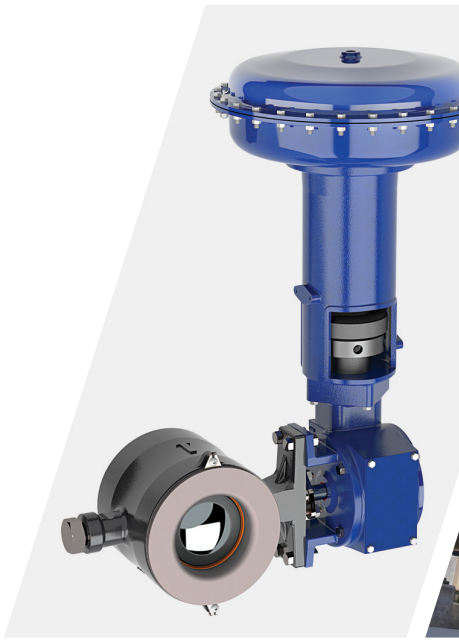
CURTISS-WRIGHT | VALVES DIVISION

Dyna-Flo Control Valves

Products and Services Overview

Focused on Solutions

Dyna-Flo is your Trusted Partner to help improve plant safety, minimize downtime, and eliminate production disruptions with our safe and high performance control valves. We design, manufacture, and supply a variety of control valve systems that meet our customers most demanding applications and solve operational challenges.



Dyna-Flo engineers control valve systems to help customers achieve safe and reliable operation, while reducing total cost of ownership.

CUSTOMER CHALLENGE	DYNA-FLO APPROACH	OPERATIONAL OUTCOME
RELIABILITY	Providing the right design and application engineering, combined with the ability to offer performance monitoring and predictive maintenance diagnostics.	INCREASED UPTIME
SAFETY	Highly skilled and OEM certified technicians are always available to reduce unplanned downtime (risk exposure).	MINIMIZED RISK
MAINTENANCE	Reduced planned maintenance scope and unplanned downtime through diagnostics, and 24-hour on-call service.	REDUCED COST

Product Sizing & Selection

For optimal system performance it is critical to determine the correct product for your application. Our FloSpec software helps you select the ideal flow control solution.

FloSpec allows you to:

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

www.concept.dynaflo.com

Trust the Dyna-Flo Team to Help You.

Providing a spectrum of support, including product training, on-site assistance, and repair services.

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

Dyna-Flo Authorized Service Providers are stationed worldwide so that your facility can maintain peak performance during operation. Our qualified teams of technicians are committed to providing quick service and repair to reduce downtime and costs for essential equipment.

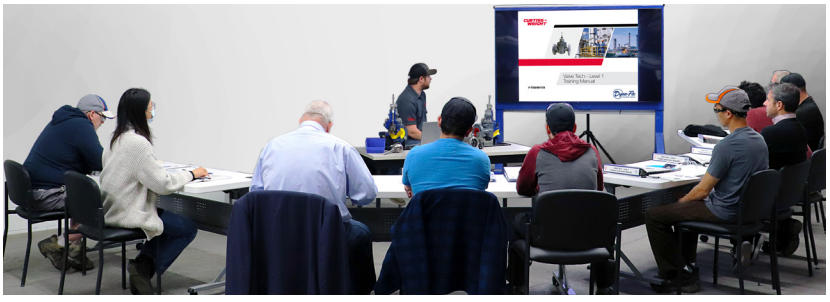
Find your local representative at:
www.cw-dynaflo.com/distribution

Product Training and Seminars

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

Available Classes Include:

- Level 1 - Basic Valve Technician Training
- Valve and Actuator Sizing
- Material Selection
- FloSpec Software Training



360 Series Sliding Stem Control Valves

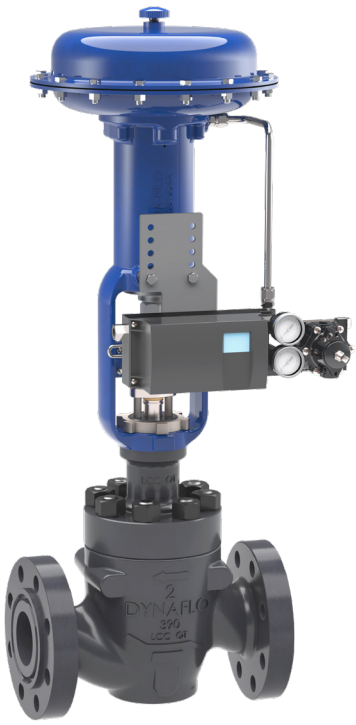
Standard Pressure Range

Available Models:	360 • 361 • 362 • 363
Body Size Range:	1/2" to 8" Nominal Pipe Size (15mm to 400mm Diameter Nominal)
Temperature Range:	-325°F to +1000°F (-198°C to +538°C)
Pressure Range:	ASME B16.34 Class 150 to 600
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class II to VI
Body Styles:	Globe • Angle
End Connections:	RF • RTJ • BWE • SWE • FNPT
Plug Types:	Balanced • Unbalanced
Characteristics:	Equal Percentage • Linear • Quick Opening
Body Materials:	Refer to Page 11 for material options
Options:	Cage or top guided Metal seating standard, soft seating available Anti-cavitation, low-noise, Dyna-form, Dyna-flute trim Live-loaded packing available Cryogenic design available NACE construction available

390 Series Sliding Stem Control Valves

High Pressure Range

Available Models:	390 • 391 • 392
Body Size Range:	1" to 8x6" Nominal Pipe Size (25mm to 200x150mm Diameter Nominal)
Temperature Range:	-325°F to +1000°F (-198°C to +538°C)
Pressure Range:	ASME B16.34 Class 900 to 1500
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class II to V
Body Styles:	Globe • Angle
End Connections:	RF • RTJ • BWE • SWE
Plug Types:	Balanced • Unbalanced
Characteristics:	Equal Percentage • Linear • Quick Opening
Body Materials:	Refer to Page 11 for material options
Options:	Cage or top guided Metal seating standard Anti-cavitation, low-noise, Dyna-form and reduced port trim Live-loaded packing available Cryogenic design available NACE construction available



320 AxFlo Sliding Stem Control Valves

Axial Flow Anti-Cavitation Trim

Body Size Range:	2 to 8" Nominal Pipe Size (50mm to 200mm Diameter Nominal)
Temperature Range:	-50°F to +600°F (-46°C to +316°C)
Pressure Range:	ASME B16.34 Class 300 to 1500
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class V
Body Styles:	Globe
End Connections:	RF • RTJ • BWE • SWE • FNPT
Plug Types:	Balanced • Unbalanced
Characteristics:	Linear
Body Materials:	Refer to Page 11 for material options
Options:	Cage guided Metal seating standard Live-loaded packing available NACE options available

350 Series Sliding Stem Control Valves

Expanded Outlet - Reduced Port

Available Models:	350 • 351
Body Size Range:	8x6" to 12x8" Nominal Pipe Size (200x150mm to 300x200mm Diameter Nominal)
Temperature Range:	-50°F to +1000°F (-46°C to +538°C)
Pressure Range:	ASME B16.34 Class 150 to 900
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class II to VI
Body Styles:	Globe
End Connections:	RF • RTJ • BWE
Plug Types:	Balanced
Characteristics:	Equal Percentage • Linear • Quick Opening
Body Materials:	Refer to Page 11 for material options
Options:	Cage guided Metal seating standard, soft seating available Anti-cavitation, low-noise trim available Live-loaded packing available NACE options available

Dyna-Flo Control Valves

370 Series Sliding Stem Control Valves

Large Size Standard Pressure Range

Available Models:	370 • 371
Body Size Range:	12" Nominal Pipe Size (300mm Diameter Nominal)
Flange Size Range:	12" • 14" • 16" Nominal Pipe Size (300mm • 350mm • 400mm Diameter Nominal)
Temperature Range:	-100°F to +1000°F (-73°C to +538°C)
Pressure Range:	ASME B16.34 Class 150 to 600
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class IV and V
Body Styles:	Globe
End Connections:	RF • RTJ
Plug Types:	Balanced
Characteristics:	Equal Percentage • Linear • Quick Opening
Body Materials:	Refer to Page 11 for material options
Options:	Cage guided Metal seating standard Anti-cavitation and low-noise trim available Live-loaded packing available NACE construction available

380 Series Sliding Stem Control Valves

Limited Size High Pressure Range

Available Models:	380 • 381
Body Size Range:	3" • 4x3" • 8" Nominal Pipe Size (80mm • 100x80mm • 200mm Diameter Nominal)
Temperature Range:	-100°F to +800°F (-73°C to +427°C)
Pressure Range:	ASME B16.34 Class 1500 to 2500
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class II to V
Body Styles:	Globe
End Connections:	RF • RTJ • BWE
Plug Types:	Balanced
Characteristics:	Equal Percentage • Linear • Quick Opening
Body Materials:	Refer to Page 11 for material options
Options:	Cage guided Metal seating standard Anti-cavitation and low-noise trim available Live-loaded packing available NACE construction available

DF2000 Sliding Stem Control Valves

Rugged Oilfield Applications

Body Size Range:	1 & 2" Nominal Pipe Size (25mm & 50mm Diameter Nominal)
Temperature Range:	-50°F to +450°F (-46°C to +232°C)
Pressure Range:	ASME B16.34 Class 150 to 2500
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class IV to V
Body Styles:	Globe • Angle
End Connections:	RF • RTJ • FNPT
Plug Types:	Unbalanced
Characteristics:	Equal Percentage
Body Materials:	Refer to Page 11 for material options
Options:	Top guided Threaded bonnet and seat ring Metal seating standard Live-loaded packing available NACE construction standard

Integral Sliding Stem Valve and Actuator

Available Models:	DF100 • DF234 • DF270 • DF2410
Body Size Range:	1" & 2" Nominal Pipe Size (25mm & 50mm Diameter Nominal)
Port Size Range:	1/4" to 1-1/4" (6.4mm to 38.1mm)
Temperature Range:	-50°F to +300°F (-46°C to +150°C)
Pressure Range:	ASME B16.34 Class 150 to 1500
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class IV
Body Styles:	Globe • "T" Style (DF100 Only)
End Connections:	RF • RTJ • FNPT
Plug Types:	Unbalanced
Characteristics:	Equal Percentage • Quick Opening
Body Materials:	Refer to Page 11 for material options
Options:	Standard live-loaded packing Standard NACE construction

570 Series Rotary Control Valves

Segmented Ball Flow Control

Available Models:	570 • 571 • 573
Body Size Range:	1" to 16" Nominal Pipe Size (25mm to 400mm Diameter Nominal)
Temperature Range:	-100°F to +800°F (-73°C to +427°C)
Pressure Range:	ASME B16.34 Class 150 to 600
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class II to VI
Body Styles:	Flanged • Wafer
End Connections:	RF
Characteristics:	Linear
Body Materials:	Refer to Page 11 for material options
Options:	Live-loaded packing available NACE construction standard Splined, square and keyed shafts available

590 Rotary Control Valves

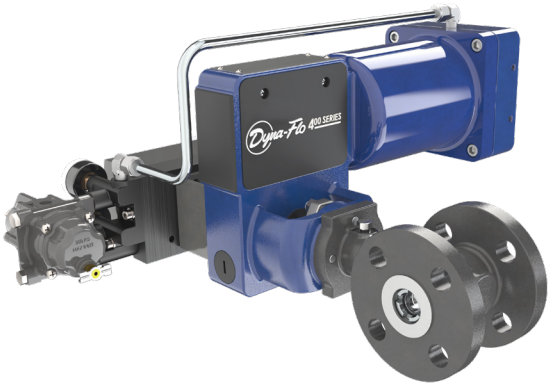
Large Bore Flow Control

Body Size Range:	4" to 16" Nominal Pipe Size (100mm to 400mm Diameter Nominal)
Temperature Range:	-50°F to +400°F (-46°C to +204°C)
Pressure Range:	ASME B16.34 Class 600 to 900
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class II and VI
Body Styles:	Wafer
End Connections:	RF • RTJ
Ball Types:	Straight-Through
Characteristics:	Modified Equal Percentage
Body Materials:	Refer to Page 11 for material options
Options:	Splined and keyed shafts available Live-loaded packing standard Standard NACE construction Full ANSI shutoff available

DF400 Eccentric Rotary Plug Control Valves

Small, Light and Powerful High Capacity Flow Control

Body Size Range:	1" to 6" Nominal Pipe Size (25mm to 150mm Diameter Nominal)
Temperature Range:	-320°F to +750°F (-196°C to +399°C)
Pressure Range:	ASME B16.34 Class 150 to 600
Shutoff Range:	ANSI/FCI 70.2 and IEC 60534-4 Class IV and VI
Body Styles:	Flanged • Wafer
End Connections:	RF
Characteristics:	Linear
Body Materials:	Refer to Page 11 for material options
Actuator Options:	Exclusive Integral Actuator
Options:	Low-emission packing standard Blowout proof shafts Reduced port trim options available NACE construction available High temperature and severe service coatings available



Instrumentation • Positioners / Regulators / Controllers

SIEMENS PS2 Digital Valve Positioner	
Output Range:	0 to 100 PSIG (0 to 6.9 BARG)
Features:	HART ready / Zero bleed in steady state
Dyna-Flo PRO-50 Pressure Regulator	
Outlet Pressures:	0-35 • 0-60 • 0-125 PSIG (0-2.4 • 0-4.1 • 0-8.6 BARG)
Inlet Pressures:	250 PSI (17 BAR)
Temperature Range:	-40°F to +300°F (-40°C to +150°C)
Dyna-Flo 4000 Series Local Pneumatic Pressure Controller	
Pressure Range:	30 to 5,000 PSIG (2.1 to 345 BARG)
Temperature Range:	-40°F to +160°F (-40°C to +71°C)
Features:	Low-bleed and NACE options available
Dyna-Flo 5000 Series Displacer Type Pneumatic Liquid Level Controller	
Sensor Temperature Range:	-40°F to +400°F (-40°C to +204°C)
Pressure Rating:	ASME B16.34 Class 1500
End Connections:	RF • RTJ • MNPT
Pilot Options:	Pneumatic • Electric SPDT or DPDT

Dyna-Flo Control Valves

Actuators • Pneumatic Spring and Diaphragm

Temperature Range: -40°F to +180°F (-40°C to +82°C)

Linear Spring and Diaphragm - Models DFC • DFO • DFN	
DFC Input Signals:	0-18 • 0-33 PSIG (0-1.24 • 0-2.28 BARG)
DFO Input Signals:	3-15 • 6-30 PSIG (0.21-1.03 • 0.41-2.07 BARG)
DFN Input Signals:	35 PSIG (2.41 BARG)
Travel Range:	3/8" to 4" (9.5mm to 102mm)
Stem Connections:	3/8" • 1/2" • 3/4" (9.5mm • 12.7mm • 19.1mm)

Rotary Spring and Diaphragm - Models DFR	
Input Signals:	0-18 • 0-33 • 3-27 PSIG (0-1.24 • 0-2.28 • 0.21-1.86 BARG)
Stem Connections:	1/2" to 2" (12.7mm to 50.8mm)

Actuators • Pneumatic Piston

Temperature Range: -40°F to +180°F (-40°C to +82°C)

Linear Piston - Models DFLP	
Operating Pressures:	20 PSIG to 150 PSIG (1.38 BARG to 10.3 BARG)
Travel Range:	3/4" to 8-1/8" (19.1mm to 206mm)
Stem Connections:	3/4" • 1" • 1-1/4" (19.1mm • 25.4mm • 31.8mm)

Rotary Piston - Models DFRP	
Operating Pressures:	20 PSIG to 150 PSIG (1.38 BARG to 10.3 BARG)
Stem Connections:	1/2" to 2-1/2" (12.7mm to 63.5mm)

Product Reference Chart

Product Specifications		Linear Sliding Stem Valves							Rotary Ball Valves		Rotary Plug Valves	Integral Actuator & Linear Sliding Stem Valves			
Valve Series		**320**	**350**	**360**	**370**	**390**	**380**	**DF2000**	**570**	**590**	**DF400**	**DF100**	**DF234**	**DF270**	**DF2410**
Valve Body Size Range		2 to 8"	8 to 12"	½ to 8"	12 to 16"	1 to 6"	3 & 8"	1 to 2"	1 to 16"	4 to 16"	1 to 6"	1"	1 & 2"	1 & 2"	2"
Pressure Rating Class ASME B16.34		300 to 1500	150 to 600	150 to 600	150 to 600	900 to 1500	1500 to 2500	150 to 2500	150 to 600	600 to 900	150 to 600	150 to 900	150 to 1500	150 to 1500	150 to 1500
Body Style	Globe	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Angle			✓		✓		✓							
	Wafer								✓	✓	✓				
	T Body											✓			
End Connections	FNPT[1]	✓		✓				✓				✓	✓	✓	✓
	RF[2]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	RTJ[3]	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
	BWE[4]	✓	✓	✓	✓	✓	✓								
	SWE[5]	✓		✓		✓		✓							
Trim Options	Low-Noise		✓	✓	✓	✓	✓								
	Anti-Cavitation	✓	✓	✓	✓	✓	✓								
Shutoff Class	II		✓	✓		✓	✓		✓	✓					
	III		✓	✓		✓	✓								
	IV		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	V	✓	✓	✓	✓	✓	✓	✓							
	VI			✓					✓	✓	✓				
Plug Style	Balanced	✓	✓	✓	✓	✓	✓								
	Unbalanced	✓		✓		✓	✓	✓				✓	✓	✓	✓
Standard Body Material Options	LCC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	WCC	✓	✓	✓	✓	✓	✓		✓	✓	✓				
	CF8M	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	
	CF3M										✓				
	CG8M								✓						
Body Material Note:		All ASME B16.34 pressure boundary materials are available as body material options.													

Actuators	320	350	360	370	390	380	DF2000	570	590	DF400
Model DFC	✓	✓	✓		✓	✓	✓			
Model DFO	✓	✓	✓		✓	✓	✓			
Model DFLP	✓	✓	✓	✓	✓	✓	✓			
Model DFR								✓	✓	
Model DFRP								✓	✓	

NOTES:

(1) **FNPT** = Female Internal Thread

(2) **RF** = Raised-Face

(3) **RTJ** = Ring Type Joint

(4) **BWE** = Butt Weld End

(5) **SWE** = Socket Weld End

GLOBAL PRESENCE

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CURTISS-WRIGHT | VALVES DIVISION

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