



NORGREN

Incorporating



Thermal Management Solutions For Alternative Powertrain Vehicles



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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.

Buschjost Valves For Thermal Management Applications

Fuel economy improvements and the reduction of emissions are at the top of our global customers' agenda.

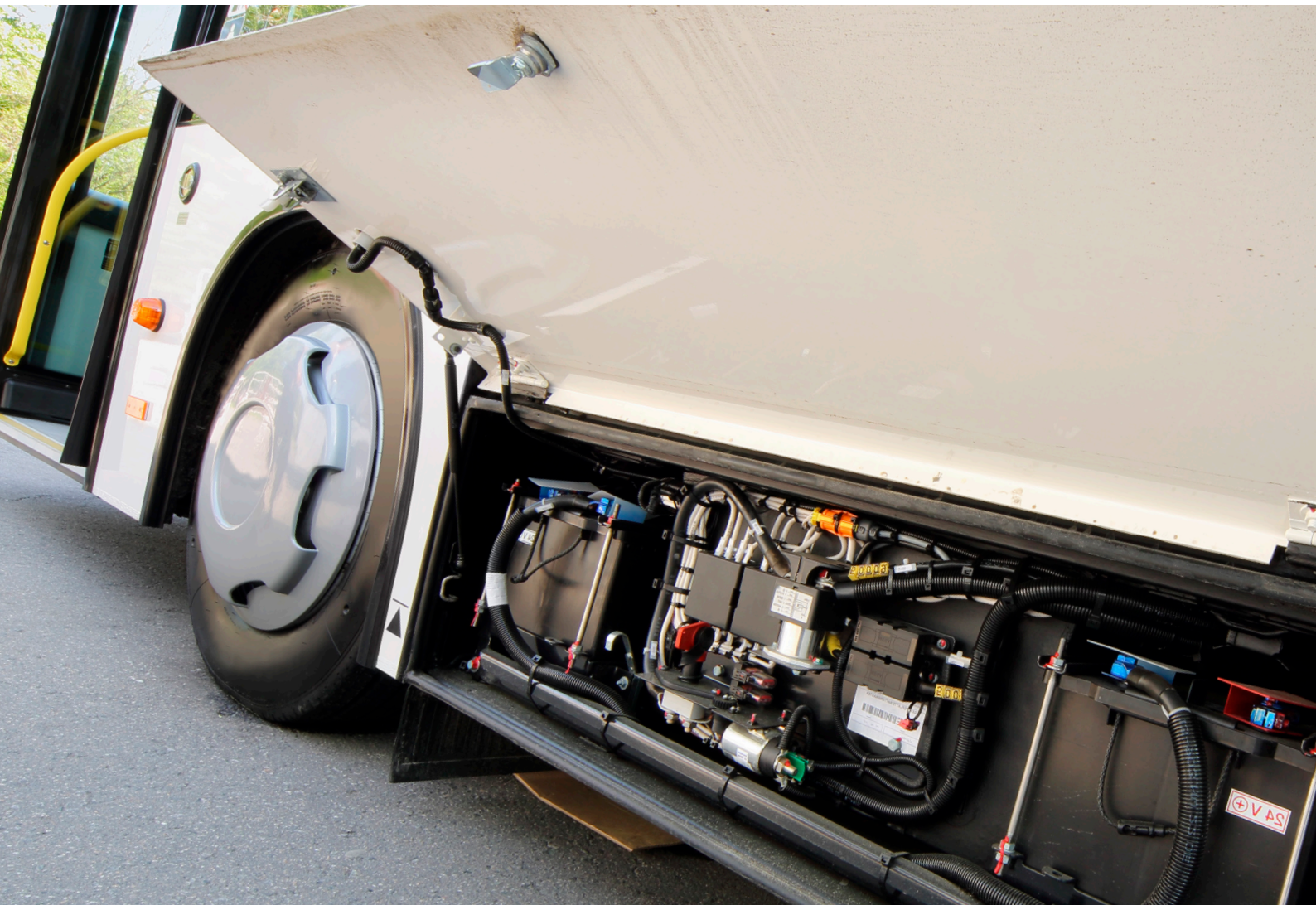
With the recent technological advances, thermal management solutions play an increasingly important role in improving the overall efficiency of both conventional and alternative powertrain vehicles.

While the impact on fuel consumption is the key metric for thermal management concepts in conventional powertrains, alternative powertrains have a different set of requirements.

These include improvements in range, charging times as well as reduction in overall system size, mass and subsequently cost.

Whether all-electric, hybrid or fuel cell, thermal control for the subsystems of the powertrain is critical.

Based on our experience in conventional and alternative powertrain technology, the Buschjost range of motorised valves has been designed to help you improve the performance, reliability and efficiency of such thermal management systems.



Buschjost Motorised Valves – Key Features

3-Way Motorised Valves

Precise Proportional Control

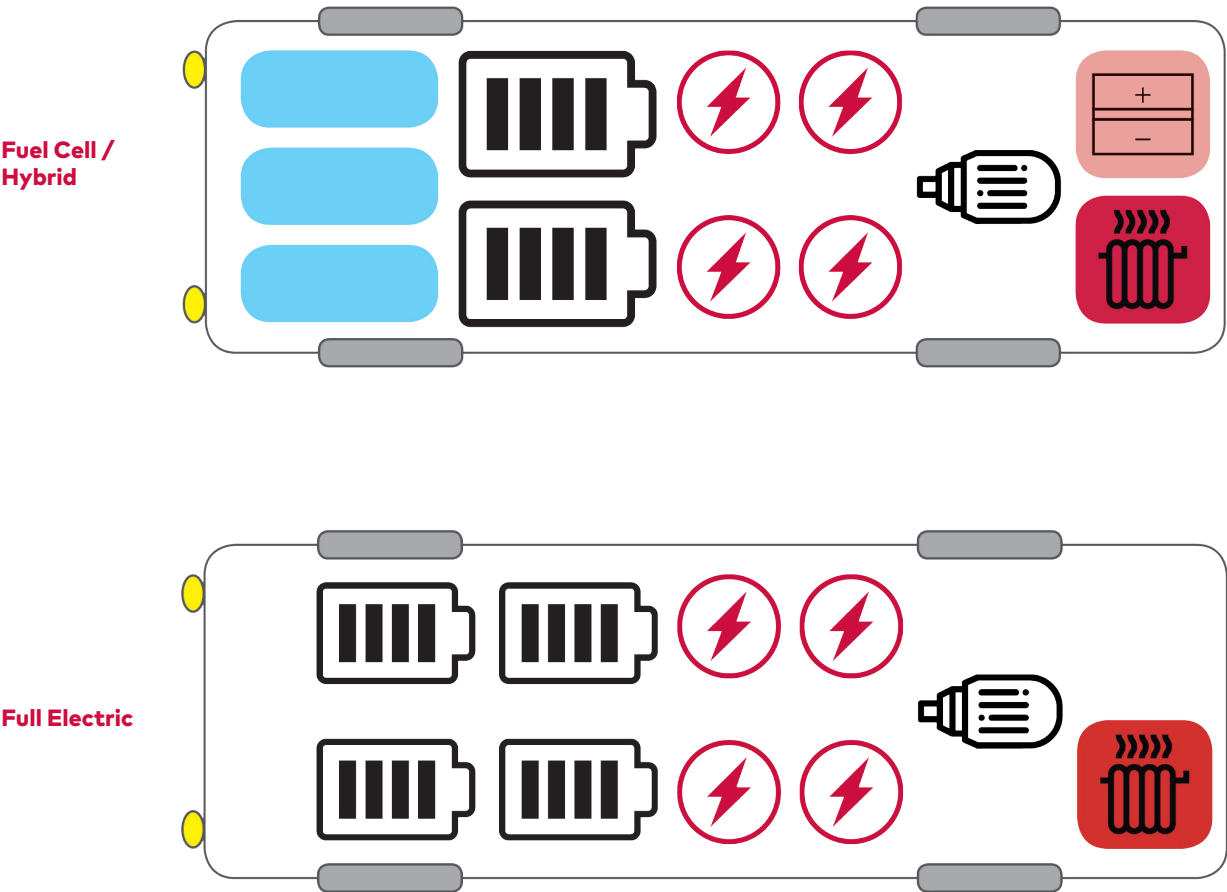
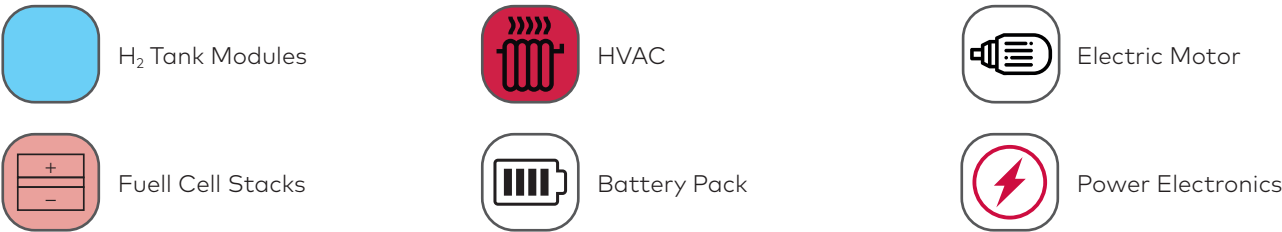
High Flow



Product Highlights

- » Minimum hysteresis proportional control
- » Low power consumption
- » Ultra-low friction ball valve technology
- » Debris tolerant
- » Compact design
- » Large temperature range
- » High volume flow capabilities
- » IP6K9K
- » Light-weight and robust
- » Chemically compatible with numerous coolants
- » Electrochemically neutral
- » Oil and grease free options
- » High resolution potentiometer
- » ECE R10 approved actuator
- » Can withstand high pressure peaks

Alternative Powertrain Applications



A Broad Portfolio For On- and Off-Highway Vehicles

Motorised Valve

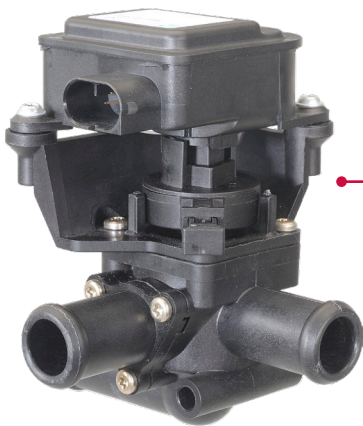
- » 12 & 24 V d.c. versions available
- » 22, 28 and 38 mm port sizes
- » 2- and 3-way configurations
- » Flow rates from 1.4m³/h to 28 m³/h
- » -30°C to 110°C temperature range
- » 0 – 2.5 bar (~36 psi) MOPD
- » Withstands pressure peaks up to 4 bar (58 psi)
- » Oil & grease free options
- » Optional manual override



Valve Actuator

- » 12 & 24 V d.c. versions available
- » ECE R10 approved
- » 2.5W power consumption
- » Does not consume power to hold
- » High-resolution potentiometer
- » Gold-plated pins for minimum resistance





3-Way Motorised Valves With Manual Override



3-Way Motorised Ball Valves



2-Way Motorised Valves With Manual Override



2-Way Motorised Valves



Buses and Coaches



Medium Duty Trucks



Heavy Duty Trucks



Light and Heavy Rail

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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