

FLUID CONTROL SOLUTIONS

GLOBAL BRANDS
CREATING
GLOBAL ADVANTAGE

Norgren is a global company engineering advantage for customers in both fluid and motion control technologies.

Norgren Fluid Controls focuses its energy and resources on **valves, pumps and fluid control solutions.**

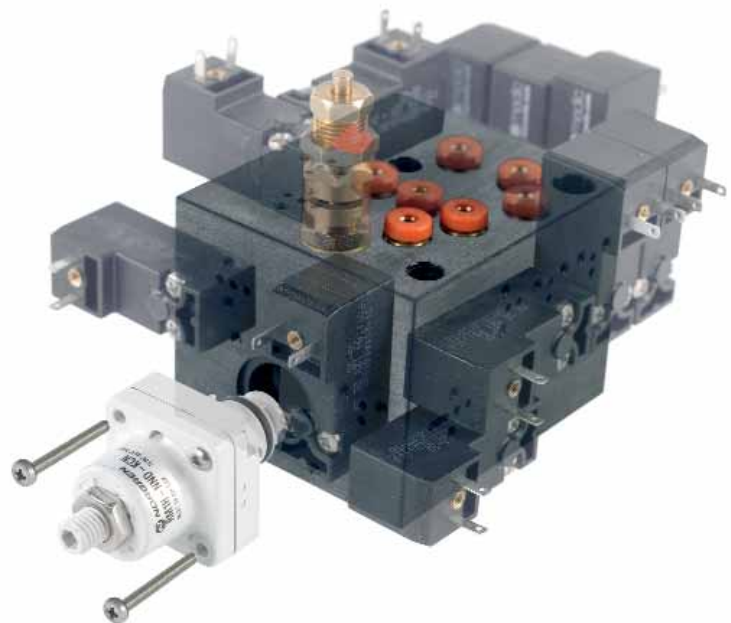
The well-established and proven brands within this Group include:

» Buschjost » FAS » KIP » Kloehn

Combining these brands into one organisation provides our customers with unrivaled resources, expertise, and breadth of product range to enable them to source any fluid control solution from one capable global supplier, represented in all the world's major regions.

Norgren Fluid Controls solutions can create competitive advantage for you by increasing your sales and market share, and reducing your total cost of ownership.

ENGINEERING THAT MAKES A DIFFERENCE



PROVEN TECHNICAL SOLUTIONS

Our engineers are dedicated to the development of solenoid valves, process valves, precision liquid handling technologies, and customised manifolds & solutions.

Fully equipped clean room facilities, in several locations, meet the specific needs of demanding market sectors such as Life Sciences and semiconductor manufacturing.

Our manufacturing locations in Germany, Switzerland and the USA enable us to stay close to our customers, and take advantage of local technological expertise. The Norgren Fluid Controls facility in Geneva, for example, that develops sophisticated miniature valve solutions, draws heavily on the miniaturisation and precision traditions of the Swiss watch-making industry.

As a subsidiary of IMI plc, and part of the global Norgren group, we provide our customers worldwide with the reassurance of dealing with an established global supplier. This gives financial strength and security, and all the advantages of a global sales and service network.

UNDERSTANDING YOUR NEEDS

» CLOSE PARTNERSHIPS

Our dedicated engineers work directly with your engineers to provide design advice and assistance, develop customised solutions, and get your new concepts to market faster.

» SECTOR AND APPLICATION EXPERTISE

Many decades of industry-specific experience means we speak your language, and understand your operating environment.

» QUALITY AND CERTIFICATION

Products and processes conform to ISO 9001, ISO/TS 16949, KTA 1401, APQP, ATEX, DB A1, FDA, NSF, UL, VDA. Selected production facilities include GMP compliant assembly areas and Class 10,000 clean rooms.

CREATING IDEAS THAT WORK HARDER



» DELIVERY LEAD TIMES

A choice of flexible delivery arrangements can meet individual needs. Customised supply chain solutions include Kanban and just-in-time deliveries.

» COMPREHENSIVE SIZE RANGE

From 8 mm FAS miniature solenoid valves to 200 mm Buschjost process valves.

» HIGH SPEED

Response times as low as 3 ms for sorting machines, inkjet printing etc.

» HIGH VACUUM

10^{-6} Torr (10^{-9} bar) or even lower, with a leak rate of 10^{-8} mbar l/sec.

» HIGH PRESSURE

Pressure range going up to 250 bar.

» HIGH FLOW-TO-SIZE RATIO

Highly compact solutions with no compromise on performance.

» MEDIA SEPARATED VALVES

Comprehensive range featuring industry leading flow-to-size ratio and small or no dead volume. For use with ultra pure or corrosive media.

» PROPORTIONAL TECHNOLOGY

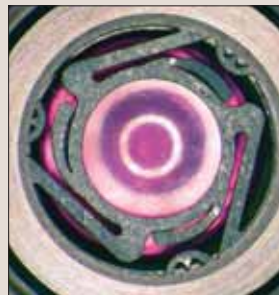
High flow precision and high repeatability combined with space, weight and power savings.

» LAMINATED MANIFOLD TECHNOLOGY

Norgren's expertise in thermal, diffusion and solvent bonding processes allow manifolding in acrylic and other high-grade polymers, and a precise alignment of fluidic pathways as small as $250 \mu\text{m}$.

» SYRINGE AND SYRINGE PUMP TECHNOLOGY

Superior design and manufacturing processes allow longer lifetimes, high precision, and high accuracy for dispense down to nanoliters.



1 Solenoid Valves without Differential Pressure



Page 8

2 Solenoid Valves with Differential Pressure



Page 103

3 Pressure Actuated Valves



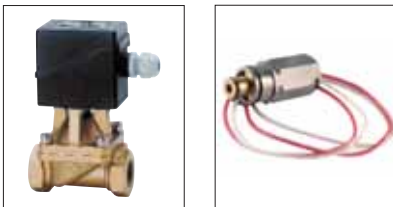
Page 132

4 Valves and Systems for Dust Filters



Page 201

5 Proportional Valves



Page 221

6 Pressure Sensors



Page 227

7 Air Preparation Equipment (FRL)



Page 235

8 Fittings



Page 255

Feature Pages

	Page
Renewable Energies	17
KIP Solenoid Valves	86
Media Separated Valves	102
Sanitary Automation	110
Water Treatment and Purification	120
Oil & Gas	151
Chemical and Process Industries	160
Valve Islands	190
Dust Filtration	200
Life Sciences	220
KIP Liquid Level Switches	246
Kloehn - Precision Liquid Handling	254
Conventional Energies	263
Fittings and Accessories	274

Further Information

	Page
Technical Information	276
Pressure Equipment Directive (PED)	316
Safety Instructions	318
ATEX	319
Index	322
Sales and Service Centres	back cover

Contents in order of series

Series	Connection	Material	Page
Bacosol 32 mm	G	Ms	24
Chipsol 8 mm	C	SS	10
Flatprop 16 mm	C, A	Ms, SS	224
Intersol 22 mm	A	PA	22
Microsol 15 mm	A	PPS/PA, SS	18
Picosol 10 mm	A	PPS	14
Fittings - Pneufit	RS	Msv, GFK	256
Fittings - Pneufit C & M	RS	PBT, Msv	264
FRL - Excelon Filter/Regulators	G	Zg, Al, Pk, Acetal	242
FRL - Excelon Series	G	Pk, Zg	240
FRL - F22, R22, L22	G	SS	250
FRL - Olympian Plus	G	Al, Zg	236
Pressure Sensor - 18 S Allfluid	G	SS	228
Pressure Sensor - 33 D	G, A	Al, SS	230
Regulators - R05, B05	G	SS, Acetal	248
82080**	G	PVDF	100
82160*	G	Ms	134
82180*	G	Ms	136
82280*	G	Rg	136
82370	G	Ms	26
82380*	G	1.4408	166
82400*	G	Ms	104
82470*	G	Ms	106
82480*	G	1.4408	166
82510	G	Ms	28
82530*	G	Ms	30
82540*	G	Ms	32
82560*	G	1.4408	72
82580	G	Ms	138
82590 NEW	G	1.4408	74
82610 NEW	G	1.4408	76
82660 NEW	G	Ms	36
82670 NEW	G	1.4408	78
82710*	G	Ms	140
82730*	G	1.4408	116
82870	G	GG	214
82880	G	Ms	222
82900*	G	Al	202
82960*	G	Al	204
83050	F	GG	118
83200	F	GG	188
83240	F	GG	192
83250	G	Rg	164
83300	G	1.4408	210
83320	G	1.4408	212
83340	F	GG	54
83350	G	GG	194
83380	F	GG	196
83400	-	-	216
83580	F	GG	122
83750 NEW	-	-	218
83860	F	GS	198
83920	Adapter	Al	206
83930	Adapter	Al	208
84070 NEW	G	PPO GF 30	114
84080 NEW	G	PPO GF 30	114
84100	F	GG	56

Series	Connection	Material	Page
84120	F	GG/Rg	60
84140	F	1.4581	82
84180 NEW	G	Ms	142
84190 NEW	G	1.4408	168
84200	F	GS	64
84220	F	GS/Rg	68
84240	F	1.4581	88
84320	F	GG	124
84340	F	GS	128
84360 NEW	G	Ms	38
84500*	G	Ms	144
84520*	G	1.4408	170
84540	SW	1.4581	174
84550	SW	1.4581	174
84580	SW	1.4581	178
84590	SW	1.4581	180
84660	G	Ms	148
84680	G	Ms	148
84720*	G	Ms	162
84740*	G	1.4581	184
84760	SW	1.4581	186
84770	SW	1.4581	186
84880	SW	1.4581	178
84890	SW	1.4581	180
85040	G	1.4581	80
85100	F	GG	56
85120	F	GG/Rg	60
85140	F	1.4581	82
85200	F	GS	64
85220	F	GS/Rg	68
85240	F	1.4581	88
85300*	G	Ms	108
85320*	G	Ms	112
85640	F	1.4581	92
85700*	G	Ms	40
85720*	G	Ms	44
85740* NEW	G	1.4408	94
95000	G	Ms	48
95100	G	SS	98
96000	G	Ms	152
96100	G	SS	154
97100 NAMUR	G	Al anodized	156

* NPT-connection available, ** = Sealed core tube (less susceptible to contaminated fluids)

A = Subbase

C = Cartridge

F = Flange connection

G = Internal thread

RS = Tube connection

SW = Welded ends

Al = Aluminium

GFK = Glass filled nylon

GG = Grey cast iron

GG/Rg = Grey cast iron / gunmetal seat

GS = Cast steel

Ms = Brass

Msv = Nickel plated brass

PBT = Polybutylene terephthalate

Pk = Polycarbonate

PVC = Polyvinylchloride

PVDF = Polyvinylidenefluoride

Rg = Gun metal

SS = Stainless steel

Zg = Zinc alloy

1.4581 / 1.4408 = Stainless steel