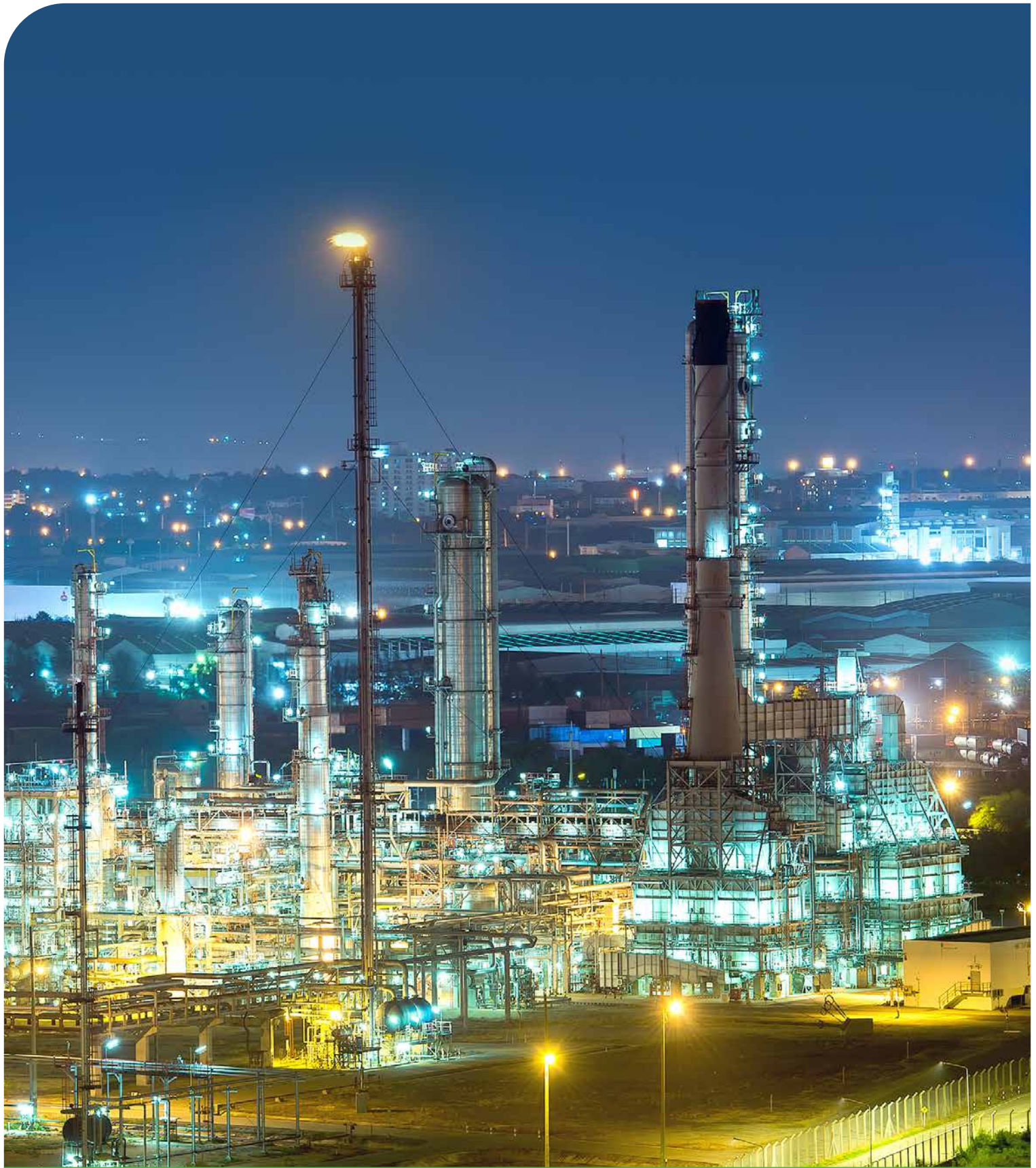


Efficiency, value and cost optimization

Flow control solutions for
petrochemical applications





Today's petrochemical producers face everincreasing regulatory, environmental and performance demands. Now, more than ever, you need more than just a valve supplier.



Your partner in petrochemicals

You need a reliability partner who offers deep application knowledge with a complete offering of technologies, customer support and services.

With over 60 years of valve engineering experience behind us, our products are famous for their reliability. We offer you a single source solution for efficient running of your plants, ensuring trouble-free operations.

Every valve we sell is backed by our comprehensive service including technical training, experienced applications assistance, full

maintenance and repair, and support. Valve installation is only the beginning.

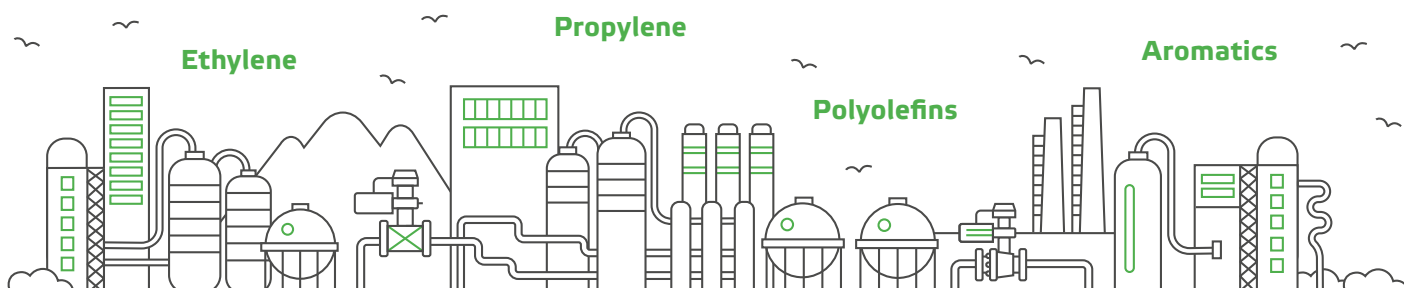
We understand the complex demands of petrochemical processing and are trusted for our expertise, built up over more than half a century of product development and successful partnerships.



Supporting the operations of various process units



The end result of petrochemical production is a wide variety of everyday items.



Our valves help in the manufacture of petrochemical commodities including ethylene, propylene, polyolefins, aromatics, and associated by-products such as ethylene oxide (EO), ethylene glycol (EG), monoethylene glycol (MEG), purified terephthalic acid (PTA) and many more.



Ethylene: Steam cracking

Steam cracking plants, which produce ethylene, are divided into three sections which together represent a very demanding environment. We've developed our valve solutions to ensure the utmost safety and reliability in your operations.

Hot zone valves

In the hot zone, the cracking and subsequent cooling occurs. We offer solutions for each step in this process including on/off and control valves for fuel gas, steam, quench oil, and other process media.

Compression zone valves

The compression zone is where compression, scrubbing and drying of the effluent occurs. Here, we provide valve solutions for secure compressor anti-surge, amine let down, and dryer switching operations.

Cold zone valves

The separation of components from the medium occurs in the cold zone. Here, we provide column control valves, refrigeration system high pressure drop valves, butadiene valves and many more.



Propylene: Propane dehydrogenation (PDH)

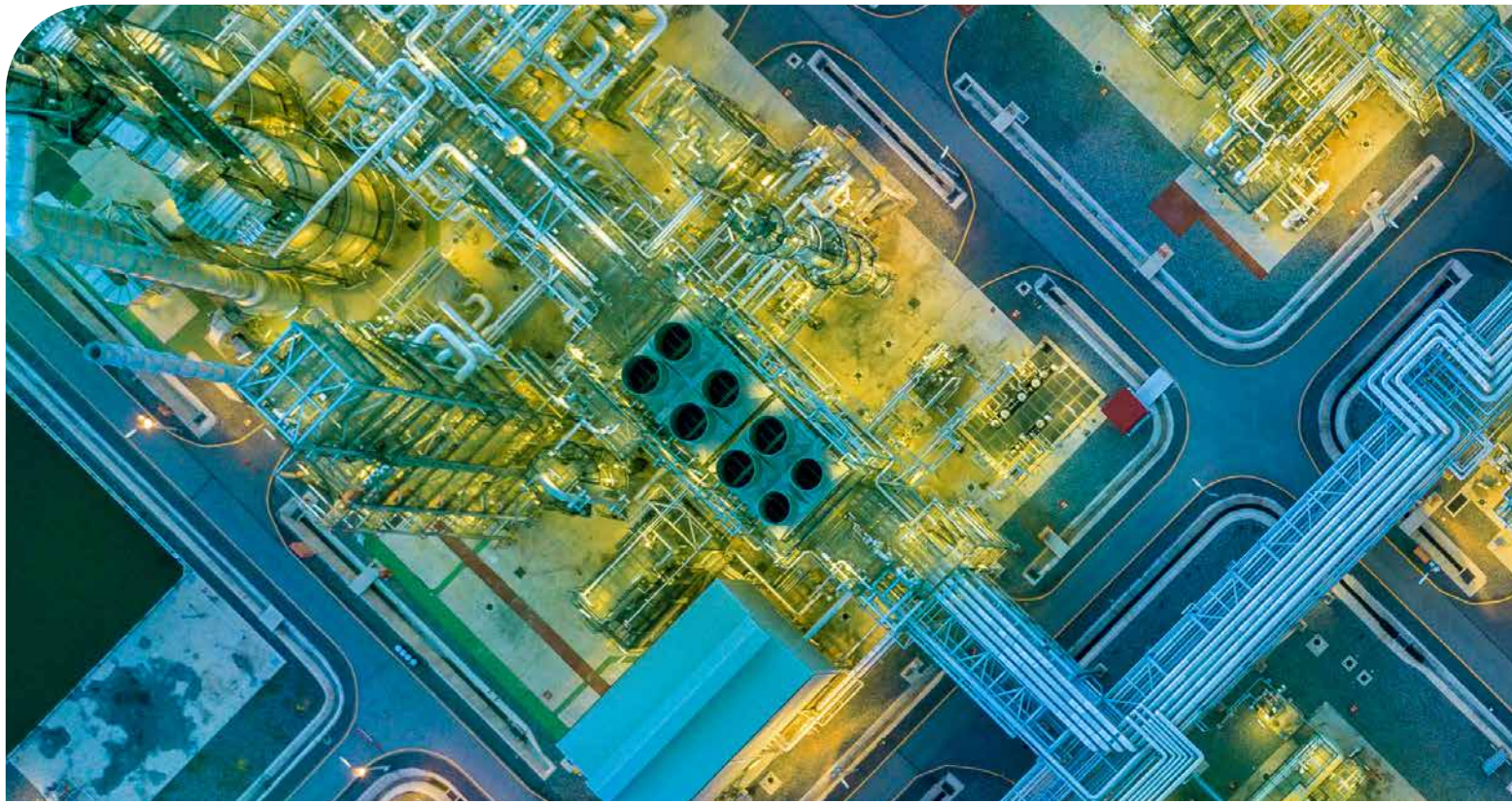
Propane dehydrogenation uses propane to produce high-quality propylene. Our valves offer the highest reliability throughout every step of the demanding PDH process.

Catalyst regeneration valves

In the continuous catalyst regenerator, the catalyst is repeatedly withdrawn from the reactor, regenerated, and returned to the reactor bed. Efficient operation requires top quality lock hopper block, catalyst addition and removal, and chloride injection and addition valves. Our valves are extensively used in such critical applications.

Dryer sequence valves

Dryers remove hydrogen sulphide and trace amounts of water formed through the catalyst regeneration process. Valves here must withstand fluctuations in temperature while maintaining tightness over years of operation. Our intelligent metal-seated ball valves with scraping and closed seat design are extensively used in these applications.



Polyolefins: Polyethylene (PE) & polypropylene (PP)

Polyolefin technologies include gas-phase, slurry, high-pressure, mixed-phase, and solution processes. Our valves have been developed to operate in extreme conditions, dealing with an abrasive flow media at very demanding cycling requirements.

Product discharge systems (PDS)

Unreacted gas is separated from the product and returned to the reactor via product discharge systems. Because they are anti abrasive, and also prevent polymer from penetrating behind the seat and seizing the valve, our metal-seated ball valves have been the choice for many producers.

Polymer handling valves

Our polymer handling valves are designed to cope with the erosive flow media typical in polyolefin processes, preventing it from entering the seat area, and helping remove any particle build-up.

High cycling valves

In polyolefin processes, valves must be able to withstand up to 1.5 million cycles annually. We offer solutions providing excellent flow characteristics and high capacity, while also maintaining internal tightness.



Aromatics: Benzene, toluene & xylenes (BTX)

Aromatics complexes are used to produce benzene, toluene and xylenes. These products are extremely dry and create surface friction. Our valves ensure protection against erosion by providing suitable coatings for trim materials.

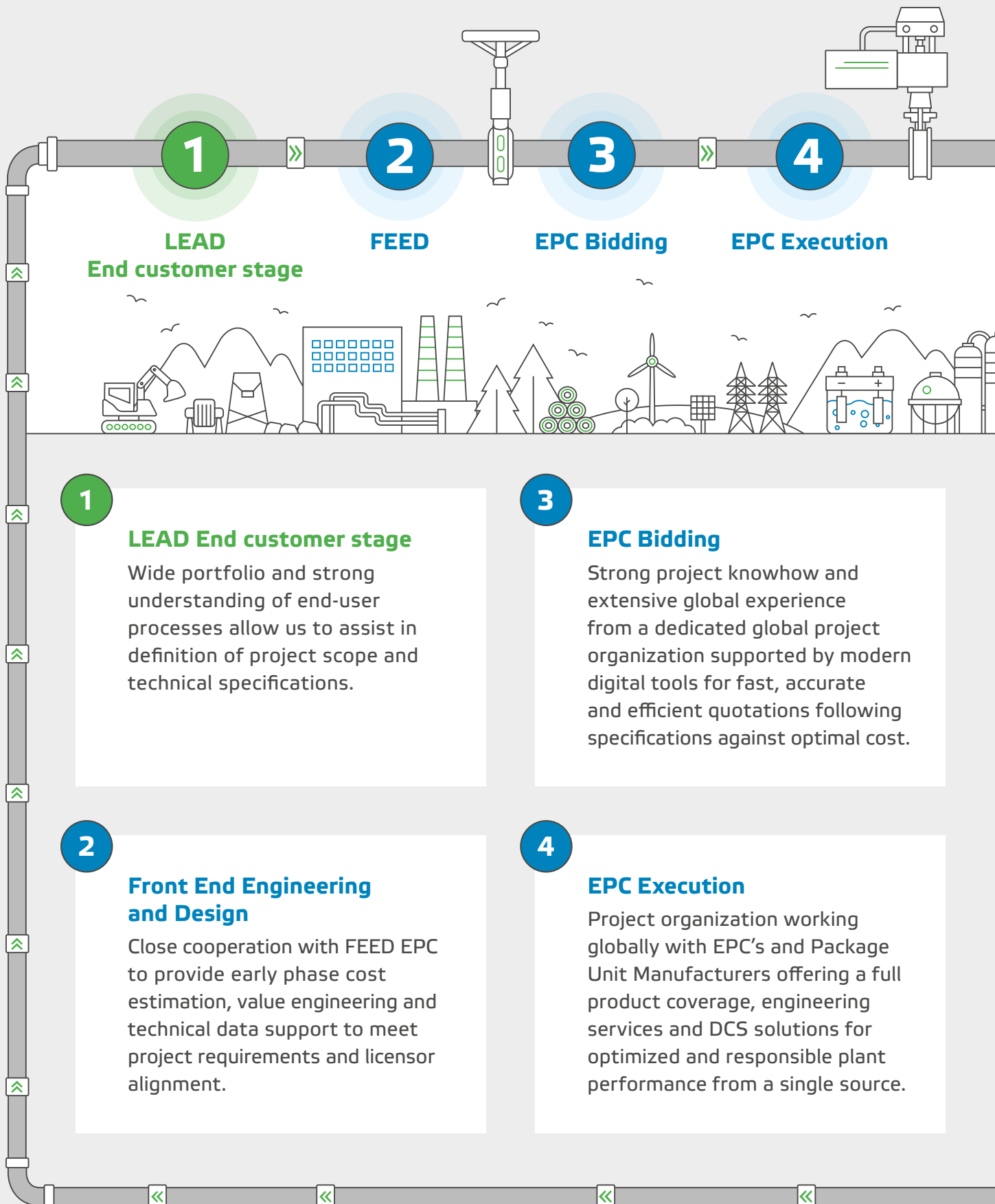
P-Xylene separation valves

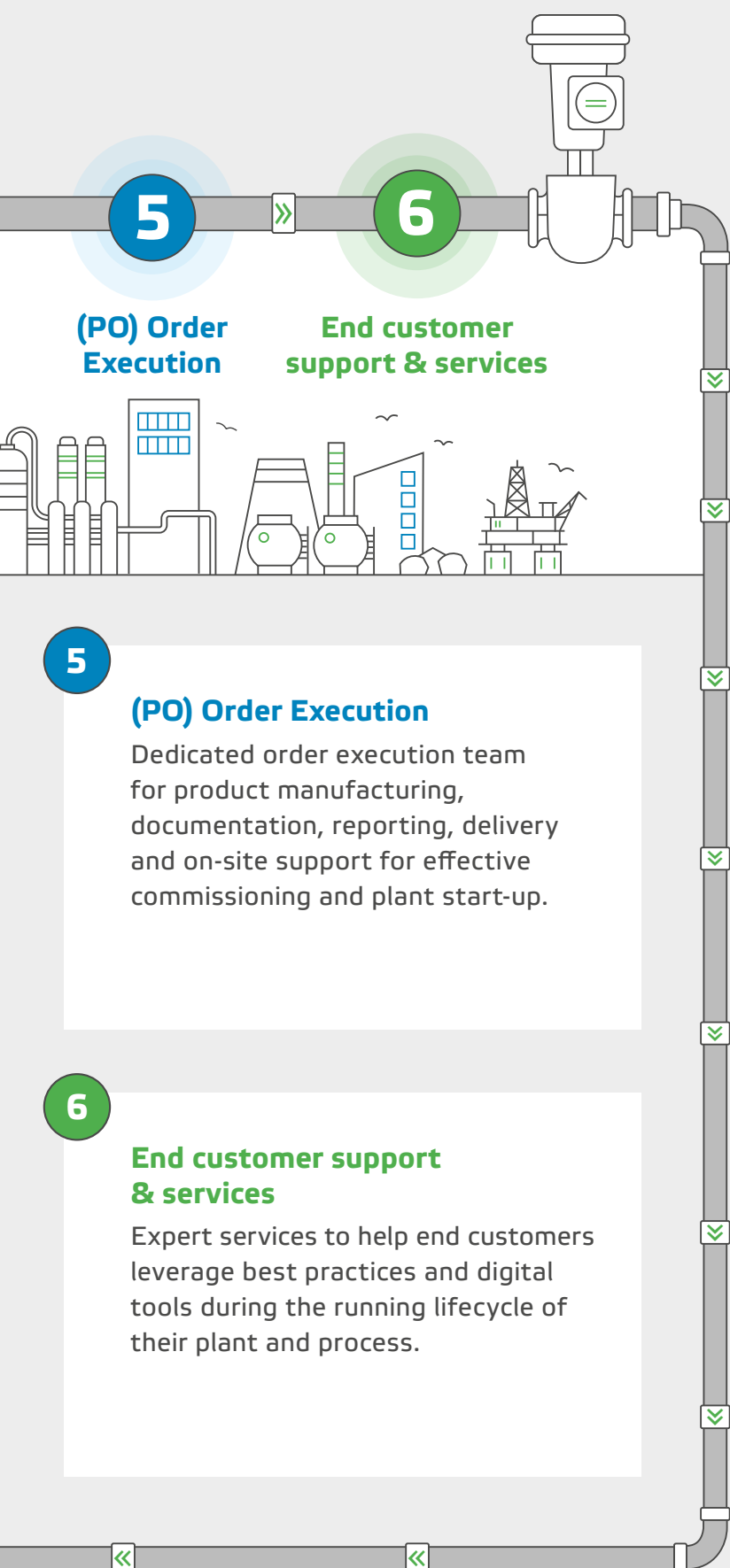
Our metal-seated rotary ball valves are hard-coated and low temperature compatible, minimising friction and wear. Furthermore, quick response and high cycle compatibility is ensured with the Neles SwitchGuard™ controller.

Benzene and toluene extraction valves

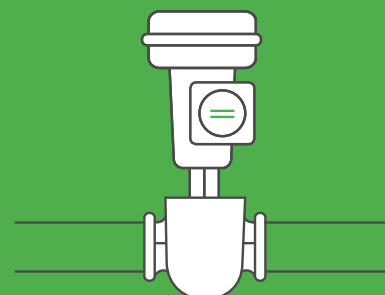
In this process, valves must be able to withstand half- or full vacuum conditions, as well as ensure accurate emission control due to the flow medium's toxicity. Our true metal-seated, bi-directionally tight triple eccentric butterfly valves boast a robust design, resulting in extended service life while reducing material and piping costs.

Process industry EPC projects





Technologies and services for optimum performance



Reliable and accurate solutions for control, on/off and emergency shutdown applications from the industry's widest valve portfolio.



Easy, safe and reliable performance with solutions such as intelligent valve controllers, advanced diagnostics software and loop optimisation.



Comprehensive expert services and digital tools available globally, covering everything from commissioning and start-up to intelligent shutdown planning and lifecycle asset management.



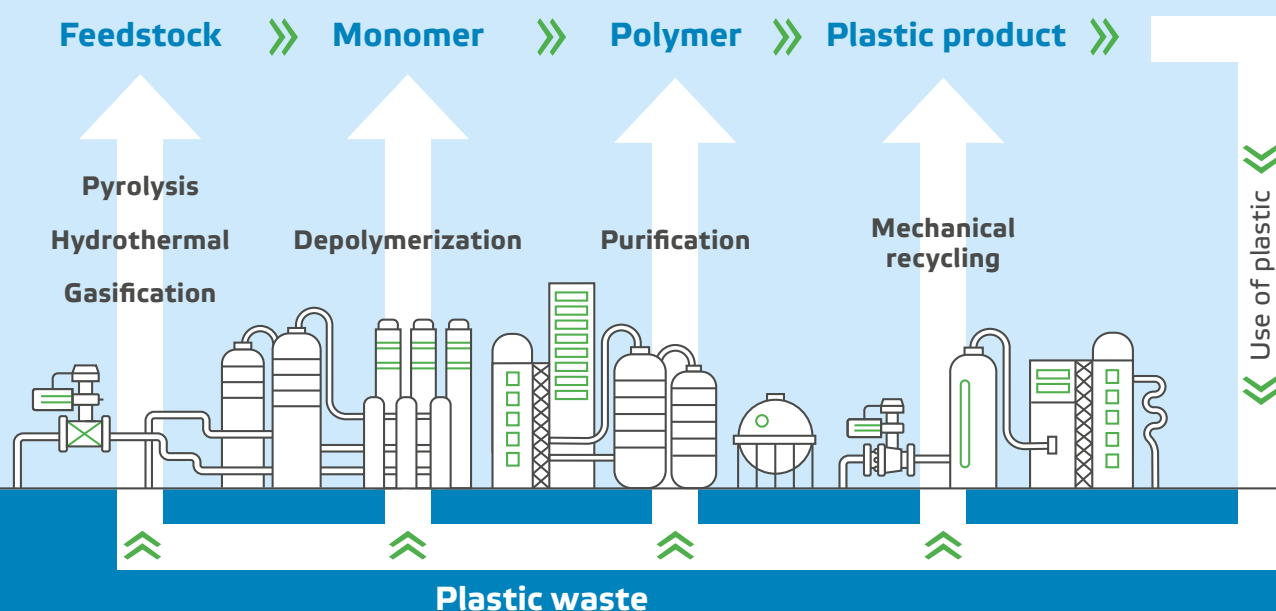
Plastics recycling

With plastic usage growing, there's more focus now on its recycling. The common goal for increasing the share of recycled plastic in circulation will require major investments into recycling processes. Especially chemical recycling continues to become more interesting. It is estimated that by 2050 more than 60% of the plastic produced will be from recycled plastics.

Valmet offers a wide range of flow control solutions for plastics recycling processes, such as pyrolysis, gasification, depolymerization and hydrothermal and pneumatic conveying processes. These chemical recycling processes offer solutions for the recycling and repurposing of all grades of plastics.

Our valve offering for these various processes includes high-temperature valves as well as valves that can handle the high pressures in many of these applications. These valves can handle molten plastics as a flow media as well as a wide range of high-quality general service valves to choose from.

The plastics recycling chain



Control valves

Neles™ globe control valves						
Product	Series	Design	Specifications		Service	Bulletin
Neles top-guided globe valves 	GU-series	Globe unbalanced, single seated, top-guided, flanged, butt & socket welded Options: Low noise and anti-cavitation Tendril trims	Size: DN15 – 150 (½" – 6") Pressure: ASME 150 – 2500 / PN10 – 320 / JIS 10K – 20K Temperature: -200 to +593 °C / -320 to +1053 °F Body: WCB, CF8M Tightness: ANSI Class IV ~ VI		General, severe, high pressure, cryogenic and high temperature, low emissions, fire safe, SIL	4GV21
Neles cage-guided globe valves 	GB-series	Globe balanced, single seated, cage-guided, flanged, butt & socket welded Options: Low noise and anti-cavitation Tendril trims	Size: DN50 – 600 (2" – 24") Pressure: ASME 150 – 2500 / PN10 – 320 / JIS 10K – 20K Temperature: -200 to +593 °C / -320 to +1053 °F Body: WCB, CF8M Tightness: ANSI Class IV ~ V		General, severe, high pressure, cryogenic and high temperature, low emissions, fire safe, SIL	4GV23
Neles Omega™ globe valves 	GM-series	Globe Omega, multi-stage, single seated, top- & cage-guided, flanged, butt & socket welded	Size: DN25 – 600 (1" – 24") Pressure: ASME 150 – 2500 / PN10 – 320 / JIS 10K – 20K Temperature: -200 to +593 °C / -320 to +1053 °F Body: WCB, CF8M Tightness: ANSI Class IV ~ VI		Severe, high pressure and high temperature, low emissions, fire safe, SIL	4GV20
Neles angle pattern valves 	AU, AB & AM-series	Angle body, single seated, top- & cage-guided, flanged, butt & socket welded Options: Low noise and anti-cavitation trim Tendril™ trim Omega™ trim	Size: DN15 – 1200 (½" – 48") Pressure: ASME 150 – 2500 / PN10 – 320 Temperature: -200 to +593 °C / -320 to +1053 °F Body: WCB, CF8M Tightness: ANSI Class IV ~ VI		General, severe, erosive, high pressure, cryogenic and high temperature, low emissions, fire safe, SIL	4GV23
Neles 3-way globe valves 	GW-series	Globe 3-way, diverting / mixing double seated, flanged, butt & socket welded	Size: DN25 – 250 (1" – 10") Pressure: ASME 150 – 600 / PN10 – 100 Temperature: -29 to +425 °C / -20 to +797 °F Body: WCB, CF8M Tightness: ANSI Class II ~ IV		Diverting, mixing	4GV24
Flowrox™ pinch valves						
Product	Series	Design	Specifications		Service	Bulletin
Flowrox heavy duty pinch valves with enclosed body 	PVE, PVE/S and PVS-series	Enclosed body prevents premature sleeve deterioration and protects the sleeve, making it extremely safe to operate. The rubber sleeve is the only wearing part.	Size: DN 25 – 800 NPS 1" – 32" Bigger sizes upon request Pressure: Up to 100 bar / 1500 psi Temperature: -50 to +160 °C / -58 to +320 °F Actuator Manual, manual with gear, pneumatic, electric, hydraulic		Pneumatic conveying, isolation and control applications	4PV20

Ball valves

Neles ball valves						
Product	Series	Design	Specifications		Service	Bulletin
Neles X-series modular ball valves 	XA, XB, XC, XU & XT-series Seat supported XG, XM & XH-series Trunnion mounted	Full or reduced port, metal and soft seats Options: Steam jacket, cryogenic and high temperature, catalyst handling, polymer service, oxygen service, Q-Trim™, Q2-Trim™	Size: Pressure: Temperature: Body: Tightness:	DN25 – 600 (1" – 24") For larger sizes, see bulletin ASME 150 – 900 / PN 10 -160 -200 to +600 °C / -320 to +1110 °F CF8M, WCB. For other body materials, see bulletin ANSI Class IV ~ VI	General, demanding, SIL, fire safe, low emission	1X22 1X23 1X26 1X27 1XH20 1XH21
Neles top entry rotary valves 	T5-series	Reduced or full port, flanged, weld-ends Options: Cryogenic, high temperature	Size: Pressure: Temperature: Body: Tightness:	DN25 – 400 (1" – 16") ASME 150 – 600 / PN10 – 40 -200 to +600 °C / -320 to +1110 °F CF8M, WCB. For other body materials, see bulletin Class IV ~ VI	High MTBF, SIL 3 certified	1T520
Neles D-series ball valves 	D2C, D2D & D1F-series	Full or reduced port, stemball construction Options: Cryogenic, high temperature	Size: Pressure: Temperature: Body: Tightness:	D1F: DN50 – 700 (2" – 28") D2: DN700 – 900 (28" – 36") ASME 150 – 600 / PN10 – 100 -200 to +600 °C / -320 to +1110 °F CF8M, WCB. For other body materials, see bulletin Class V ~ VI	High MTBF, SIL 3 certified	1D21
Jamesbury™ ball valves						
Product	Series	Design	Specifications		Service	Bulletin
Jamesbury standard port flanged ball valves 	7000-series	Pre-engineered valve types and materials according to industry standards for control, on/off and manual use	Size: Pressure: Temperature: Materials: Seat: Seals:	DN15 – 500 (½" – 20") ASME 150 & 300 Up to +260 °C / +500 °F Carbon steel, 316SS, Alloy 20, Monel, Hastelloy C Xtreme™ High performance Low emission stem seals	Isolation and control applications	B107-1 B107-3
Jamesbury full port flanged ball valves 	9000-series	Pre-engineered valve types and materials according to industry standards for control, on/off and manual use	Size: Pressure: Temperature: Materials: Seat: Seals:	DN15 – 600 (½" – 24") ASME 150 & 300 Up to +260 °C / +500 °F Carbon steel, 316SS, Alloy 20, Monel, Hastelloy C Xtreme High performance Low emission stem seals	Isolation and control applications	B107-1 B107-3

Ball valves

Neles Easyflow™ ball valves*						
Product	Series	Design	Specifications		Service	Bulletin
Neles Easyflow flanged ball valves 	J7-series	Reduced bore flanged floating ball valve	Sizes: DN15 – 200 (NPS ½ – 8) Pressure: ASME Class 150 or 300 Temperature: -29 °C to +200 °C Body: WCB carbon steel, CF8M stainless steel Seat/seal: TFM™ 1600 / Graphite Leakage: No visible leakage		General, utility services	B135-1
Neles Easyflow flanged ball valves 	J9-series	Full bore flanged floating ball valve	Sizes: DN15 – 200 (NPS ½ – 8) Pressure: ASME Class 150 or 300 Temperature: -29 °C to +200 °C Body: WCB carbon steel, CF8M stainless steel Seat/seal: TFM™ 1600 / Graphite Leakage: No visible leakage		General, utility services	B136-1
Neles Easyflow angle stem tank bottom valves 	JT-series	Angle stem tank bottom ball valve	Sizes: DN25 – DN150 (NPS 1 – 6) Pressure: ASME Class 150 Temperature: -29 °C to +200 °C Body: WCB carbon steel, CF8M stainless steel Seat/seal: TFM™ 1600 / Graphite Leakage: No visible leakage		General, utility services	B134-1

*Neles Easyflow valves are not for sale in North American market.

Segment valves

Neles segment valves						
Product	Series	Design	Specifications		Service	Bulletin
Neles V-port segment valves 	RA & RE-series	Wafer, flanged Options: Reduced Cv trim, low noise and anti-cavitation Q-Trim	Size: DN25 – 800 (1" – 32") Pressure: ASME 150 – 600 / PN10 – 100 Temperature: -52 to + 425 °C / -60 to +797 °F Body: CF8M, WCB, CG8M, Titanium, Hastelloy C, SMO Tightness: 10xISO Rate D, Rate D		General, demanding, erosive, severe, fire safe, low emission	3R21 3R24

Eccentric plug valves

Neles eccentric plug valves						
Product	Series	Design	Specifications		Service	Bulletin
Neles Finetrol™ 	FC, FG & FL-series	Flanged, eccentric rotary plug valve Options: Reduced Cv trim, low noise and anti-cavitation Q-Trim, cryogenic, globe valve face-to-face	Size: DN25 – 300 (1" – 12") Pressure: ASME 150 – 600 / PN10 – 100 Temperature: -200 to +450 °C / -320 to +842 °F Body: CF8M, WCC Tightness: Class IV ~ VI		General, severe, SIL, fire safe, low emission	5FT20 5FT22

Butterfly valves

Neles butterfly valves						
Product	Series	Design	Specifications		Service	Bulletin
Neles high performance triple eccentric disc valves 	L12, L6, LW & LG, L1 & L2-series	Wafer, lugged, double flanged Options: High tightness, erosion resistant version, cryogenic and high temperature, high cycling	Size: Pressure: Temperature: Body: Tightness:	DN80 – 2200 (3" – 88") ASME 150 – 600 / PN10 – 100 -200 to +650 °C / -320 to +1200 °F CF8M, WCB, CG8M, LCC, 5A Up to ISO Rate A, API 598 & Class VI	General, moderate SIL, fire safe, low emission	2L121 2L1220 2LW20 2L621 2LBF20
Neles butterfly valves 	BWX-series	Wafer, lugged, double flanged	Size: Pressure: Temperature: Body:	NPS 4 – 24 / DN100 – 600 ASME 600 / PN63 -29 to +470 °C / -20 to +880 °F Stainless steel, special material	Cryogenic LNG applications, high temperature, nitrogen, helium and hydrogen	2BW20
Jamesbury butterfly valves						
Product	Series	Design	Specifications		Service	Bulletin
Jamesbury high performance butterfly valve 	800-series	Pre-engineered valve types and materials according to industry standards for control, on/off and manual use	Size: Pressure: Temperature: Body/trim: Seat:	DN65 – 750 (2½" – 30") Lugged: DN65 – 1500 (2½" – 60") ASME 150 & 300 Up to +260 °C / +500 °F Carbon steel, 316SS, Alloy 20, 254SMO®, Monel, Hastelloy C Teflon®, Xtreme, UHMV, 316SS/PTFE, 316SS/XT	Economical performance for control and shut-off service in all soft seated applications	W101-6 W104-1 W105-1 W130-1
Neles Easyflow butterfly valves*						
Product	Series	Design	Specifications		Service	Bulletin
Neles Easyflow butterfly valves 	JA-series	Resilient seated butterfly valves, wafer, lugged	Sizes: Pressure: Temperature: Body: Seat/seal: Leakage:	DN50 – DN600 (NPS 2 – 24) PN10, PN16, Class 150 -30 °C to +200 °C GGG40 ductile iron, GG25 cast iron, WCB carbon steel, CF8M stainless steel Ethylene-Propylene (EPDM), Nitrile (Buna-N, NBR), Fluorocarbon (FKM), Silicone (VMQ) No visible leakage	General, utility services	W152-1

* Neles Easyflow valves are not for sale in North American market.

Valve automation excellence – best possible valve performance

Valmet offers a complete range of solutions for your valve automation needs. Our valve automation offering ranges from limit switches to reliable actuators and intelligent valve controllers with third generation diagnostics. The unique solutions ensure the best possible valve performance and compliance to environmental regulations, regardless of valve make, model or manufacturer.

ND-series valve controllers



Neles NDX™ and ND9000 valve controllers provide a solution for all valve brands in a wide range of applications regardless of customer or industry. The product delivers all the robustness and reliability you'd expect from a valve controller by Valmet. At the same time it is extremely easy to install and use.

Neles SwitchGuard™ SG9000



Neles SwitchGuard is a top class intelligent on/off valve controller designed to operate on any valve actuator. Large pneumatics capacity and embedded diagnostic features enable users to guarantee the availability of their switching and high cycling valves in demanding processes.

Neles ValvGuard™ VG9000



Neles ValvGuard is a top class intelligent safety solenoid with partial stroke testing features for emergency shutdown and venting valves. Based on the automatic PST and other diagnostics data, VG9000 increases safety and plant safety targets can be reached more economically than with other solutions.

Axiom™ AN / ANX



The Stonel Axiom AN / ANX offers unmatched reliability using non-contact position sensing with solid state electronics and contaminant-tolerant pneumatic control. Coupled with its space-efficient design, corrosion resistance and networking/wireless link capability, the AN / ANX offers unrivaled convenience and cost-saving benefits in hazardous and general purpose process applications.

Other proven, high-efficiency solutions for demanding feedstock from Valmet

In addition to our flow control offering, Valmet's solutions for helping petrochemical companies achieve plant-wide circular economies also include boilers, emission control technologies and automation solutions – all backed up by our comprehensive service expertise.

Valmet DNA Automation System

Valmet DNA is the Distributed Control System (DCS) for all your process automation needs. It gives you complete control of all your processes and provides user

experience and transparency that go far beyond traditional automation systems.

The automation system has built-in control, optimization, condition monitoring, advanced analytics, information management and remote support, as well as seamlessly integrated Safety Instrumented Systems (SIS). This single system architecture saves on both costs and effort while ensuring open growth for your future challenges.



Valmet's professionals around the world work close to our customers and are committed to moving our customers' performance forward – every day.

Valmet Flow Control Oy

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