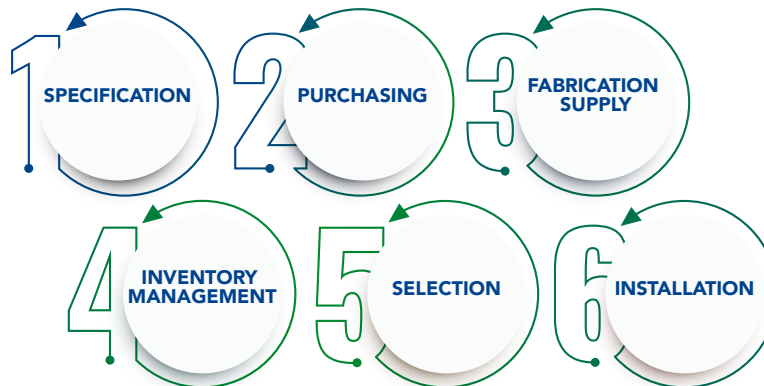
for the safe transfer of goods

VSP's Hose Program is a Six Sigma approach to Hose Assembly and Coupling Management that enhances the safety and reliability of hose applications for fluid and bulk material transfer. By identifying and analyzing all critical steps of the transfer process, VSP's Total Cost of Ownership (TCO) solution drives efficiencies and profits.

Clients work with VSP Sealing Specialists, Field Support Specialists, and Engineers to achieve the lowest TCO for all their transfer needs, including chemical loading & unloading, process fluids, utilities, hydraulics, and associated couplings.



The Material Transfer Process



Joining the Hose Program allows VSP to provide value-added services that increase reliability at no additional cost

The Hose Program streamlines the material transfer process and ensures clients receive

- ▶ Highest performance hose and coupling products
- ▶ Detailed standard purchasing descriptions
- ▶ Accurate assembly and installation instructions
- ▶ Guidance to achieve the lowest TCO



Specification

Chemical & Mechanical Compatibility Analysis

Understanding chemical, thermal, and mechanical compatibility is critical when choosing the appropriate material for any application. Incorrect specifications can result in premature failure, equipment damage, production delays, shorter product life, and possible injury.

VSP works with the site engineering team to review current hose standards to develop the appropriate specifications based on all variables of the material transfer application.



Not all hose applications are straightforward. VSP's hose specialists have the expertise to analyze and recommend solutions for challenging applications

Understanding the variables associated with the material transfer processes is critical for determining optimal specifications

Achieve optimal material transfer performance through

- ▶ Safety Data Sheets (SDS) review for chemical compatibility
- ▶ Pipe code and process/equipment diagram review
- ▶ Evaluation of the operating conditions for compatibility



Purchasing

Accurate Item Descriptions

An effective purchasing strategy ensures the maintenance team has parts on hand when needed.

VSP conducts storeroom surveys to inspect and catalog current stock materials and identify old, obsolete, and excessive inventory. Our specialists work with your purchasing and storeroom teams to consolidate, standardize, and verify the accuracy of all part descriptions.

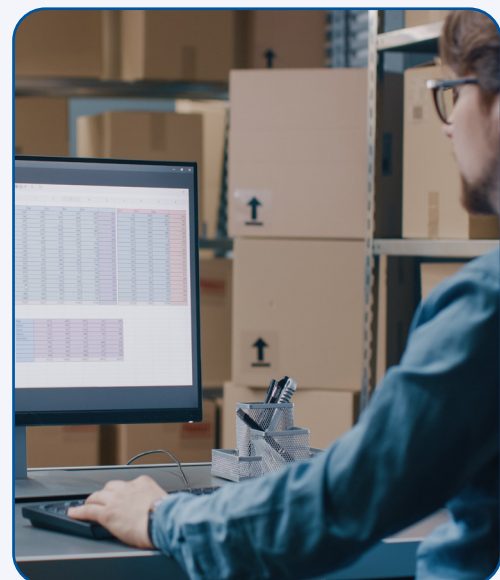
Accurate and complete item descriptions (ERP) give plant personnel the confidence of knowing the correct hose components are purchased and are on hand.



Material standardization reduces inventory costs and streamlines maintenance practices

VSP's storeroom survey process

- ▶ Outlines expectations and deliverables
- ▶ Obtains inventory report of parts being surveyed
- ▶ Compiles part details (brand, style, and dimensions)
- ▶ Identifies excess, obsolete, and past-shelf-life inventory
- ▶ Finalizes description template with purchasing and engineering
- ▶ Updates inventory descriptions





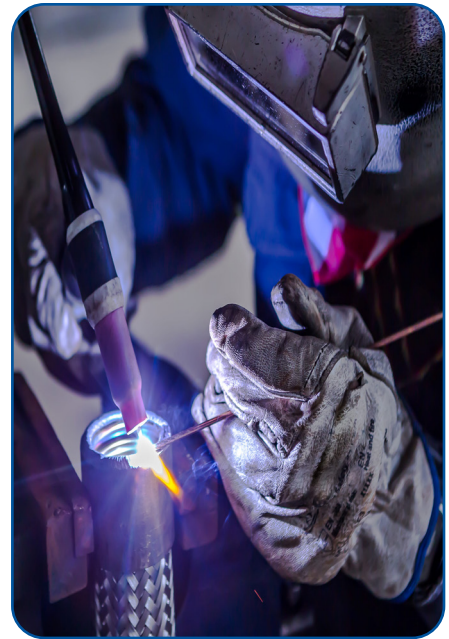
Fabrication & Supply

Standard and Custom
Hose Assemblies

Successful fabrication requires complete and accurate specifications, descriptions, proper material sourcing, manufacturing expertise, and quality control measures.

VSP's fabrication combines high-quality materials with innovative technologies and manufacturing to ensure the accuracy of each part and order.

All fabricated assemblies meet NAHAD guidelines, and post-production inspection ensures assemblies produced meet all customer requirements. ISO 9001:2015.



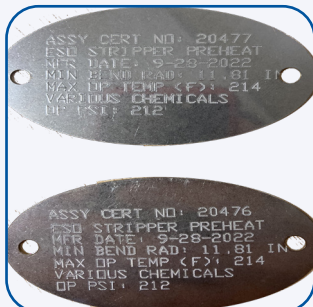
CAD design technology creates complete and accurate drawings to the customers' exact specifications

- ▶ Drawings meet design requirements
- ▶ Revisions are documented for compliance
- ▶ Standard tolerances are met

Database tracking and tagging of assemblies

Hose history and service life are tracked using a tagging system to identify and maintain inventory.

Each hose assembly is linked to a unique serial number and any client-specific information. This description is stored in VSP's database for complete traceability and consistency in fabrication.





Inventory Management

Documented Cost Savings

Effective inventory management is critical to avoid stockouts.

Delayed product availability results in increased downtime, lost production, and unnecessary operating costs.

VSP improves operating efficiency through innovative inventory consolidation solutions that reduce TCO.



Multi-site inventory ensures VSP can quickly respond to customer needs

Inventory management options include

- ▶ Onsite vendor-managed inventory or consignment
- ▶ Labeling managed inventory with specific customer and VSP part numbers
- ▶ Just-in-time availability, including customer-specific products

**An effective inventory system
provides visibility of all items**

VSP Headquarters' Warehouse

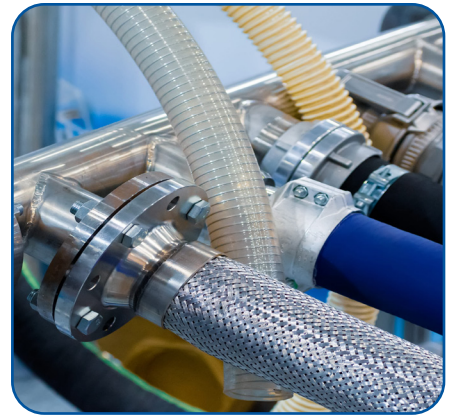




Selection

Selection Tools/Visual Aids

Proper product selection prior to installation is critical to maintaining reliability in any sealing application. VSP ensures customers have the tools necessary to select the right product for the application.



Selection tools assist in choosing the right product for each application

- ▶ Visual aid guides include
 - ▶ Coupling board
 - ▶ Selection charts
 - ▶ Serial number tags
- ▶ Onsite function-specific training is tailored for maintenance personnel to ensure a clear understanding of the products/materials specified
- ▶ Site-specific visual aids are available

VSP Customer Visual Aids



STAMPED Hose Selection Guidelines



SIZE ~ I.D. and length; any O.D. constraints

- The inside diameter and overall length of the assembly.
- The outside diameter may be required for some applications.



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MATERIAL ~ being conveyed, type and concentration

- What product/media will be moving through the hose assembly?
- If chemical, what are the concentrations?
- Is there potential for static build-up?
- Any additional characteristics of the media being conveyed?



PRESSURE ~ to which the assembly will be exposed

- Identify the internal pressure the assembly will be exposed to - is it constant or cyclical?
- Are there potential spikes in pressure, or can the assembly see vacuum?



ENDS ~ style, type, orientation, attachment methods.

- What are the end fittings required, and how will they be connected?
- Check the media pressure to make sure fittings are compatible and meet the pressure and temperature requirements.



DELIVERY ~ testing, packaging, and delivery requirements

- Outside of assembly, are there testing requirements?
- What are the quality concerns, any packing requirements?
- Will test certificates or MTRs be required to make delivery?
- Any tagging requirements?

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Installation

Best Practices Hose Assembly Training

Improper installation and use is a leading cause of failure in the material transfer process. These failures result in unscheduled downtime, revenue loss, and safety concerns. Our training focuses on best practices, including consistent and repeatable means of installation and use.

VSP custom training sessions use demonstrations and practical examples for site maintenance and engineering teams. This includes a comprehensive understanding of proper hose selection, installation, and the importance of pre- and post-use inspection guidelines.



VSP meets all industry standards and guidelines for hose and accessories distribution

- ▶ All welds meet VSP standards and National Association of Hose and Accessories Distributors (NAHAD) guidelines
- ▶ VSP follows guidelines issued by the Rubber Manufacturers Association and NAHAD
- ▶ Routine Quality Audits are performed at partner sites to ensure compliance with VSP standards
- ▶ Hose Safety Institute guidelines reflect VSP's commitment to safety and industry standards

Environmental, Social, and Governance (ESG)

VSP Technologies' ESG program – Delivering Value Responsibly (DVR) – is our business and strategy. DVR is built around five focus areas: colleague engagement, health and safety, diversity, equity and inclusion, supply chain, and the environment.

