

ENGINEERING
TOMORROW

Danfoss

Brochure

Vickers® by Danfoss Industrial valves

Reliable and precision performance in the world's most demanding applications



Demanding applications **call for Vickers by Danfoss**

Cut, groove, bore, clamp, inject, press, form, or lift, dig, haul... day in and day out, in both Industrial and Mobile applications. This is the work of Danfoss Hydraulics products and systems, engineered for reliable and continuous performance in the world's most demanding and rigorous applications. Vickers by Danfoss industrial valve products provide our customers the competitive advantages required to win in the global market.

- Increased machine productivity
- Improved machine performance
- Extended machine durability & reliability
- Higher machine efficiency

Vickers by Danfoss industrial valve products provide excellent control, handle harsh environments, and perform in tough applications with rigorous duty cycles.

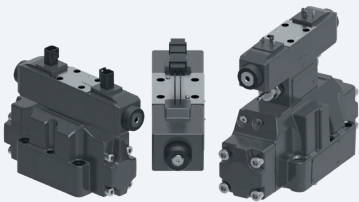
Industrial valve families

- Directional control valve
- Modular valves
- Proportional valves
- Cartridge valves
- Servo valves
- Gasket mounted flow and pressure control valves
- Pressure control valves

Primary Markets	Submarkets	Force Control	Speed Control	Position Control
Machine Tools	Metal Cutting	X	X	X
	Material Handling		X	X
Automotive	Assembly Parts	X	X	X
	Metal Cutting	X	X	X
	Foundry	X		X
	Plastics	X	X	X
Molding	Plastics	X	X	X
	Die Casting	X	X	X
	Rubber	X	X	X
	Foundry	X		X
	Ceramic	X	X	X
Metal Working	Press	X	X	X
	Baler	X	X	X
	Shear & Cutting	X	X	X
	Metal Forming	X	X	X
	Welding & Joining	X	X	X
Primary Metal	Ferrous	X	X	X
	Non-Ferrous	X	X	X
Processing	Wood Product	X	X	X
	Pulp & Paper	X	X	X
	Textile	X	X	X
	Chemical		X	X
	Glass & Ceramic	X	X	X
	Concrete & Aggregate	X	X	X
	Food	X	X	X
Natural Resources	Forest Product	X	X	X
	Petroleum			X
	Minerals	X	X	X
Power Generation	Hydro			X
	Fossil		X	X
	Nuclear			X
	Wind	X		X
	Geothermal			X
	Solar Radiation			X
Other Industrial	Entertainment		X	X
	Test & Simulation	X	X	X
	Medical Equipment	X	X	
	Non-Metal			
	Working Machinery			
	Power Unit Builders Educational Institute	X	X	X
Mobile	Off Shore/Marine		X	
	Conveyors	X	X	
	Construction		X	
	Vehicle			X
	Crawler Vehicle		X	
	Cranes & Hoist Agriculture	X	X	

Industrial valve families

Directional Control Valves



DG valves mount on industry standard surfaces and provide 3 or 4-way control in a broad range of applications, industrial and mobile. Their primary function is to direct fluid flow to a cylinder or to control the direction of rotation of a hydraulic motor. These valves can be actuated by solenoid, hydraulic or pneumatic pilot, lever, or mechanically.

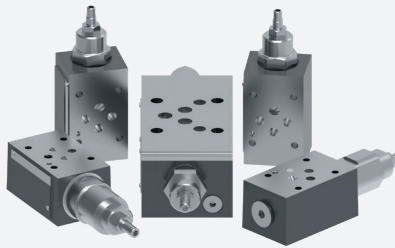
Benefits

- Complete function (type of actuation)
- Complete size range
- Wide variety of voltage & wattage
- Various electrical connection (for both Industrial & Mobile applications)

Specs

- Size - NG4-32 (D02-10)
- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to -1100 LPM/290 GPM

SystemStak™ Modular Valves



These compact hydraulic systems feature modular valves that are "sandwich" mounted between a directional control valve and a standard mounting surface. All circuit flow paths are contained within the control valve and modules. These valves provide a compact hydraulic circuit at a reduced cost, eliminating interconnecting piping. Each valve "stack" can be configured to provide the specific system functions.

Benefits

- Design flexibility
- Reduced system space
- Cost-effective
- Versatile and easy to install
- Rugged and reliable
- Easy to service

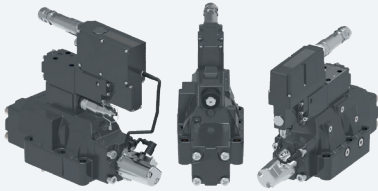
Specs

- Size - NG4 - 8 (D02 - 08)
- Rated pressure up to - 315 bar/4500 psi
- Rated flow up to - 90 GPM/340 LPM
- Function - relief, reducing, sequence, check, PO check, throttle, counterbalance



Industrial valve families

Proportional Valves



With options for on-board electronics (OBE) and non-OBE, the Vickers by Danfoss proportional valve family offers a complete size range and performance levels to meet customer demands in industrial and mobile markets. The KB family of proportional valves have integrated OBE with superior reliability and durability featuring digital electronics, IP67 environmental protection, reduced power consumption, valve enable, and ramp adjustment.

Benefits

- Less commission time (plug & play)
- Labor saving (less wiring)
- Improved machine up time
- Improved productivity and quality
- Higher automation level
- Easier serviceability

Specs

- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to - 700 LPM/185 GPM
- Function - direction, pressure, flow
- Size - NG6-32 (D03-10)

Featuring

KBFRG4-05 Proportional Valve

Delivers high power capacity and superior durability.

- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to - 290 LPM/185 GPM
- IP67 Ingress protection rating



AxisPro® Proportional Valves



When you're creating a next-generation industrial hydraulic system, you need sophisticated valve technology. AxisPro hydraulic valves outperform traditional valves by offering innovative design with intelligent controls and onboard diagnostics built right into the valve.

Quick and easy to configure, the valves allow changes to be made in real time, giving you the flexibility to create custom solutions for the most sophisticated, demanding applications.

Benefits

- On-board controls and built-in diagnostics
- Software configurability enables quick setup and real-time changes
- Simple setup, commissioning, tuning and troubleshooting
- IP65 & IP67 ingress protection rating

Specs

- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to 375 L/min

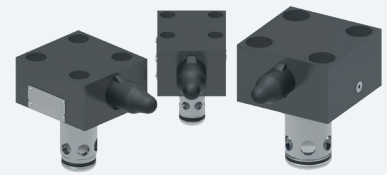
Featuring

Expanded communication protocols

AxisPro valves (Level 2 and 3) are capable of enhanced communication with industrial networks via Profinet®, Ethernet/IP®, EtherCAT®, and CANopen®.

Programmed via Pro-FX® Configure, the powerful software offers a streamlined, step-by-step workflow which takes the user through valve setup for specified control modes including spool position, cylinder position, pressure, speed, or force.

Slip-in Cartridge Valves



Typically associated with relatively high flows, i.e. 40 gpm or higher, slip-in cartridge valves are targeted at more efficient, faster and more compact hydraulic systems. Vickers by Danfoss cartridge valve system technology meets the changing needs of new generations of hydraulically operated machinery and equipment. Today's machines need controls that are exceptionally cost effective and energy efficient. Vickers cartridge valves fulfill these needs.

Benefits

- Space saving (smaller package size)
- Lowered installation costs
- More efficient operation
- Elimination of external leakage
- Greater contamination resistance
- System design flexibility
- Improved reliability

Specs

- Size - NG16 -100
- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to - 1300 GPM (5000 LPM)
- Function - pressure, direction, flow, and proportional

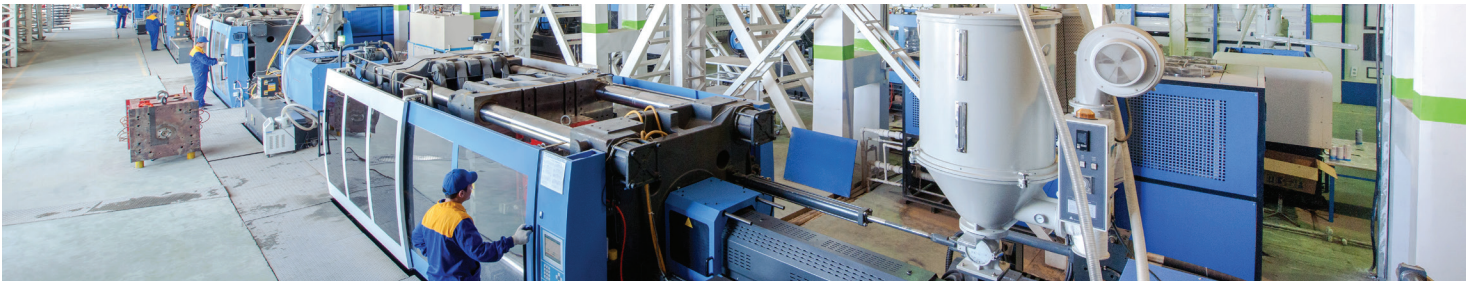
Featuring

Market-leading performance and enhanced value.

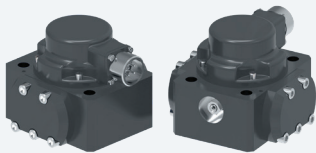
CVU-SWD(3) slip-in cartridge valves now offer significantly improved flow and pressure ratings. The enhancements enable smaller valves to be used in projects, allowing for reduced size, weight and cost.

- Rated pressure up to - 420 bar/6090 psi
- Rated flow increased up to 50% (varies by size)

Industrial valve families



Servo Valves



These two-stage, four-way, flapper nozzle valves provide system closed loop control with exact positional accuracy, repeatable velocity, and predictable force (torque regulation).

Compared to Vickers SM4 servo valves, the SX4 offers extended frequency response for more demanding close loop applications.

Danfoss also offers a servo trade up program with incentives for replacing competitors valves.

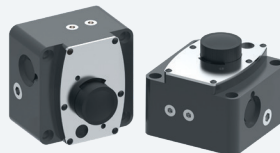
Benefits

- The wide range of sizes allows best suitability for application
- Jeweled feedback ball receiver virtually eliminates the wear
- Jeweled orifices greatly extend the life
- Highly accurate control profiles
- Integral filter provides extra contamination protection

Specs

- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to - 151 LPM/40 GPM
- Function - positioning, speed, and pressure
- Size - SM4/10 - 40; SX4/20

Flow Controls - Adjustable



Temperature and pressure compensated flow controls allow precise volumetric control.

Suitable for pressures up to 3600 psi, flow controls are available with (bypass type) or without (restrictor type) integral relief valves. Adjustable flow control valves are suited for applications requiring flow regulation without pressure compensation.

Benefits

- Consistent speed control
- Precise speed control
- Extremely low flow regulation capability

Specs

- Rated pressure up to - 315 bar/4500 psi
- Rated flow up to - 106 LPM/28 GPM

Pressure Control Valves



Pressure control valves perform pressure relieving, reducing, sequencing, and unloading control. Both subplate and in-line mounting types are available with various control types including remote, multiple pressure, and venting.

Benefits

- Choice of four adjustment control ranges
- Solenoid venting function
- Pressure override optimized
- Low off-load power wastage
- Low installed cost and space

Specs

- Rated pressure up to - 350 bar/5000 psi
- Rated flow up to - 400 LPM/106 GPM

Directional Control **Valve Families**

Family Model Code	Description	Rate Pressure (Bar)	Rated Flow (LP)	Actuation Type						Coil Power			Coil Voltage				
				Solenoid Operated	Hydraulic Operated	Air Operated	Lever/Knob Operated	Roller/Cam Operated	Plunger Operated	Standard Power (W)	Low Power (W)	Super Low Power (W)	110V AC 50Hz	120V AC 60 Hz	220V AC 50 Hz		
D02																	
DG4V-02-10 Design	Solenoid operated	250	30	X							25	12					
DG2V-2; DG17V-2; DG21V-2	Mechanical actuated	250	30				X	X	X								
D03																	
DG4V3S - 60 Design	Solenoid operated	350	40	X							30			X	X	X	
DG4V3 - 60 Design	Solenoid operated	350	80	X							30	18	8	X	X	X	
DG4V3 - 70 Design	Solenoid operated	350	80	X							30	18	8				
DG3/4VP-3	Solenoid operated	315	20	X							30			X	X	X	
DG4V-3S; EN490	Solenoid operated	350	40	X													
DG2V-3; DG3V-3; DG17V-3; DG18V-3; DG20V-3; DG21V-3	Mechanical actuated	350	80		X	X	X	X	X		30						
D05																	
DG4S4 - 60 Design	Solenoid operated	250	95	X			X		X		45			X	X	X	
DG4V4 - 60 Design	Solenoid operated	315	115	X			X				45	30		X	X	X	
DG4V5 -20 Design	Solenoid operated	315	120	X							42	32		X	X	X	
DG1V4; DG17V4	Mechanical actuated	315	115				X										
DG2S2; DG16S2	Mechanical actuated	210	76				X	X	X								
D05 (two-stage)																	
DG3V5; DG5V-5	Solenoid/pilot operated	315	160	X	X						30	18	8	X	X	X	
DG5S4-02	Solenoid operated	210	115	X							30	18		X	X	X	
DG3S4-02	Pilot operated	210	115		X												
D07 (two-stage)																	
DG3V7; DG5V-7	Solenoid/pilot operated	350	300	X	X						30	18	8	X	X	X	
DG5S4-04	Solenoid operated	210	230	X							30	18		X	X	X	
DG3S4-04	Pilot operated	210	230		X												
D08 (two-stage)																	
DG3V-8; DG5V-8	Solenoid/pilot operated	350	700	X	X						30	18	8	X	X	X	
DG3S-8; DG5S-8	Solenoid/pilot operated	210	380	X	X						30	18		X	X	X	
DG17S-8	Mechanical actuated	210	380				X										
DG17V-8	Mechanical actuated	350	700				X										
D10 (two-stage)				X	X												
DG3V10; DG5V-10	Solenoid/pilot operated	350	1100				X				30	18	8	X	X	X	
DG17V-10	Mechanical actuated	350	1100														

Coil Voltage						Electrical Connection										Features							
240V AC 60 Hz	12 VDC	18 VDC	24 VDC	48 VDC	98/110/220V DC	DIN Plug	Conduit Box	Receptacle Plug	M12 (4/5 pin)	Flying Leads	Spade	AMP	Packard Weatherpak	Deutsch	Integrated Deutsch	Explosion Proof	Surge Suppressor	Spool Position Switch	Light (wining box option)	Soft Shift	Stroke Limiter	OTHER	
	X	X	X		X	X		X		X													
	X	X	X		X	X		X		X													
X	X	X	X		X	X	X	X	X	X	X						X		X				
X	X	X	X		X	X	X	X	X	X	X				X	X	X	X	X	X			
			X						X								X		X				OBE & IP 67
X	X	X	X																				Poppet spool
	X		X			X				X	X	X	X	X			X		X				Mobile Spec.
X	X	X	X	X	X	X	X	X	X	X									X	X			
X	X	X	X	X	X	X	X	X	X	X				X		X		X	X				
X	X	X	X	X	X	X				X	X							X		X			
X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X
X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X
																							Stainless Steel Handle
X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X



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