

DOT THREE WAY CONTROL VALVE

SIZES 1" - 3"
ANSI CLASS 125, 150



DOT THREE WAY CONTROL VALVE WITH
OPTIONAL HAND OPERATING DEVICE



- **EPDM O-Rings** for temperatures to 450°F
- **Cage Trim** provides easy maintenance. All trim parts can be removed from the top of the valve
- **Cage-Guided Trim** for increased valve stability and trim life
- **One-Piece Body** eliminates the conventional tailpiece and extra gasketed joint
- **Spring Loaded Teflon® Chevron Stem Packing** eliminates the need for periodic adjustment
- **In-Line Maintenance** reduces labor costs
- **Lower Stem Friction** provides increased stability
- **Single Body Style** performs either mixing or diverting functions

APPLICATION DATA

- Mixing or diverting water, oil, sea water or other liquids
- Heating or cooling applications involving heat exchanger bypass control
- Blending Systems
- On-off Selector Systems

OPTIONS

- Hand Operating Device
- Valve Positioner
- Position Transmitter
- Limit Switches
- Electric Actuator

FLOW COEFFICIENTS (C_V)

Stroke	Valve Size		Diverging Service	Converging Service
	Inches	mm		
1/4"	1	25	11	12
3/8"	1¼	32	17	19
3/8"	1½	40	24	26
1/2"	2	50	40	45
9/16"	2½	65	60	63
11/16"	3	80	87	91

DOT THREE WAY CONTROL VALVE

SPECIFICATIONS

TRIM MATERIALS

Part	Iron Valves	Bronze Valves
Main Valve	316 Stainless	Monel
Cage	Bronze	Bronze
Lower Seat	17-4 PH SST	Monel
Packing	Teflon Chevron	Teflon Chevron
Packing Spring	Monel	Monel

MAXIMUM OPERATING TEMPERATURE¹

Bronze 150#	365° F	185° C
Cast Iron 125#	365° F	185° C

MAXIMUM INLET PRESSURE

Bronze	225 PSIG @ 100°F
Iron	200 PSIG @ 100°F

YOKES

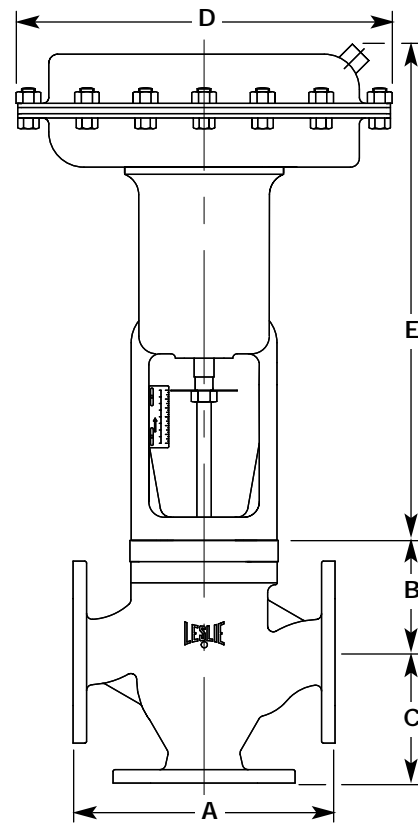
Cast Iron or Aluminum

CHARACTERISTICS

On/Off and Throttling

LEAKAGE

Maximum 0.1% of Rated Capacity



VALVE DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

Size	A			B	C			Weight		
	NPT	125	150		NPT	125	150	NPT	125	150
1 (25)	8 ³ / ₈ (212.7)	7 ¹ / ₄ (184.2)	7 ¹ / ₈ (181)	2 ⁵ / ₈ (66.7)	4 ¹ / ₁₆ (106.4)	3 ⁵ / ₈ (42.1)	3 ³ / ₈ (90.5)	62 (28.1)	66 (29.9)	66 (29.9)
1 ¹ / ₄ (32)	9 ⁵ / ₈ (244.5)	8 ⁵ / ₈ (219.1)	8 ¹ / ₈ (214.3)	2 ¹⁵ / ₁₆ (74.6)	4 ¹³ / ₁₆ (122.2)	4 ⁵ / ₈ (109.5)	4 ¹ / ₂ (107.2)	69 (31.3)	73 (33.1)	73 (33.1)
1 ¹ / ₂ (40)	9 ⁷ / ₈ (250.8)	8 ³ / ₄ (222.3)	8 ¹ / ₂ (215.9)	2 ¹⁵ / ₁₆ (74.6)	4 ¹⁵ / ₁₆ (125.4)	4 ³ / ₈ (111.1)	4 ¹ / ₄ (108)	72 (32.7)	78 (35.4)	78 (35.4)
2 (50)	11 (279.4)	10 (250)	9 ³ / ₄ (247.7)	3 ³ / ₈ (84.1)	5 ¹ / ₂ (139.7)	5 (125)	4 ³ / ₈ (123.8)	80 (36.3)	85 (38.6)	85 (38.6)
2 ¹ / ₂ (65)	— —	10 ⁵ / ₈ (276.2)	10 ³ / ₈ (269.9)	4 ¹ / ₄ (108)	— —	5 ¹ / ₈ (138.1)	5 ⁵ / ₈ (134.9)	— —	145 (65.8)	143 (64.9)
3 (80)	— —	11 ¹ / ₄ (298.5)	11 ¹ / ₂ (292.1)	4 ¹ / ₂ (114.3)	— —	5 ⁷ / ₈ (149.2)	5 ³ / ₄ (146.1)	— —	175 (79.4)	173 (78.5)

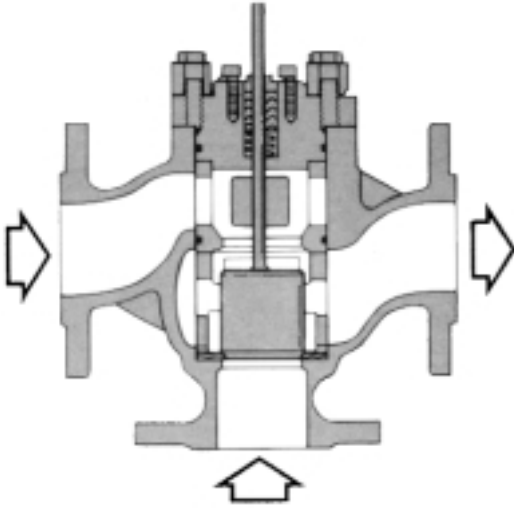
ACTUATOR DIMENSIONS inches AND WEIGHTS pounds

Size	D	E	WT.
35	9 ¹ / ₄ (235)	12 ¹ / ₄ (311.2)	35 (15.9)
35R	9 ¹ / ₄ (235)	12 ³ / ₈ (314.3)	35 (15.9)
55,55A	12 (304.8)	15 ¹ / ₄ (387.4)	50 (10.4)
55R, 55AR	12 (304.8)	18 (457.2)	60 (13.6)
85	14 ³ / ₄ (374.7)	19 ⁵ / ₈ (498.5)	96 (43.5)
85R	14 ³ / ₄ (374.7)	23 ¹ / ₄ (590.6)	117 (53.1)

1. With EPDM O-Rings, 220°F / 104°C with Buna-N O-Rings

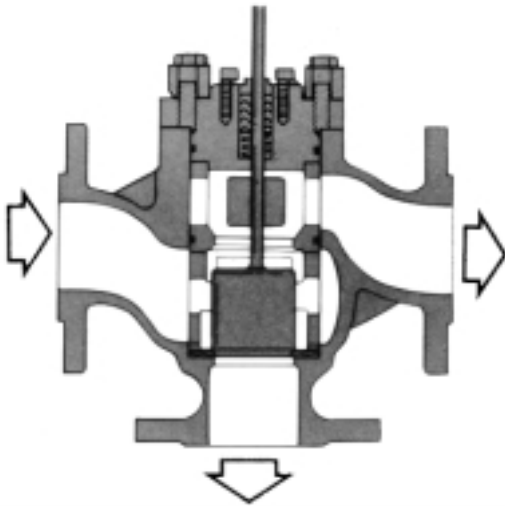
DOT THREE WAY CONTROL VALVE

CONVERGING SERVICE



Typical D(D)OT Class, single plug valve with flanged ends, indicating converging or mixing flow with a single outlet port.

DIVERGING SERVICE



Typical D(D)OT Class, single plug valve with flanged ends, showing throttling diverging service with two outlet ports.

MAXIMUM PRESSURE DROP with STANDARD and ALTERNATE ACTUATORS

Valve Size (Inches)	Actuator Size	Air Pressure PSIG	Converging Service PSID	Diverging Service PSID
1"	35	18	125	60
		25	185	60
		60	225	60
	55	18	225	100
		25	225	100
		60	225	100
1¼" 1½"	35	18	70	25
		25	120	40
		60	225	40
	55	18	100	35
		25	187	65
		60	225	65
2"	35	18	43	—
		25	80	25
		60	130	40
	55	18	57	20
		25	120	35
		60	225	65
2½"	55A	18	30	—
		25	70	25
		60	225	40
	85	18	35	30
		25	95	43
		60	225	43
3"	55A	18	12	—
		25	40	20
		60	155	35
	85	18	27	8
		25	72	27
		60	225	40

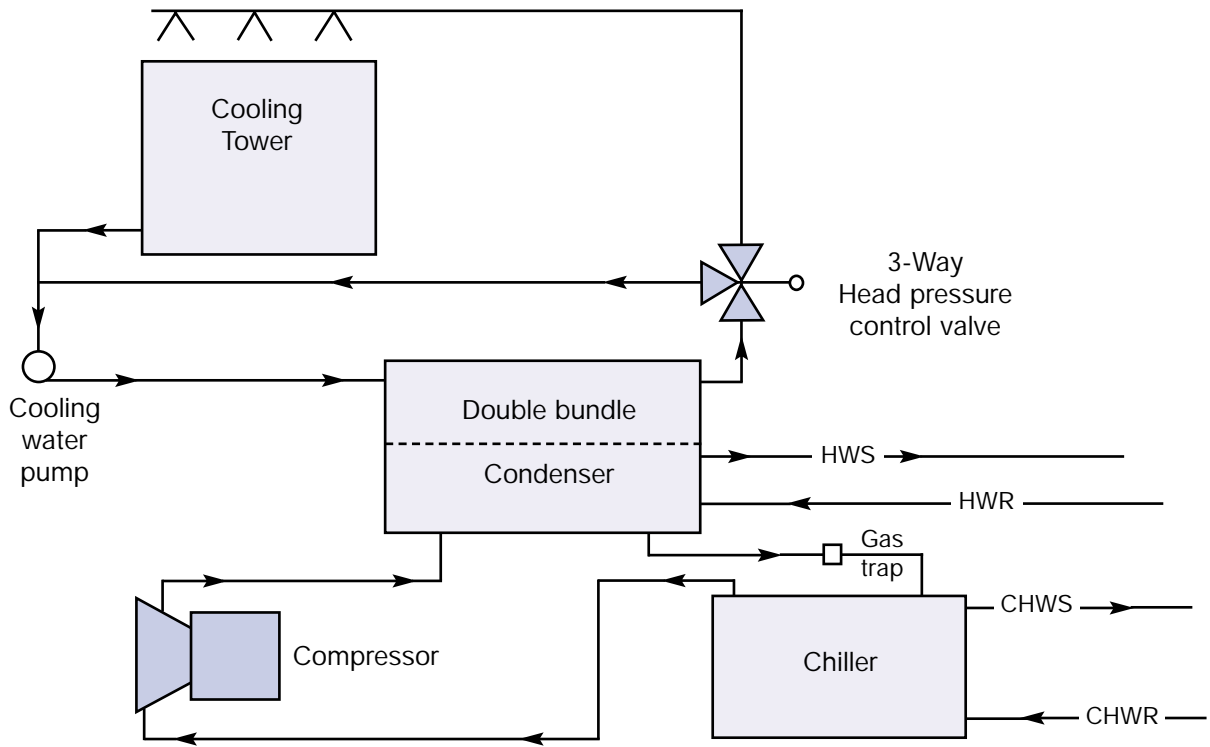
NOTE:

Actuators 35 and 55 are mutually interchangeable; however please note actuator travels are different.

Actuators indicated are all direct-acting (top seat normally closed). For reverse-acting actuators, suffix "R" is added to actuator number. Maximum allowable pressure drop values shown are identical for either type. Maximum allowable pressure drop figures shown above are subject to body pressure/temperature limitations.

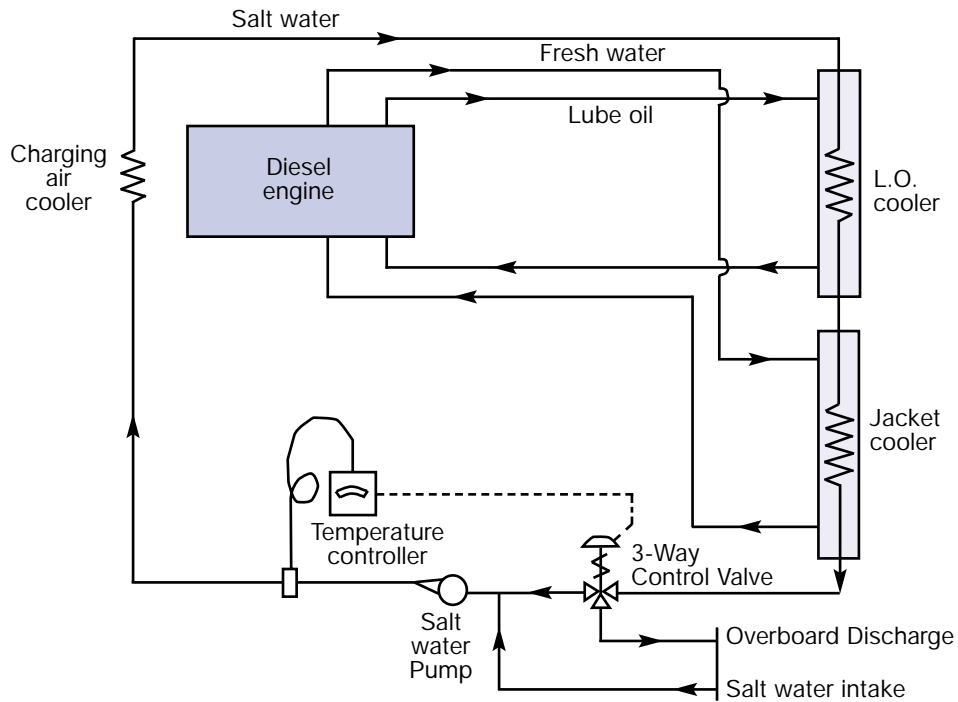
DOT TYPICAL APPLICATIONS

TYPICAL APPLICATION — INDUSTRIAL/COMMERCIAL



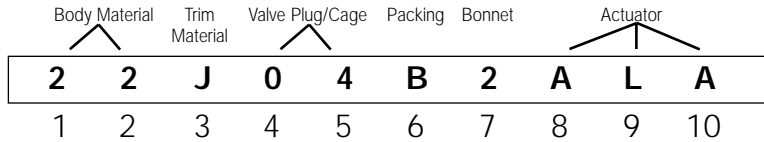
A basic hydronic system.

TYPICAL APPLICATION — MARINE



THREE WAY

DOT ORDER CODE



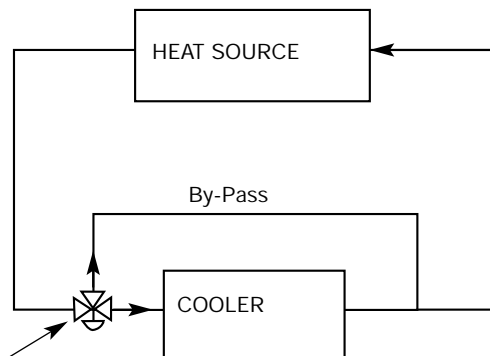
Body Material - Position 1 & 2 02 = Cast Iron 22 = Bronze	Bonnet - Position 7 2 = Regular (up to 450°F)
Trim Material - Position 3 A = Stainless Steel, Renewable Seat J = Monel	Actuator - Position 8, 9 & 10 U = 35 Iron Y = 35R Iron AL = 55 Iron ALA = 55A Iron GLA = 55AR Iron GL = 55R Iron BL = 85 Iron HL = 85R Iron
Valve Plug/Cage - Position 4 & 5 04 = Quick Opening – Q.O.	
Packing - Position 6 B = Teflon Chevron	

VALVE AVAILABILITY CHART

Body Material	ANSI Class	Size		Actuator Standard	Threaded Ends	Flanged Ends	
		Inches	mm			ANSI	DIN
CAST IRON	125	1	25	35(R)	X	Class 125 All Sizes	ND-10 ND-16 All Sizes
		1¼	32	35(R)	X		
		1½	40	35(R)	X		
		2	50	35(R)	X		
		2½	65	55A(R)	—		
3	80	55A(R)	—				
BRONZE	150	1	25	35(R)	—	Class 150 All Sizes	ND-10 ND-16 All Sizes
		1¼	32	35(R)	—		
		1½	40	35(R)	—		
		2	50	35(R)	—		
		2½	65	55A(R)	—		
3	80	55A(R)	—				

BY-PASS TEMPERATURE CONTROL

By-pass temperature control describes a simple method for controlling the temperature of one fluid with another fluid. A typical system consists basically of a heat source, a cooler, connecting fluid direction: the DOT 3-Way Control Valve.



DOT 3-Way Control Valve

DOT 3-Way Valve Specification Form



LESLIE CONTROLS, INC.

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CONTROL VALVE SPEC SHEET

Project/Job _____
Unit/Customer _____
P.O./LCO File # _____
Item _____
Contract _____
MFR Serial# _____

Data Sheet _____ of _____
Spec _____
Tag _____
Dwg _____
Service _____

Fluid Steam Liquid _____ Other _____ Crit Pres PC _____

Service Conditions

Flow #/hr gpm scfh _____

Inlet Pressure psig psia _____

Outlet Pressure psig psia _____

Temperature °C °F _____

Max Press/Temperature: _____ / _____

Density/MW/SG _____ / _____ / _____

Viscosity _____ CP

Vapor Pressure psia _____

Required C_v _____ Noise (dBA) Allowable _____

Max. Flow	Norm. Flow	Min. Flow

Line Info Pipe Size In _____ /Sch _____ Pipe Size Out _____ /Sch _____

Valve, Body & Bonnet

Body Size in. 1 1¼ 1½ 2 2½ 3

ANSI Class 125 150 Other _____

Body/Bonnet Material: Cast Iron Bronze

End Conn. Inlet/Outlet: Threaded Int. Flange Other _____

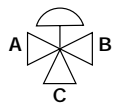
Packing Material: Teflon Chevron *Special EPDM Seals for 365°F

Trim Size 100% - Quick Opening
 SST Monel

Flow Path

Mixing (Converging) (choose one outlet port)

Diverting (Diverging) (choose two outlet ports)



	A	B	C
Outlet Port	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Close Port on Air Loss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Actuator

35 55 85 Converging Diverting None

Available Air Supply Pressure: Max. _____ Min. _____

Manual Override: Yes No Type _____

Solenoid Yes No Type _____ Voltage _____

Positioner Yes No Type _____ Pneu I/P

Switch Yes No Type _____

Air Set Yes No Type: _____ Range: _____

Other Accessories Yes No Type _____

Test ANSI/FCI Leakage Class: .1% of capacity (std)

THREE WAY

QUESTIONS? CALL LESLIE CONTROLS @ (813) 978-1000 PLEASE FAX COMPLETED FORM TO: (813) 977-0174