

Pharmaceutical Overview

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Breakthrough Engineering for a Better World

Norgren is part of global engineering organisation IMI plc. IMI is at the forefront of delivering the solutions we need in a changing world and is focused on **creating tremendous value by solving key industry problems in attractive markets and employing the best.**

Norgren has a proud history of creating innovative engineering solutions in precise motion control and fluid technology, and we collaborate with our customers across more than 50 countries in critical areas such as Factory Automation, Material Handling, Rail, Energy, Process Control, Life Science and Commercial Vehicles.

From improving speed, productivity, reliability and efficiency of equipment, to generating significant energy and cost savings, or lowering total cost of ownership across many industries, Norgren's high-quality solutions are designed to help customers pursue progress, achieve new goals and overcome problems.

With market-leading industry expertise, we offer the capability, resources, engineering intelligence and global support infrastructure to tackle the largest project demands.

Our world-class portfolio of fluid and motion control products include Norgren, Bimba, Buschjost, FAS, Herion, Kloehn and Maxseal. Supplied either individually or combined into powerful customised solutions to meet customer needs.

Breakthrough engineering you can count on.

Preparation of the Pharmaceutical Product

The pharmaceutical industry produces a diverse range of medicines and food supplements.

An important issue in this industry is ensuring that hygienic processes are maintained to protect the preparations against contamination and impurities. Naturally, these processes also play an important role in the (automated) plants operated by the pharmaceutical manufacturers. Therefore, all the components used must comply with the plant operator's requirements for hygienic design – which naturally also includes the installed valves.

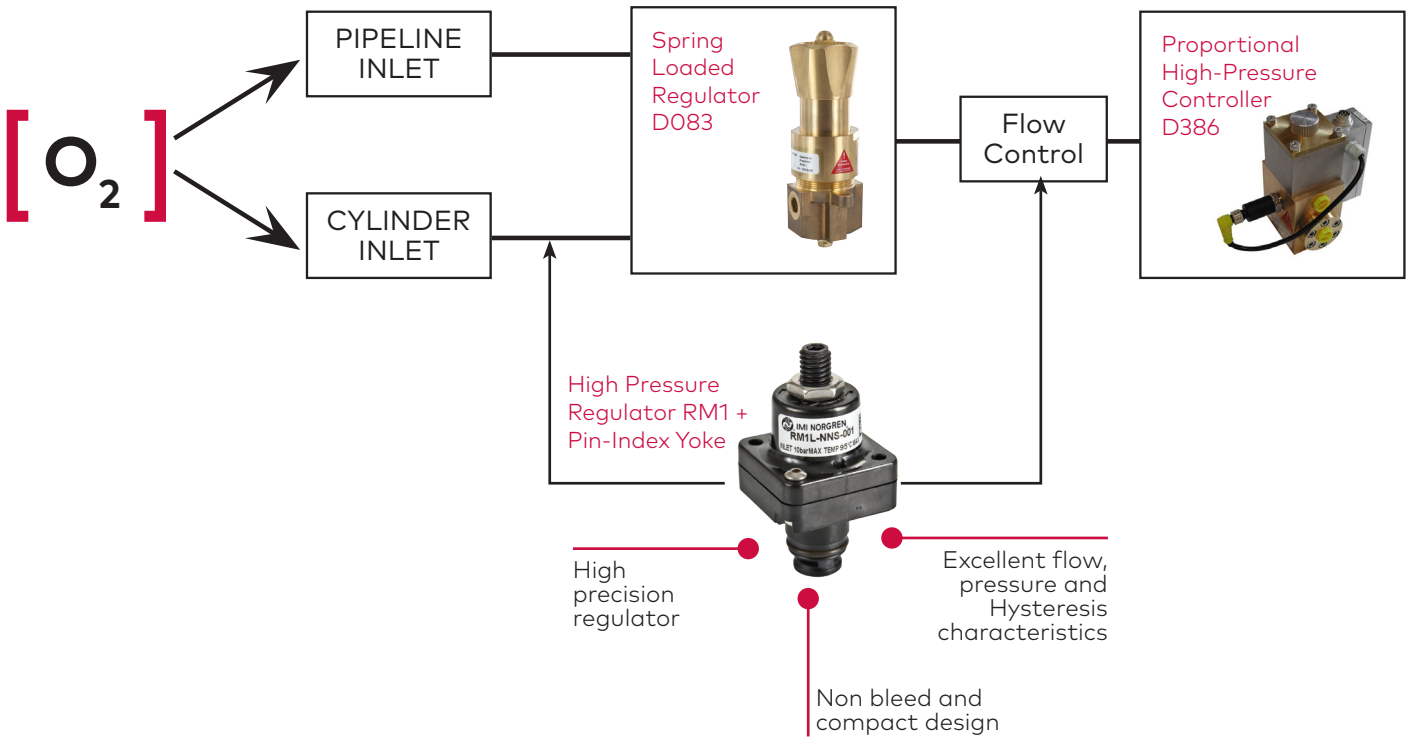
Certifications & approvals:

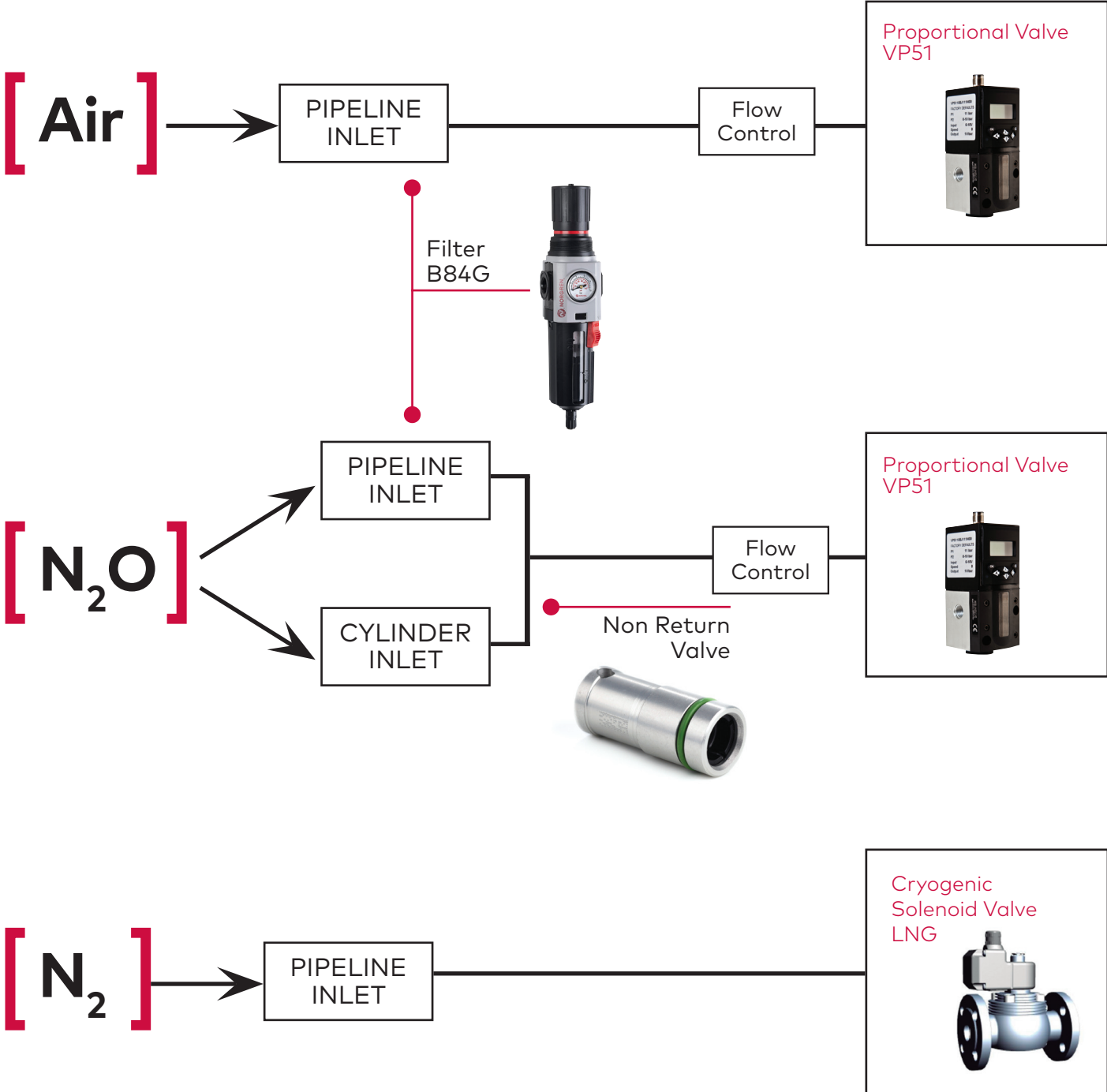
- » ISO 9001
- » CE
- » ATEX
- » CU-TR
- » SIL 3 per IEC 61508
- » NQA-1 QA Manual
- » FDA & USP
- » PED
- » API-622



Air Preparation Stage

In the pharmaceutical industry, compressed air is used for a number of production and packaging applications, including blowing off and drying bottles prior to filling, conveying pills, providing air for pneumatically controlled valves and cylinders, as well as breathing air systems.





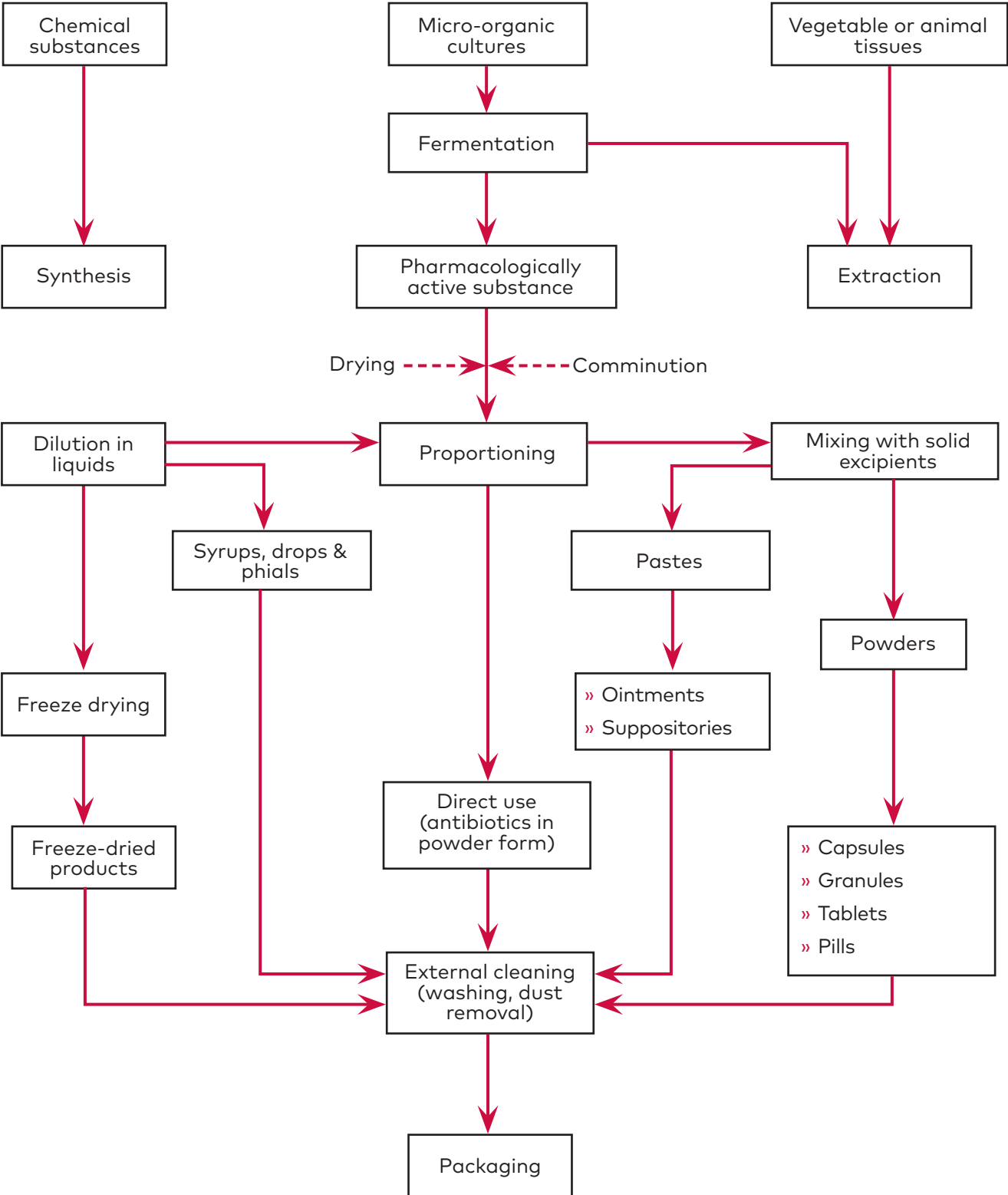
Pharmaceutical Operations, Related Hazards & Workplace Control Measures

Pharmaceutical Manufacturing operations may be categorised as basic production of bulk drug substances and pharmaceutical manufacturing of dosage from products.

Clean-in-Place (CIP) and Sterilise-in-Place (SIP) systems are designed to both automate essential cleaning and disinfection processes and remove the need for time-consuming disassembly and assembly work.

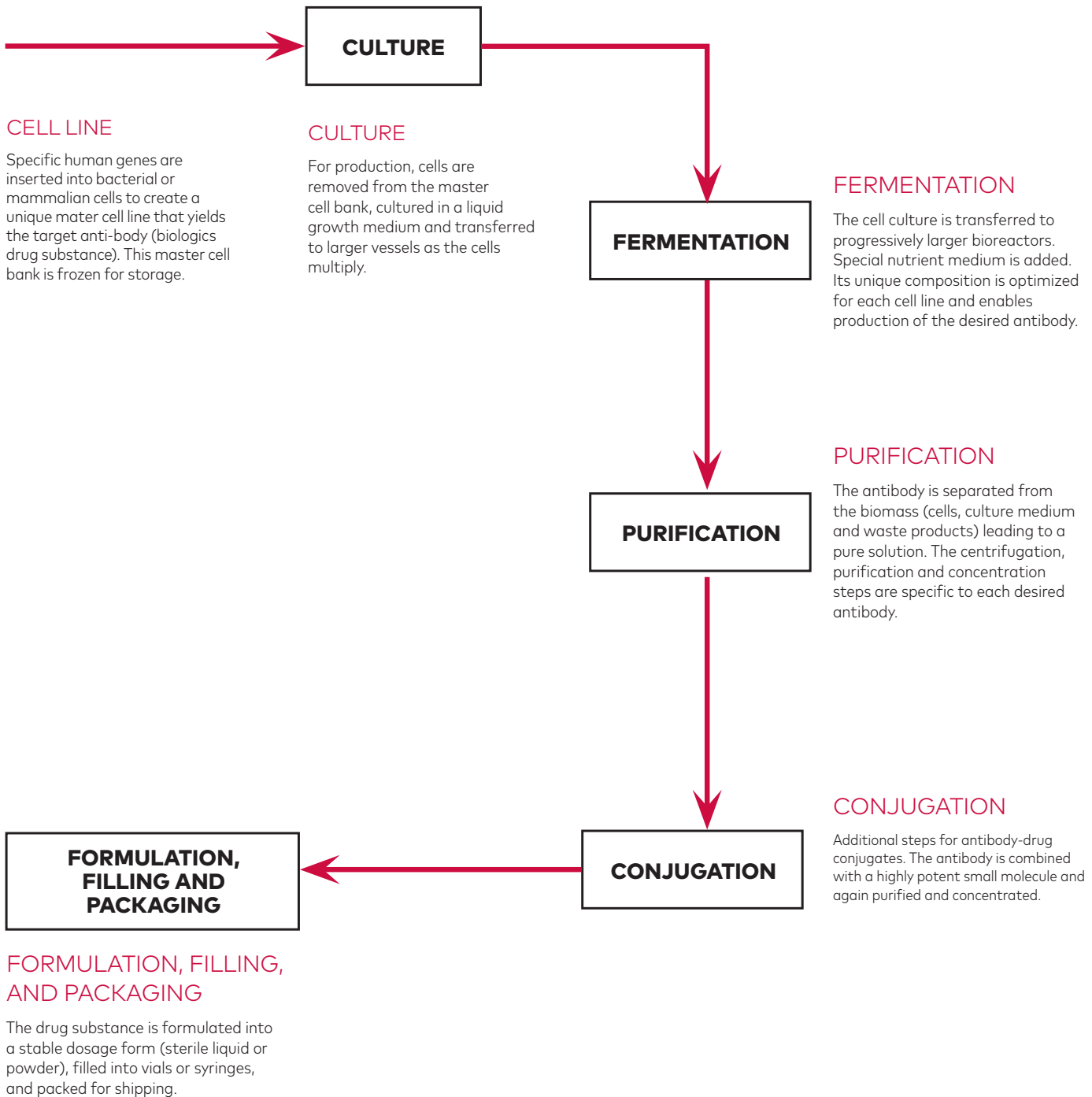


Preparation of the pharmaceutical product





Biotech Manufacturing Cell Culture Production

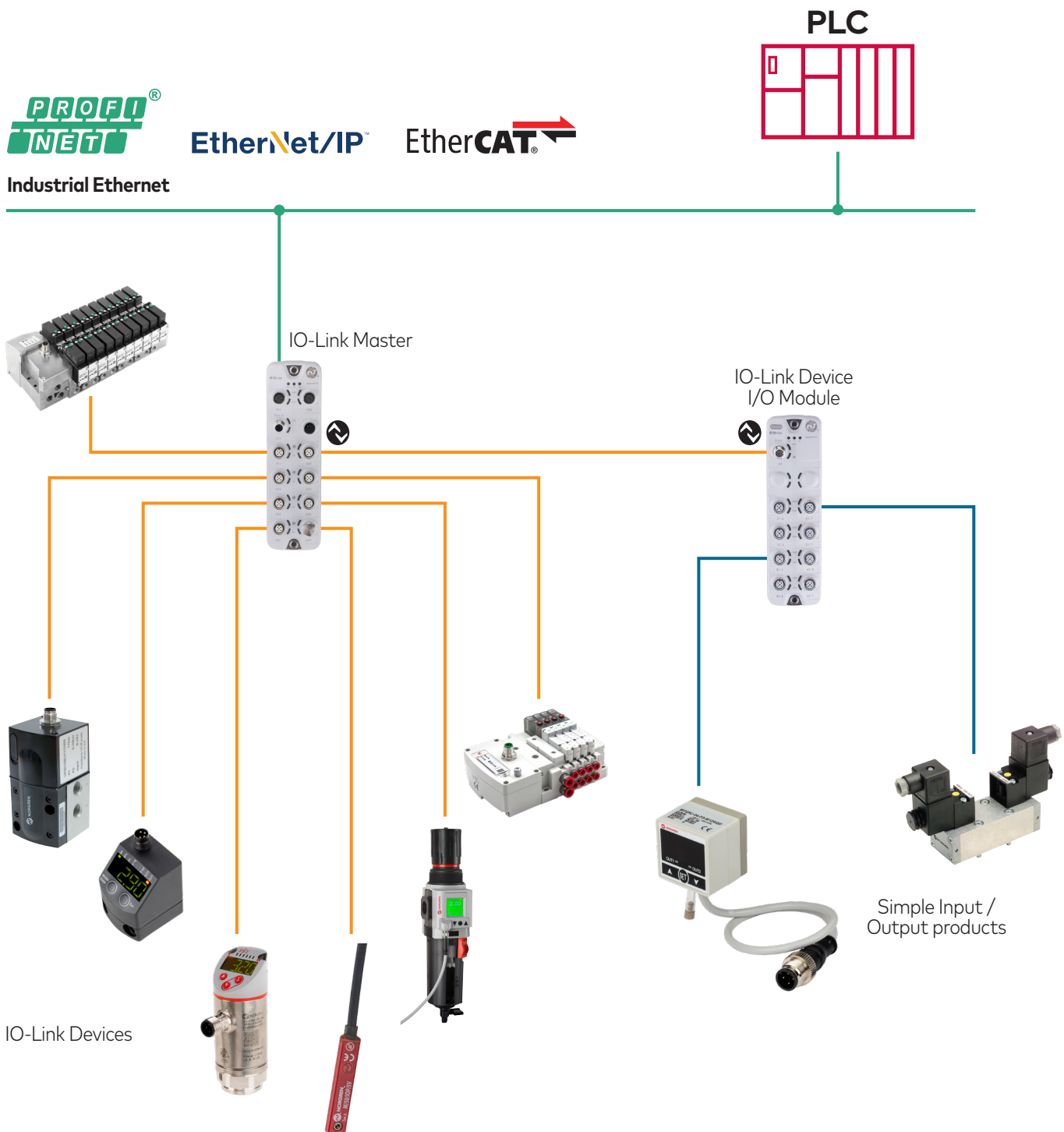


Product Portfolio

	Product Solution	Use in application
	Clean Steam Trap Valves	Clean Steam Application
	Flush Tank Valves	Mixing Tank
	Diaphragm Valve (pneumatic /manual)	Sanitary Production
	Multi-Port valves	Sanitary Production
	Rising Stem Sampling	Sampling Control
	Diverter	Sanitary Production
	Zero Dead Leg	Draining Application

IO-Link A Simple Communication Structure

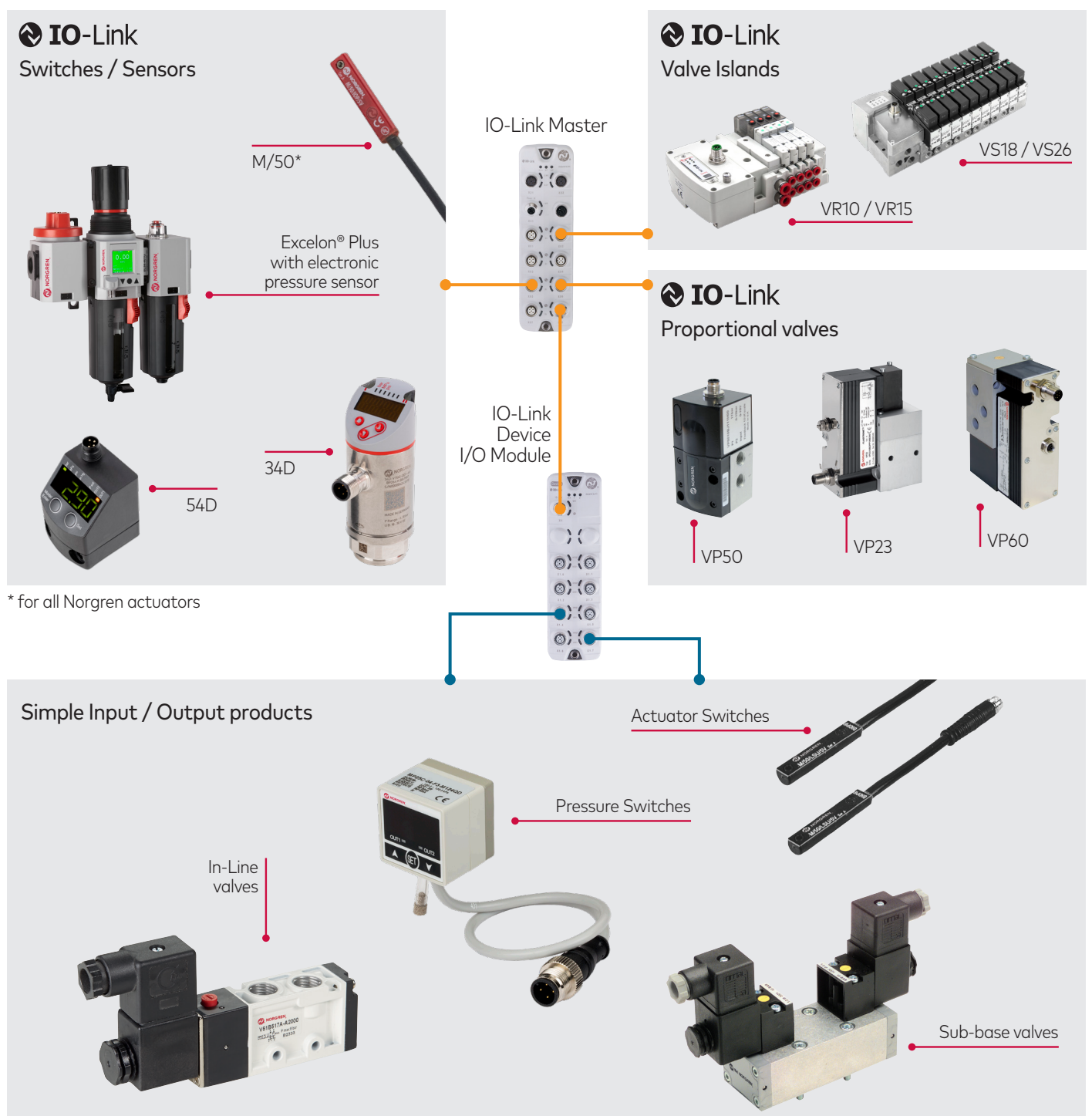
As a communication standard, IO-Link reduces the number of cables and different interfaces, and consequently the number of control inputs required. Over the long term, this reduces planning and administrative costs, while increasing flexibility.



IO-Link Enabled Products A complete System Solution

Norgren offers a complete IO-Link system solution, which includes a wide range of IO-Link enabled devices, as well as an IO-Link Master and I/O Modules (Hubs). The IO-Link Master and the I/O Modules provides a decentralised solution offering the ultimate flexibility:

- » Simple "Plug and Play" devices.
- » Flexibility - easy to add, remove, re-position or reconfigure your system.



Sampling Control Enclosed Panels Solution & Case Study

Our high performance products are used in numerous industrial applications and we have particular expertise in Industrial Automation, Precision Fluid Technology and Commercial Vehicles.

With over 30 years' experience in each, we use our deep understanding of the technical challenges and legislative framework to develop pioneering platform products to answer specific needs. In this way, we help more customers enjoy solutions that deliver cost and energy savings, a simplified supply chain and a reduction in machine complexity.

Enclosed panels Customised & Engineered to your needs

- » Reliable
- » Comes with complete documentation
- » Plug and Play design
- » Ease of maintenance



[Case study]

Control Panel for Singapore Pharmaceutical Process Line

We had a customer who wanted to expand their process line and required control panel for their air diaphragm pumps.

Our expertise in control panels enabled us to work closely with the customer and provide an effective solution that combined fit for purpose control design at a reliable cost.



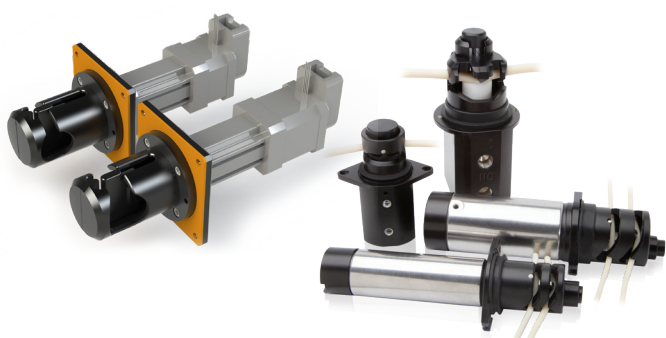
Fill & Finish

Fill and finish is the process of filling vials and packaging the medicine for distribution.

[Pinch Valves]

What Is A Pinch Valve?

A pinch valve is a type of control valve, which uses a pinching effect on a flexible tube to control fluid flow. The pinching (compression) can be accomplished using mechanical clamping mechanisms and can be pneumatically or electrically actuated.

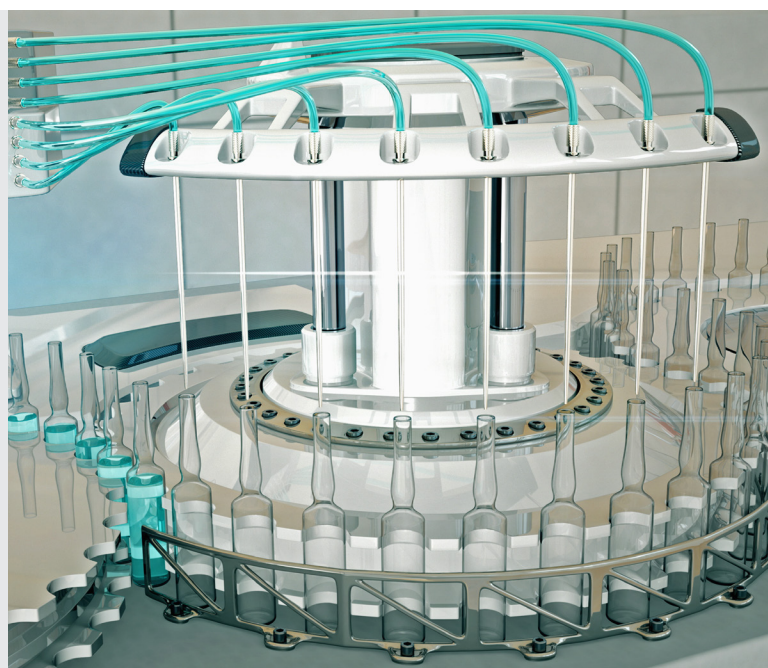


Pinch valves can be used as dosing valves for filling canisters, bottles, glasses, cans, vials or tubes. All thanks to their modular and simple construction, they can be easily adapted to meet the requirements of the pharmaceutical industry and healthcare sector.

Why Use Pinch Valves?

Industry leaders looking for a low-maintenance and more cost-effective solutions for controlling liquids, gases, slurries and powders (incl. corrosive media) in a pipeline are turning to pinch valves over traditional valves (diaphragm valves, ball valves, butterfly valves, needle valves, etc.)

Unlike traditional valves, pinch valves feature a straight-through flow, very little pressure drop over the valve, and full shut-off of media in the tube, making it the most practical and efficient solution for various ON/OFF flow control applications.



Norgren operates four global centres of technical excellence and a sales and service network in 50 countries, as well as manufacturing capability in Brazil, China, Czech Republic, Germany, India, Mexico UK and the USA.

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Incorporating

