

rotork®

Keeping the World Flowing
for Future Generations



02

Bifold

Product Overview & Portfolio

02 Introduction to Rotork

Contents		Pages
■	02 Introduction to Rotork	2 - 3
■	02 Introduction to Bifold	4 - 5
■	02 Product Structure	6 - 9
■	03 - 43 Product Overview & Portfolio	10 - 67
■	44 Market Sectors	68 - 73



rotork®

Rotork is the market leading actuator manufacturer and flow control company that operates in any market where the flow of gases or liquids need to be controlled. We are passionate about solving your problems- and we have the technology, knowledge and experience to do it.

Our business is perfectly aligned to service the needs of our customers. Our engineering and application knowledge base, built over 60 years, allows us to provide pioneering and reliable solutions for all flow control applications. At Rotork, there is an emphasis on innovation and new product development, to better meet customer requirements.

As a global company with local support, we provide assured reliability for critical applications and environments wherever you are. As the recognised market leader for 60 years, our experience of flow control is second to none.

Rotork is committed to close customer ties and our global network of offices and manufacturing sites support operations in some of the most remote and challenging environments imaginable. We work across the globe, servicing a diverse range of markets and critical applications. Our unrivalled worldwide sales and service network ensures a Rotork contact point is available for customers in any region to help global industries improve efficiency, assure safety and protect the environment.

Rotork support customers by understanding their needs and problems. The innovative research and development activities across all of Rotork ensures cutting edge products are available for every application, as we solve customer challenges and develop new solutions to create successful and reliable operations.

Reliable operation

when it matters



Assured reliability for critical applications and environments. Whether used 24/7 or infrequently, Rotork products will operate reliably and efficiently when called upon.

Quality-driven

global manufacturing



Products designed with 60 years of industry and application knowledge.

Research and development across all our facilities ensures cutting edge products are available for every application.

Customer-focused service

worldwide support



Solving customer challenges and developing new solutions. From initial enquiry through to product installation, longterm after-sales care and CSP (Client Support Programmes).

Low cost

of ownership



Long-term reliability prolongs service life.

Rotork helps to reduce long term cost of ownership and provides greater efficiency to process and plant.

Comprehensive product range

serving multiple industries



Improved efficiency, assured safety and environmental protection.

Rotork products and services are used throughout industry inclusive of Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Pulp & Paper, Food & Beverage, Pharmaceutical and Chemical industries around the world.

Market leader

technical innovator



The recognised market leader for 60 years.

Our customers have relied upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

Global presence

local service



Global company with local support.

Manufacturing sites, service centres, sales offices and Centres of Excellence throughout the world provide unrivalled customer services and fast delivery.

Corporate social

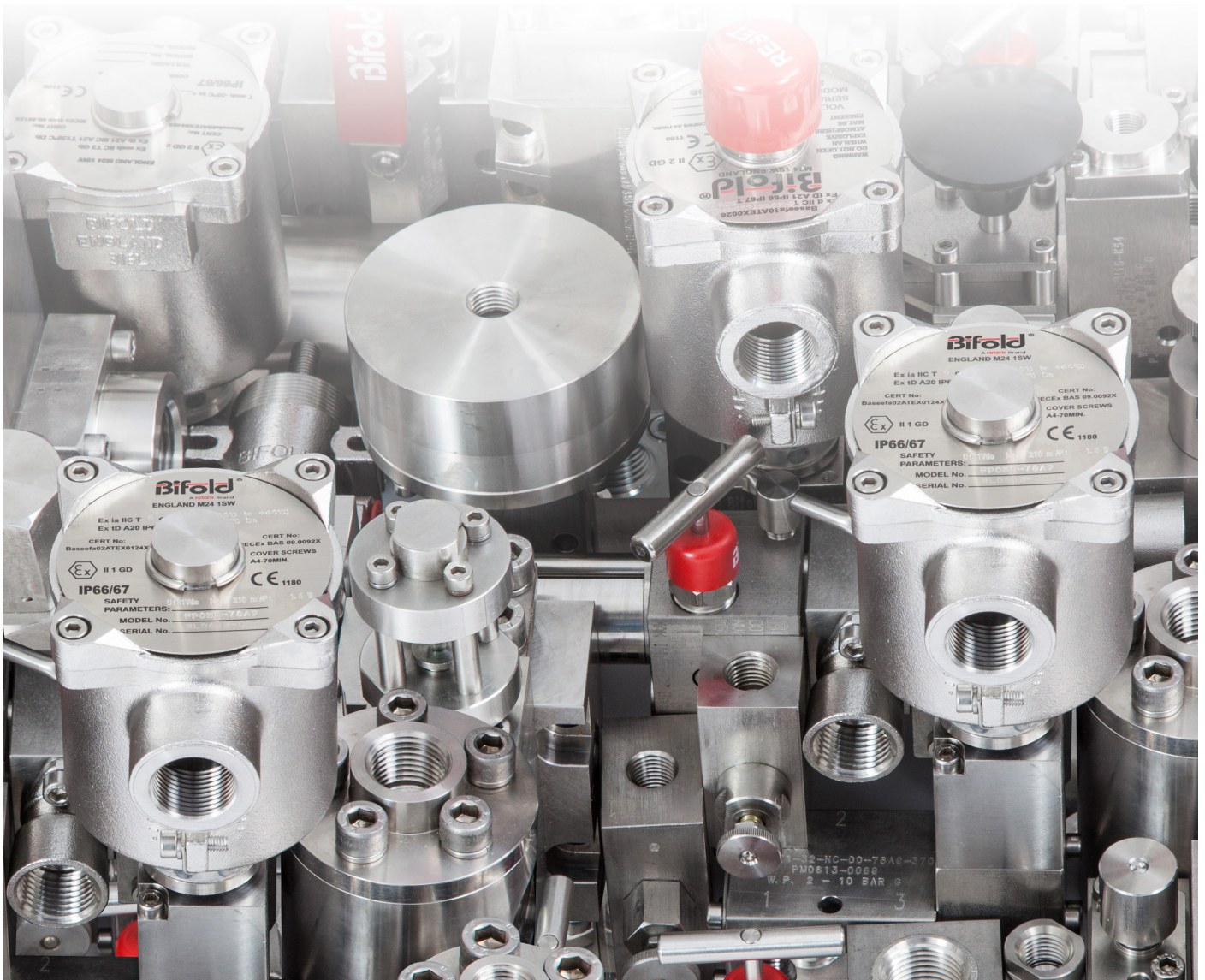
responsibility



A responsible business leads to being the best business.

We are socially, ethically, environmentally responsible and committed to embedding CSR (Corporate Social Responsibility) across all our processes and ways of working.

02 Introduction to Bifold



Since joining Rotork in 2015, Bifold has continued to develop its growth strategy, specialising in a wide range of products, supplying the oil, gas and wider industrial markets, with expertise in a number of niche sectors including subsea and wellhead.

With the Rotork global footprint, Bifold will continue to be leaders in the design and manufacture of hydraulic, pneumatic, gaseous and subsea products.

The combination of our product brands trusted reputation and pioneering outlook on the industry as a whole, underpins our position as a leading global supplier of innovative design solutions.

Our world class products complement Rotork solutions and help with performance and productivity enabling us to work together to grow our skills, confidence and knowhow and get closer to our customers.

Our design centre of excellence based in Manchester UK is supported worldwide with product manager specialists and a global network of agents and distributors. Other locations include Houston USA and Singapore.

Bifold, Bifold Marshalsea and Bifold Orange;

Rotork Brands



100%

Our valves and pumps outperform all others in the industry - with the largest range of pressures, from 0 to 20,000 psi / 0 to 1,380 bar.



No 1

For global wellhead, process, choke, valve actuation, deluge and fire damper markets.



Decades of topside and subsea service use, knowledge and reliability.



Ultra low power solutions - ideal for solar applications.



In-house design, technical and production facilities for standard and bespoke product solutions.



Quickest technical response with worldwide service and support for peace of mind.



Global approvals.



Compact modular solutions featuring block before bleed technology.



Guaranteed safety factors - Highest level of safety and qualification testing, continuously meeting rigorous industry standards.



Lowest leakage rates in the industry and zero steady state consumption positioning solutions.



Configurable designs to meet specific user requirements.



Widest range of hydraulic, pneumatic, gaseous and subsea stainless steel and aluminium products and solutions.

02 Product Structure

* SECTION	MEDIA	PRODUCT RANGES	PRESSURE (Up to)	FLOW RATE (Up to)	PAGE
Modular Systems	Overview	Modular Systems			10-11
	03 Pneumatic	Model AXIS & Deluge Modular Systems, XS04, XS08, XS16, XS104, XSN04 & XSIN04	20 bar	50.0 Cv	12
	04 Hydraulic	Valve Assembly Modular Systems, VA's	1,380 bar	3.8 Cv / 200.0 l/min	12
	05 Gaseous	Valve Assembly Modular Systems, VA's	210 bar	0.32 Cv	12
	06 Subsea Hydraulic	Valve Assembly Modular Systems, SVA's	1,035 bar	1.9 Cv / 100.0 l/min	12
Solenoid Valves	Overview	Solenoid Valves			13-14
	07 Pneumatic	Direct Acting & Indirect Acting Solenoid Valves, FP03P, FP06P, FP10P, FP12P, BXS, SPR & PPV	50 bar	11.2 Cv	15
	08 Hydraulic	Direct Acting & Indirect Acting Solenoid Valves, FP01, FP02, FP03, FP04, FP05, FP10, FP15, FP50, FP50(B), FP100, FP200, FP200(B) & SVP	1,380 bar	3.8 Cv / 200.0 l/min	15
	08 Hydraulic	Slide Valve Indirect Acting Solenoid Valves, SV & SVI	1,380 bar	0.8 Cv / 40.0 l/min	15
	09 Gaseous	Direct Acting & Indirect Acting Solenoid Valves, FP02G, FP05G & FP15G	210 bar	0.32 Cv	15
	10 Subsea Hydraulic	Direct Acting Solenoid Pilot Valves (SPV), FPS01	690 bar	0.014 Cv / 0.6 l/min	16
	10 Subsea Hydraulic	Directional Control Valves (DCV), FPS10	690 bar	0.22 Cv / 11.5 l/min	16
	10 Subsea Hydraulic	Directional Control Valves (DCV), FPS15	1,035 bar	0.32 Cv / 15.0 l/min	16
Logic Valves	Overview	Logic Valves - Pilot, Mechanical & Reset Valves			17-18
	11 Pneumatic	Pilot & Mechanical Indicating Relays First Out / Visual Indicator Valves, SJJ06	10 bar	1.0 Cv	19
	11 Pneumatic	Pilot, Mechanical & Reset Valves, BXS, SPR & PPV	12 bar	102.0 Cv	19
	12 Hydraulic	Pilot & Mechanical Valves, FP01, FP02, FP03, FP04 & FP05	690 bar	0.1 Cv / 5.0 l/min	19
	12 Hydraulic	Interface Valves, FP15, FP15E, FP50, FP50(B), FP100, FP200 & FP200(B)	1,380 bar	3.8 Cv / 200.0 l/min	19
	12 Hydraulic	Time Delayed Block Valves, TDBV	690 bar	0.6 Cv / 35.0 l/min	20
	12 Hydraulic	Mechanical 4-Way Directional Control Valves, I4550	690 bar	0.9 Cv / 40.0 l/min	20
	13 Gaseous	Pilot & Mechanical Valves, FP02G, FP05G & FP15(G)	210 bar	0.2 Cv	20
	13 Gaseous	Interface Valves, FP15/L(G), FP15/H(G) & FP15E(G)	300 bar	0.32 Cv	20
	14 Subsea Hydraulic	Pilot & Mechanical Valves, FPS01	1,380 bar	0.014 Cv / 0.6 l/min	21
	14 Subsea Hydraulic	Directional Control Valves, FPS10	1,035 bar	0.22 Cv / 10.0 l/min	21
	14 Subsea Hydraulic	Interface Valves, FPS15, FPS50 & FPS100	1,035 bar	1.9 Cv / 100.0 l/min	21
	14 Subsea Hydraulic	Pilot Slide Valves, HPV5300	1,035 bar	0.2 Cv / 10.0 l/min	21
	14 Subsea Hydraulic	Time Delayed Vent Valves, TDVVS	690 bar	0.32 Cv / 15.0 l/min	22
Pressure Control & Filtration	Overview	Pressure Control & Filtration - Filters, Regulators, Filter Regulators & Filtration Units			23-24
	15 Pneumatic	Air Preparation, Filter, Regulator & Filter Regulator Units, SH & SC	20 bar	11.2 Cv	25
	16 Hydraulic	High Pressure Regulators, HPRI	690 bar	0.11 Cv	25
	16 Hydraulic	Inline & Bowl Filters, F & BF	520 bar	1.2 Cv / 40.0 l/min	25
	16 Hydraulic	Automatic Shut-off Bypass Valves, ASBV	345 bar	0.9 Cv / 50.0 l/min	25



* SECTION	MEDIA	PRODUCT RANGES	PRESSURE (Up to)	FLOW RATE (Up to)	PAGE
17 Volume Boosters & Filter Boosters	Overview	Ancillaries - Volume Boosters & Filter Boosters			26-27
	17 Pneumatic	Volume Boosters & Filter Boosters, VBP	20 bar	50.0 Cv	28
18 - 21 Flow Control Valves	Overview	Ancillaries - Flow Control Valves			29
	18 Pneumatic	Flow Control Valves & Cylinder Plug Valves, FCI, NV & CPV	12 bar	11.2 Cv	30
	18 Pneumatic	Port Flow Regulator, PFR	12 bar	9.5 Cv	30
	19 Hydraulic	Flow Control Valves & Cylinder Plug Valves, FCV	690 bar	1.2 Cv / 100.0 l/min	30
	20 Gaseous	Flow Control Valves, FCV(GS)	414 bar	1.2 Cv / 100.0 l/min	30
	21 Subsea Hydraulic	Flow Control Valves, FCVS & FCVMS	690 bar	2.2 Cv / 115.0 l/min	31
22 - 25 Shuttle, Check, Exhaust Valves & Couplers	Overview	Ancillaries - Shuttle, Check, Exhaust Valves & Couplers			32
	22 Pneumatic	High Speed Proportional Quick Exhaust Valves, HIPEX	20 bar	50.0 Cv	33
	22 Pneumatic	Quick Exhaust Valves, QEV	12 bar	10.0 Cv	33
	22 Pneumatic	Shuttle Valves, SV	12 bar	10.0 Cv	33
	22 Pneumatic	Check Valves, PCV	13 bar	8.6 Cv	33
	23 Hydraulic	Quick Exhaust Valves, QEV15 & QEV50	1,035 bar	5.6 Cv / 400.0 l/min	34
	23 Hydraulic	Shuttle Valves, FPI5/SV & FP50/SV	690 bar	0.9 Cv / 50.0 l/min	34
	23 Hydraulic	Check, Excess Flow & Medium Pressure Check Valves, HCV, SCV, SCV(C), DCV, EFCV2, MPCV & VC-SS	828 bar	3.8 Cv / 200.0 l/min	34
	24 Gaseous	Shuttle Valves, FPI5G/SV	210 bar	0.32 Cv	34
	24 Gaseous	Check & Excess Flow Check Valves, HCV(NT) & EFCV2(4)	414 bar	2.0 Cv	35
	25 Subsea Hydraulic	Shuttle Valves, FPS30 & FPS50	1,035 bar	1.44 Cv / 75.0 l/min	35
	25 Subsea Hydraulic	Check Valves, HCVS, SCVS & DCVS	690 bar	1.38 Cv / 70.0 l/min	35
	25 Subsea Hydraulic	Couplers, SSCM, SSCW & SSCT	690 bar	5.5 Cv / 290.0 l/min	35
26 - 28 Relief & Flowline Pilot Valves	Overview	Ancillaries - Relief & Flowline Pilot Valves			36
	26 Pneumatic	Pressure Sensing Valves, PSV	12 bar	0.11 / 0.75 Cv	37
	26 Pneumatic	Flowline Pilot Valves, PSV5A & PSV5E	10 / 750 bar	0.1 Cv	37
	26 Pneumatic	Proportional Pressure & Precision Relief Valves, PR & CPR	12 bar	9.90 Cv	37
	27 Hydraulic	Proportional Pressure & Precision Relief Valves, VRP, VRT, VRL, VRD, VRCD & VRX	1,380 bar	25.0 l/min	37
	28 Subsea Hydraulic	Precision Relief Valves, VRL & VRP	1,380 bar	25.0 l/min	38
29 - 30 Fire Safety Valves	Overview	Ancillaries - Fire Safety Valves			39
	29 Pneumatic	Fusible Valves - Frangible Bulb, FVMB	12 bar	2.4 Cv	40
	29 Pneumatic	Eutectic Plug, ETSP	10 bar	2.4 Cv	40
	30 Hydraulic	Direct & Indirect Acting Frangible Bulbs & Eutectic Material Fusible Valves, ETSV15, FP01/FBV, FP50(B)/FBV, FP200(B)/FBV, FPI5/FBVH(A), FP50/FBVH(A), FPI00/FBVH(A) & FP200/FBVH(A)	690 bar	3.8 Cv / 200.0 l/min	41
31 - 32 Pressure Intensifiers	Overview	Ancillaries - Pressure Intensifiers			42
	31 Hydraulic	Topside Pressure Intensifiers, PI39-TS & PI73-TS	1,380 bar	N/A	43
	32 Subsea Hydraulic	Subsea Pressure Intensifiers, PI73-SS	1,380 bar	N/A	43

02 Product Structure

* SECTION	MEDIA	PRODUCT RANGES	PRESSURE (Up to)	FLOW RATE (Up to)	PAGE		
Pumps	Overview	Pumps			44-45		
	33	Hydraulic	Pumps - Water Glycol, SMW, LMW, XW & XW30	1,380 bar	41.30 l/min	46	
	33	Hydraulic	Pumps - Oil, SM, SMLP, LM, LMLP, X & X30	1,040 bar	41.30 l/min	46	
	34	Chemical	Low Power - 24Vdc Chemical Injection Pumps, M-SMC, E-SMC & I-SMC	690 bar	0.52 l/min / 31.2 l/hr	47	
	35	Subsea Hydraulic	Pumps - Water Glycol, XWSS & XWHSS	1,040 bar	186.0 l/min	47	
Ball & Needle Valves	Overview	Ball & Needle Valves			48 - 49		
	36	Hydraulic	Instrumentation Ball & Needle Valves, BV01, BV02, BV05, NV01, NV03, NV04, NV05, NV06 1, NV06 2, NV06 3 & NV22	690 bar	19.0 Cv / 857.0 l/min	50	
	36	Hydraulic	Instrumentation Medium Pressure Ball & Needle Valves, MPN, MPBF, MPBT, MPNM & MPBM	1,380 bar	N/A	50	
	36	Hydraulic	Instrumentation & Process, Electric, Pneumatic & Hydraulic Actuated Ball Valves, BV01, BV02, BV13, MPBF & MPBT	1,380 bar	2" Full Bore	51	
	36	Hydraulic	Instrument to Process & Process Ball & Needle Valves & Monoflanges, BV06, BV07, BV09, BV14, BV17, BV25, BV26, NV07, NV08 & NV09	Class 2500	2" Full Bore	51	
	37	Subsea Hydraulic	Instrumentation Ball & Needle Valves, BVS01, BVS11, BVS12 & NVS01	690 bar	9.6 Cv / 500.0 l/min	52	
	37	Subsea Hydraulic	Instrumentation Process Ball Valves, BVS06 & BVS07	690 bar	9.6 Cv / 500.0 l/min	52	
Valve Positioners	38	Overview	Valve Positioners - Valve Actuator Diagnostic Controllers			53 - 54	
	38	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	Valve Actuator Diagnostic Controller, EHPC210D	N/A	N/A	55	
	39	Overview	Valve Positioners - Valve Actuator Modulating Controllers			56	
		39	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	Valve Actuator Modulating Controller, EHPC210M	N/A	N/A	57
		39	Universal - Pneumatic & Hydraulic	Intrinsically Safe Valve Actuator Modulating Controller, IS200	N/A	N/A	57
		39	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	FISCO Infrared Valve Actuator Modulating Controller, IS210F	N/A	N/A	58
		39	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	Valve Actuator Modulating Controller, EX200	N/A	N/A	58
	40 - 41	Overview	Valve Positioners - Smart Positioners			59	
		40	Pneumatic	Actuator Positioner Units, PICO	NEW!! Product Under development		59
		41	Hydraulic	Actuator Positioner Units, HICO	NEW!! Product Under development		59

* Industry Classifications
 ☑ Dual Media Application

* SECTION	MEDIA	PRODUCT RANGES	PRESSURE (Up to)	FLOW RATE (Up to)	PAGE	
☑ ☑ Actuators	Overview		Actuators		60	
	42	Universal - Hydraulic & Electro-Hydraulic	Linear Actuators	NEW!! Product Under development	61	
	42	Universal - Hydraulic & Electro-Hydraulic	Quarter Turn Actuators	NEW!! Product Under development	61	
☑ Accessories	Overview		Accessories - Pressure Transmitters		62 - 63	
	43	Universal - Pneumatic & Hydraulic	Pressure Transmitters, PT I	1,000 bar	N/A	
	☑ 03, 15 & 36 Accessories	Overview		Accessories		65
		15	Pneumatic	Air Preparation - Accessories, L8, L9, L15, L46, L116, L160 & K10		66
		03 / 15	Pneumatic	Gauges, X5, X5PB, X8, X8PB, X10, X10PB, X11 & X11PB		66
		03 / 15	Pneumatic	Bug Screen / Breathers / Silencer, k4 & k4S		66
36	Hydraulic	Medium Pressure Fittings, Adaptors & Nipples, MPF		66		

MEDIA	ICONS	DEPARTMENT	MEDIA	ICONS	DEPARTMENT
☑ Pneumatic		Pneumatic	Gaseous		Gaseous
☑ Pneumatic		Pneumatic / Low Pressure Hydraulic / Hydraulic	Subsea Hydraulic		Subsea Hydraulic
Hydraulic		Hydraulic	Chemical		Chemical
☑ Hydraulic		Hydraulic / Pneumatic	Universal - Pneumatic, Hydraulic & Electro-Hydraulic		Universal - Pneumatic, Hydraulic & Electro-Hydraulic

MEDIA	LEAKAGE RATES	TESTING FLUID
Pneumatic	40Pa/S Maximum (Closed)	Compressed Air
Hydraulic	4ml/hr (0.06cc/min) per stage	Water Glycol
Gaseous	<2 bubbles per minute	Nitrogen
Subsea Hydraulic	<6ml/hr (0.1cc/min) Single Valve <12ml/hr (0.2cc/min) Mainstage + Pilots	Water GlycolΔ

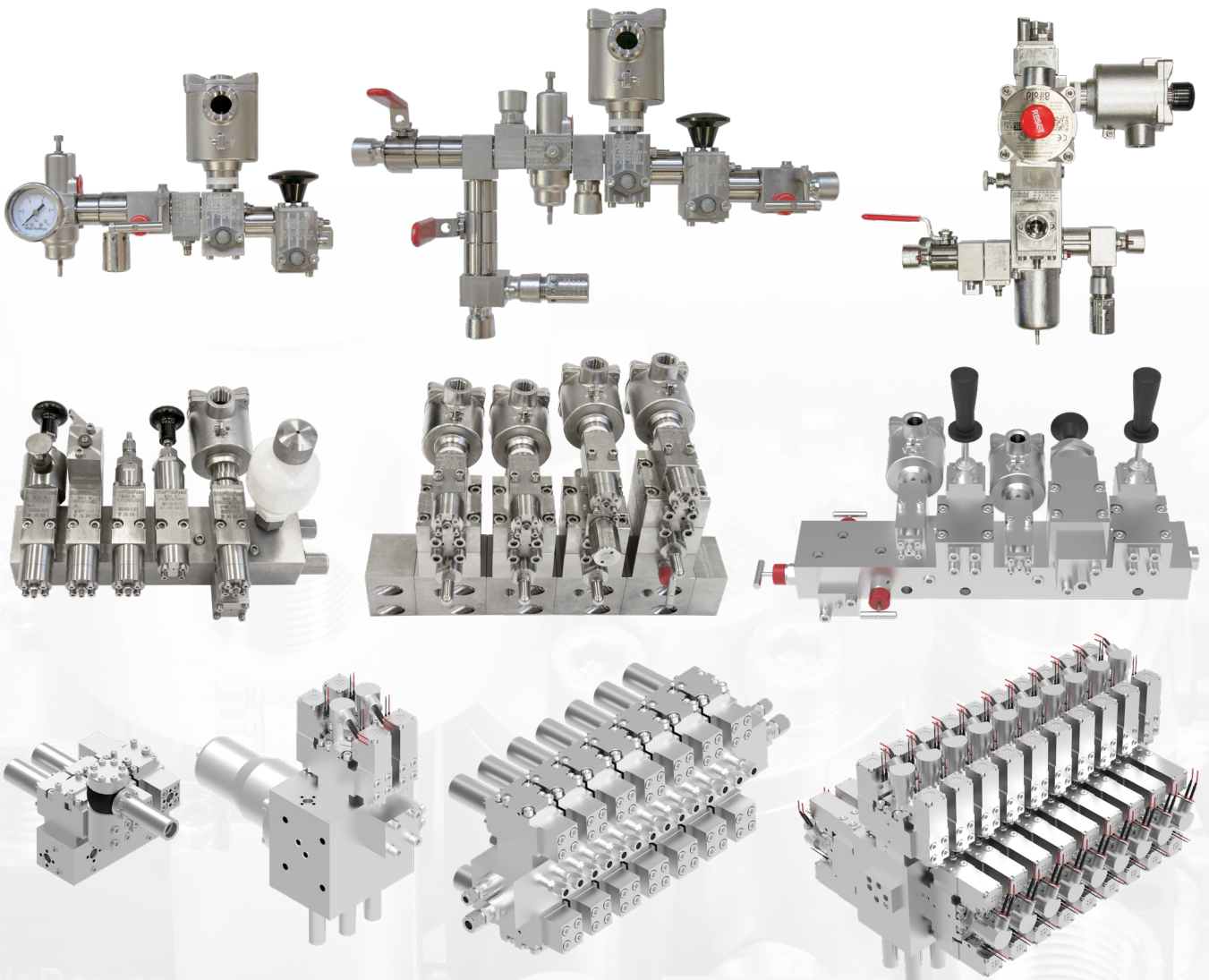
MEDIA	FLOW RATE - DIFFERENTIAL PRESSURE
Pneumatic	1 bar ΔP
Hydraulic	10 bar ΔP
Gaseous	10 bar ΔP
Subsea Hydraulic	10 bar ΔP

MODULES SYSTEMS



Modular Systems Features & Benefits

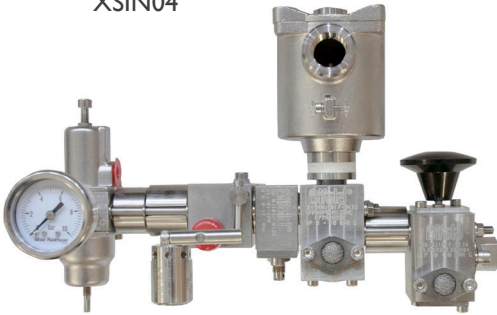
- The best technology at the lowest cost = at least **22%** to **39%** cost saving, removes up to **90%** of fittings
- Relief valves correctly sized and safe to match the filter regulator
- High system flow - improvements up to **400%** with our check valves, flow control valves, pilot valves, filter regulators, filter boosters and solenoid valves
- Bespoke solution to suit customer requirements
- Fully configurable ranges in 316L stainless steel, simplified for ease of selection
- Capability to configure engineered to order products with up to 10^{38} permutations
- Wide range of operating media covered - $1/8$ " to 1" ports in air, wet air, water, water glycol, oil, chemicals and gases
- Reduced leak paths, fitting requirement and installation times
- NACE MR-01-75 internal wetted and body materials
- Highest qualified safety factors in the industry - worldwide Ex solenoid approvals: safe area use and SIL 3 third party certified with Exida



03 - 06 Modular Systems



Pneumatic Model AXIS & Deluge Modular Systems, XS04, XS08, XS16, XS104, XSN04 & XSIN04

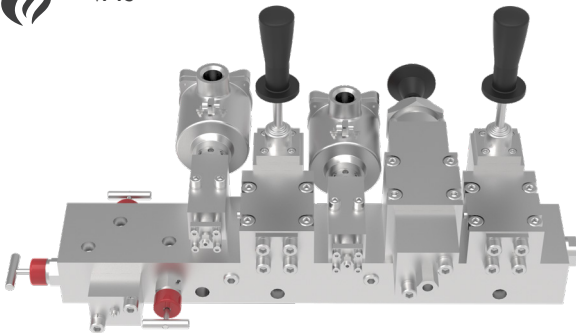


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 50.0 Cv
- Working pressure up to 290 psi / 20 bar (inlet) and 145 psi / 10 bar (outlet)
- Patented system
- Namur interface available
- Complete deluge trim / full control circuit valves supplied from one supplier
- Modular systems are maintainable in situ

Please see catalogue section number **03** for the full product range.



Gaseous Valve Assembly Modular Systems, VA's

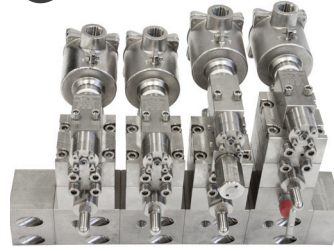


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- Flow - up to 0.32 Cv
- Working pressure up to 3,045 psi / 210 bar
- Modular systems are maintainable in situ

Please see catalogue section number **05** for the full product range.



Hydraulic Valve Assembly Modular Systems, VA's

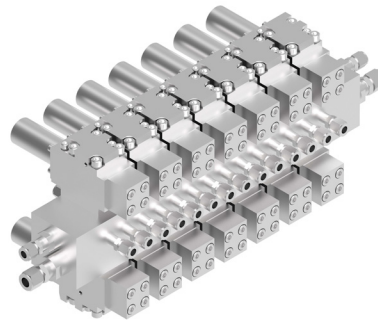


- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 3.8 Cv / 200.0 l/min
- Working pressure up to 20,000 psi / 1,380 bar
- Block before bleed (two stage valves) for ease of system design
- Ceramic ball and exotic material seat for chemical and high cycle life applications available
- Modular systems are maintainable in situ

Please see catalogue section number **04** for the full product range.



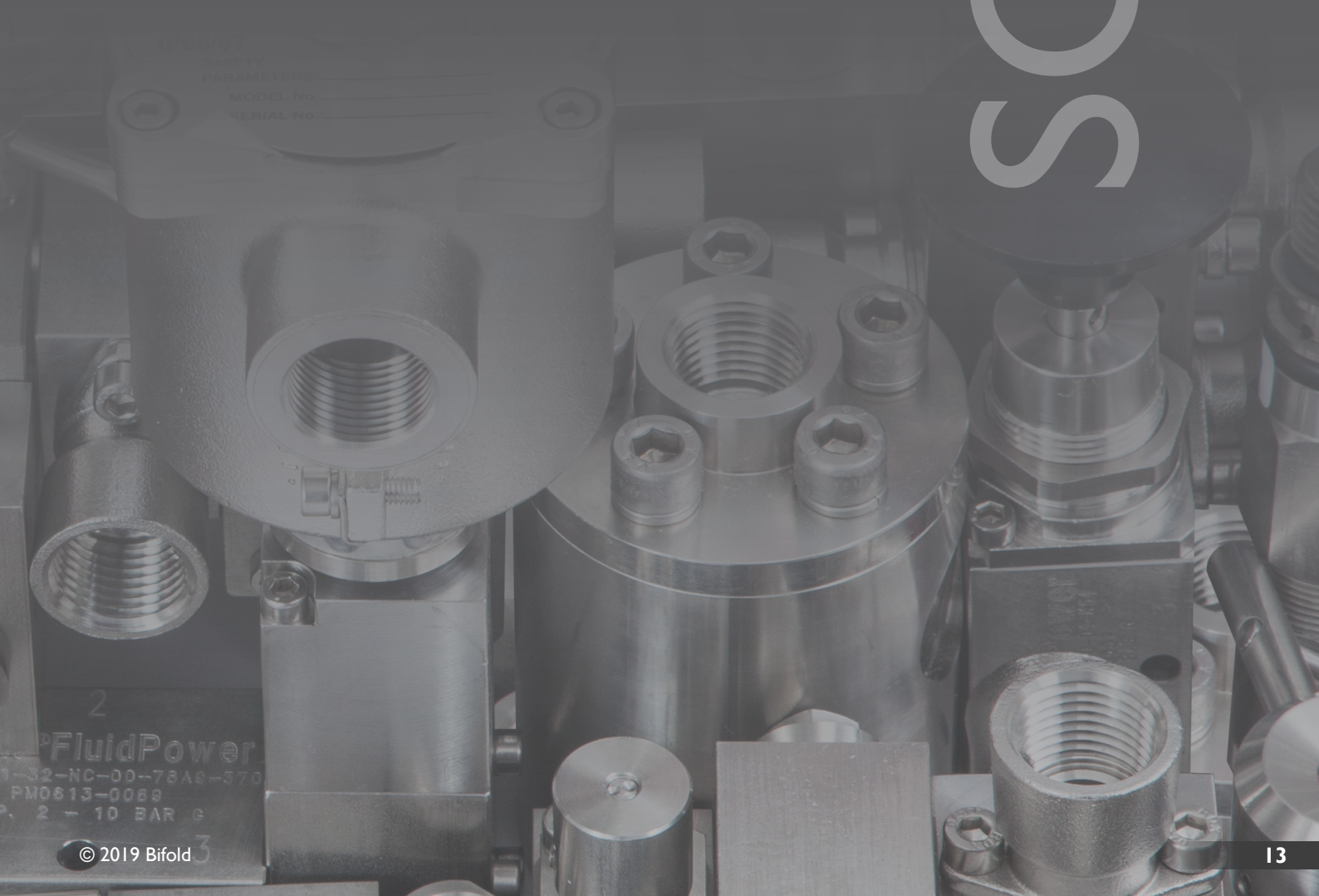
Subsea Hydraulic Valve Assembly Modular Systems, SVA's



- Designed to comply with API 17F and ISO 13628-6
- High flow - up to 1.9 Cv / 100.0 l/min
- Working pressure up to 15,000 psi / 1,035 bar
- Lowest cost solution, compact footprint
- Bespoke interface / solution available - retrofitted to existing customer footprint
- Direct seawater immersion
- Typical applications include: subsea well control module, intervention and work over control systems

Please see catalogue section number **06** for the full product range.

SOLENOIDS VALVES



PRODUCT
SAFETY
PARAMETERS
MODEL No.
SERIAL No.

2
FluidPower
1-32-NC-00-78A8-370
PM0613-0068
P, 2 - 10 BAR g

Solenoid Valves Features & Benefits

- **No 1** for global wellhead and choke market - HPU's (Hydraulic Power Units), valve actuation, chokes, deluge and fire dampers
- NACE MR-01-75 internal wetted and body materials
- Fully configurable ranges in 316L stainless steel, carbon steel and aluminium, simplified for ease of selection
- Wide range of operating media covered - 1/8" to 2" ports in air, wet air, water, water glycol, oil, chemicals and gases
- Low power - from 0.8W up to 12.0W
- Highest qualified safety factors in the industry - worldwide Ex solenoid approvals: safe area use and SIL 3 third party certified with Exida





Pneumatic Direct Acting & Indirect Acting Solenoid Valves, FP03P, FP06P, FP10P, FP12P, BXS, SPR & PPV

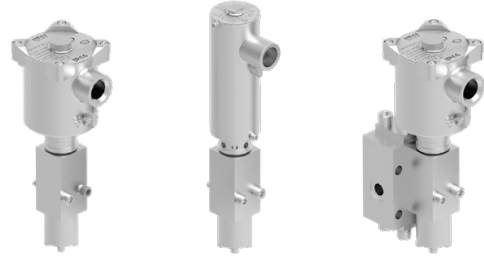


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 11.2 Cv
- Versions available for up to 725 psi / 50 bar working pressure
- Namur interface available

Please see catalogue section number **07** for the full product range.



Hydraulic Direct Acting & Indirect Acting Solenoid Valves, FP01, FP02, FP03, FP04, FP05, FP10, FP15, FP50, FP50(B), FP100, FP200, FP200(B) & SVP

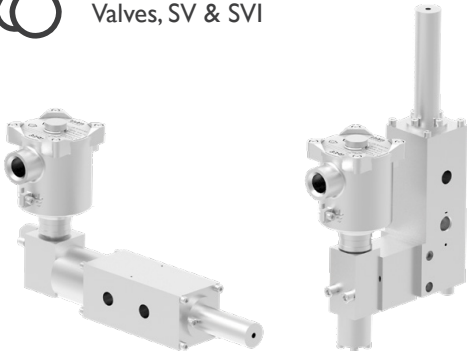


- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 3.8 Cv / 200.0 l/min
- Working pressure up to 20,000 psi / 1,380 bar
- Block before bleed (two stage valves) for ease of system design
- Ceramic ball and exotic material seat for chemical and high cycle life applications available
- CETOP 03 options available
- Medium pressure connections available (selected models)

Please see catalogue section number **08** for the full product range.



Hydraulic Slide Valve Indirect Acting Solenoid Valves, SV & SVI

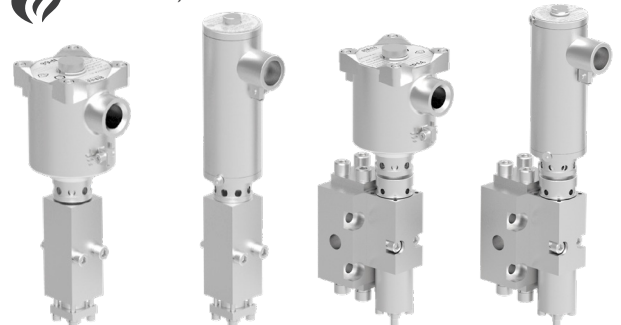


- Compatible with fluids at NAS1638 Class 12 and ISO 4406 18/15
- High flow - up to 0.8 Cv / 40.0 l/min
- Working pressure up to 20,000 psi / 1,380 bar
- Block before bleed (two stage valves) for ease of system design
- Leaktight crossover function

Please see catalogue section number **08** for the full product range.



Direct Acting & Indirect Acting Solenoid Valves, FP02G, FP05G & FP15G



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 0.32 Cv
- Working pressure up to 3,045 psi / 210 bar

Please see catalogue section number **09** for the full product range.



Can be used in pneumatic and low pressure hydraulic applications.

07 - 10 Solenoid Valves



Subsea Hydraulic Direct Acting Solenoid Pilot Valves (SPV), FPS01

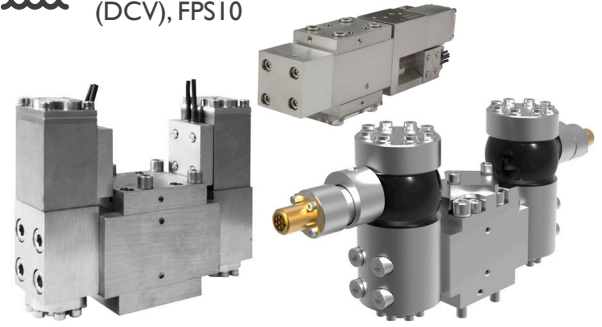


- Hydraulic pressure-balanced solenoid operated pilot valves
- Designed to comply with API 17F and ISO 13628-6
- Flow - up to 0.014 Cv / 0.6 l/min
- Working pressure up to 10,000psi / 690 bar
- Endurance tested up to 1 million cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion
- Typical applications include: choke stepper systems and low volume actuator control

Please see catalogue section number **10** for the full product range.



Subsea Hydraulic Directional Control Valves (DCV), FPS10

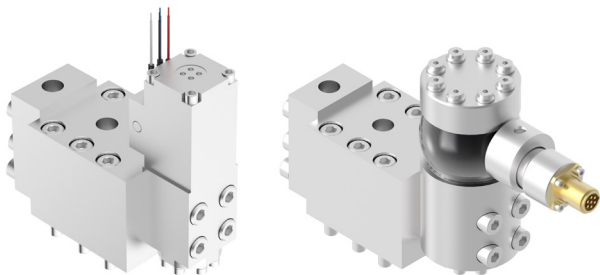


- Shear seal type hydraulic force-balanced solenoid operated valves
- Designed to comply with API 17F and ISO 13628-6
- Flow - up to 0.22 Cv / 11.5 l/min
- Working pressure up to 10,000psi / 690 bar
- Endurance tested up to 1 million cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion
- Typical applications include: subsea control modules

Please see catalogue section number **10** for the full product range.



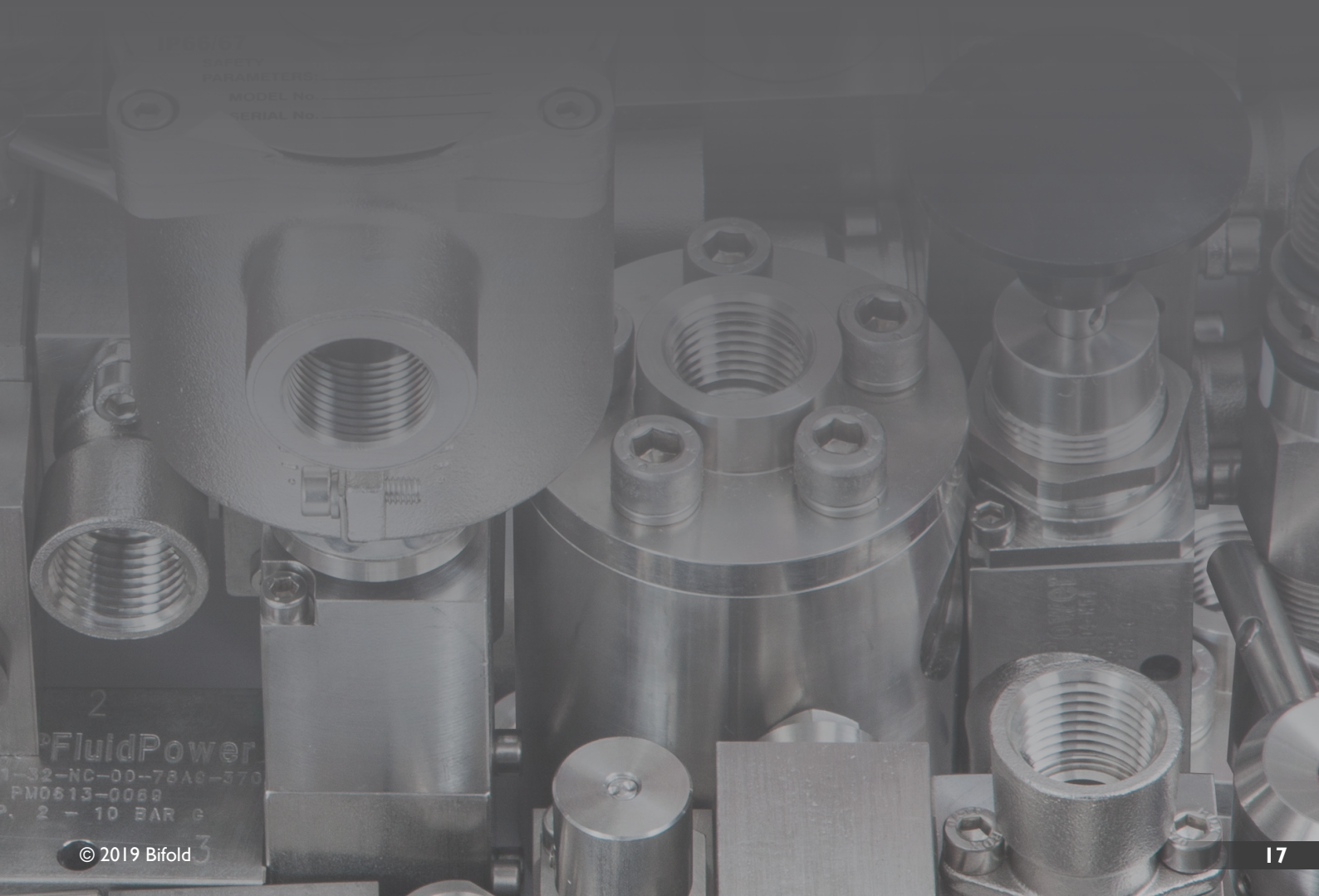
Subsea Hydraulic Directional Control Valves (DCV), FPS15



- Seated Poppet / Ball type solenoid operated valves
- Designed to comply with API 17F and ISO 13628-6
- Flow - up to 0.32 Cv / 15.0 l/min
- Working pressure up to 15,000 psi / 1,035 bar
- Endurance tested up to 10,000 cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion

Please see catalogue section number **10** for the full product range.

LOGGERS VALVES



PRODUCT
SAFETY
PARAMETERS
MODEL No.
SERIAL No.

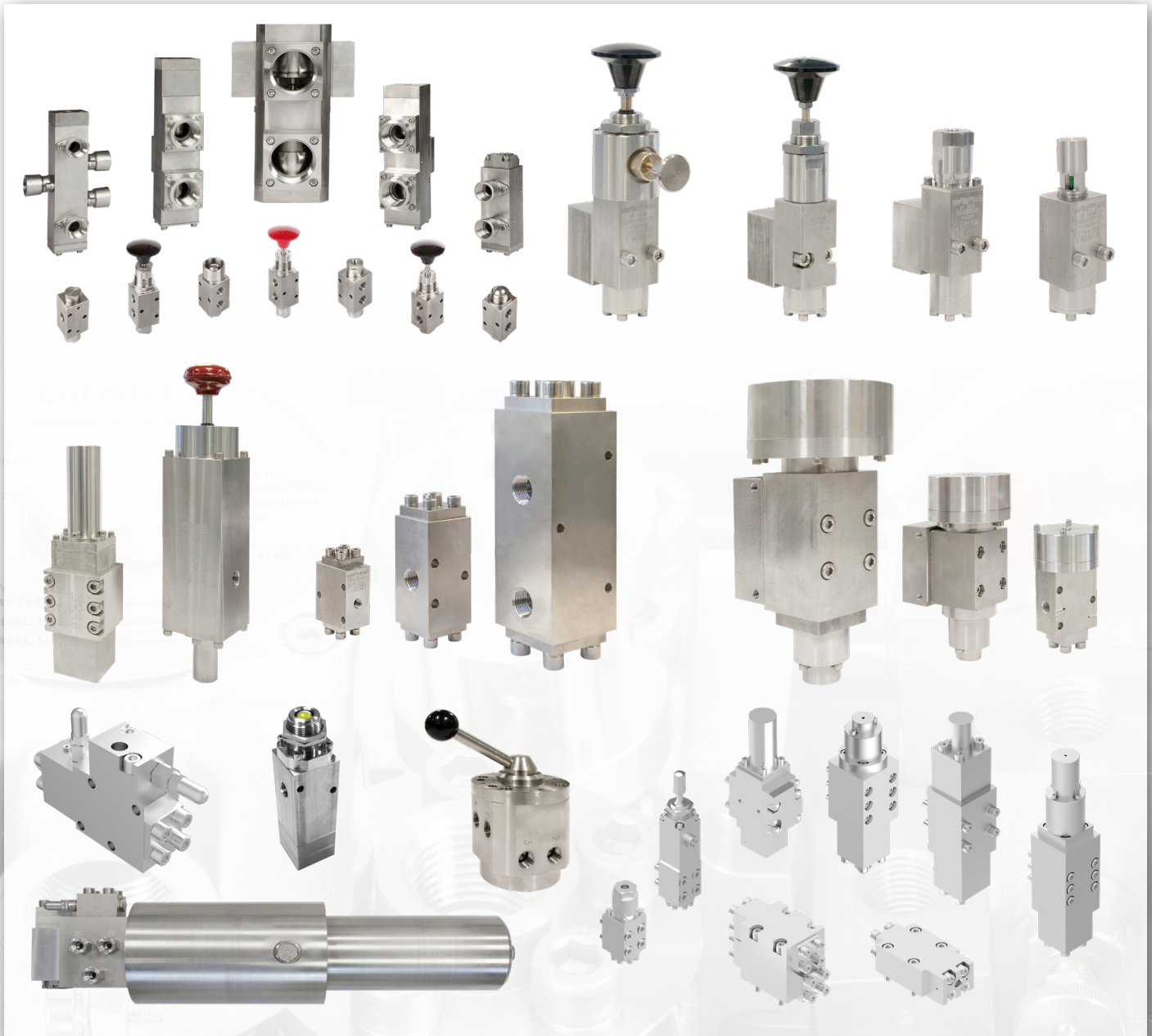
2
FluidPower
1-32-NC-00-78A8-370
PM0613-0068
P, 2 - 10 BAR g


11 - 14 Logic Valves Pilot, Mechanical & Reset Valves

Pilot, Mechanical & Reset Valves

Features & Benefits

- The only pilot, mechanical and reset valve manufacturer with working pressures from 0 to 20,000 psi / 0 to 1,380 bar
- Highest flow available in the market
- SIL 3 capable 1" and 2" low temperature valves, available in 316L stainless steel and aluminium
- Fully configurable ranges in 316L stainless steel and aluminium, simplified for ease of selection
- Wide range of operating media covered - 1/4" to 2" ports in air, wet air, water, water glycol, oil, chemicals and gases
- NACE MR-01-75 internal wetted and body materials




 Pneumatic Pilot & Mechanical Indicating Relays
First Out / Visual Indicator Valves, SJJ06



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 1.0 Cv
- Working pressure up to 145 psi / 10 bar
- Indicates visually on a panel that a circuit malfunction has occurred
- Has the ability to quickly exhaust operating pressure from the system through the main supply reset valve


Please see catalogue section number **11** for the full product range.

 Hydraulic Pilot & Mechanical Valves, FP01, FP02, FP03, FP04 & FP05

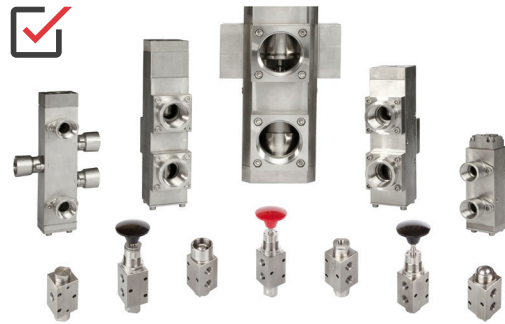


- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 0.1 Cv / 5.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Extensive valve operator options
- Seated ball design offers extremely low leakage
- Block before bleed (two stage valves) (selected models)
- Medium pressure connections available (selected models)

Please see catalogue section number **12** for the full product range.

 Can be used in pneumatic and low pressure hydraulic applications.

 Pneumatic Pilot, Mechanical & Reset Valves, BXS, SPR & PPV



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 102.0 Cv
- Working pressure up to 174 psi / 12 bar
- NAMUR interface multi-function plates
- Extensive valve operator options

Please see catalogue section number **11** for the full product range.

 Hydraulic Interface Valves, FP15, FP15E, FP50, FP50(B), FP100, FP200 & FP200(B)



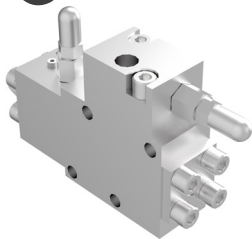
- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 3.8 Cv / 200.0 l/min
- Working pressure up to 20,000 psi / 1,380 bar
- This versatile range covers a wide spectrum of actuation to meet the challenging requirements of WHCP (Wellhead Control Panels), HPU's (Hydraulic Power Units) and other actuation applications
- Seated ball design offers extremely low leakage
- Block before bleed (two stage valves) (selected models)
- Medium pressure connections available (selected models)

Please see catalogue section number **12** for the full product range.

11 - 14 Logic Valves Pilot, Mechanical & Reset Valves



Hydraulic Time Delayed Block Valves, TDBV



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 0.6 Cv / 35.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Isolates any process gas rising in the line, resulting from a leak across the SSSV (Sub-Surface Safety Valve) actuator seals. Preventing gas from returning to the hydraulic control system
- Range of time delay options with accompanying accumulator

Please see catalogue section number **12** for the full product range.



Gaseous Pilot & Mechanical Valves, FP02G, FP05G & FP15(G)



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- Flow - up to 0.2 Cv
- Working pressure up to 3,045 psi / 210 bar
- Ideally suited for gas over oil valve actuation
- Extensive valve operator options
- Soft seated design offers extremely low leakage

Please see catalogue section number **13** for the full product range.



Bifold Marshalsea Hydraulic Mechanical 4-Way Directional Control Valves, 14550

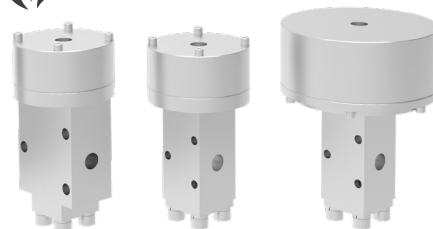


- Compatible with fluids at NAS1638 Class 6 and ISO 4406 15/12
- High flow - up to 0.9 Cv / 40.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Compact and flexible solution for low and high pressure applications
- Dynamically biased towards closing - seal becomes tighter as pressure rises
- Torque to operate handle is light throughout the pressure range
- Subsea option available

Please see catalogue section number **12** for the full product range.



Gaseous Interface Valves, FP15/L(G), FP15/H(G) & FP15E(G)

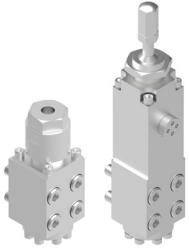


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- Flow - up to 0.32 Cv
- Working pressure up to 4,350 psi / 300 bar
- Compact and flexible solution for low and high pressure pilot applications
- Covers a wide spectrum of actuation to meet the challenging requirements of WHCP (Wellhead Control Panels), HPU's (Hydraulic Power Units) and other actuation applications

Please see catalogue section number **13** for the full product range.



Subsea Hydraulic Pilot & Mechanical Valves, FPS01

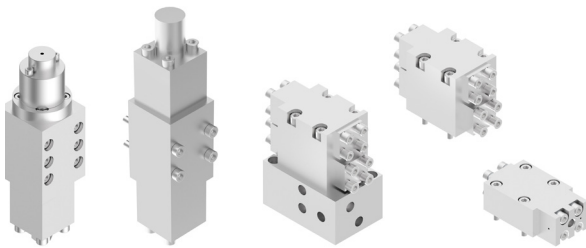


- Designed to comply with API 17F and ISO 13628-6
- Flow - up to 0.014 Cv / 0.6 l/min (nominal)
- Working pressure up to 20,000 psi / 1,380 bar
- A wide range of hydraulic pilot roller cam and plunger operators available
- Superior operational performance with high safety factors to energise and de-energise
- Endurance tested up to 10,000 cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion
- Typical applications include: grease injection systems

Please see catalogue section number **14** for the full product range.



Subsea Hydraulic Interface Valves, FPS15, FPS50 & FPS100

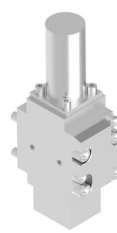


- Designed to comply with API 17F and ISO 13628-6
- High flow - up to 1.9 Cv / 100.0 l/min (nominal)
- Working pressure up to 15,000 psi / 1,035 bar
- Superior operational performance with high safety factors to de-energise
- Endurance tested up to 10,000 cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion
- Typical applications include: BOP (Blow Out Preventor), well intervention and workover control systems

Please see catalogue section number **14** for the full product range.



Subsea Hydraulic Directional Control Valves, FPS10



- Designed to comply with API 17F and ISO 13628-6
- Flow - up to 0.22 Cv / 10.0 l/min (nominal)
- Working pressure up to 15,000 psi / 1,035 bar
- A wide range of hydraulic pilot roller cam and plunger operators available
- Endurance tested up to 10,000 cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion
- Typical applications include: intervention, well control and workover control systems

Please see catalogue section number **14** for the full product range.



Subsea Hydraulic Pilot Slide Valves, HPV5300



- Designed to comply with API 17F and ISO 13628-6
- Flow - up to 0.2 Cv / 10.0 l/min (nominal)
- Working pressure up to 15,000 psi / 1,035 bar
- Various pilot configurations available including: pilot inhibit and dual pilot
- Superior operational performance with high safety factors to de-energise
- Endurance tested up to 10,000 cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion
- Typical applications include: well intervention systems

Please see catalogue section number **14** for the full product range.

11 - 14 Logic Valves Pilot, Mechanical & Reset Valves



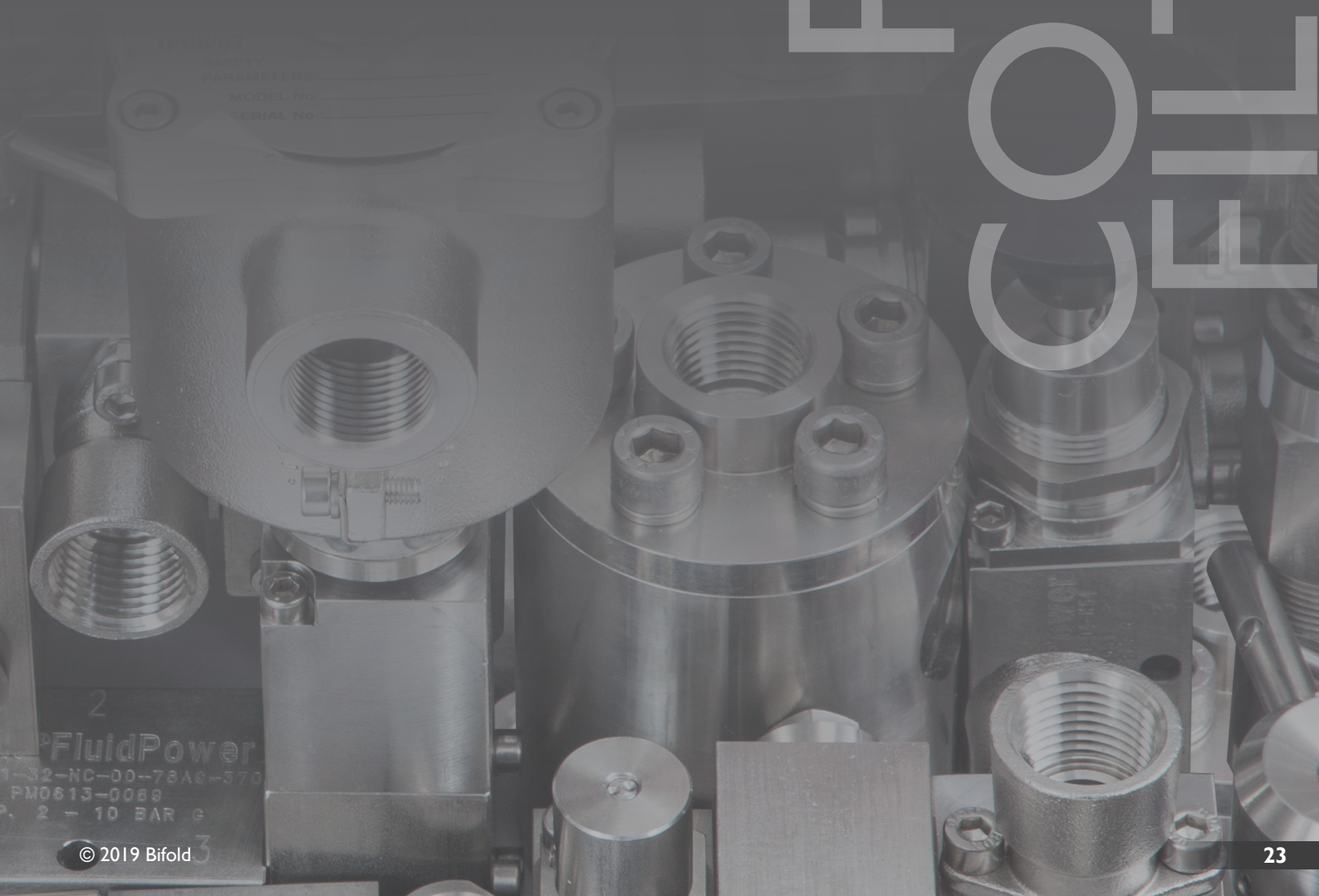
Subsea Hydraulic Time Delayed Vent Valves,
TDVVS



- Designed to comply with API 17F and ISO 13628-6
- High and low flow options available - from 0.014 Cv and 0.6 l/min and up to 0.32 Cv / 15.0 l/min (nominal)
- Working pressure up to 10,000 psi / 690 bar
- Range of time delay options
- Time delay consistent, independent of ambient depth pressure and working pressure
- Operates independent of ambient depth pressure and working pressure
- Designed for up to 10,000 feet / 3,000 metres operating depth
- Direct seawater immersion
- Typical applications include: sequencing control in well workover control systems

Please see catalogue section number **14** for the full product range.

PRESSURE CONTROL & FILTRATION



SAFETY
PARAMETERS
MODEL No.
SERIAL No.

FluidPower
1-32-NC-00-78A8-370
PM0613-0068
P, 2 - 10 BAR g

Filters, Regulators, Filter Regulators & Filtration Units

Features & Benefits

- Suited for applications that require high flow capacity and accurate process control
- Highest guaranteed safety factors in the industry
- Wide range of operating media covered - 1/4" to 1" ports in air, wet air, water, water glycol, oil, chemicals and gases
- NACE MR-01-75 internal wetted and body materials





Pneumatic Air Preparation, Filter, Regulator & Filter Regulator Units, SH & SC



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 11.2 Cv
- Working pressure up to 290 psi / 20 bar
- Accurately maintained output pressure under high flow conditions
- Diaphragm design for good repeatability, response and sensitivity
- High stability precision adjustment

Please see catalogue section number **15** for the full product range.



Hydraulic Inline & Bowl Filters, F & BF



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 1.2 Cv / 40.0 l/min
- Working pressure up to 7,540 psi / 520 bar
- Designed to supplement hydraulic system main filters
- This range of filters affords protection to vulnerable hydraulic components
- Considerably greater contamination holding capacity and flow capability
- Suitable as primary filters for low flow hydraulic systems, particularly hand pump units
- 3, 10 and 25 micron absolute filter rating

Please see catalogue section number **16** for the full product range.



Hydraulic Pressure Regulators, HPR I



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - 0.09 Cv (forward flow) and 0.11 Cv (vent flow)
- Working pressure up to 10,000 psi / 690 bar
- Long life by using superior corrosion resistant materials and a replaceable 40µ service filter to protect internal components from debris
- Main valve ensures added resistance to erosion and deterioration due to ceramic ball and hardened stainless seat
- Segregated captured vent controls relief media
- One-piece main valve cartridge includes seals and filter for quick in-line service or repair

Please see catalogue section number **16** for the full product range.



Hydraulic Automatic Shut-off Bypass Valves, ASBV



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 0.9 Cv / 50.0 l/min
- Working pressure up to 5,000 psi / 345 bar
- Used in parallel with low Cv and hand loaded pressure regulators
- Permits a high bypass flow until a pre-determined, set point pressure is attained
- For application in offshore / onshore oil and gas production, control systems

Please see catalogue section number **16** for the full product range.

AN CILLARIES



17 Ancillaries

Volume Boosters & Filter Boosters

Volume Boosters & Filter Boosters

Features & Benefits

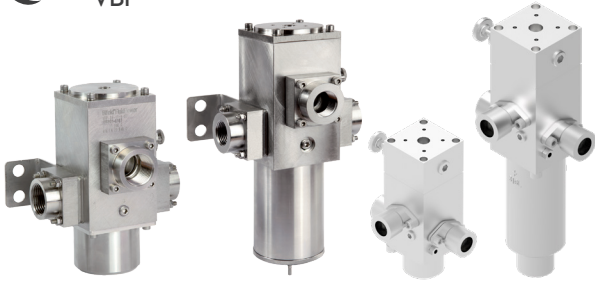
- Use filter booster circuits to reduce tube size and Save **50% to 70%** on cost
- Our bi-directional full flow design volume / filter boosters are zero bleed and offer up to **200%** higher flow than conventional circuits
- Highest guaranteed safety factors in the industry
- Wide range of operating media covered - 1/4" to 2" ports in air, wet air, water, water glycol, oil, chemicals and gases
- NACE MR-01-75 internal wetted and body material option
- Highest qualified safety factors in the industry - SIL 3 third party certified with Exida



17 Ancillaries Volume Boosters & Filter Boosters



Pneumatic Volume Boosters & Filter Boosters,
VBP



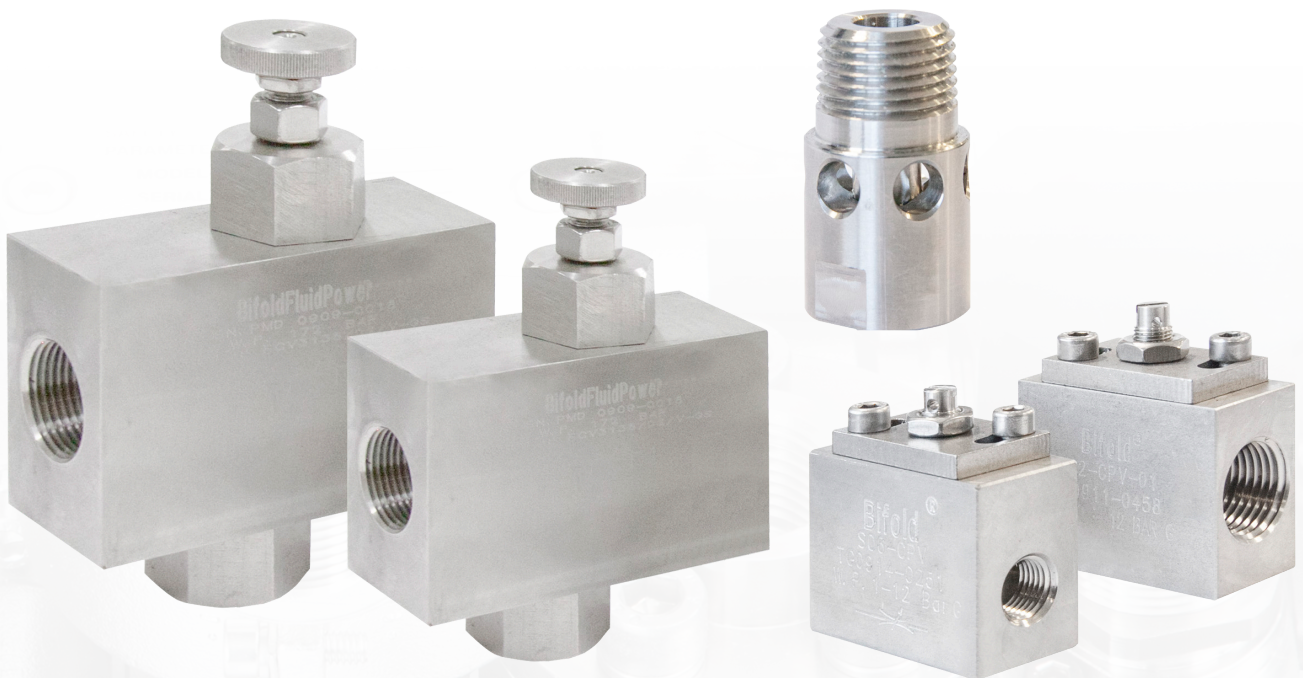
- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 50.0 Cv
- Working pressure up to 290 psi / 20 bar (inlet) and 174 psi / 12 bar (outlet)
- Suited for fast ESD (Emergency Shut Down)
- Eliminates the need for an additional poppet or quick exhaust valve to achieve the required closing speeds
- Matches fill and exhaust flow allowing independent inlet and venting speed control
- Captive exhaust vent
- Integrated filter design

Please see catalogue section number **17** for the full product range.

Flow Control Valves

Features & Benefits

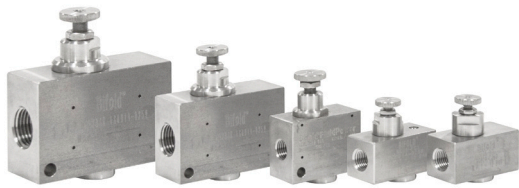
- The uni-directional flow control valve, features a bypass check which then allows rapid free flow from the output port through the input port
- The bi-directional needle valve flow control valve, controls the speed of an actuator by regulating the flow rate or pressure within the system in both directions
- Highest guaranteed safety factors in the industry
- Wide range of operating media covered - 1/4" to 2" ports in air, wet air, water, water glycol, oil, chemicals and gases
- NACE MR-01-75 internal wetted and body materials



18 - 2 | Ancillaries Flow Control Valves



Pneumatic Flow Control Valves & Cylinder Plug Valves, FCI, NV & CPV

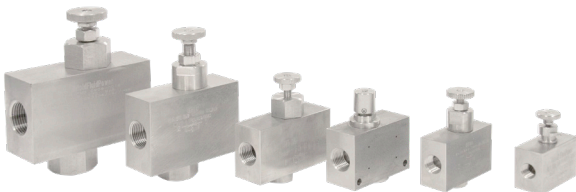


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 11.2 Cv
- Working pressure up to 174 psi / 12 bar
- Designed with a finely threaded stem which allows gradual adjustment and control of flow passing through the system
- The cylinder plug valve range, allows maximum flow capacity to pass through the valve and into the system and has no restrictive effect when fully open
- Open and close flow can be independent if using a CPV on the inlet and exhaust line

Please see catalogue section number **18** for the full product range.



Hydraulic Flow Control Valves & Cylinder Plug Valves, FCV



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 1.2 Cv and 100.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Designed with a finely threaded stem which allows gradual adjustment and control of flow passing through the system

Please see catalogue section number **19** for the full product range.



Can be used in pneumatic and low pressure hydraulic applications.



Pneumatic Port Flow Regulator, PFR



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 9.5 Cv
- Working pressure up to 174 psi / 12 bar
- Adjustable flow control by restricting the air exhaust

Please see catalogue section number **18** for the full product range.



Gaseous Flow Control Valves, FCV(GS)

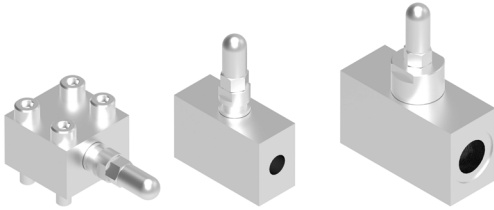


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High Flow - Up to 1.2 Cv and 100.0 l/min
- Working pressure up to 6,000 psi / 414 bar
- Designed with a finely threaded stem which allows gradual adjustment and control of flow passing through the system

Please see catalogue section number **20** for the full product range.



Subsea Hydraulic Flow Control Valves, FCVS & FCVMS



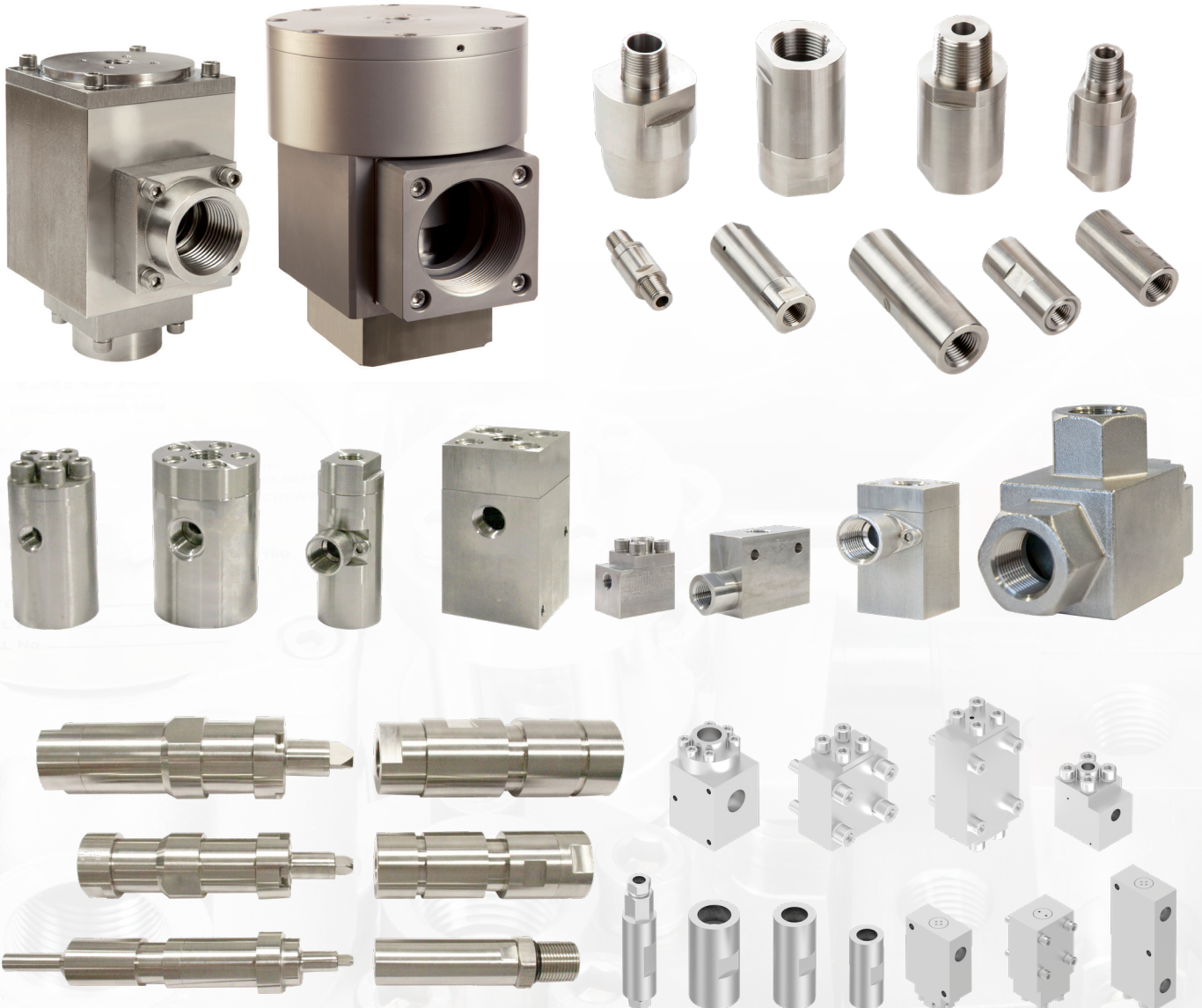
- Designed to comply with API 17F and ISO 13628-6
- High flow - up to 2.2 Cv and 115.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Designed with a finely threaded stem which allows gradual adjustment and control of flow passing through the system
- Tamperproof option available
- Designed for up to 10,000 feet / 3,000 metres operating depth
- Direct seawater immersion

Please see catalogue section number **21** for the full product range.

Shuttle, Check, Exhaust Valves & Couplers

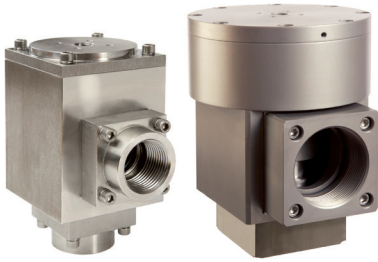
Features & Benefits

- Our check valves out-perform all others in the industry
- Our pneumatic check valves coupled with our flow controllers increase the system flow by up to **218%**
- Manifold mounted check valves are **30%** lower cost than conventional controllers
- Low sealing forces - no leaks
- Very high flow - no restrictive effect on circuits
- Highest qualified safety factors in the industry - SIL 3 third party certified with Exida (selected models)
- Wide range of operating media covered - 1/4" to 2" ports in air, wet air, water, water glycol, oil, chemicals and gases
- NACE MR-01-75 internal wetted and body materials





Pneumatic High Speed Proportional Quick Exhaust Valves, HIPEX

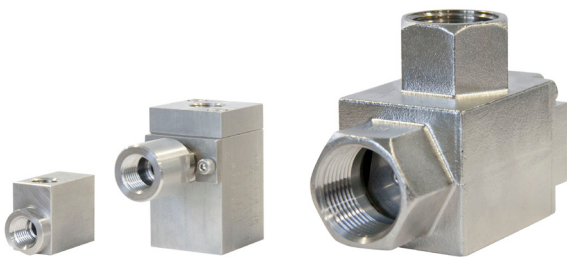


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 50.0 Cv
- Working pressure up to 290 psi / 20 bar (inlet) and 145 psi / 10 bar (outlet)
- 2-way, normally closed directional control valve
- Venting flow rate proportional to the differential pressure between the inlet and the pilot signal pressures
- Specifically designed for both modulating and "on - off" pilot pressure signals
- High flow pilot operated quick exhaust valve with automatic pressure sensing and pressure relief capability
- Designed for high flow valve actuator exhausting when accurate partial stroke testing is required

Please see catalogue section number **22** for the full product range.



Pneumatic Shuttle Valves, SV

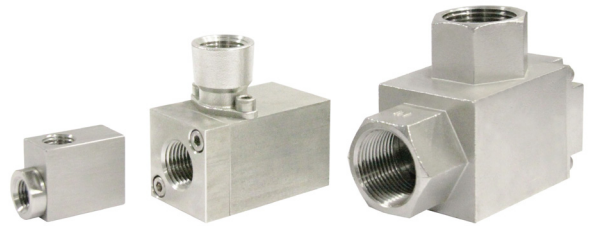


- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 10.0 Cv
- Working pressure up to 174 psi / 12 bar
- Automatically selects the higher of two pressures and allows flow from one input port to the output port

Please see catalogue section number **22** for the full product range.



Pneumatic Quick Exhaust Valves, QEV



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 10.0 Cv
- Working pressure up to 14 -174 psi / 1 - 12 bar
- Designed for the rapid purge of air or exhaust from a pneumatic system

Please see catalogue section number **22** for the full product range.



Pneumatic Check Valves, PCV



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 8.6 Cv
- Working pressure up to 188 psi / 13 bar working
- Allows free flow in one direction and provides positive checked flow in the reverse direction
- Wide selection of inlet and outlet connections available

Please see catalogue section number **22** for the full product range.

22 - 25 Ancillaries Shuttle, Check, Exhaust Valves & Couplers



Hydraulic Quick Exhaust Valves, QEVI5 & QEVI50



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 0.65 Cv (inlet), and up to 5.6 Cv (exhaust) / 400.0 l/min
- Working pressure up to 15,000 psi / 1,035 bar
- Designed to allow ultra-fast hydraulic venting and can be used in parallel to reduce closing times further
- Medium pressure connections available (selected models)

Please see catalogue section number **23** for the full product range.



Hydraulic Check, Excess Flow & Medium Pressure Check Valves, HCV, SCV, SCV(C), DCV, EFCV2, MPCV & VC-SS

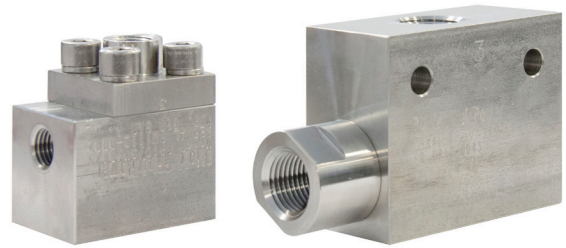


- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 3.8 Cv / 200.0 l/min
- Working pressure up to 12,000 psi / 828 bar
- Allows free flow in one direction and provide positive checked flow in the reverse direction
- Our excess flow check valves also provide an effective shut-off in a system pressure supply line when the flow rate exceeds a pre-determined flow setting
- Wide selection of inlet and outlet connections available (HCV)
- Medium pressure connections available (selected models)

Please see catalogue section number **23** for the full product range.



Hydraulic Shuttle Valves, FP15/SV & FP50/SV



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 0.9 Cv / 50.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Used to select between two hydraulic inputs and allow flow from one input port to the output port

Please see catalogue section number **23** for the full product range.



Gaseous Shuttle Valves, FP15G/SV



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 0.32 Cv
- Working pressure up to 3,045 psi / 210 bar
- Used to select between two gaseous inputs and allow flow from one input port to the output port

Please see catalogue section number **24** for the full product range.



Gaseous Check & Excess Flow Check Valves, HCV(NT) & EFCV2(4)



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 2.0 Cv
- Working pressure up to 6,000 psi / 414 bar
- Allows free flow in one direction and provides positive checked flow in the reverse direction
- Our excess flow check valves also provide an effective shut-off in a system pressure supply line when the flow rate exceeds a pre-determined flow setting
- Wide selection of inlet and outlet connections available (HCV(NT))

Please see catalogue section number **24** for the full product range.



Subsea Hydraulic Check Valves, HCVS, SCVS & DCVS

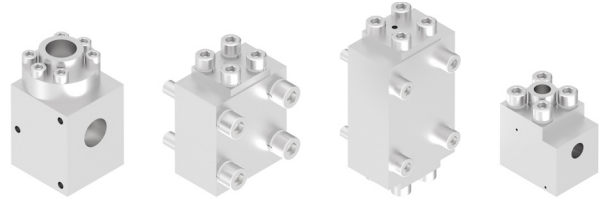


- Designed to comply with API 17F and ISO 13628-6
- High flow - up to 1.38 Cv / 70.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- Allows free flow in one direction and provides positive checked flow in the reverse direction.
- Feature compact ball seated check valve cartridges
- Wide selection of inlet and outlet connections available
- Endurance tested up to 100,000 cycles
- Designed for up to 10,000 feet / 3,000 metres operating depth
- Direct seawater immersion

Please see catalogue section number **25** for the full product range.



Subsea Hydraulic Shuttle Valves, FPS30 & FPS50

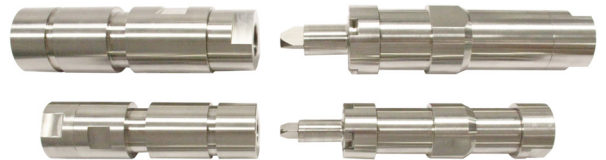


- Designed to comply with API 17F and ISO 13628-6
- High flow - up to 1.44 Cv / 75.0 l/min
- Working pressure up to 15,000 psi / 1,035 bar
- SIL 2 third party certified
- Used to automatically select the higher of two pressures and allow flow from one input port to the output port
- Endurance tested up to 10,000 cycles
- Designed for up to 16,400 feet / 5,000 metres operating depth
- Direct seawater immersion

Please see catalogue section number **25** for the full product range.



Subsea Hydraulic Couplers, SSCM, SSCW & SSCT



- Designed in Accordance with the Relevant Parts of API 6A and 17D/E/F
- High Flow - Up to 5.5 Cv / 290.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- High strength nitronic 50
- Removable cartridge for ease of flushing and servicing
- Available as manifold mounted or plate mounted
- Eliminate the complexity of dissimilar metal welds, the unique design allows the user to specify a range of tail materials and end connections
- Tail ends available - tube stub (for site welding) or threaded
- Endurance tested up to 10,000 cycles
- Designed for up to 10,000 feet / 3,000 metres operating depth
- Direct seawater immersion

Please see catalogue section number **25** for the full product range.

26 - 28 Ancillaries Relief & Flowline Pilot Valves

Relief & Flowline Pilot Valves

Features & Benefits

- Widest range of relief valves for pneumatic, hydraulic and instrument applications with pressures ranging from 0 to 22,016 psi / 0 to 1,518 bar
- Our relief valves are suitable for safety applications with a proven capability for any system with low sealing forces - no leaks. Many other relief valves of this type on the market fail to perform the correct safety function required
- High precision - our flowline pilot valves allow pressure fluctuations within a low and high adjustable set-point
- Highest safety factors in the industry
- Wide range of operating media covered - 1/4" to 1" ports in air, wet air, water, water glycol, oil, chemicals and gases
- NACE MR-01-75 internal wetted and body materials



Pneumatic Pressure Sensing Valves, PSV



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 0.11 Cv (singular) and 0.75 Cv (direct mount)
- Working pressure up to 174 psi / 12 bar, differential pressure up to 5.8 psi / 0.4 bar and adjustable pressure from 29 psi / 2 bar up to 116 psi / 8 bar
- Designed for fitting to the pilot port of a valve to create an adjustable pressure sensing function suitable for low pressure applications
- Direct mount option available with the BXS and domino junior pilot valves (P5 operator)


Please see catalogue section number **26** for the full product range.

Pneumatic Proportional Pressure & Precision Relief Valves, PR & CPR



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 9.90 Cv
- Working pressure up to 174 psi / 12 bar
- Suitable for low and high pressure applications
- PR pneumatic proportional pressure relief valves vent to atmosphere, are direct acting and suitable for low pressure applications
- PR Optimised force balance design - PED certified
- CPR pneumatic precision high flow captive pressure relief valves are designed to discharge excess pressure which builds up inside a system. Protecting the system components from exposure to excessive pressures
- Up to 2" process relief valve options

Please see catalogue section number **26** for the full product range.

 Can be used in pneumatic and hydraulic applications.

Pneumatic Flowline Pilot Valves, PSV5A & PSV5E



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - up to 0.1 Cv
- Working pressure up to 10,877 psi / 750 bar flowline pressure up to 145 psi / 10 bar control pressure
- Designed to switch a pneumatic or hydraulic control pressure on rising or falling flowline pressures in pipeline valve and wellhead control systems
- SIL 3 third party certified
- Rapid response and consistent set point
- Narrow deadband <10% of maximum set point

Please see catalogue section number **26** for the full product range.

Bifold Marshalsea Hydraulic Proportional Pressure & Precision Relief Valves, VRP,VRT, VRL,VRD,VRCD & VRX



- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- PED category IV certified or designed in accordance to PED standards
- High flow - up to 110.0 l/min at < 1,450 psi / 100 bar, up to 50.0 l/min at > 11,603 psi / 800 bar and 25.0 l/min at 20,000 psi / 1,380 bar
- Working pressure up to 20,000 psi / 1,380 bar
- 316L stainless steel with super duplex options
- Designed to efficiently open at a predetermined set pressure to protect equipment
- High sealing forces along with accurate and narrow dead bands
- Maintain safety function in high flow applications
- Captive exhaust and precision
- Selected to suit system requirements
- Medium pressure connections available (selected models)

Please see catalogue section number **27** for the full product range.

26 - 28 Ancillaries Relief & Flowline Pilot Valves



Bifold Marshalsea Subsea Hydraulic Precision Relief Valves, VRL & VRP



- PED category IV certified or designed in accordance to PED standards
- High flow - up to 25.0 l/min
- Working pressure up to 20,000 psi / 1,380 bar
- 316L stainless steel with super duplex options
- Designed to efficiently open at a predetermined set pressure to protect equipment
- Flooded spring chamber
- Floating poppet design produces reseating at 90% of cracking pressure
- The main spring load is not transmitted to the seat, thus reducing distortion and wear
- Design characteristics are not flow dependent; producing a near linear response to increasing flow
- Direct seawater immersion
- Medium pressure connections available (selected models)

Please see catalogue section number **28** for the full product range.


Fire Safety Valves

Features & Benefits

- Our fusible valves have been applied in onshore / offshore oil and gas production safety shut-down systems since 1989
- This extensive range includes valves and basic screw-in plugs for pneumatic / low pressure hydraulic applications, single and two stage valves for high pressure hydraulic service
- Available in a wide range of sizes, pressures and temperatures
- Both pneumatic and high pressure hydraulic valves are available in 2-way, 2-position and 3-way, 2-position configurations
- Contains safety guard against accidental bulb damage
- Highest guaranteed safety factors in the Industry
- NACE MR-01-75 internal wetted and body material (selected models)




29 - 30 Ancillaries Fire Safety Valves

 Pneumatic Fusible Valves - Frangible Bulb, FVMB



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - Up to 2.4 Cv
- Working pressure up to 174 psi / 12 bar
- Used to close safety valve actuators to isolate potential fuel sources from fire
- Designed specifically for high flow system vent
- Bulb offers clear indication of valve status
- Wide range of melting temperatures - from 57°C up to 260°C (frangible bulb)
- Ideally suited for emergency shutdown systems, automatic trigger lines of deluge systems and pneumatic shutdown loops of wellhead systems

Please see catalogue section number **29** for the full product range.

 Pneumatic Eutectic Plug, ETSP



- Suitable for air quality to ISO 8573.1 Class 4: dirt, water and oil
- High flow - Up to 2.4 Cv
- Working pressure up to 145 psi / 10 bar
- Operates as a last-resort safety device for when dangerous temperatures are reached
- Used to close safety valve actuators to isolate potential fuel sources from fire
- Designed specifically for high flow system vent
- Wide range of melting temperatures - from 72°C up to 260°C (frangible Bulb)
- Ideally suited for emergency shutdown systems, automatic trigger lines of deluge systems and pneumatic shutdown loops of wellhead systems

Please see catalogue section number **29** for the full product range.



Can be used in pneumatic and low pressure hydraulic applications.



Hydraulic Direct and Indirect Acting Frangible Bulbs & Eutectic Material Fusible Valves, ETSV15, FP01/FBV, FP50(B)/FBV, FP200(B)/FBV, FP15/FBVH(A), FP50/FBVH(A), FP100/FBVH(A) & FP200/FBVH(A)



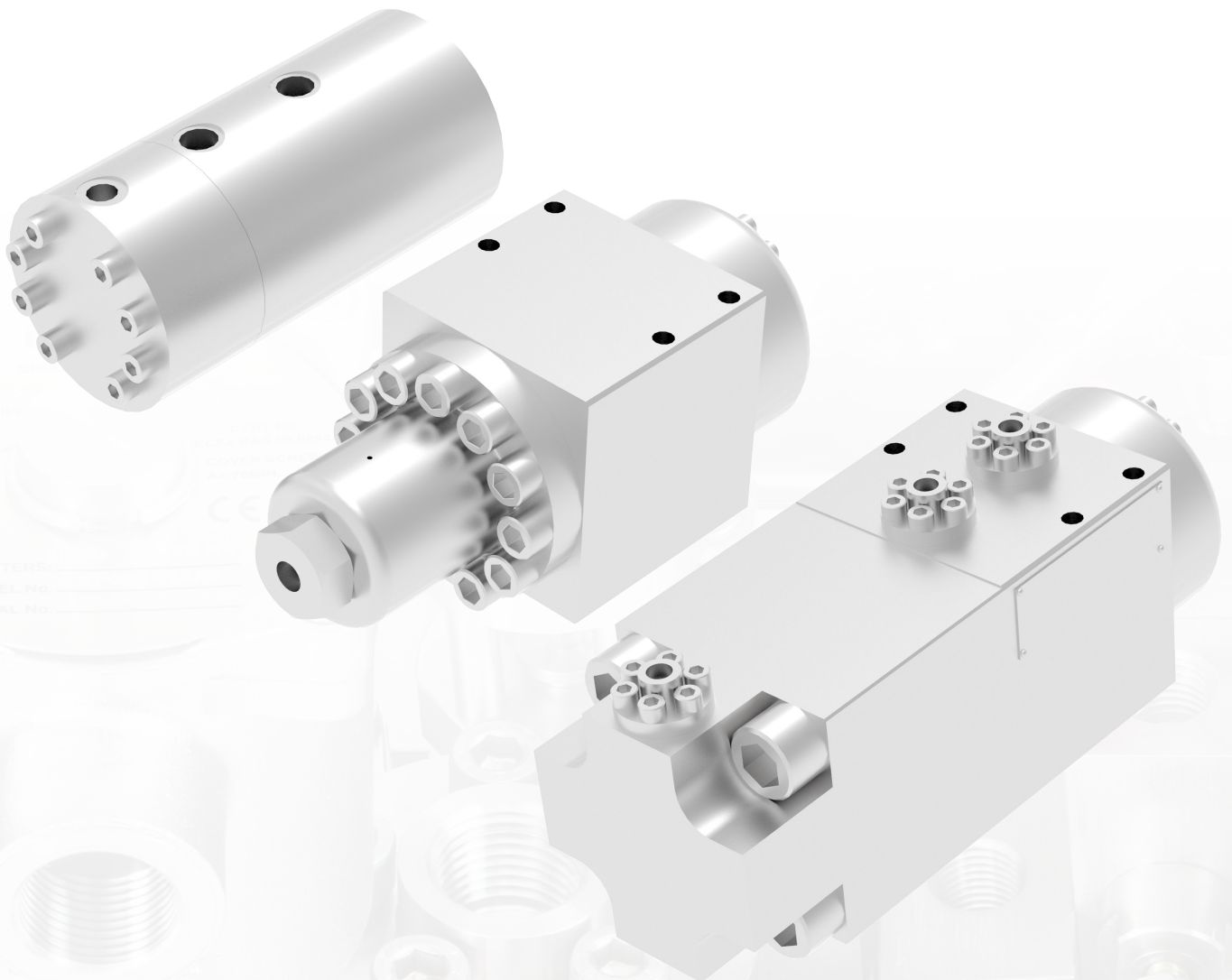
- Compatible with fluids at NAS1638 Class 9 and ISO 4406 18/15
- High flow - up to 0.1 Cv / 5.0 l/min (direct acting), 3.8 Cv / 200.0 l/min (indirect acting)
- Working pressure up to 10,000 psi / 690 bar
- Temperature sensitive flow control devices
- When intense heat or close proximity to a fire causes the valve temperature to exceed the frangible bulb rating or eutectic melting point, the valve returns to the vent position.
- Designed specifically for high flow system vent
- Bulb offers clear indication of valve status
- Wide range of melting temperatures - from 57°C up to 182°C (frangible bulb) and from 47°C up to 220°C (eutectic plug)

Please see catalogue section number **30** for the full product range.

Pressure Intensifiers

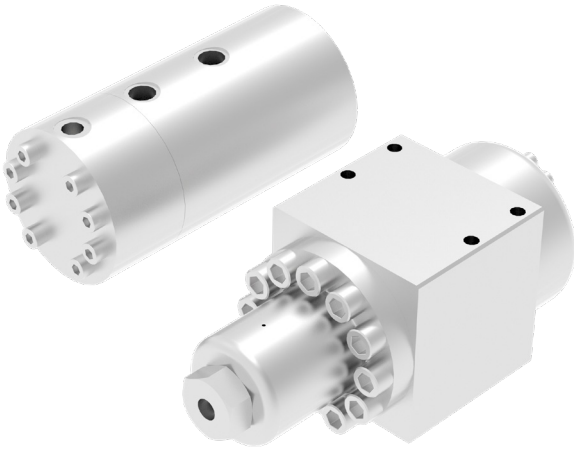
Features & Benefits

- Designed to locally boost the pressure of any water based or mineral / synthetic oil based fluid using a low pressure hydraulic supply
- Stall free operation without the use of additional valves and equipment. The Bifold Marshalsea pressure intensifiers cannot stall regardless of how low the demand is on the high-pressure side
- Once system pressure is achieved, there is minimal consumption of expensive hydraulic fluid - virtually leak free
- Boosts inlet pressure up to 7 times without external power
- Lower costs - significantly reduced infrastructure costs. Removing the need for high pressure motor pump units and long distance high pressure piping and umbilicals (it does not require an electrical supply and has no external controls)
- Compact design
- No electrical supply or controls required





Bifold Marshalsea Hydraulic Topside Pressure Intensifiers, PI39-TS & PI73-TS

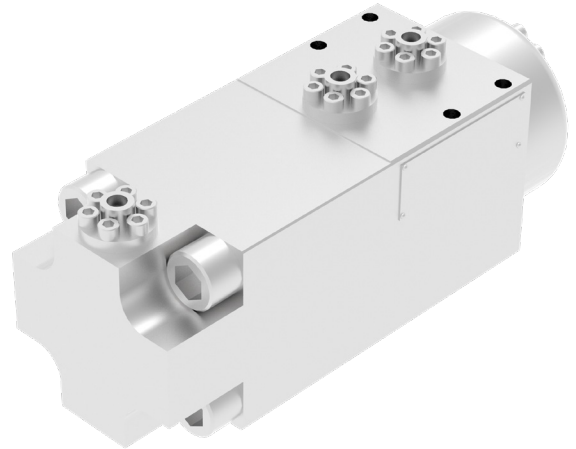


- Designed to amplify the inlet pressure to a higher outlet pressure by a predetermined ratio
- Working pressure up to 20,000 psi / 1,380 bar
- Maximum Intensification Ratio – 7 times inlet pressure
- Two sizes available:
PI39-TS = 39cc LP piston (without vent valve)
PI73-TS = 73cc LP piston (with or without pilot operated vent valve)
- Inline last chance filter elements can be fitted, preventing ingress of debris into the intensifier causing potential damage to the pressure intensifier
- Medium pressure connections available (selected models)

Please see catalogue section number **31** for the full product range.



Bifold Marshalsea Subsea Hydraulic Pressure Intensifiers, PI73-SS



- Designed to amplify the inlet pressure to a higher outlet pressure by a predetermined ratio
- Working pressure up to 20,000 psi / 1,380 bar
- Maximum Intensification Ratio – 7 times inlet pressure
- PI73-SS = 73cc LP piston (pilot operated vent valve for the high pressure line)
- Direct seawater immersion
- Medium pressure connections available (selected models)

Please see catalogue section number **32** for the full product range.

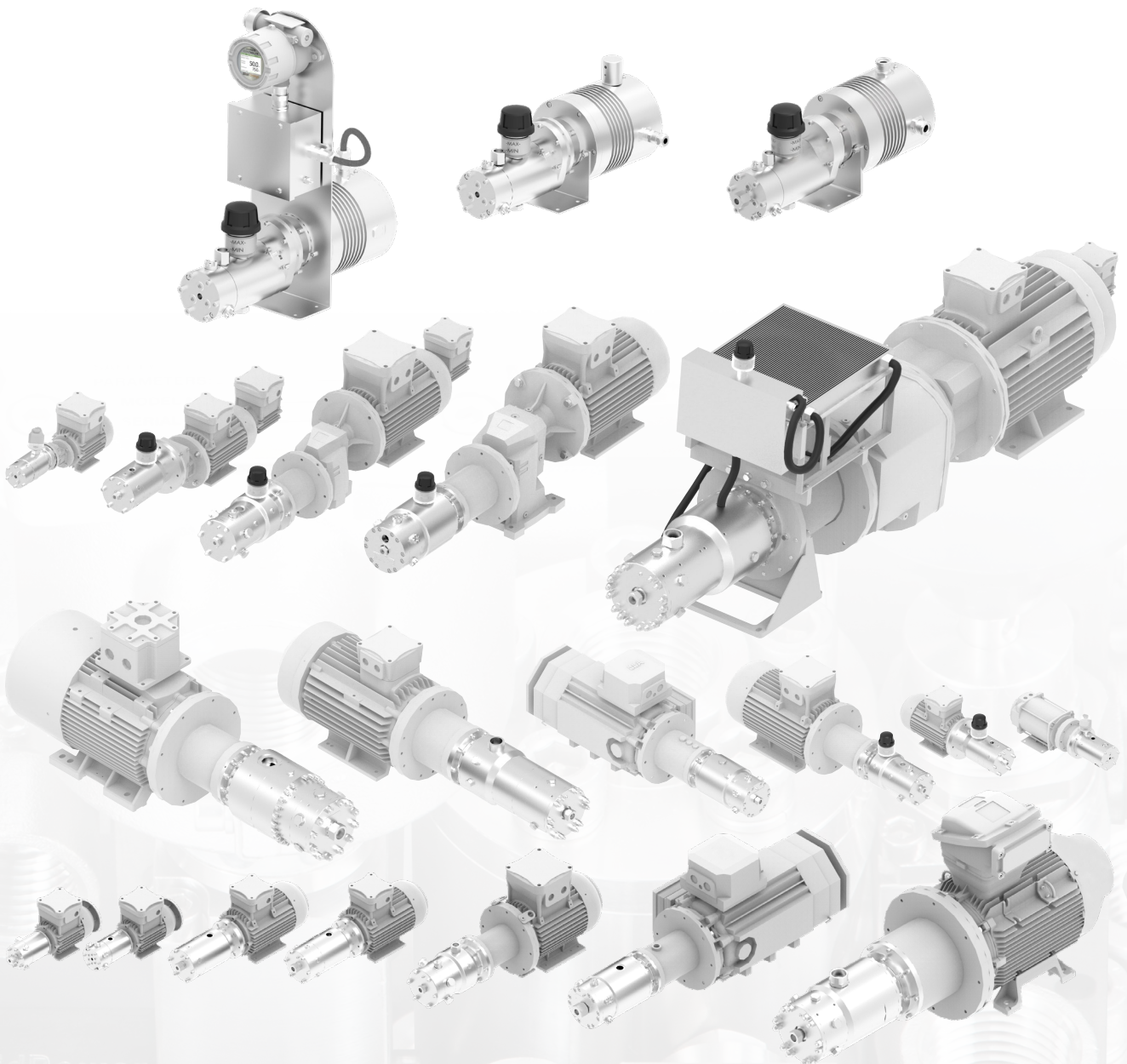
PUMPS



Pumps

Features & Benefits

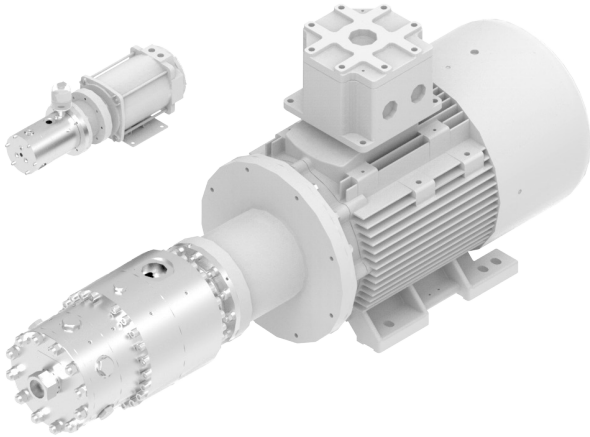
- Pump assembly provides a typical footprint saving of **50%** versus other typical style of pumps on the market. The weight saving can also be more than **50%** compared to competitor units
- In the offshore oil and gas sector, Bifold Marshalsea's water glycol pumps have up to **67 - 70%** of the market share
- Sequentially actuated pistons deliver smooth flow
- High efficiency axial piston pump technology up to 30.0 kW and up to 20,000 psi / 1,380 bar working pressure
- Zero external leakage - potential leakage is returned to suction
- Lower cost - significantly reduced infrastructure costs throughout with ultra low power consumption



33 - 35 Pumps



Bifold Marshalsea Hydraulic Pumps - Water
Glycol, SMW, LMW, XW & XW30

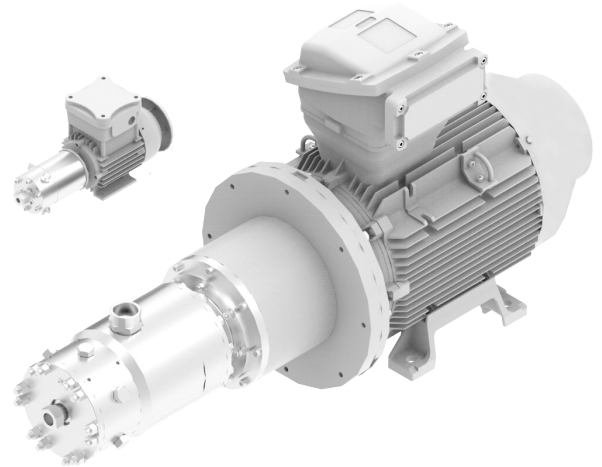


- High flow - from 0.75 l/min to 41.30 l/min
- High efficiency - from 0.2 kW up to 30.0 kW (electrical power)
- Working pressure up to 20,000 psi / 1,380 bar
- 316L stainless steel as standard with carbon steel and aluminium (external components) options available
- Designed for a wide range of fluids including water-based solutions and oil-based fluids
- Separate bearing oil lubrication, which reduces running noise and prevents the bearing assemblies from coming into contact with the process fluid
- Suitable for horizontal and vertical installation
- 3 and 6 piston pumps available
- Zero external leakage = environmentally friendly
- API 674 compliant
- Medium pressure connections available (selected models)

Please see catalogue section number **33** for the full product range.



Bifold Marshalsea Hydraulic Pumps - Oil, SM,
SMLP, LM, LMLP, X & X30



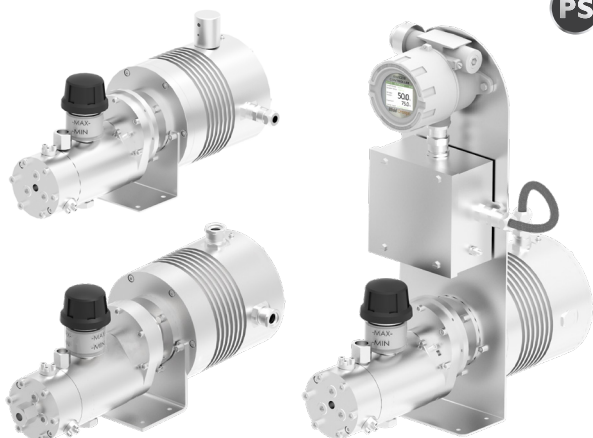
- High flow - from 0.23 l/min to 41.30 l/min (13.8 l/hr to 2,478 l/hr)
- High efficiency - from 0.2 kW up to 30.0 kW (electrical power)
- Working pressure up to 15,080 psi / 1,040 bar
- 316L stainless steel as standard with carbon steel and aluminium (external components) options available
- Models SM, SMLP, LM and LMLP are direct coupled, removing the need for a bellhousing making the design more compact
- Suitable for horizontal and vertical installation
- 3 and 6 piston pumps available
- Zero external leakage = environmentally friendly
- API 674 compliant
- Medium pressure connections available (selected models)

Please see catalogue section number **33** for the full product range.



Bifold Marshalsea Chemical Low Power - 24Vdc Chemical Injection Pumps, M-SMC, E-SMC & I-SMC

PS

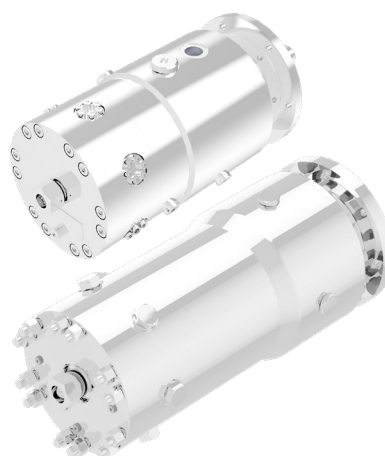


- Flow - from 0.00 l/min to 0.52 l/min (0.00 l/hr to 31.2 l/hr)
- High efficiency - from 0.1 kW up to 0.25 kW (electrical power)
- Working pressure up to 10,000 psi / 690 bar
- Meets industry standards including API 674 / 675 and have IECEx/ATEX certification
- NACE MR-01-75 external and pressure retaining components
- 316L stainless steel as standard with carbon steel and aluminium (external components) options available
- Designed for chemical injection
- 300% more efficiency than conventional pump solutions
- Low power - ideal for solar applications - reduced emissions
- Manual and digital flow control models
- Smooth fluid delivery
- Chemically inert, low friction ceramic pistons
- Medium pressure connections available (selected models)

Please see catalogue section number **34** for the full product range.



Bifold Marshalsea Subsea Hydraulic Pumps - Water Glycol, XWSS & XWHSS



- Flow - from 2.30 l/min to 186.0 l/min
- High efficiency - from 15.0 kW up to 60.0 kW (electrical power)
- Working pressure up to 15,080 psi / 1,040 bar
- Meets industry standards including API 674 / 675
- NACE MR-01-75 external and pressure retaining components
- Manufactured from 316L stainless steel or super duplex (external components) as standard
- Designed for a wide range of fluids including water-based solutions and oil-based fluids
- Separate bearing oil lubrication, which reduces running noise and prevents the bearing assemblies from coming into contact with the process fluid
- Direct seawater immersion
- Medium pressure connections available (selected models)

Please see catalogue section number **35** for the full product range.



Pre-series product

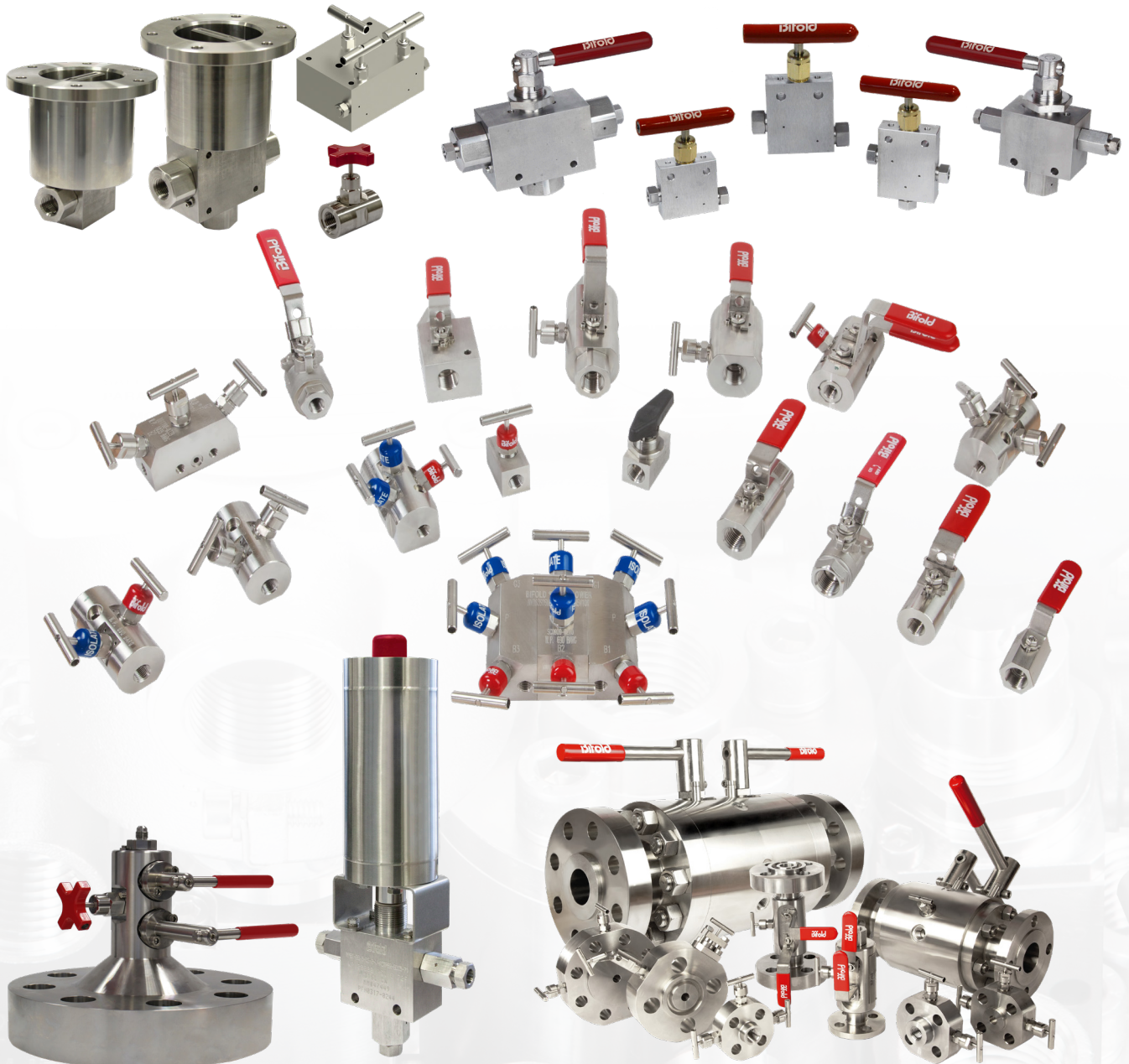
BALL & NEEDLES VALVES



Ball & Needle Valves

Features & Benefits

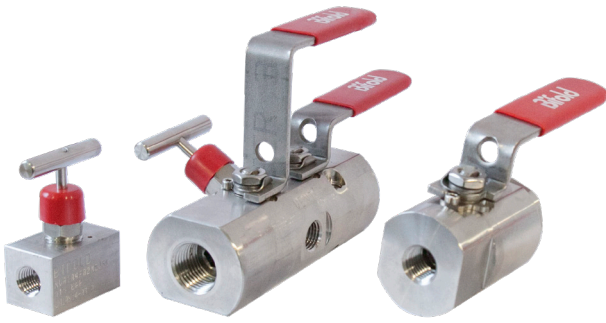
- Our needle valve range incorporates dynamic sealing which eliminates the loss of seal integrity and reduces the risk of fugitive emissions along with non-wetted threads
- Stem seal design prevents galling and contamination
- Anti blow out stem
- Unique compact design, sleek light weight body with a smaller envelope enabling closer mounting
- Ease of installation and a significant reduction in overall panel size and weight
- Wide range of operating media covered - 1/4" to 2" ports in air, wet air, water, water glycol, oil, chemicals and gases



36 - 37 Ball & Needle Valves



Hydraulic Instrumentation Ball & Needle Valves, BV01, BV02, BV05, NV01, NV03, NV04, NV05, NV06 1, NV06 2, NV06 3 & NV22

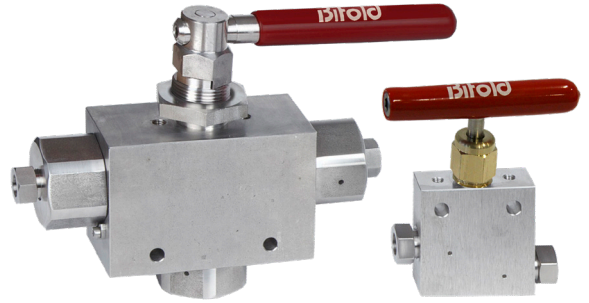


- High flow - Up to 19.0 Cv / 857.0 l/min
- Working pressure up to 10,000 psi / 690 bar
- NACE MR-01-75 internal wetted and body materials as standard
- Viton / RTFE Stem Sealing - maintenance free
- Low operating torque eliminating the need to mount on a back plate to counteract torque
- Non-rotating, anti-galling tip (selected models)
- Custom manifold solutions available
- Fire safe option available - Fire tested in accordance with API 607, API 6FA and ISO 10497
- Further product configurations available
- Up to 1" actuated solutions available

Please see catalogue section number **36** for the full product range.



Hydraulic Instrumentation Medium Pressure Ball & Needle Valves MPN, MPBF, MPBT, MPNM & MPBM



- Working pressure up to 20,000 psi / 1,380 bar
- Low torque to operate
- Non-rotating, anti-galling tip as standard
- Secondary metal to metal seals to prevent potential leak paths
- HNBR stem sealing - maintenance free
- Custom manifold solutions
- Further medium pressure products are also available: Solenoid Valves, Pilot Valves, Interface Valves, Quick Exhaust Valves, Check Valves, Relief Valves, Pumps, Pressure Intensifiers, Pressure Transmitters, Fittings, Adaptors and Nipples
- Up to 1" actuated solutions available

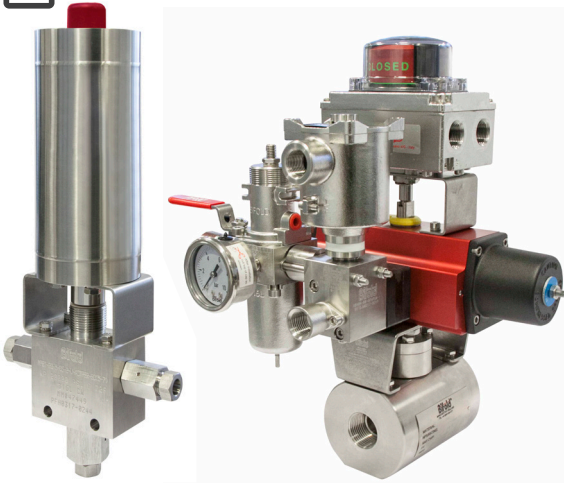
Please see catalogue section number **36** for the full product range.



Can be used in hydraulic and pneumatic applications.



Hydraulic Instrumentation & Process, Electric, Pneumatic and Hydraulic Actuated Ball Valves, BV01, BV02, BV13, MPBF & MPBT

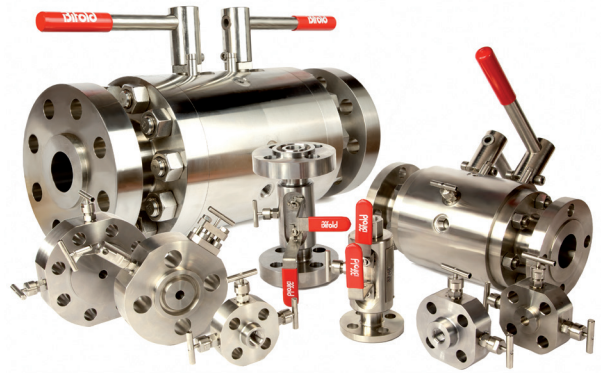


- Working pressure up to 20,000 psi / 1,380 bar
- Up to 2" full bore
- Designed for instrumentation and process flow control applications
- Pneumatic, hydraulic and electric actuated solutions available on all instrumentation ball valves, medium pressure and process valves
- Single or double acting actuators available with a range of configurable options including limit switches, solenoid valves, control valves and positioners
- NACE MR-01-75 internal wetted and body materials as standard (excluding medium pressure valves)

Please see catalogue section number **36** for the full product range



Hydraulic Instrument to Process & Process Ball & Needle Valves & Monoflanges, BV06, BV07, BV09, BV14, BV17, BV25, BV26, NV07, NV08 & NV09



- Up to and including Class 2500
- Designed for instrumentation and process applications
- Up to 2" full bore
- Available in a range of ASME compliant materials
- Designed in accordance with ASME B16.34, B16.5 and B1.20.1
- NACE MR-01-75 internal wetted and body materials as standard
- Non-rotating, anti-galling tip as standard
- Fire safe option available - Fire tested in accordance with API 607, API 6FA and ISO 10497
- Up to 2" (full bore) and 3" (reduced bore) actuated solutions available

Please see catalogue section number **36** for the full product range.

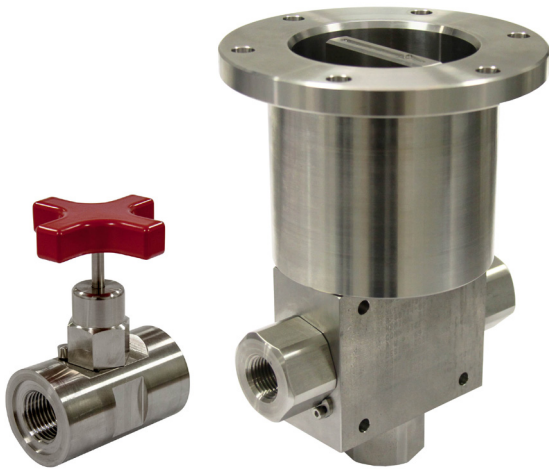


Can be used in hydraulic and pneumatic applications.

36 - 37 Ball & Needle Valves



Subsea Hydraulic Instrumentation Ball & Needle Valves, BVS01, BVS11, BVS12 & NVS01

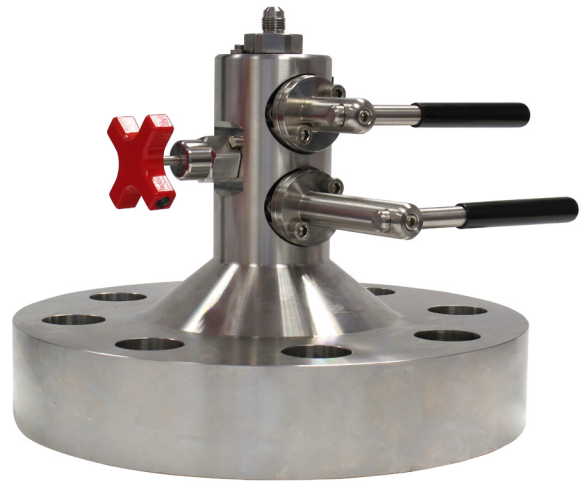


- Working pressure up to 10,000 psi / 690 bar
- High flow - up to 9.6 Cv / 500.0 l/min
- Designed in accordance with API 6A
- Certification is available to PSL 3
- Non-rotating, anti-galling tip as standard
- Wide selection of inlet and outlet, threaded and welded connections available
- Control options including ROV and diver control

Please see catalogue section number [37](#) for the full product range.



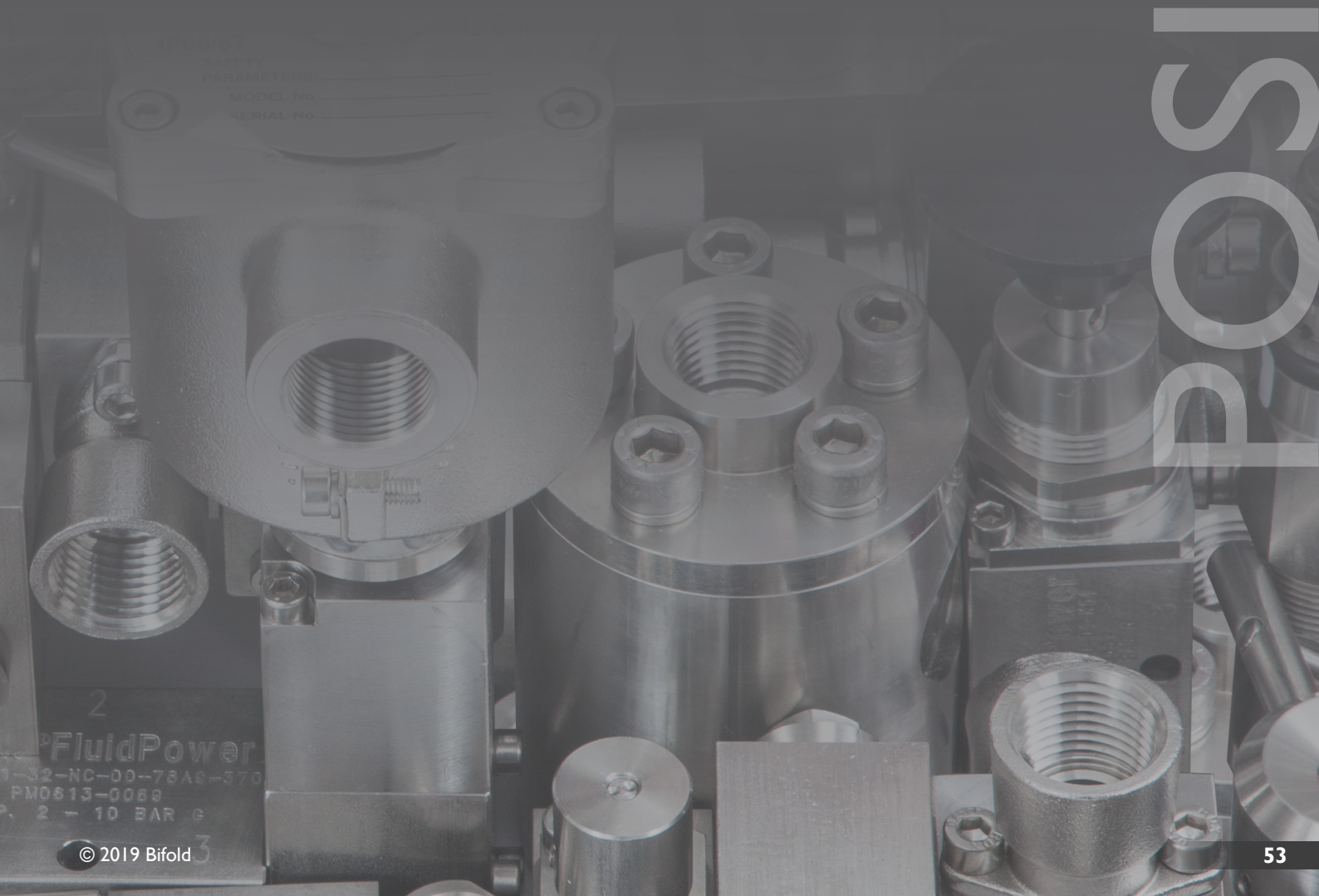
Subsea Hydraulic Instrumentation Process Ball Valves, BVS06 & BVS07



- Working pressure up to 10,000 psi / 690 bar
- High flow - up to 9.6 Cv / 500.0 l/min
- Available in a range of ASME compliant materials
- Designed in accordance with API 6A
- Certification is available to PSL 3
- Typical flange connections API 6A and ASME B16.34
- Non-rotating, anti-galling tip as standard

Please see catalogue section number [37](#) for the full product range.

VALVES POSITIONERS



SAFETY
PARAMETERS
MODEL No.
SERIAL No.

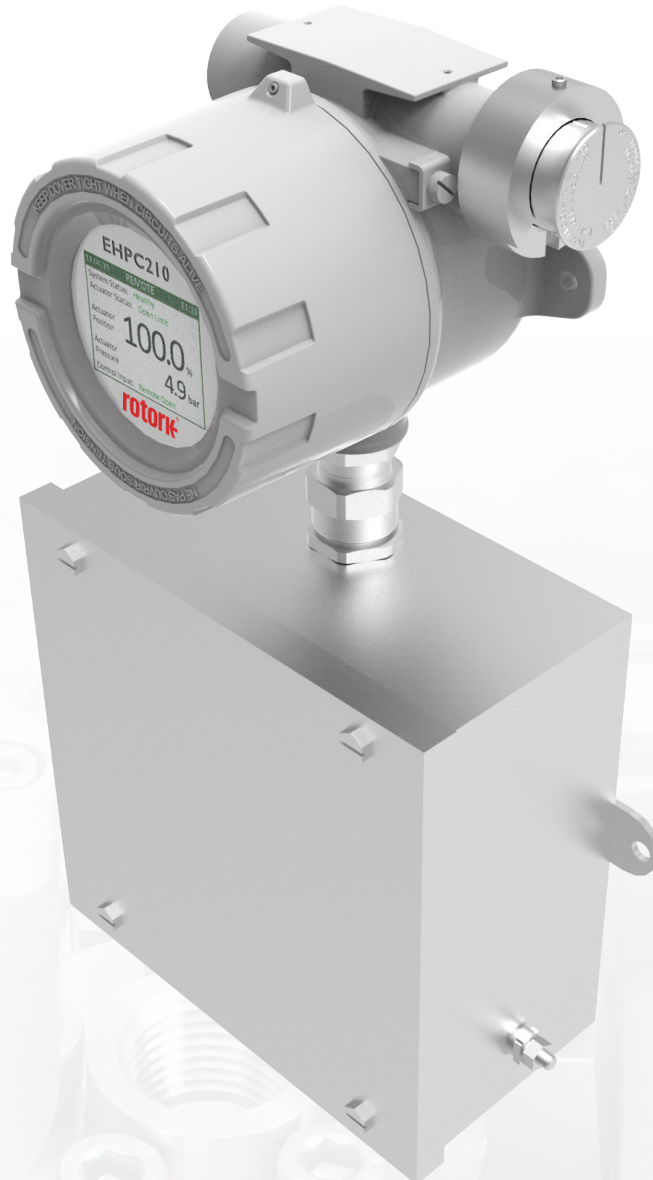
2
FluidPower
1-32-NC-00-78A8-370
PM0613-0068
P, 2 - 10 BAR g

38 Valve Positioners Valve Actuator Diagnostic Controllers

Valve Actuator Diagnostic Controllers

Features & Benefits

- Unique partial stroke test solution for actuator systems
- Suitable for Zone 1 and 2 hazardous (classified) locations
- Fully configurable for all valve applications
- ATEX, IECEx or UL and certified as SIL 3 capable - providing a unique partial stroke test solution for SIL applications
- Developed in conjunction with the Bifold solenoid valve characteristics to provide superior and high accuracy actuation control





Bifold Orange Universal - Pneumatic,
Hydraulic & Electro-Hydraulic Valve Actuator
Diagnostic Controller, EHPC210D



- Low power - under 2.0W (24Vdc)
- Essential component in the control and testing of pneumatic, hydraulic and electro-hydraulic valve actuators
- Provides a unique partial stroke test solution suitable for SIL applications
- Available with Ex i intrinsically safe 4-20mA command and retransmission signals
- HART 7 and MODBUS protocol interface
- Configurable for all control logic requirements, e.g. ESD (Emergency Shut Down), PST (Partial Stroke Test), valve signature test, single and double acting valve actuators and pump motor control
- Colour graphic display and integral control switch for local control and indication
- Set up and commissioning using the Bifold orange application

Please see catalogue section number **38** for the full product range.



Pre-series product



Can be used in pneumatic, hydraulic and electro-hydraulic applications.

39 Valve Positioners Valve Actuator Modulating Controllers

Valve Actuator Modulating Controllers

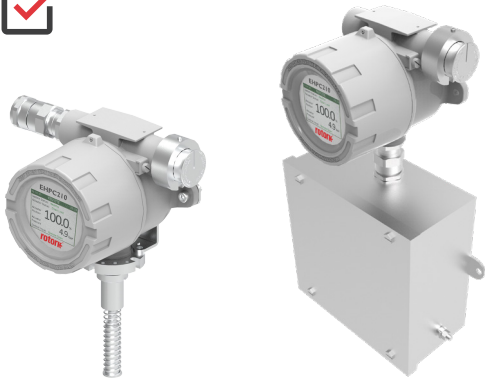
Features & Benefits

- The modulating controller can position a pneumatic, hydraulic and electro-hydraulic actuated control valve from 0.25% accuracy with a resolution of 0.2% from the 4-20mA control signal
- Fully configurable for all valve applications
- High accuracy - integrated linear position transducers
- Developed in conjunction with the Bifold solenoid valve characteristics to provide superior and high accuracy actuation control





Bifold Orange Universal - Pneumatic, Hydraulic & Electro-Hydraulic Valve Actuator Modulating Controller, EHPC210M



- Low power - under 2.0W (24Vdc)
- Essential component in the modulating control of pneumatic, hydraulic and electro-hydraulic valve actuators
- Provides an accurate and flexible positioning system
- 4-20mA isolated command and retransmission signals
- Integral linear, current or potentiometer valve feedback sensors
- HART 7 and MODBUS protocol interface
- Configurable for all control logic requirements, e.g. modulating, single and double acting valve actuators
- Hydraulic pump motor control options including on demand and pressure control
- Colour graphic display and integral control switch for local control and indication
- Set up and commissioning using the Bifold orange application
- Suitable for Zone 1 and 2 hazardous (classified) locations and Class 1 Division 1

Please see catalogue section number **39** for the full product range.



Bifold Orange Universal - Pneumatic & Hydraulic Intrinsicly Safe Valve Actuator Modulating Controller, IS200



- Intrinsically safe
- Simple two-step calibration
- Current command, current or potentiometer feedback signal
- Actual position 4-20mA calibrated output
- Manual mode
- Stepping mode with adjustable on and off times
- Selectable solenoid drive sense for fail-safe operation
- Selectable default operation on command signal feedback signal break
- Fault solenoid output relaxed by control signal breaks
- Compact DIN Rail mounted enclosure
- Optional hart communication protocol available
- HART 7 protocol data on actual position signals
- HART 7 device specific configuration commands

Please see catalogue section number **39** for the full product range.



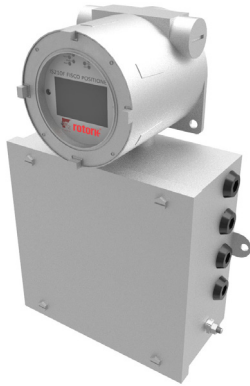
Can be used in pneumatic, hydraulic and electro-hydraulic applications.

39 Valve Positioners

Valve Actuator Modulating Controllers



Bifold Orange Universal - Pneumatic, Hydraulic & Electro-Hydraulic FISCO Infrared Valve Actuator Modulating Controller, IS210F



- Low power - under 2.0W (24Vdc) (excluding solenoids)
- FISCO foundation fieldbus protocol
- Utilises the fieldbus communication standard, HI ITK6
- Infra-red intrinsically safe hand held controller, IR900 that can remotely calibrate and configure the actuator
- Large graphics LCD with comprehensive status and data display
- Local / remote configuration enables input and open drain status output
- Selectable solenoid drive sense for fail-safe operation
- Selectable default operation on external fault and feedback signal break
- Fault output – 24Vdc open drain
- External fault contact monitoring
- Stepping mode with adjustable ON and OFF times
- Suitable for Zone 1 and 2 hazardous (classified) locations

Please see catalogue section number **39** for the full product range.



Bifold Orange Universal - Pneumatic, Hydraulic & Electro-Hydraulic Valve Actuator Modulating Controller, EX200



- Low power - under 1.5W (24Vdc)
- Essential component in the control of electro-hydraulic valve actuators
- Provides an accurate and flexible positioning system
- 4-20mA current command and retransmission signals
- Suitable for current or potentiometer valve actuator feedback
- Control of increase, decrease and fast-fail 24Vdc solenoid valves
- Available with HART 7 protocol interface
- Hydraulic pump control, on-demand or pressure

Please see catalogue section number **39** for the full product range.



Can be used in pneumatic, hydraulic and electro-hydraulic applications.

40 - 41 | Valve Positioners

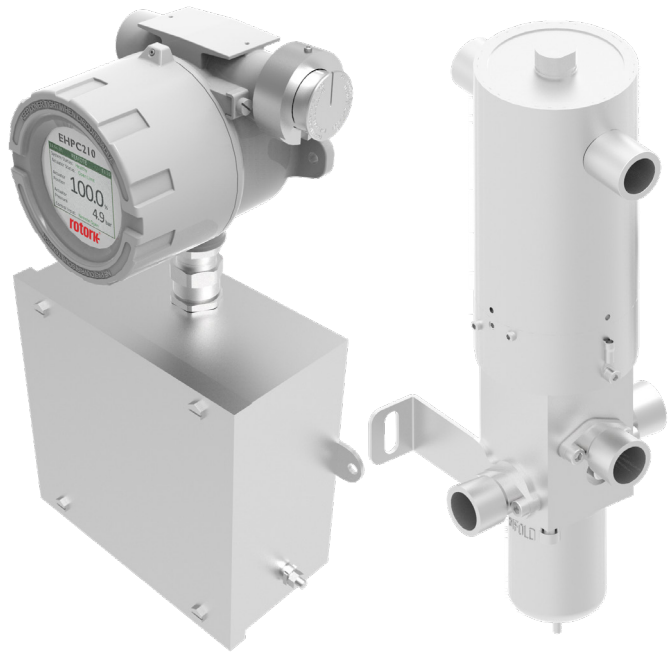
NEW!! Product Under Development



Pneumatic, Actuator Positioner Units, PICO

- Zero steady state consumption
- SIL 3 certified
- Configurable logic control
- Digital proportional control
- High flow capability

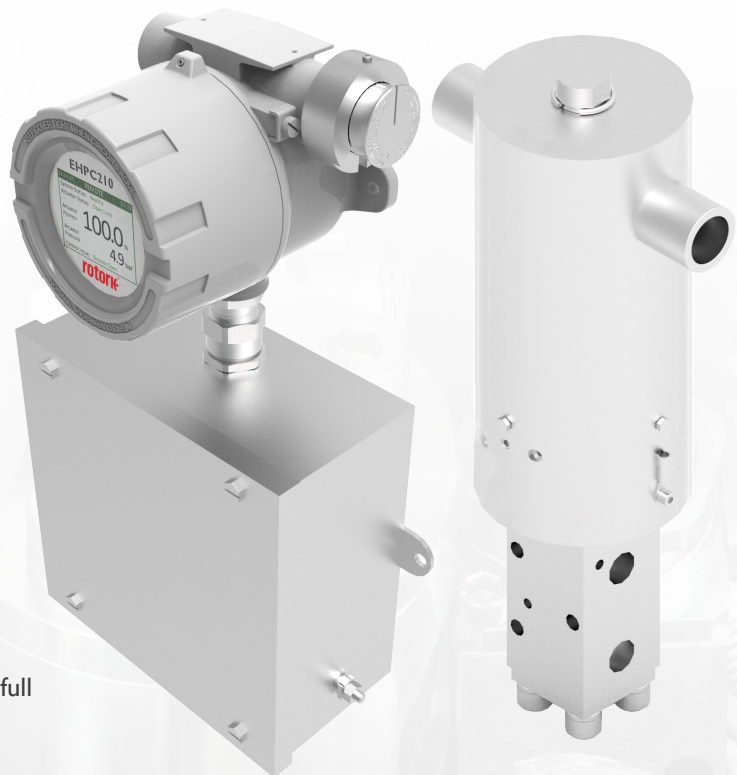
Please see catalogue section number **40** for the full product range.



Hydraulic, Actuator Positioner Units, HICO

- Zero steady state consumption
- SIL 3 certified
- Configurable logic control
- Digital proportional control
- High flow capability

Please see catalogue section number **41** for the full product range.



ACTUATORS



42 Actuators

NEW!! Product Under Development

rotork®



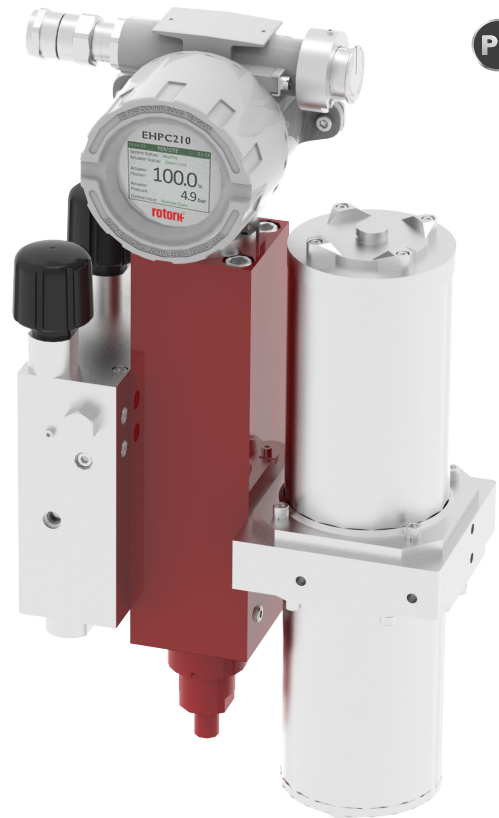
Universal - Hydraulic & Electro-Hydraulic
Bifold Orange Linear Actuators

- Rotork self contained linear solution
- Low power ideal for solar applications
- Compact
- Configurable modular design
- High pressure

Please see catalogue section number **42** for the full product range.



Pre-series product



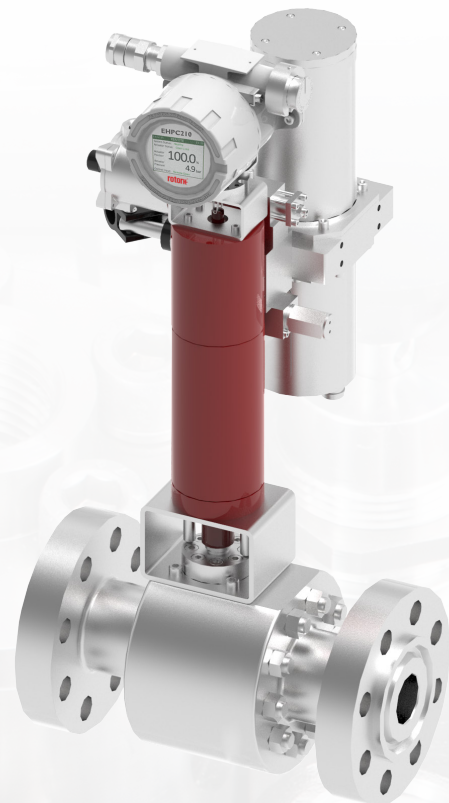
rotork®



Universal - Hydraulic & Electro-Hydraulic
Bifold Orange Quarter Turn Actuators

- Rotork self contained quarter turn solution
- Low power ideal for solar applications
- Compact
- Configurable modular design
- High pressure

Please see catalogue section number **42** for the full product range.



ACCESSORIES



Bifold
ENGLAND M24 15W

Ex Ia BC T
Ex II 20 IPF
CERT No: Daseefa02ATEX024X

CERT No: ECEX BAS 09.0092X
COVER SCREWS
A4-70MIN.

Ex II 1 GD
IP66/67

CE 1180

SAFETY
PARAMETERS:
MODEL No. BPO50-TBA3
SERIAL No.

Pressure Transmitters

Features & Benefits

- Able to withstand extreme environmental and pressure conditions
- Suitable for Zone 1 and 2 hazardous (classified) locations and corrosive atmospheres and Class I Division I
- Compact design
- High tolerance to field misuse
- Low cost solution



43 Accessories

Pressure Transmitters



Universal - Pneumatic & Hydraulic Pressure Transmitters, PT I



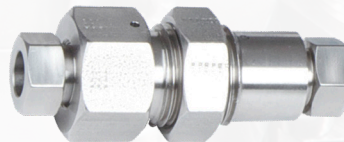
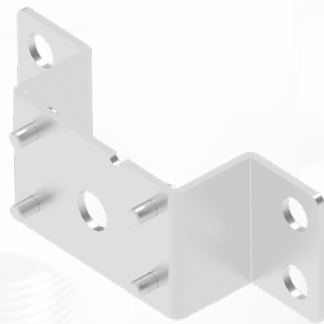
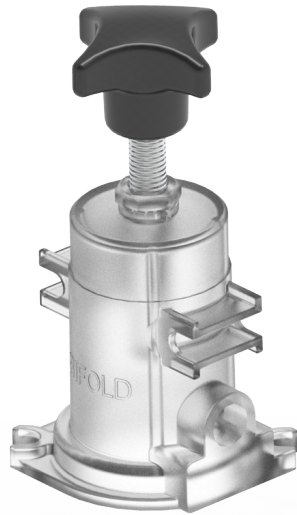
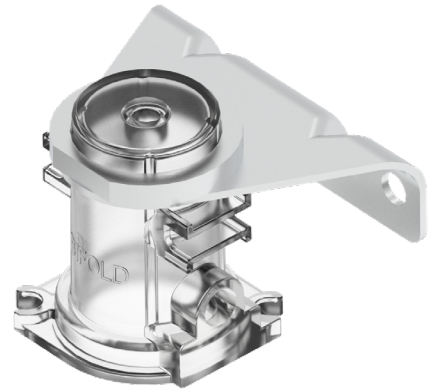
- Up to and including 14,503 psi / 1,000 bar working pressure
- Body manufactured from 316L stainless steel
- Wetted parts manufactured from 17 - 4 PH stainless steel
- Designed to monitor pressure in a pipeline and transmits a 4-20 mA electrical signal
- 2 wire - 4-20 mA loop powered
- High proof pressures
- 3 wire voltage output for low power applications
- Wide selection of pressure connections and electrical outputs

Please see catalogue section number **43** for the full product range.



Can be used in pneumatic and hydraulic applications.

03, 15 & 36 Accessories



03, 15 & 36 Accessories



Pneumatic - Air Preparation - Accessories, L8, L9, L15, L46, L116, L160 & K10



- Device specific accessories
- 316L stainless steel
- Panel mounts and brackets
- Drain screw
- Precision adjustment
- Bug vents
- Tamperproof cap

Please see catalogue section number **15** for the full product range.



Pneumatic - Bug Screen / Breathers / Silencer, k4 & k4S



- Reduces the noise levels of pneumatic equipment
- Sintered element protects vent ports open to the atmosphere
- Working pressure up to 12 bar / 174 psi
- 316L stainless steel body and porous element
- 1/4" up to 1" port size
- NPT and BSP options

Please see catalogue section number **03 & 15** for the full product range.



Pneumatic - Gauges, X5, X5PB, X8, X8PB, X10, X10PB, X11 & X11PB

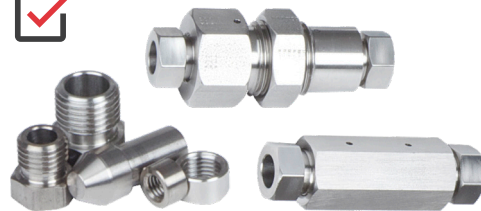


- Mechanical pressure gauges require no external power and provide a reliable means of accurate pressure measurement
- Pressure display up to 16 bar or 160 psi
- 316L stainless steel
- Dual scale - can be calibrated in bar and psi
- Gauge diameter - 1.5" (40mm), 2" (50mm) and 2.5" (63mm)
- Accuracy - +/-2.5% of full scales for 1.5"(40mm) +/-1.6% of full scales for 2" (50mm) and 2.5" (63mm)
- 1/8" up to 1" connection size
- BSP, BSPT, NPT or metric thread

Please see catalogue section number **03 & 15** for the full product range.



Hydraulic - Medium Pressure Fittings, Adaptors & Nipples, MPF

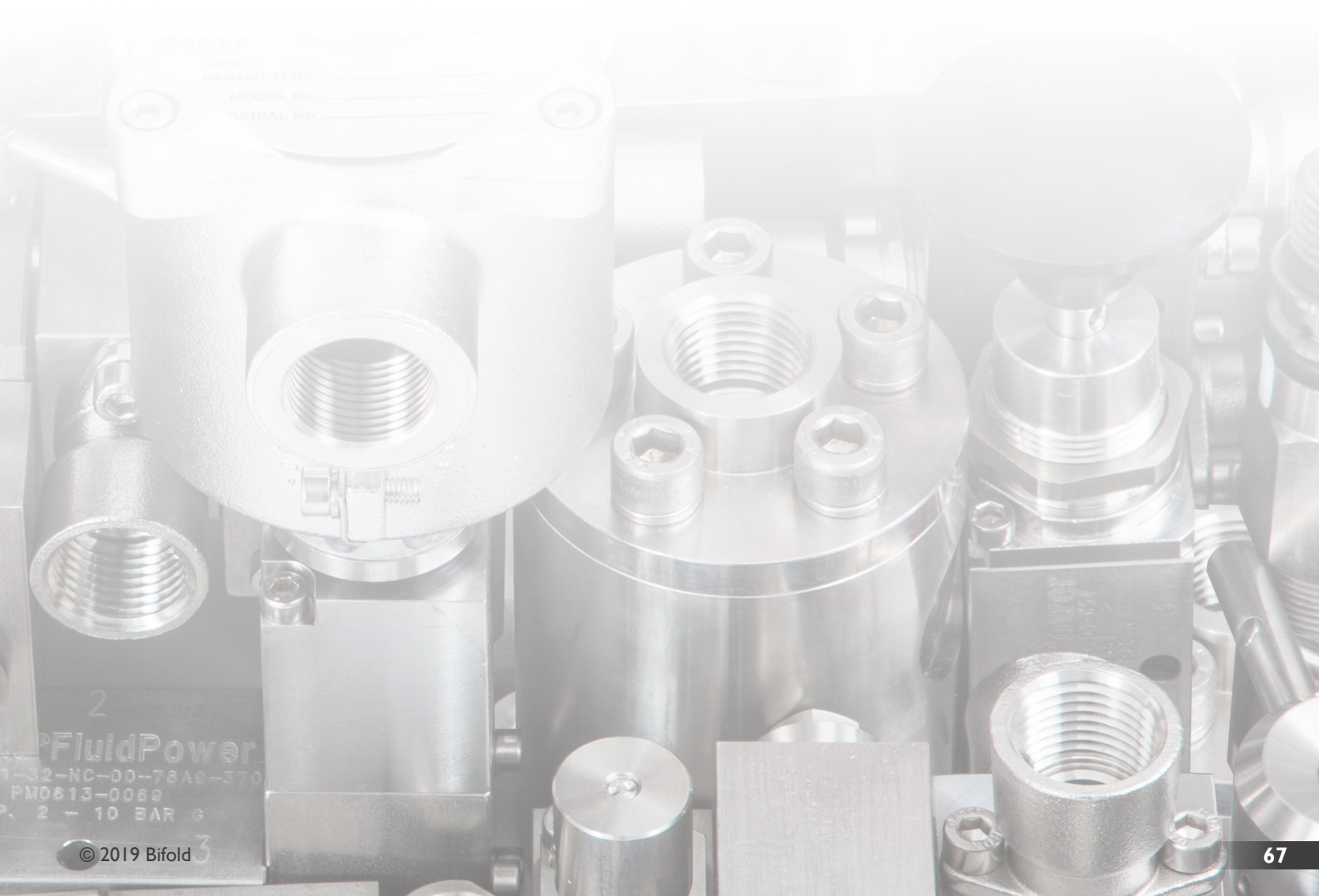


- Connectors and adaptors for medium pressure solutions
- Working pressure up to 20,000 psi / 1,380 bar
- 316L stainless steel
- 1/4" up to 1" port size
- Wide range of product options

Please see catalogue section number **36** for the full product range.



Can be used in hydraulic and pneumatic applications.



44 Market Sectors

Oil & Gas

Section	Media	Product Ranges	Page	Upstream			
				Wellhead Controls & Associated Field Instrumentation	Umbilical Reelers	Chemical Injection	
03 - 06 Modular Systems	03	Pneumatic	Model AXIS, XS04, XS08, XS16, XS104, XSN04 & XSIN04	12	-	✓	-
	03	Pneumatic	Deluge Modular Systems, XS04, XS08, XS16, XS104, XSN04 & XSIN04	12	-	-	-
	04	Hydraulic	Valve Assembly Modular Systems, VA's	12	✓	-	-
	05	Gaseous	Valve Assembly Modular Systems, VA's	12	-	-	-
	06	Subsea Hydraulic	Valve Assembly Modular Systems, SVA's	12	-	-	-
07 - 10 Solenoid Valves	07	Pneumatic	Direct Acting & Indirect Acting Solenoid Valves, FP03P, FP06P, FP10P, FP12P, BXS, SPR & PPV	15	✓	-	-
	08	Hydraulic	Direct Acting Solenoid Valves, FP01	15	✓	-	✓
	08	Hydraulic	Direct Acting Solenoid Valves, FP02, FP03, FP04, FP05 & FP10	15	-	✓	✓
	08	Hydraulic	Indirect Acting Solenoid Valves, FP15	15	✓	-	✓
	08	Hydraulic	Medium Pressure Indirect Acting Solenoid Valves, FP15	15	✓	-	-
	08	Hydraulic	Indirect Acting Solenoid Valves, FP50, FP50(B), FP100, FP200 & FP200(B)	15	✓	-	-
	08	Hydraulic	Direct Acting Solenoid Valves, SVP	15	✓	✓	-
	08	Hydraulic	CETOP 03 Direct Acting & Indirect Acting Solenoid Valves, FP04(C3) & FP15(C3)	15	-	-	-
	08	Hydraulic	Slide Valve Indirect Acting Solenoid Valves, SV & SVI	15	✓	-	-
	09	Gaseous	Direct Acting & Indirect Acting Solenoid Valves, FP02G, FP05G	15	-	-	-
	09	Gaseous	Direct Acting & Indirect Acting Solenoid Valves, FP15G	15	-	-	-
	10	Subsea Hydraulic	Direct Acting Solenoid Pilot Valves (SPV), FPS01	16	-	-	-
	10	Subsea Hydraulic	Directional Control Valves (DCV), FPS10	16	-	-	-
	10	Subsea Hydraulic	Directional Control Valves (DCV), FPS15	16	-	-	-
11 - 14 Pilot, Mechanical & Reset Valves	11	Pneumatic	Pilot & Mechanical Indicating Relays First Out / Visual Indicator Valves, SJJ06	19	✓	-	-
	11	Pneumatic	Pilot, Mechanical & Reset Valves, BXS, SPR & PPV	19	✓	✓	-
	12	Hydraulic	Pilot & Mechanical Valves, FP01, FP02, FP03, FP04 & FP05	19	✓	-	-
	12	Hydraulic	Interface Valves, FP15 & FP15E	19	✓	✓	-
	12	Hydraulic	Interface Valves, FP50, FP50(B), FP100, FP200 & FP200(B)	19	-	-	-
	12	Hydraulic	Time Delayed Block Valves, TDBV	20	✓	-	-
	12	Hydraulic	Mechanical 4-Way Directional Control Valves, I4550	20	✓	✓	-
	13	Gaseous	Pilot & Mechanical Valves, FP02G, FP05G & FP15(G)	20	-	-	-
	13	Gaseous	Interface Valves, FP15/L(G), FP15/H(G) & FP15E(G)	20	-	-	-
	14	Subsea Hydraulic	Pilot & Mechanical Valves, FPS01	21	-	-	-
	14	Subsea Hydraulic	Directional Control Valves, FPS10	21	-	-	-
	14	Subsea Hydraulic	Interface Valves, FPS15, FPS50 & FPS100	21	-	-	-
	14	Subsea Hydraulic	Pilot Slide Valves, HPV5300	21	-	-	-
	14	Subsea Hydraulic	Time Delayed Vent Valves, TDVVS	22	-	-	-

44 Market Sectors

Oil & Gas

Section	Media	Product Ranges	Page	Upstream			
				Wellhead Controls & Associated Field Instrumentation	Umbilical Reelers	Chemical Injection	
15 - 16 Filters, Regulators, Filter Regulators & Filtration Units	15	Pneumatic	Air Preparation, Filter, Regulator & Filter Regulator Units, SH & SC	25	✓	✓	-
	16	Hydraulic	High Pressure Regulators, HPRI	25	✓	✓	-
	16	Hydraulic	Inline & Bowl Filters, F & BF	25	✓	-	-
	16	Hydraulic	Automatic Shut-off Bypass Valves, ASBV	25	-	-	-
17 Volume Boosters & Filter Boosters	17	Pneumatic	Volume Booster & Filter Boosters, VBP	28	-	✓	-
18 - 21 Flow Control Valves	18	Pneumatic	Flow Control Valves & Cylinder Plug Valves, FCI, NV & CPV	30	✓	-	-
	18	Pneumatic	Port Flow Regulator, PFR	30	✓	✓	-
	19	Hydraulic	Flow Control Valves & Cylinder Plug Valves, FCV	30	✓	-	✓
	20	Gaseous	Flow Control Valves, FCV(GS)	30	-	-	-
	21	Subsea Hydraulic	Flow Control Valves, FCVS & FCVMS	31	-	-	-
22 - 25 Shuttle, Check, Exhaust Valves & Couplers	22	Pneumatic	High Speed Proportional Quick Exhaust Valves, HIPEX	33	-	✓	-
	22	Pneumatic	Quick Exhaust Valves, QEV	33	-	-	-
	22	Pneumatic	Shuttle Valves, SV	33	✓	-	-
	22	Pneumatic	Check Valves, PCV	33	✓	✓	-
	23	Hydraulic	Quick Exhaust Valves, QEV15 & QEV50	34	✓	-	-
	23	Hydraulic	Shuttle Valves, FPI5/SV & FP50/SV	34	✓	✓	-
	23	Hydraulic	Check, Excess Flow & Medium Pressure Check Valves, HCV, SCV, SCV(C), DCV, EFCV2, MPCV & VC-SS	34	✓	✓	✓
	24	Gaseous	Shuttle Valves, FPI5G/SV	34	-	-	-
	24	Gaseous	Check & Excess Flow Check Valves, HCV(NT) & EFCV2(4)	35	-	-	-
	25	Subsea Hydraulic	Shuttle Valves, FPS30 & FPS50	35	-	-	-
	25	Subsea Hydraulic	Check Valves, HCVS, SCVS & DCVS	35	-	-	-
26 - 28 Relief & Flowline Pilot Valves	26	Pneumatic	Pressure Sensing Valves, PSV	37	-	-	-
	26	Pneumatic	Flowline Pilot Valves, PSV5A & PSV5E	37	✓	-	-
	26	Pneumatic	Proportional Pressure & Precision Relief Valves, PR & CPR	37	✓	✓	-
	27	Hydraulic	Proportional Pressure & Precision Relief Valves, VRP, VRT, VRL, VRD, VRCD & VRX	37	✓	-	-
	28	Subsea Hydraulic	Precision Relief Valves, VRL & VRP	38	-	-	-

Upstream				Upstream, Midstream & Downstream							
Shale Gas	Process Choke Valve Actuation	Ship / Vessel Ballast & Cargo Handling Valve Controls	Subsea Valves	HPU (Hydraulic Power Unit)	Process Skids & Modules	HVAC, Fire Damper Actuator & Fire Water Deluge Controls	Gas Compression & Turbine Controls	Process Valve Actuator & Pipeline ESD (Emergency Shut Down) Valve Actuator Controls	Process Hook-up & Process Instrument Isolation	Electronic Valve Actuator Controls	HIPPS (High Integrity Pressure Protection Systems)
✓	-	-	-	-	✓	✓	-	✓	-	-	✓
-	✓	✓	-	✓	✓	-	-	✓	-	-	-
✓	-	-	-	✓	✓	-	-	✓	-	-	-
✓	-	-	-	-	✓	-	-	✓	-	-	-
✓	-	-	-	-	✓	-	-	✓	-	-	-
✓	-	-	-	-	✓	-	-	✓	-	-	-
✓	✓	✓	-	-	✓	✓	-	✓	-	-	✓
✓	✓	-	-	-	✓	✓	-	✓	-	-	-
✓	✓	✓	-	✓	✓	✓	-	✓	-	-	✓
✓	-	-	-	-	✓	✓	✓	✓	✓	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
✓	-	-	-	-	✓	-	-	✓	-	-	-
✓	-	-	-	-	✓	✓	✓	✓	-	-	-
-	-	-	-	-	✓	-	-	-	-	-	-
✓	✓	✓	-	✓	✓	-	-	✓	-	-	✓
✓	-	-	-	-	-	-	✓	-	-	-	-
✓	-	-	-	-	-	✓	✓	✓	✓	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
-	-	-	-	-	✓	✓	-	✓	-	-	-
-	-	-	-	-	✓	-	-	✓	-	-	✓
✓	-	✓	-	-	✓	✓	-	✓	-	-	-
✓	✓	✓	-	✓	✓	-	-	-	-	-	-
-	-	-	✓	-	-	-	-	-	-	-	-

44 Market Sectors

Oil & Gas

Section	Media	Product Ranges	Page	Upstream			
				Wellhead Controls & Associated Field Instrumentation	Umbilical Reelers	Chemical Injection	
29 - 30 Fire Safety Valves	29	Pneumatic	Fusible Valves - Frangible Bulb, FVMB	40	✓	-	-
	29	Pneumatic	Eutectic Plug, ETSP	40	✓	-	-
	30	Hydraulic	Direct and Indirect Acting Frangible Bulbs & Eutectic Material Fusible Valves, ETSV15, FP01/FBV, FP50(B)/FBV, FP200(B)/FBV, FP15/FBVH(A), FP50/FBVH(A), FP100/FBVH(A) & FP200/FBVH(A)	41	✓	-	-
31 - 32 Pressure Intensifiers	31	Hydraulic	Topside Pressure Intensifiers, PI39-TS & PI73-TS	43	✓	-	-
	32	Subsea Hydraulic	Subsea Pressure Intensifiers, PI73-SS	43	-	-	-
33 - 35 Pumps	33	Hydraulic	Pumps - Water Glycol, SMW, LMW, XW & XW30	46	✓	-	-
	33	Hydraulic	Pumps - Oil, SM, SMLP, LM, LMLP, X & X30	46	✓	✓	-
	34	Chemical	Low Power - 24Vdc Chemical Injection Pumps, M-SMC, E-SMC & I-SMC	47	-	-	✓
	35	Subsea Hydraulic	Pumps - Water Glycol, XWSS & XWHSS	47	-	-	-
36 - 37 Ball & Needle Valves	36	Hydraulic	Instrumentation Ball & Needle Valves, BV01, BV02, BV05, NV01, NV03, NV04, NV05, NV06 1, NV06 2, NV06 3 & NV22	50	✓	✓	✓
	36	Hydraulic	Instrumentation Medium Pressure Ball & Needle Valves, MPN, MPBF, MPBT, MPNM & MPBM	50	✓	✓	-
	36	Hydraulic	Instrumentation & Process, Electric, Pneumatic and Hydraulic Actuated Ball Valves, BV01, BV02, BV13, MPBF & MPBT	51	-	-	✓
	36	Hydraulic	Instrument to Process & Process Ball & Needle Valves & Monoflanges, BV06, BV07, BV09, BV14, BV17, BV25, BV26, NV07, NV08 & NV09	51	-	✓	✓
	37	Subsea Hydraulic	Instrumentation Ball & Needle Valves, BVS01, BVS11, BVS12 & NVS01	52	-	-	-
	37	Subsea Hydraulic	Instrumentation Process Ball Valves, BVS06 & BVS07	52	-	-	-
38 Valve Actuator Diagnostic Controllers	38	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	Valve Actuator Diagnostic Controller, EHPC210D	55	-	-	-
39 Valve Actuator Modulating Controllers	39	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	Valve Actuator Modulating Controller, EHPC210M	57	-	-	-
	39	Universal - Pneumatic & Hydraulic	Intrinsically Safe Valve Actuator Modulating Controller, IS200	57	-	-	-
	39	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	FISCO Infrared Valve Actuator Modulating Controller, IS210F	58	-	-	-
	39	Universal - Pneumatic, Hydraulic & Electro-Hydraulic	Valve Actuator Modulating Controller, EX200	58	-	-	-
43 Pressure Transmitters	43	Universal - Pneumatic & Hydraulic	Pressure Transmitters, PT I	64	✓	-	✓

Upstream				Upstream, Midstream & Downstream							
Shale Gas	Process Choke Valve Actuation	Ship / Vessel Ballast & Cargo Handling Valve Controls	Subsea Valves	HPU (Hydraulic Power Unit)	Process Skids & Modules	HVAC, Fire Damper Actuator & Fire Water Deluge Controls	Gas Compression & Turbine Controls	Process Valve Actuator & Pipeline ESD (Emergency Shut Down) Valve Actuator Controls	Process Hook-up & Process Instrument Isolation	Electronic Valve Actuator Controls	HIPPS (High Integrity Pressure Protection Systems)
-	-	-	-	✓	✓	✓	-	✓	-	-	✓
-	✓	✓	-	-	-	✓	-	✓	✓	-	✓
-	-	-	-	✓	✓	-	-	✓	-	-	✓
-	-	-	-	✓	-	-	-	-	-	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
-	-	-	-	✓	✓	-	-	-	-	-	-
-	-	-	-	✓	✓	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	-
-	-	-	-	✓	-	-	-	-	-	-	-
✓	-	-	-	-	✓	-	✓	-	-	-	-
✓	-	-	-	✓	✓	-	-	-	✓	-	✓
-	-	-	✓	-	-	-	-	-	-	-	-
-	-	-	✓	-	-	-	-	-	-	-	-
✓	-	-	-	✓	-	✓	-	✓	-	✓	✓
✓	✓	-	-	✓	-	✓	✓	✓	-	✓	-
✓	✓	-	-	✓	-	✓	✓	✓	-	✓	-
✓	✓	-	-	✓	-	✓	✓	✓	-	✓	-
✓	✓	-	-	✓	-	✓	✓	✓	-	✓	-
✓	✓	✓	-	✓	✓	✓	✓	✓	✓	-	-





EFFICIENCY THROUGH TECHNOLOGY



Accuracy of information

We take care to ensure that product information in this catalogue is reasonably accurate and up-to-date. However, our products are continually developed and updated so to ensure accurate and up-to-date information please refer to the product catalogue issue list on our web site or contact a member of our sales team.

When selecting a product, the applicable operating system design must be considered to ensure safe use. The products function, material compatibility, adequate ratings, correct installation, operation and maintenance are the responsibilities of the system designer and user.

Quality Assurance

All Bifold products are manufactured to a stringent QA programme to ensure that every product will give optimum performance and reliability. We are third party certified to BS EN ISO 9001. We reserve the right to make changes to the specifications and design etc., without prior notice.

Registered No. 06186844 in England.

Registered Office: Rotork House,
Brassmill Lane, Bath, BA1 3JQ.

Bifold
Broadgate, Oldham Broadway Business
Park, Chadderton, Greater Manchester,
OL9 9XA, UK.

Tel: +44 (0) 161 345 4777
Email: bifold.sales@rotork.com

USA Office
Tel: +1 (713) 304 4012

Singapore Office
Mobile: +65 9824 5580

Email: bifold.sales@rotork.com

Bifold, Bifold Marshalsea, & Bifold
Orange are all brands of Rotork

rotork®

bifold.co.uk

PUB135-006-00
Issue 11/19

© 2019 Bifold