

**CURTISS -
WRIGHT**



Control Valve Products and Services Overview



Our Company

Dyna-Flo Control Valve Services, a business unit of Curtiss-Wright, has been developing and manufacturing process control equipment for nearly 30 years. Our passion to rapidly provide high quality products and services is why Dyna-Flo is now a leading producer of linear and rotary control valves, actuators, and level and pressure control systems for the oil and gas, chemical/petrochemical, power and general industries.

Curtiss-Wright is a worldwide leader in delivering solutions that improve plant safety, reliability, and efficiency. The businesses of Curtiss-Wright pioneer highly engineered solutions to deliver profound value to their customers and enable them to transform the way their business is done.





Our Commitment

A Trusted Partner to help you improve safety and minimize plant downtime and production disruption with our safe and high performance products. We design, manufacture, and test a variety of control valves ready to meet a broad range of service capabilities and customer equipment needs.

Responsive

Technical service and support available to assist with your project or application

Reliable

Extensive selection of products for precise control and dependability

Quality

Providing safe products compliant with rigorous industry standards

Speed

Dedicated to quick delivery of valves and parts to our customers to avoid costly downtime

Local Support

Factory trained technicians available for installation and maintenance

Global Presence

Network of representatives strategically located to assist our customers worldwide

The Dyna-Flo Team is Available to Help You.

We provide a spectrum of services including product sizing, selection, custom design and repair.

Product Sizing & Selection

For optimal system performance it is critical to determine the correct product for your application. Our Configurator software helps you select the ideal control valve or actuator.

The Configurator allows you to:

- Size Valves
- Calculate Valve Thrust and Torque
- Develop Dimensional Drawings for Product
- Request special construction options
- Organize and store project data
- Save and share projects between users
- Share product requests with sales representatives

Access the software by visiting:
www.dynaflo.com/configurator

Local Support and Service

We are a global company with local presence. Our factory trained sales representatives are readily available to understand and meet or exceed your needs such as:

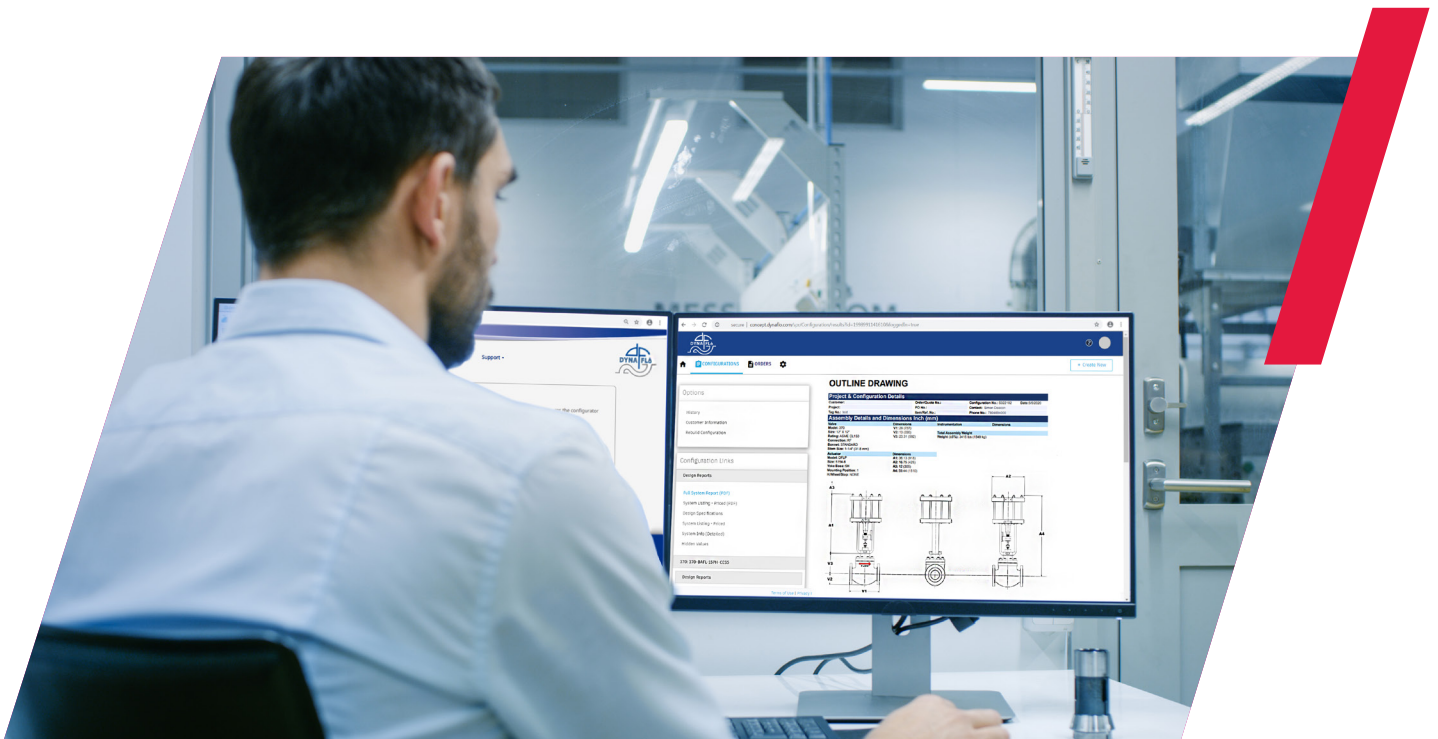
- Determining appropriate product configuration
- Identifying products for your application
- Establishing compliance with codes and standards

Maintenance and repair services are available for your facility so you can maintain peak performance during operation. Our qualified team of technicians are committed to providing quick service and repair to reduce downtime and costs for essential equipment.

Find your local representative at:
www.dynaflo.com/distributors

Seminars and Product Training

We offer product seminars to educate our customers on our wide-range of products, their performance and applications. For more information or to schedule a Dyna-Flo Product Seminar, contact your local sales representative.



Valves		Linear Sliding Stem						Rotary		Integral Actuator & Linear Sliding Stem			
Series		360	350	370	390	380	DF2000	570	590	DF100	DF234	DF270	DF2410
Body Size Range		1 to 8"	6 to 12"	12 to 16"	1 to 8"	3 & 8"	1 to 2"	1 to 16"	4 to 16"	1"	1 to 2"	1 to 2"	2"
Pressure Rating Class ASME B16.34		150 to 600	150 to 900	150 to 600	900 to 1500	1500 to 2500	150 to 2500	150 to 600	600 to 900	150 to 900	150 to 1500	150 to 1500	150 to 1500
Body Style	Globe	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
	Angle	✓			✓		✓						
	Wafer							✓	✓				
	T Body									✓			
End Connections	Female Internal Thread (FNPT)	✓					✓			✓	✓	✓	✓
	Raised-Face (RF)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Ring Type Joint (RTJ)	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Butt Weld End (BWE)	✓	✓	✓	✓	✓							
	Socket Weld End (SWE)	✓											
Trim Options	Low-Noise	✓	✓	✓	✓	✓							
	Anti-Cavitation	✓	✓	✓	✓	✓							
Material Options	LCC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	WCC	✓	✓	✓	✓	✓		✓	✓				
	CF8M	✓	✓	✓	✓	✓	✓	✓	✓				
	WC9	✓	✓	✓	✓	✓							
Shutoff Class	II	✓	✓		✓	✓		✓	✓				
	III	✓	✓		✓	✓							
	IV	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
	V	✓	✓	✓	✓	✓	✓						
	VI	✓						✓	✓				
Plug Style	Balanced	✓	✓	✓	✓	✓							
	Unbalanced	✓			✓	✓	✓			✓	✓	✓	✓

Actuators	360	350	370	390	380	DF2000	570	590
Model DFC	✓	✓		✓	✓	✓		
Model DFO	✓	✓		✓	✓	✓		
Model DFLP	✓	✓	✓	✓	✓	✓		
Model DFR							✓	✓
Model DFRP							✓	✓

Control Valves

Linear Sliding Stem

360 Series



Description	Most versatile, general purpose control valve series used in various demanding applications.
Body Size Range	1" to 8" Nominal Pipe Size (25mm to 200mm Diameter Nominal)
Body Styles	Globe • Angle
End Connections	RF • RTJ • BWE • SWE • FNPT: 1" to 2" Valves Only
Pressure Rating	ASME B16.34 Class 150 to 600
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class II to VI
Body Materials	LCC • WCC • CF8M • WC9
Features	<ul style="list-style-type: none"> Cage or top guided Other material options available Metal seating standard Anti-cavitation, low-noise, and reduced port trim options available Live-loaded packing available Cryogenic design available NACE options available

390 Series



Description	High pressure, severe service control valve used in various demanding applications.
Body Size Range	1" to 8x6" Nominal Pipe Size (25mm to 200x150mm Diameter Nominal)
Body Styles	Globe • Angle
End Connections	RF • RTJ • BWE
Pressure Rating	ASME B16.34 Class 900 & 1500
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class II to V
Body Materials	LCC • WCC • CF8M • WC9
Features	<ul style="list-style-type: none"> Cage guided, balanced or unbalanced plug design Other material options available Metal seating standard Anti-cavitation, low-noise, and reduced port trim options available Live-loaded packing available NACE options available

350 Series



Description	Severe service control valve with larger internal cavities for noise and cavitation control.
Body Size Range	6 to 12" Nominal Pipe Size (150mm to 300mm Diameter Nominal)
Body Styles	Globe
End Connections	RF • RTJ • BWE
Pressure Rating	ASME B16.34 Class 150 to 900
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class II to V
Body Materials	LCC • WCC • CF8M • WC9
Features	<p>Cage guided</p> <p>Other material options available</p> <p>Metal seating standard</p> <p>Anti-cavitation, low-noise, reduced port, and pilot plug trim options available</p> <p>Live-loaded packing available</p> <p>High temperature options readily available</p> <p>NACE options available</p>

370 Series



Description	Larger version of the 360 series, which is our most versatile, general purpose control valve series.
Body Size Range	12" Nominal Pipe Size (300mm Diameter Nominal) valve body with 12", 14", or 16" Flanges
Body Styles	Globe
End Connections	RF • RTJ • BWE
Pressure Rating	ASME B16.34 Class 150 to 600
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class IV & V
Body Materials	LCC • WCC • CF8M • WC9
Features	<p>Cage guided</p> <p>Other material options available</p> <p>Metal seating standard</p> <p>Anti-cavitation and low-noise trim options available</p> <p>Live-loaded packing available</p> <p>Bolted seat rings</p> <p>NACE options available</p>

Control Valves

Linear Sliding Stem

380 Series



Description	Cage guided control valves designed for high pressure applications.
Body Size Range	3", 4x3", & 8" Nominal Pipe Size (80mm, 100x80mm, & 200mm Diameter Nominal)
Body Styles	Globe
End Connections	RF • RTJ • BWE
Pressure Rating	ASME B16.34 Class 1500 & 2500
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class II to V
Body Materials	LCC • WCC • CF8M • WC9
Features	<ul style="list-style-type: none"> Cage guided Other material options available Metal seating standard Anti-cavitation and low-noise trim options available Live-loaded packing available NACE options available

Model DF2000



Description	Heavy duty control valve used in a variety of demanding applications for either throttling or on-off control.
Body Size Range	1" to 2" Nominal Pipe Size (25mm to 50mm Diameter Nominal)
Body Styles	Globe • Angle
End Connections	FNPT • RF • RTJ
Pressure Rating	ASME B16.34 Class 150 to 2500
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class IV & V
Body Materials	LCC • CF8M
Features	<ul style="list-style-type: none"> Top guided, unbalanced plug design Metal seating. Hard-faced or Tungsten Carbide available Plug characterized trim with a wide range of port sizes Live-loaded packing available Threaded bonnet and seat ring Standard NACE construction

570 Series



Description	Segmented ball control valves suited for high flow, low pressure drop services which offer larger capacity than globe style valves.
Body Size Range	1" to 16" Nominal Pipe Size (25mm to 400mm Diameter Nominal)
Body Style	Wafer • Flanged
End Connections	RF
Pressure Rating	ASME B16.34 Class 150 to 600
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class II, IV, & VI
Body Materials	LCC • WCC • CG8M • WC9
Features	<p>Other material options available</p> <p>Metal and soft seats available</p> <p>Live-loaded packing available</p> <p>Splined, square, and keyed shafts are available</p> <p>Throttling and on/off control capabilities</p> <p>Standard NACE construction</p>

Model 590



Description	Full ball control valve suited for high flow, high pressure drop services which offer larger capacity than globe style valve.
Body Size Range	4" to 16" Nominal Pipe Size (100mm to 400mm Diameter Nominal)
Body Style	Wafer
Pressure Rating	ASME B16.34 Class 600 & 900
Shutoff Class	ANSI/FCI 70.2 and IEC 60534-4 Class II & VI
Body Materials	LCC • WCC • CG8M
Features	<p>Live Loaded packing standard</p> <p>Splined & keyed shaft connections</p> <p>Positive ball-to-shaft connection</p> <p>Full ANSI shut off available</p> <p>Standard NACE construction</p>

Control Valves

Integral Actuator & Linear Sliding Stem

DF100 Control Valve



Description	Compact dump valve used in tough fluid applications.
Valve Size Range	1" Nominal Pipe Size (25mm Diameter Nominal)
Port Sizes	1/4" (6.4mm) • 3/8" (9.5mm) • 1/2" (12.7mm) • 3/4" (19.1 mm)
Body Styles	Globe • "T" Body
End Connections	FNPT • RF • RTJ
Pressure Rating	ASME B16.34 Class 150 to 900
Shutoff Class	ANSI/FCI 70.2 Class IV
Body Materials	LCC
Features	Standard Live Loaded Packing • Threaded bonnet Field-reversible from spring-to-close to spring-to-open • NACE Standard

DF234 Control Valve



Description	Compact dump valve used in tough fluid applications, designed for easier serviceability.
Valve Size Range	1" to 2" Nominal Pipe Size (25mm to 50mm Diameter Nominal)
Port Sizes	1/4" (6.4mm) • 3/8" (9.5mm) • 1/2" (12.7mm) • 3/4" (19.1 mm) • 1" (25.4 mm)
Body Styles	Globe • Angle
End Connections	FNPT • RF • RTJ
Pressure Rating	ASME B16.34 Class 150 to 1500
Shutoff Class	ANSI/FCI 70.2 Class IV
Body Materials	LCC
Features	Standard Live Loaded Packing • Hammer nut bonnet Field-reversible from spring-to-close to spring-to-open • NACE Standard

DF270 Control Valve



Description	Heavy duty, compact control valve used in a variety of demanding applications for either throttling or on-off control.
Valve Size Range	1" to 2" Nominal Pipe Size (25mm to 50mm Diameter Nominal)
Port Sizes	1/4" (6.4mm) • 3/8" (9.5mm) • 1/2" (12.7mm) • 3/4" (19.1 mm) • 1" (25.4 mm)
Body Styles	Globe • Angle
End Connections	FNPT • RF • RTJ
Pressure Rating	ASME B16.34 Class 150 to 1500
Shutoff Class	ANSI/FCI 70.2 Class IV
Body Materials	LCC
Features	Standard Live Loaded Packing • Hammer nut bonnet Field-reversible from spring-to-close to spring-to-open • NACE Standard

DF2410 Control Valve



Description	Heavy duty, compact control valve used in a variety of demanding applications for either throttling or on-off control.
Valve Size Range	2" Nominal Pipe Size (50mm Diameter Nominal)
Port Sizes	1/4" (6.4mm) • 3/8" (9.5mm) • 1/2" (12.7mm) • 3/4" (19.1 mm) • 1" (25.4 mm) • 1-1/4" (38.1 mm)
Body Styles	Globe • Angle
End Connections	FNPT • RF • RTJ
Pressure Rating	ASME B16.34 Class 150 to 1500
Shutoff Class	ANSI/FCI 70.2 Class IV
Body Materials	LCC
Features	Standard Live Loaded Packing • Hammer nut bonnet • NACE Standard

Actuators

Pneumatic Linear

Models DFC & DFO



Description	Spring and diaphragm actuators that allow for low supply pressure operation, which offer fail safe position.
Actuator Sizes	046 • 069 • 105 • 156 • 220
Input Signal	3-15 Psig (0.21-1.03 bar) or 6-30 Psig (0.41-2.07 bar)
Yoke Boss Size	2-1/8" (54 mm) • 2-13/16" (71 mm) • 3-9/16" (90 mm)
Features	Open yoke - open valve stem Versatile mounting options for positioners and limit switches Throttling and on/off control capabilities

Model DFLP



Description	Double acting pneumatic piston actuator designed for high thrust applications.
Actuator Sizes	113 • 154
Maximum Operating Pressures	150 Psig (10.3 bar)
Yoke Boss Size	3-9/16" (90 mm) Bolted • 5" (127 mm) Bolted
Features	Unique design allows for low cost cylinder replacement Versatile mounting options for positioners and limit switches Throttling, and on/off control capabilities

Model DFN



Description	Yokeless spring and diaphragm actuator commonly used on butterfly valves, choke valves and louvers.
Actuator Sizes	069 • 156
Input Signal	35 Psig (2.41 bar)
Bolt Circle Diameter	2-7/8" (73 mm) or 3-7/8" (99 mm)
Features	Steel welded design for proven reliability in extreme working conditions Versatile mounting capabilities

Actuators

Pneumatic Rotary

Model DFR



Description

Rotary spring and diaphragm actuators that allow for low supply pressure operation, which offer fail safe position.

Actuator Sizes

026 • 047 • 070 • 156 • 220

Input Signal

0-18 Psig (0-1.24 bar) or 0-33 Psig (0-2.28 bar)

Features

- Fail-safe field reversible
- Minimal deadband
- Splined connection
- High reliability
- Fail-Open & Fail-Closed configurations
- Broad range of torque output
- Compatible with a wide variety of today's instrumentation

Model DFRP



Description

Rotary double acting pneumatic piston actuator designed for high torque applications.

Actuator Sizes

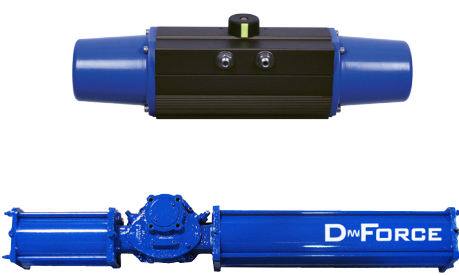
079 • 112 • 113 • 154

Maximum Operating Pressures

85 Psig (5.86 bar) • 100 Psig (6.89 bar) • 150 Psig (10.3 bar)


Features

- Splined connection
- High reliability
- Minimal deadband
- Innovative cylinder design
- Unique design allows for low cost cylinder replacement
- Compatible with a wide variety of today's instrumentation

D-Force	
	Description Rugged scotch yoke actuator designed for use with quarter turn valves. Available in double acting (DDA) and spring return (DSR) configurations. The compact dual piston design allows for simplified mounting and cost effective automation of any rotary application. The large piston design is well suited for larger torque requirements up to 427,845 lbs-in (48,340 N-M).
	Actuator Sizes Small D-Force Dual Piston: 65 • 80 • 100 • 125 • 140 • 160 • 210 Large D-Force Piston Rotary: DDA 26082 to DDA 80212 33082SR to 80211SR
	Operating Pressures 40 Psi (2.76 bar) to 143 Psi (9.86 bar)
	Features Small D-Force: Namur mounting • Corrosion resistant construction • External, adjustable travel stops Large D-Force: Rugged corrosion resistant design

Instrumentation

Instrument Supply Regulator

PRO-50	
	Description Compact, lightweight regulator that provides controlled and reduced pressures for instrumentation. Generally used for a constant supply pressure to pneumatic and electropneumatic controllers.
	Outlet Pressures 0-35 Psig (0-2.41 bar) • 0-60 Psig (0-4.14 bar) • 0-125 Psig (0-8.62 bar)
	Inlet Pressures 250 Psi (1724 kPa)
	Features Standard low-temperature construction 1/4" (6.4 mm) NPT connection (inlet & outlet) Panel mount ready NACE options available

Instrumentation

Positioners

Siemens PS2 Positioner



Description

Digital valve positioner with on-board programming and HART ready. Comes standard with an LCD screen for visual programming and diagnostics.

Features

Zero bleed in steady state, meets or exceed EPA emission standards
Limit switches and feedback modules available
Handheld communicator not required for calibration
Cold temperature and explosion proof versions available
Universal mounting
Meets local electrical approvals

Siemens 760 Positioner



Description

Pneumatic positioner that can be used with linear or rotary valves.

Features

Limit switches and feedback module available
High flow module
Position indicator beacon
Universal mounting

Instrumentation

I/P Transducer

Control Air T950XP



Description

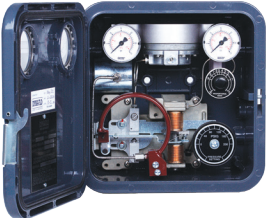

Reliable, high performance transducer for tough applications in hazardous environments. Converts electrical current input signal to stable, pneumatic output to actuate valves.

Ports (Input & Output)

Pneumatic: 1/4" (6.4 mm) NPT • Electric: 1/2" (12.7 mm) NPT

Features

Direct, reverse, or split ranging
Can be mounted in-line or directly to a panel in multiple configurations
Field adjustable with easy to open cover and on-board switches
Approved for natural gas

4000 Series Local Pressure Controllers	
	Description Pneumatic local pressure controller.
	Features Two modes of operation: Proportional Only & Proportional + Reset Control action is field reversible between direct acting and reverse acting 4000LB & 4010LB controllers meet or exceed EPA emission standards Standard controllers are equipped with critical parts in stainless steel NACE options available
5000 & 5000E Level Controller	
	Description Displacer type pneumatic liquid level controller.
	Features Can be configured as snap acting or throttling Meets or exceed EPA emission standards Pneumatic supply can be either air or natural gas Standard NACE construction Low-temperature body standard Electric pilot either SPDT or DPDT

Specialized Options

Special Coating	Special Trim Materials & Options	Non-Destructive Testing (NDT) Methods
Available for valve bodies, assemblies and trim parts to prevent premature wear due to corrosion, chemical exposure, severe service and high temperature environments. Coating options include but not limited to: <ul style="list-style-type: none"> • ENC (Electroless Nickel Coating) • IMPREGLON® Coatings • Anodizing • Nitriding • Hard Chrome Plating • Tungsten Carbide 	Ability to fabricate valve trim parts from customer specified materials or specialty materials to suit specific process needs or flow control specifications. Special material options include but are not limited to: <ul style="list-style-type: none"> • Duplex Stainless Steel • High Nickel Alloys • Urea Grade Stainless Steel • Tungsten Carbide • High Chrome Steel • Ceramics 	Several non-destructive procedures are available for product testing on pressure containing parts. NDT procedures include: <ul style="list-style-type: none"> • Visual Inspection • Magnetic Particle Test • Liquid Penetrant Test • Radiographic Test (X-Ray) • Ultrasonic Test • Positive Material Identification



Warranty

All Dyna-Flo Products have a Warranty Period of twelve months from first installation or eighteen months from delivery, whichever is sooner. All other warranty terms are as per Curtiss-Wright Industrial Standard Terms and Conditions, a copy which is available at www.cw-industrialgroup.com/About/Group-Policies/Terms-Conditions.aspx. or contact your local representative.

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