



aerospace  
climate control  
electromechanical  
filtration  
**fluid & gas handling**  
hydraulics  
pneumatics  
process control  
sealing & shielding



# FCDE Transportation Overview

Truck, Bus, Railway &  
Marine Control Solutions



ENGINEERING YOUR SUCCESS.

# Truck & Bus

## SCR: Urea Heating 2/2 Way Valve, NC Type



### Use:

SCR (Selective Catalytic Reduction) for buses and trucks.

### Benefits:

- Solenoid valves and electrical components customised according to the technical specifications of transport industry customers
- Solutions adapted to international anti-pollution standards Euro4/Euro5/US10 for NOX reduction
- Compact solutions

### Product solutions:

- 2-way valve, brass material, integrated fittings, normally closed
- Pilot operated
- EPDM seal material
- Ambient temperature: - 40°C / + 120°C
- Various possible fluid connection types (Bump,SAE-J2044, 1/2" BSP)
- ISO 15170 electrical connection (IP69K)



## SCR: Air control - 3/2 Way Valve, NC Type

### Use:

SCR (Selective Catalytic Reduction) for buses and trucks, delivers a preset airflow to the urea doser.

### Benefits:

- Solenoid valves and electrical components customised according to the technical specifications of transport industry customers
- Solutions designed to comply with international anti-pollution standards Euro4/Euro5/US10 for NOX reduction
- Compact solutions

### Product solutions:

- Assembly: 3-way valve, normally closed
- Integrated pressure regulator, aluminium body
- Exhaust muffler
- Inlet pressure: 6...12.5 bar
- Regulated pressure: 4 bar +/- 0.6 bar
- Ambient temperature: - 40°C / + 80°C
- ISO 15170 electrical connection (IP69K)



## Cabin Heating/Engine Pre-Heating - 2/2 Way Valve, NC or NO Type

### Use:

Cabin heating and engine preheating for trucks.

### Benefits:

- Solenoid valves and electrical components customised according to the technical specification of transport industrial customers
- Large flow vs compact solutions
- Low electrical consumption (9 W)
- 0 bar drop pressure operating (direct operated valve)

### Product solutions:

- 2-way servo or direct operated valve, normally closed, normally open
- Various fluid connection sizes
- ISO 15170 electrical connection (IP 69K)



## After Treatment Hydrocarbon Injector



### Use:

Diesel Oxidation Catalyst (DOC) for trucks.

### Benefits:

- Customised dosing systems for transport industry customers
- Adapted solutions to international anti-pollution standards Euro5/US10 for PM (particle matter) reduction
- No moving parts, no electrical parts on the exhaust
- No coolant lines required

### Product solutions:

- 2-way solenoid valves (ON-OFF and PWM)
- Pressure transducer, air diesel electrical connection
- Nozzle



## EGR: Exhaust Gas Recirculation - 3-Way Valve NC Type

### Use:

EGR for trucks and bus.

### Benefits:

- Customised solutions for transport industry customers
- Take part in the NOX reduction, to meet Euro5, US10 standards
- Efficient solutions with proportional air flow control

### Product solutions:

- Long life cycle
- 3-way PWM valve, normally closed
- Pressure regulation: 0-10 bar
- Ambient temperature: -40°C / +120°C
- ISO 15170 electrical connection (IP 69K)



## Engine Brake - 2-Way Valve NC Type

### Use:

Additional braking solutions for trucks.

### Benefits:

- Very compact solution
- Easy installation hydraulic cartridge valve
- PVDF seal compatible with bio-fuel

### Product solutions:

- 2-way valve, normally closed
- Aluminium cartridge valve body
- Engine installation
- Low hydraulic pressure control: 0-5 bar



# Railway

## Tilting Application Pneumatic Control Unit

### Use:

Fitted system on Pendolino trains, used to center the wagons on the tracks when it enters a curve.

### Benefits:

- Complete system, easy to install and remove
- Long life cycle PWM valve
- Low consumption (6 W)
- Integrated exhaust valve for safety functioning
- No air consumption once the wagon position is set
- EMC (electromagnetic compatibility)
- Conformity with EN50155, EN 50121-3-2
- Operating in harsh environment

### Product solutions:

- EPP3 pressure regulator, 0-10 bar, 4-20 mA (other calibration available)
- Pressure sensor, filter, ball valve
- Female electrical connector, tubing
- Low operating temperature: -40°C



## Pantograph Application Electronic Pressure Regulator

### Use:

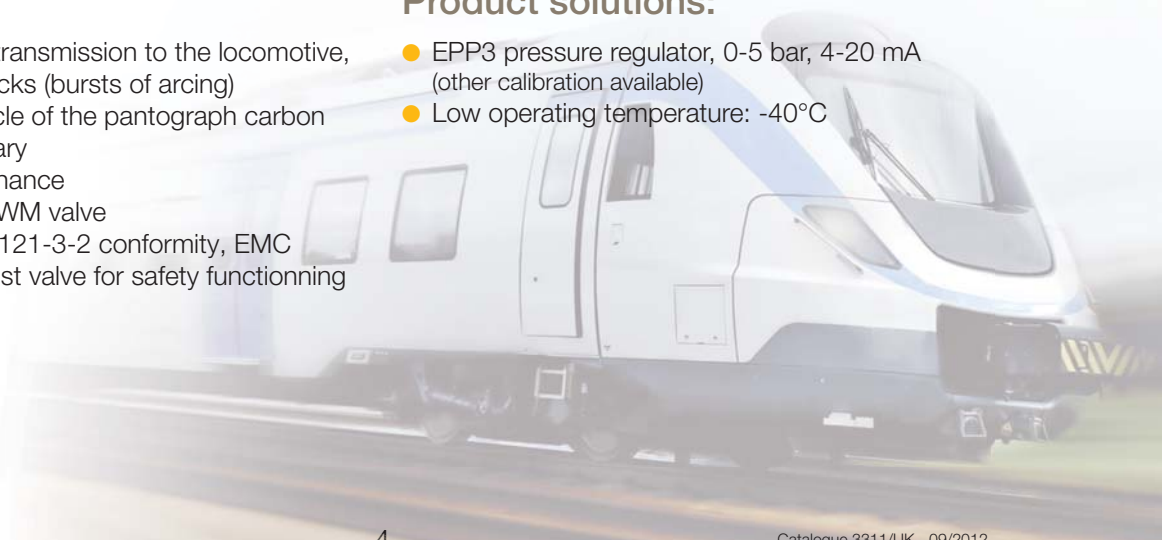
High speed trains to control the contact force between the pantograph and the catenary.

### Benefits:

- Better electrical transmission to the locomotive, reduced drawbacks (bursts of arcing)
- Increased life cycle of the pantograph carbon strips and catenary
- Reduces maintenance
- Long life cycle PWM valve
- EN50155/ EN50121-3-2 conformity, EMC
- Integrated exhaust valve for safety functioning

### Product solutions:

- EPP3 pressure regulator, 0-5 bar, 4-20 mA (other calibration available)
- Low operating temperature: -40°C



## Sanding Application 3/2-Way Valve NC, NO, Universal

### Use:

Solenoid valves controlling cylinder on sanding process.

### Benefits:

- Very compact valves
- Easy connected (flange version)
- Low consumption (3 W)
- Large operating voltage range (+or -30%)

### Product solutions:

- 3/2 way valves, 0-5 bar
- Ambient temperature : -30°C/+80°C

## Other applications

- Compressors (venting, purging)
- Airdryers,...



## Marine

## Fuel Selector Valves 2 Way Valve System, NC

### Use:

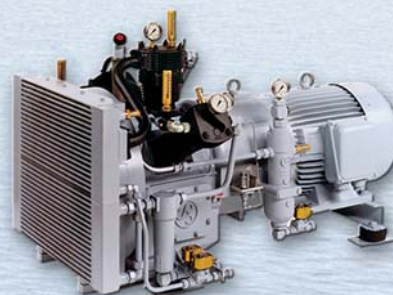
Typically fitted on yachts 30' - 70' in length, allows remote selection of desired fuel tank.

### Benefits:

- Eliminates the need to leave the helm to select fuel tanks
- No need to shut down the engine
- Can be manually operated in case of power loss
- Balance fuel levels, increasing stability of the boat

### Product solutions:

- 2 way valves, normally closed, on aluminium block
- Petrol tank: 2 solenoid valves
- Diesel tank: 4 solenoid valves
- Manual override
- Pressure relief valve (5 psi)
- KV factor: 1.93m<sup>3</sup>/h
- MOPD: 0.2 bar
- UL Marine listed (petrol selection)



# Intercooler Water Cooling 2/2 Way Valve, NO Type



## Use:

Solenoid valve fitted on diesel marine engines to avoid intercooler overheating.

## Benefits:

- Normally open function, provides cooling water in case of power loss, risk of intercooler damage/destruction
- Large flow vs compact valve
- Easy installation (bayonet connection, barb fittings)

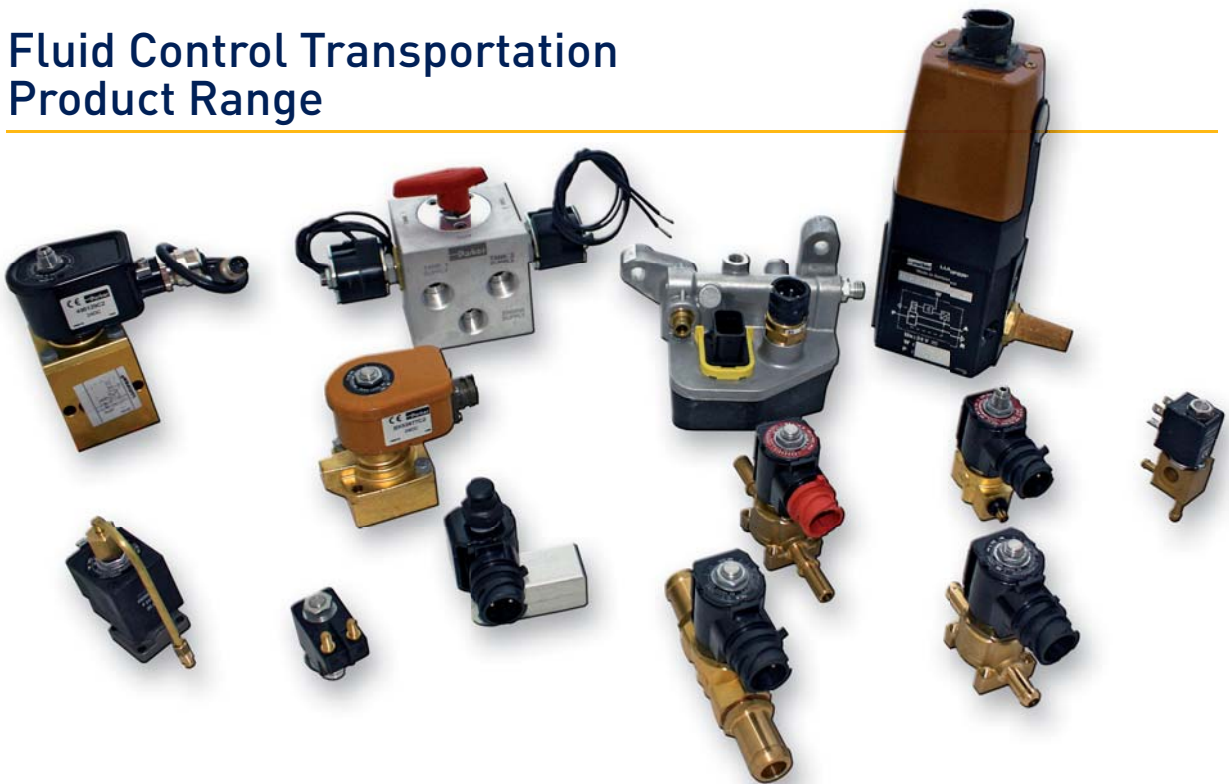
## Product solutions:

- 2-way valve, NC, servo operated
- Ambient temperature: -40°C / +60°C
- ISO15170 electrical connection (IP 69K)
- Working pressure: 0.5 bar

## Other Applications

- Oil cut off valve:  
2 way magnalift valve, normally open
- Lubricating control valve:  
2 way direct acting valve, normally closed

## Fluid Control Transportation Product Range



### WARNING - USER RESPONSIBILITY

**FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.



# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



## Aerospace Key Markets

Aftermarket services  
Commercial transports  
Engines  
General & business aviation  
Helicopters  
Launch vehicles  
Military aircraft  
Missiles  
Power generation  
Regional transports  
Unmanned aerial vehicles

## Key Products

Control systems & actuation products  
Engine systems & components  
Fluid conveyance systems & components  
Fluid metering, delivery & atomization devices  
Fuel systems & components  
Fuel tank inerting systems  
Hydraulic systems & components  
Thermal management  
Wheels & brakes



## Climate Control Key Markets

Agriculture  
Air conditioning  
Construction Machinery  
Food & beverage  
Industrial machinery  
Life sciences  
Oil & gas  
Precision cooling  
Process  
Refrigeration  
Transportation

## Key Products

Accumulators  
Advanced actuators  
CO<sub>2</sub> controls  
Electronic controllers  
Filter driers  
Hand shut-off valves  
Heat exchangers  
Hose & fittings  
Pressure regulating valves  
Refrigerant distributors  
Safety relief valves  
Smart pumps  
Solenoid valves  
Thermostatic expansion valves



## Electromechanical Key Markets

Aerospace  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Paper machinery  
Plastics machinery & converting  
Primary metals  
Semiconductor & electronics  
Textile  
Wire & cable

## Key Products

AC/DC drives & systems  
Electric actuators, gantry robots & slides  
Electrohydraulic actuation systems  
Electromechanical actuation systems  
Human machine interface  
Linear motors  
Stepper motors, servo motors, drives & controls  
Structural extrusions



## Filtration Key Markets

Aerospace  
Food & beverage  
Industrial plant & equipment  
Life sciences  
Marine  
Mobile equipment  
Oil & gas  
Power generation & renewable energy  
Process  
Transportation  
Water Purification

## Key Products

Analytical gas generators  
Compressed air filters & dryers  
Engine air, coolant, fuel & oil filtration systems  
Fluid condition monitoring systems  
Hydraulic & lubrication filters  
Hydrogen, nitrogen & zero air generators  
Instrumentation filters  
Membrane & fiber filters  
Microfiltration  
Sterile air filtration  
Water desalination & purification filters & system



## Fluid & Gas Handling

### Key Markets

Aerial lift  
Agriculture  
Bulk chemical handling  
Construction machinery  
Food & beverage  
Fuel & gas delivery  
Industrial machinery  
Life sciences  
Marine  
Mining  
Mobile  
Oil & gas  
Renewable energy  
Transportation

### Key Products

Check valves  
Connectors for low pressure fluid conveyance  
Deep sea umbilicals  
Diagnostic equipment  
Hose couplings  
Industrial hose  
Mooring systems & power cables  
PTFE hose & tubing  
Quick couplings  
Rubber & thermoplastic hose  
Tube fittings & adapters  
Tubing & plastic fittings



## Hydraulics

### Key Markets

Aerial lift  
Agriculture  
Alternative energy  
Construction machinery  
Forestry  
Industrial machinery  
Machine tools  
Marine  
Material handling  
Mining  
Oil & gas  
Power generation  
Refuse vehicles  
Renewable energy  
Truck hydraulics  
Turf equipment

### Key Products

Accumulators  
Cartridge valves  
Electrohydraulic actuators  
Human machine interfaces  
Hybrid drives  
Hydraulic cylinders  
Hydraulic motors & pumps  
Hydraulic systems  
Hydraulic valves & controls  
Hydrostatic steering  
Integrated hydraulic circuits  
Power take-offs  
Power units  
Rotary actuators  
Sensors



## Pneumatics

### Key Markets

Aerospace  
Conveyor & material handling  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Transportation & automotive

### Key Products

Air preparation  
Brass fittings & valves  
Manifolds  
Pneumatic accessories  
Pneumatic actuators & grippers  
Pneumatic valves & controls  
Quick disconnects  
Rotary actuators  
Rubber & thermoplastic hose & couplings  
Structural extrusions  
Thermoplastic tubing & fittings  
Vacuum generators, cups & sensors



## Process Control

### Key Markets

Alternative fuels  
Biopharmaceuticals  
Chemical & refining  
Food & beverage  
Marine & shipbuilding  
Medical & dental  
Microelectronics  
Nuclear Power  
Offshore oil exploration  
Oil & gas  
Pharmaceuticals  
Power generation  
Pulp & paper  
Steel  
Water/wastewater

### Key Products

Analytical Instruments  
Analytical sample conditioning products & systems  
Chemical injection fittings & valves  
Fluoropolymer chemical delivery fittings, valves & pumps  
High purity gas delivery fittings, valves, regulators & digital flow controllers  
Industrial mass flow meters/ controllers  
Permanent no-weld tube fittings  
Precision industrial regulators & flow controllers  
Process control double block & bleeds  
Process control fittings, valves, regulators & manifold valves



## Sealing & Shielding

### Key Markets

Aerospace  
Chemical processing  
Consumer  
Fluid power  
General industrial  
Information technology  
Life sciences  
Microelectronics  
Military  
Oil & gas  
Power generation  
Renewable energy  
Telecommunications  
Transportation

### Key Products

Dynamic seals  
Elastomeric o-rings  
Electro-medical instrument design & assembly  
EMI shielding  
Extruded & precision-cut, fabricated elastomeric seals  
High temperature metal seals  
Homogeneous & inserted elastomeric shapes  
Medical device fabrication & assembly  
Metal & plastic retained composite seals  
Shielded optical windows  
Silicone tubing & extrusions  
Thermal management  
Vibration dampening

ENGINEERING YOUR SUCCESS.

# Parker Worldwide

## Europe, Middle East, Africa

**AE - United Arab Emirates,**  
Dubai

Tel: +971 4 8127100  
parker.me@parker.com

**AT - Austria,** Wiener Neustadt

Tel: +43 (0)2622 23501-0  
parker.austria@parker.com

**AT - Eastern Europe,** Wiener  
Neustadt

Tel: +43 (0)2622 23501 900  
parker.easteurope@parker.com

**AZ - Azerbaijan,** Baku

Tel: +994 50 2233 458  
parker.azerbaijan@parker.com

**BE/LU - Belgium,** Nivelles

Tel: +32 (0)67 280 900  
parker.belgium@parker.com

**BY - Belarus,** Minsk

Tel: +375 17 209 9399  
parker.belarus@parker.com

**CH - Switzerland,** Etoy

Tel: +41 (0)21 821 87 00  
parker.switzerland@parker.com

**CZ - Czech Republic,** Klecany

Tel: +420 284 083 111  
parker.czechrepublic@parker.com

**DE - Germany,** Kaarst

Tel: +49 (0)2131 4016 0  
parker.germany@parker.com

**DK - Denmark,** Ballerup

Tel: +45 43 56 04 00  
parker.denmark@parker.com

**ES - Spain,** Madrid

Tel: +34 902 330 001  
parker.spain@parker.com

**FI - Finland,** Vantaa

Tel: +358 (0)20 753 2500  
parker.finland@parker.com

**FR - France,** Contamine s/Arve

Tel: +33 (0)4 50 25 80 25  
parker.france@parker.com

**GR - Greece,** Athens

Tel: +30 210 933 6450  
parker.greece@parker.com

**HU - Hungary,** Budapest

Tel: +36 23 885 470  
parker.hungary@parker.com

**IE - Ireland,** Dublin

Tel: +353 (0)1 466 6370  
parker.ireland@parker.com

**IT - Italy,** Corsico (MI)

Tel: +39 02 45 19 21  
parker.italy@parker.com

**KZ - Kazakhstan,** Almaty

Tel: +7 7272 505 800  
parker.easteurope@parker.com

**NL - The Netherlands,** Oldenzaal

Tel: +31 (0)541 585 000  
parker.nl@parker.com

**NO - Norway,** Asker

Tel: +47 66 75 34 00  
parker.norway@parker.com

**PL - Poland,** Warsaw

Tel: +48 (0)22 573 24 00  
parker.poland@parker.com

**PT - Portugal,** Leca da Palmeira

Tel: +351 22 999 7360  
parker.portugal@parker.com

**RO - Romania,** Bucharest

Tel: +40 21 252 1382  
parker.romania@parker.com

**RU - Russia,** Moscow

Tel: +7 495 645-2156  
parker.russia@parker.com

**SE - Sweden,** Spånga

Tel: +46 (0)8 59 79 50 00  
parker.sweden@parker.com

**SK - Slovakia,** Banská Bystrica

Tel: +421 484 162 252  
parker.slovakia@parker.com

**SL - Slovenia,** Novo Mesto

Tel: +386 7 337 6650  
parker.slovenia@parker.com

**TR - Turkey,** Istanbul

Tel: +90 216 4997081  
parker.turkey@parker.com

**UA - Ukraine,** Kiev

Tel: +380 44 494 2731  
parker.ukraine@parker.com

**UK - United Kingdom,** Warwick

Tel: +44 (0)1926 317 878  
parker.uk@parker.com

**ZA - South Africa,** Kempton Park

Tel: +27 (0)11 961 0700  
parker.southafrica@parker.com

## North America

**CA - Canada,** Milton, Ontario

Tel: +1 905 693 3000

**US - USA,** Cleveland

Tel: +1 216 896 3000

## Asia Pacific

**AU - Australia,** Castle Hill

Tel: +61 (0)2-9634 7777

**CN - China,** Shanghai

Tel: +86 21 2899 5000

**HK - Hong Kong**

Tel: +852 2428 8008

**IN - India,** Mumbai

Tel: +91 22 6513 7081-85

**JP - Japan,** Tokyo

Tel: +81 (0)3 6408 3901

**KR - South Korea,** Seoul

Tel: +82 2 559 0400

**MY - Malaysia,** Shah Alam

Tel: +60 3 7849 0800

**NZ - New Zealand,** Mt Wellington

Tel: +64 9 574 1744

**SG - Singapore**

Tel: +65 6887 6300

**TH - Thailand,** Bangkok

Tel: +662 186 7000-99

**TW - Taiwan,** Taipei

Tel: +886 2 2298 8987

## South America

**AR - Argentina,** Buenos Aires

Tel: +54 3327 44 4129

**BR - Brazil,** Sao Jose dos Campos

Tel: +55 800 727 5374

**CL - Chile,** Santiago

Tel: +56 2 623 1216

**MX - Mexico,** Apodaca

Tel: +52 81 8156 6000

### EMEA Product Information Centre

**Free phone: 00 800 27 27 5374**

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL,  
IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

### US Product Information Centre

**Toll-free number: 1-800-27 27 537**

[www.parker.com](http://www.parker.com)

