



INDUSTRIAL FLUID POWER COMPONENTS
AND SYSTEMS



L SERIES

Cartridge Valves



Overview



Specifications

VALVE	MODEL	TYPE	OPERATING PRESSURE	CAVITY	FLOW PATH	FLOW (GPM) ΔP=75psi
SOLENOID	LSV2-08-2NCP	Poppet, 2 Way, 2 Position	3625 psi	08-2	2	5
	LSV2-08-2NCS	Spool, 2 Way, 2 Position	3000 psi	08-2	2	4
	LSV2-08-2NOP	Poppet, 2 Way, 2 Position	3625 psi	08-2	2	6
	LSV2-10-2NCP	Poppet, 2 Way, 2 Position	3625 psi	08-2	2	12
	LSV2-10-2NCS	Spool, 2 Way, 2 Position	3625 psi	10-2	2	6
	LSV2-10-2NOP	Poppet, 2 Way, 2 Position	3625 psi	10-2	2	6
	LSV6-10-2NCSP	Poppet, 2 Way, 2 Position	5076 psi	10-2	2	13
	LSV6-16-2NCSP	Poppet, 2 Way, 2 Position	5076 psi	16-2	2	22
	LSV6-16-2NORP	Poppet, 2 Way, 2 Position	5076 psi	16-2	2	25
	LSV6-16-2NCRP	Poppet, 2 Way, 2 Position	5076 psi	16-2	2	27
	LSV6-16-2NOSP	Poppet, 2 Way, 2 Position	5076 psi	16-2	2	22
	LSV2-08-3	Spool, 3 Way, 2 Position	3000 psi	08-3	3	3
LSV2-10-3	Spool, 3 Way, 2 Position	3000 psi	10-3	3	4	
CHECK	LCV-08-P	Direct Acting, Poppet	3625 psi	08-2	2	5
	LCV-10-P	Direct Acting, Poppet	3625 psi	10-2	2	11
	LPC-10	Pilot to Open, Poppet	3625 psi	10-3	3	5
	LCODA-XAN	Pilot to Close, Poppet	5076 psi	T-11A	3	12
	LDPC-08	Dual Pilot-Operated	3000 psi	08-4	4	4
NEEDLE	LNV-08	Adjustable	3625 psi	08-2	2	4
SHUT OFF	LS-08	Adjustable	3625 psi	08-2	2	12
FLOW CONTROL	LFC-08	Adjustable	3625 psi	08-2	2	8
	LPFR-10	Regulator, Pressure-Compensated	3625 psi	10-3	3	
RELIEF	LRV-08	Adjustable, Direct Acting	3915 psi	08-2	2	4
	LBRV2-10	Adj., Direct Bi-Directional-Cross Port	3480 psi	10-2	2	16
	LPSRV2-08	Adj., Pilot Op., Sliding Spool	5075 psi	08-2	2	10
	LPSRV(2)-10	Adjustable, Pilot Operated	5075 psi	10-2	2	30
SHUTTLE	LSLV-08/10	Ball	3480 psi	10-3	3	4
PRESSURE REDUCING/RELIEVING	LDPR-10	Direct Acting	3000 psi	10-3	3	6
COUNTERBALANCE	LCBCA-LHN	Adjustable	4060 psi	T-11A	3	8
	LCBEG-LJN	Adjustable	5076 psi	T-2A	3	14

Solenoid Valves

2 Way, 2 Position, Spool/ Poppet Type - 08 Cavity



Specifications

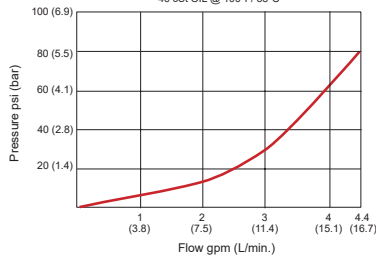
- Operating Pressure:** 3000-3625 psi (207-250 Bar)
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Coil Rating:** Continuous from 85% to 100% of rated voltage
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** ISO 16/12
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar)

Features

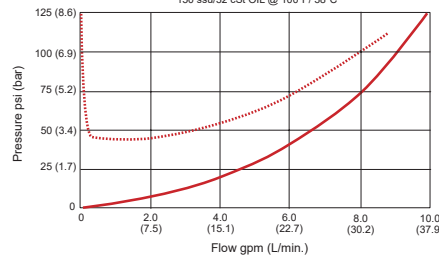
- Continuous Duty Solenoid
- Efficient Wet-Armature Construction
- Optional Coil Voltages and Terminations
- Industry Common Cavity
- Compact Size

Pressure Drop Curves

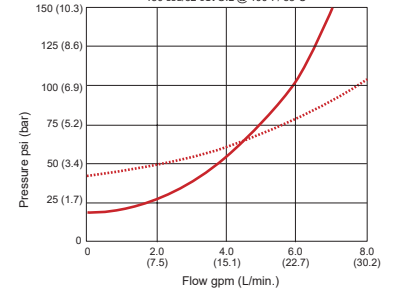
LSV2-08-2NCS Energized
46 cSt OIL @ 100°F/ 38°C



LSV2-08-2NOP 2 To 1 — 1 To 2
150 ssu/32 cSt OIL @ 100°F/ 38°C

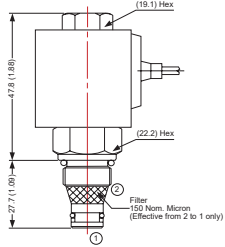


LSV2-08-2NCP 2 To 1 — 1 To 2
150 ssu/32 cSt OIL @ 100°F/ 38°C

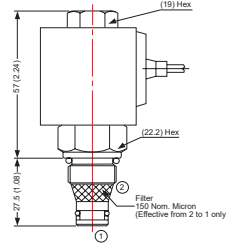


Dimensional Data

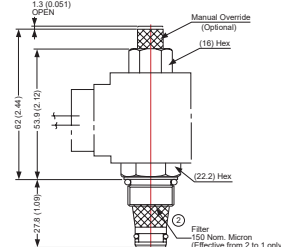
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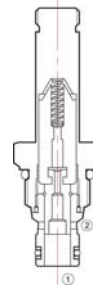
LSV2-08-2NOP



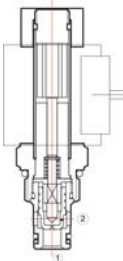
LSV2-08-2NCP



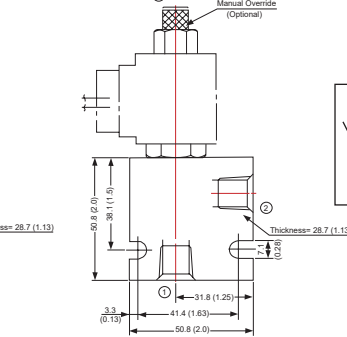
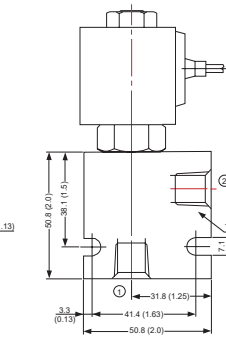
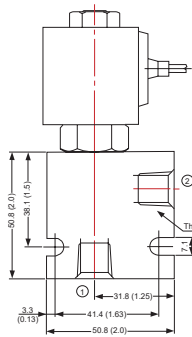
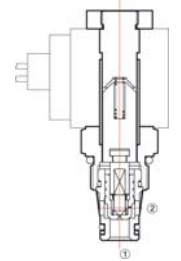
LSV2-08-2NCS



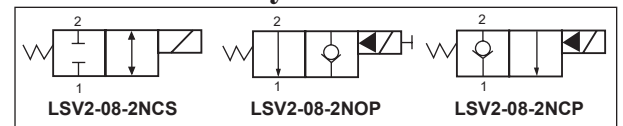
LSV2-08-2NOP



LSV2-08-2NCP

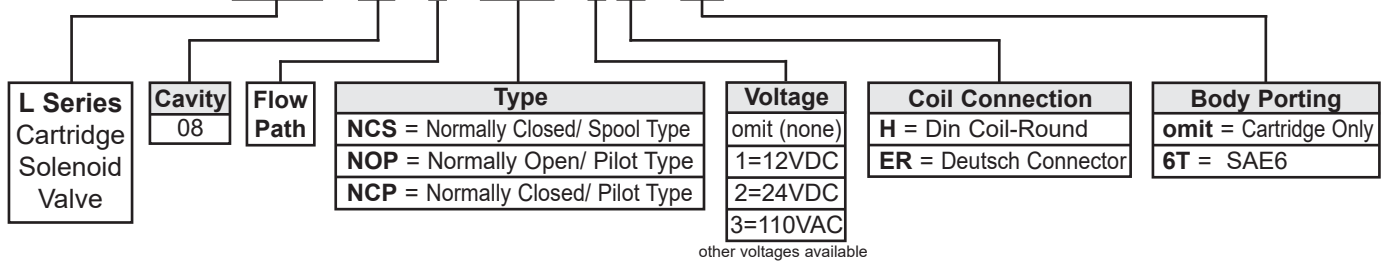


Symbols



Ordering Information

LSV2 - 08 - 2 - NCS - 3 H - 6T



Solenoid Valves

2 Way, 2 Position, Spool/ Poppet Type - 10 Cavity



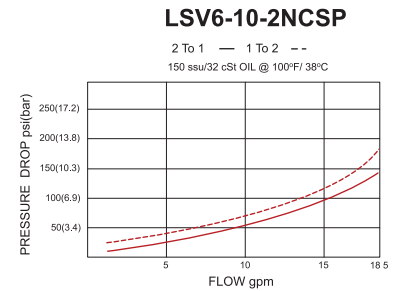
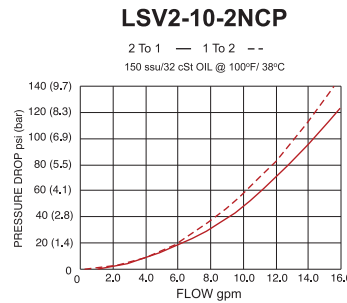
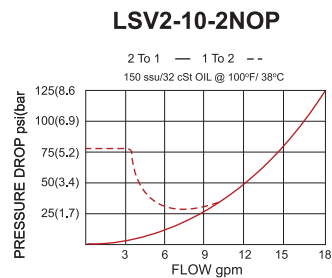
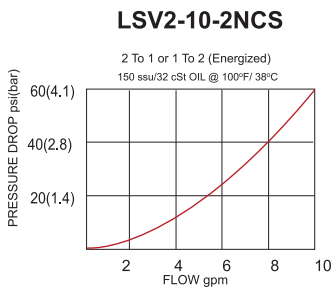
Specifications

- Max. Operating Pressure:** 5076 psi (350 Bar), Steel Body
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Coil Rating:** Continuous from 85% to 100% of rated voltage
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** ISO 16/12
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar); Steel rated at 5,076 psi (350 Bar)

Features

- Continuous Duty Solenoid
- Efficient Wet-Armature Construction
- Optional Coil Voltages and Terminations
- Industry Common Cavity
- Compact Size

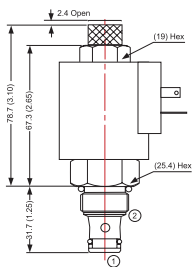
Pressure Drop Curves



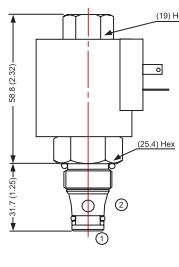
Units: mm (inch)

Dimensional Data

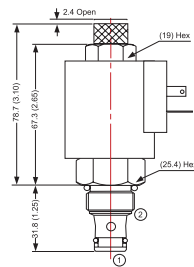
LSV2-10-2NCS



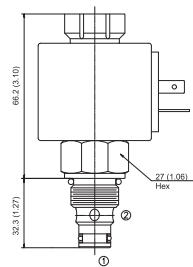
LSV2-10-2NOP



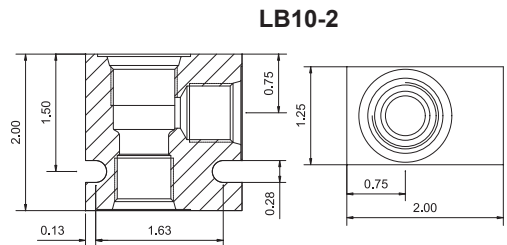
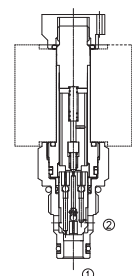
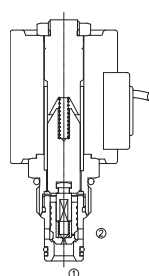
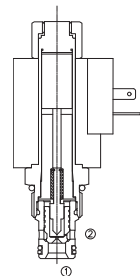
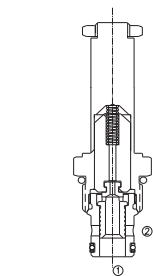
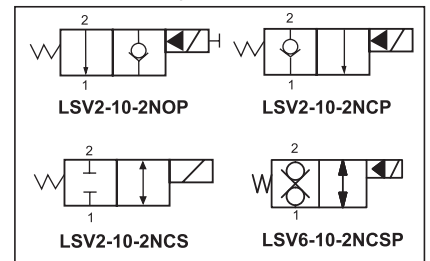
LSV2-10-2NCP



LSV6-10-2NCSP

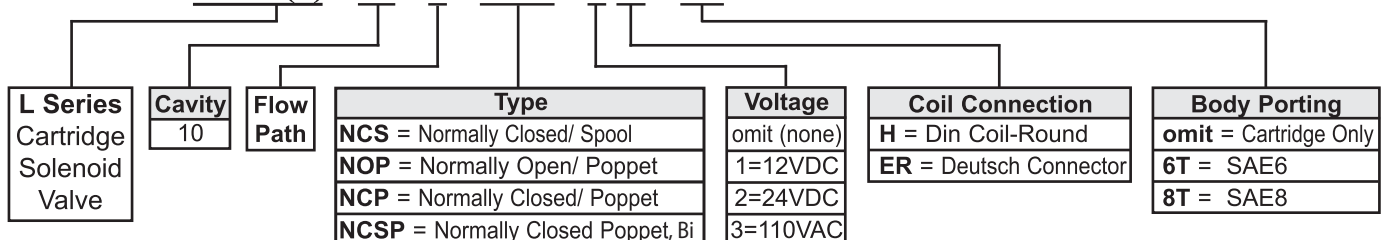


Symbols



Ordering Information

LSV2(6) - 10 - 2 - NCS - 3 H - 6T



other voltages available

Solenoid Valves

2 Way, 2 Position, Poppet Type - 16 Cavity



Specifications

- Max. Operating Pressure:** 5076 psi (350 Bar), Steel Body
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Coil Rating:** Continuous from 85% to 100% of rated voltage
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** ISO 16/12
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar); Steel rated at 5,076 psi (350 Bar)

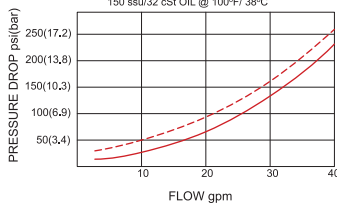
Features

- Continuous Duty Solenoid
- Efficient Wet-Armature Construction
- Optional Coil Voltages and Terminations
- Industry Common Cavity
- Compact Size

Pressure Drop Curves

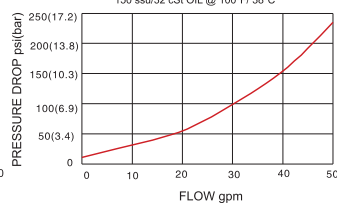
LSV6-16-2NOSP

2 To 1 (De-energized) —
1 To 2 (De-energized) - -
150 ssu/32 cSt OIL @ 100°F/ 38°C



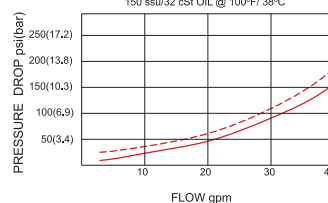
LSV6-16-2NORP

150 ssu/32 cSt OIL @ 100°F/ 38°C



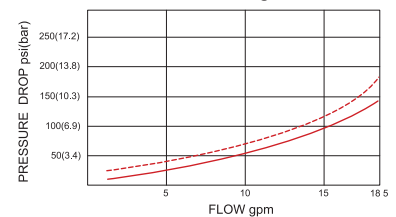
LSV6-16-2NCRP

2 To 1 (Energized) —
1 To 2 (De-energized) - -
150 ssu/32 cSt OIL @ 100°F/ 38°C



LSV6-16-2NCSP

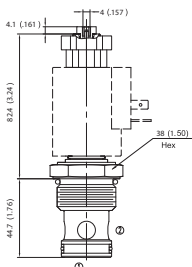
2 To 1 — 1 To 2 - -
150 ssu/32 cSt OIL @ 100°F/ 38°C



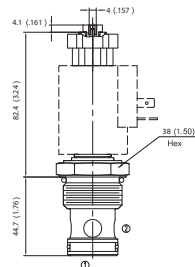
Units: mm (inch)

Dimensional Data

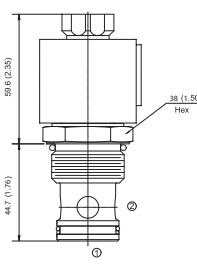
LSV6-16-2NOSP



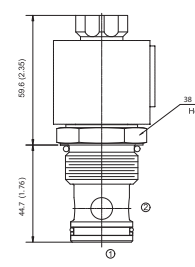
LSV6-16-2NORP



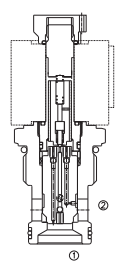
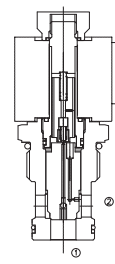
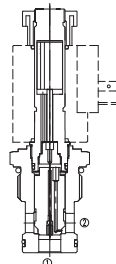
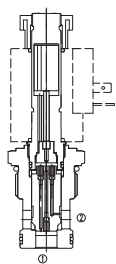
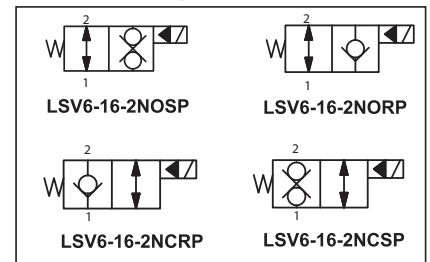
LSV6-16-2NCRP



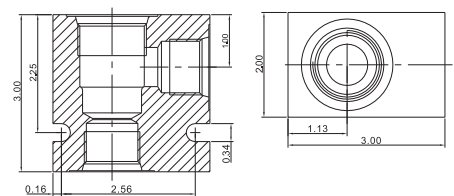
LSV6-16-2NCSP



Symbols

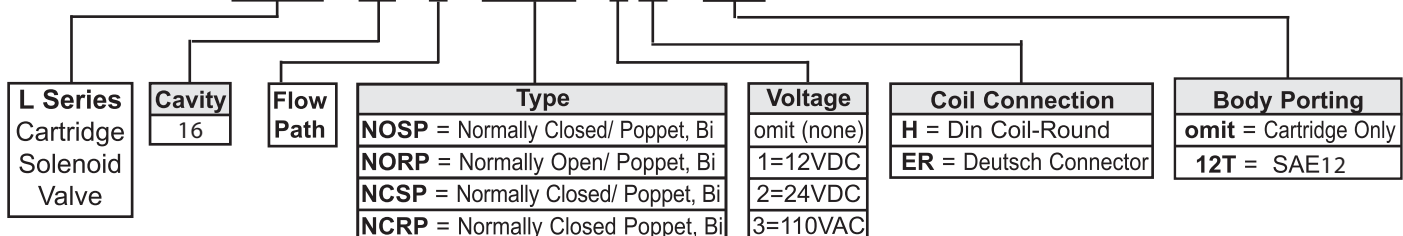


LB16-2



Ordering Information

LSV6 - 16 - 2 - NCSP - 3 H - 12T



other voltages available

Solenoid Valves

3 Way, 2 Position, Spool Type - 08 or 10 Cavity



Specifications

- Operating Pressure:** 3000 psi (207 Bar)
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Coil Rating:** Continuous from 85% to 100% of rated voltage
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** ISO 16/12
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar)

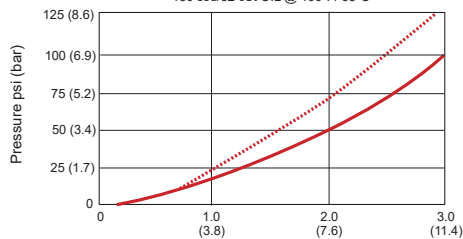
Features

- Continuous Duty Solenoid
- Efficient Wet-Armature Construction
- Optional Coil Voltages and Terminations
- Manual Override Option
- Industry Common Cavity
- Compact Size

Pressure Drop Curves

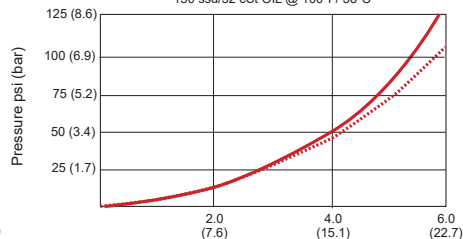
LSV2-08-3

3 To 1 (Energized)
2 To 1 (De-Energized) ———
150 ssu/32 cSt OIL @ 100°F/ 38°C



LSV2-10-3

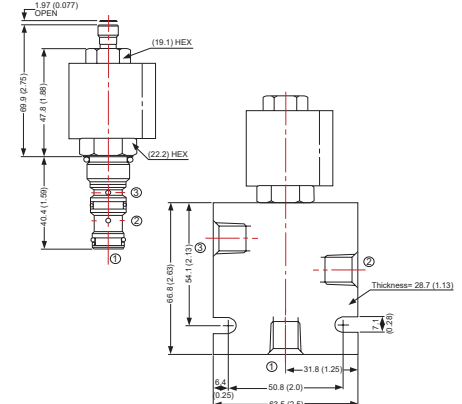
3 To 1 (Energized) ———
2 To 1 (De-Energized)
150 ssu/32 cSt OIL @ 100°F/ 38°C



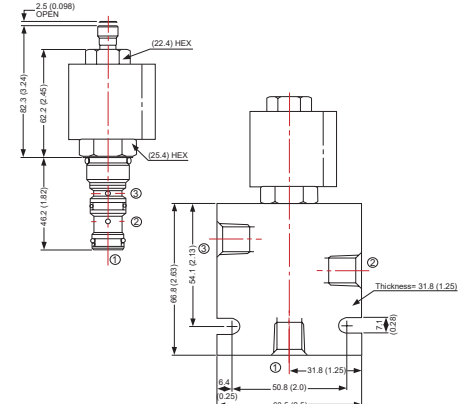
Dimensional Data

Units: mm (inch)

LSV2-08-3



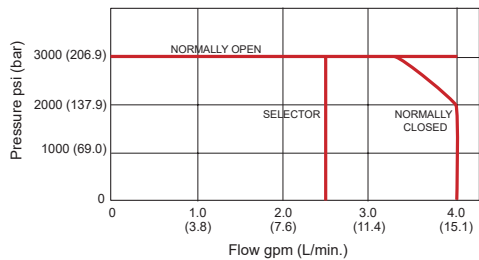
LSV2-10-3



Performance Characteristics

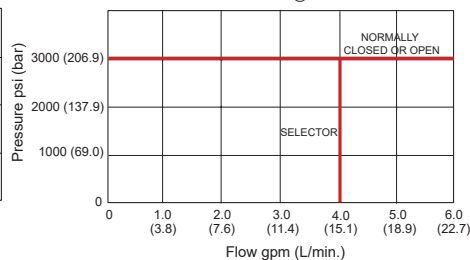
LSV2-08-3

150 ssu/32 cSt OIL @ 100°F/ 38°C

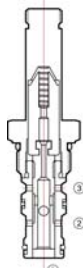


LSV2-10-3

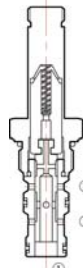
150 ssu/32 cSt OIL @ 100°F/ 38°C



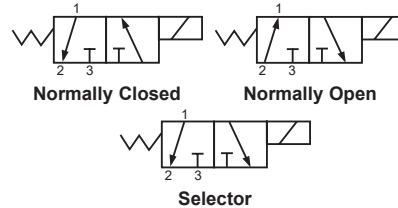
LSV2-08-3



LSV2-10-3

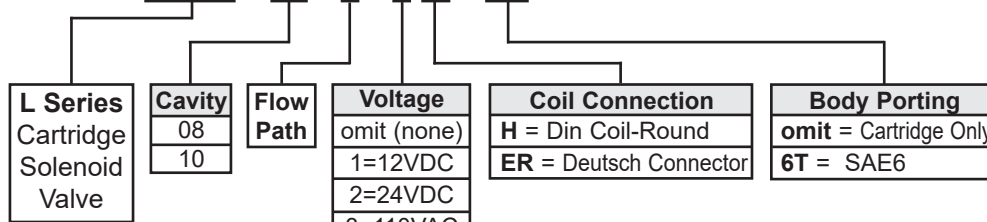


Symbols



Ordering Information

LSV2 - 10 - 3 - 3 H - 6T



other voltages available

Check Valves

SAE6 & SAE8



Specifications

- Operating Pressure:** 3000-3625 psi (207-250 Bar)
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Critical Application:** ISO 16/12
Filtration: Non-Critical Application: ISO 19/15

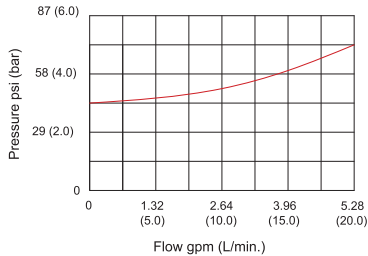
Features

- Hardened Poppet and Seat for Long Life
- Low Leakage
- Industry Common Cavity
- Compact Size

Pressure Drop Curves

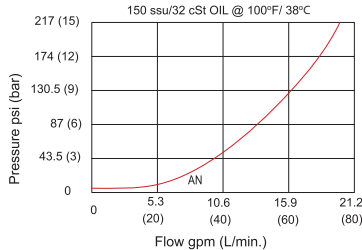
LCV-08-P

1 To 2 (Free Flow)
150 ssu/32 cSt OIL @ 100°F/ 38°C



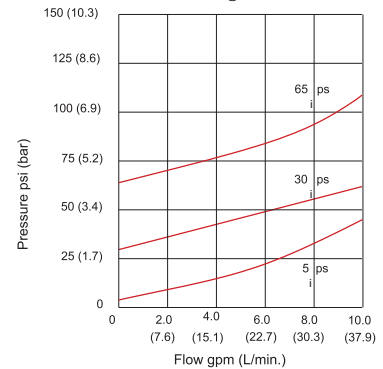
LCODA-XAN

150 ssu/32 cSt OIL @ 100°F/ 38°C



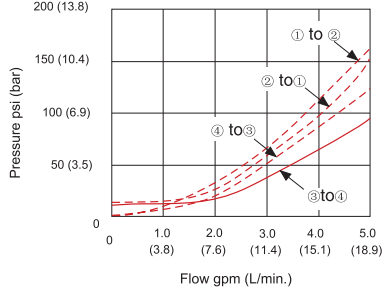
LCV-10-P

1 To 2 (Free Flow)
150 ssu/32 cSt OIL @ 100°F/ 38°C



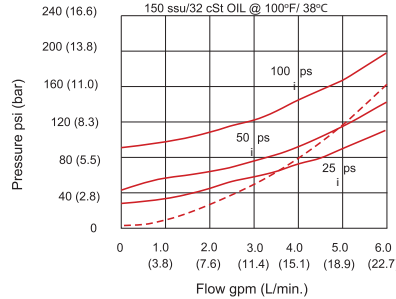
LDPC-08

150 ssu/32 cSt OIL @ 100°F/ 38°C

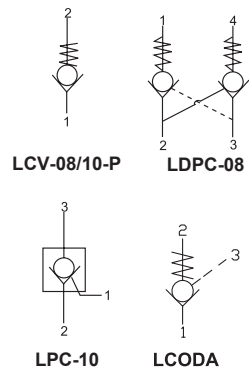


LPC-10

2 To 3 (Free Flow)
3 To 2 (Pilot Open Typ.)
150 ssu/32 cSt OIL @ 100°F/ 38°C

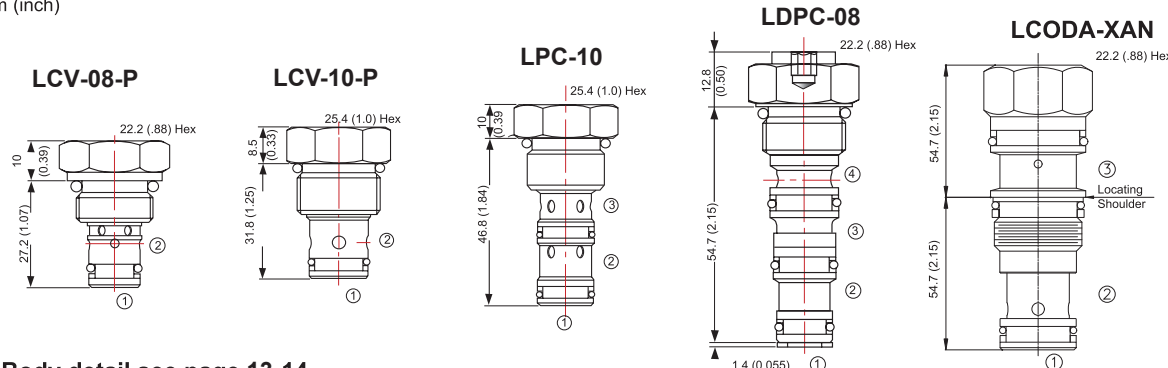


Symbols



Dimensional Data

Units: mm (inch)



Body detail see page 13-14

Ordering Information

LCV - 08 - P - 10 - 6T

Type	Cavity	Poppet Type	Function	Body Porting
LCV = Direct-Acting/ Poppet Type	08		4 = 4 psi cracking	omit = Cartridge Only
LPC = Pilot to Open/ Poppet Type	10		10 = 10 psi cracking	6T = SAE6
LDPC = Dual Pilot Operated			50 = 50 psi cracking	8T = SAE8

LCODA-XAN
LCODA-XAN-8T
Pilot to Close Check Valve

Flow Control Valves

SAE6 & SAE8



Specifications

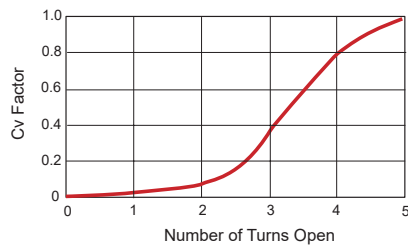
- Operating Pressure:** 3625 psi (250 Bar)
- Temperature:** -22°F - +250°F (-30°C - +120°C)
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** Critical Application: ISO 16/12 Non-Critical Application: ISO 19/15
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar)

Features

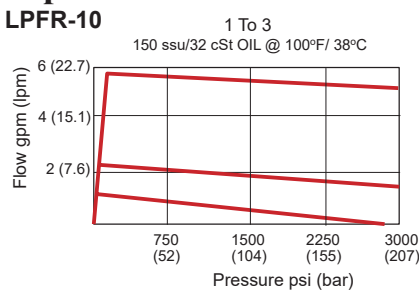
- Hardened Seat for Long Life
- Industry Common Cavity
- Compact Size

Pressure Drop Curves

LFC-08

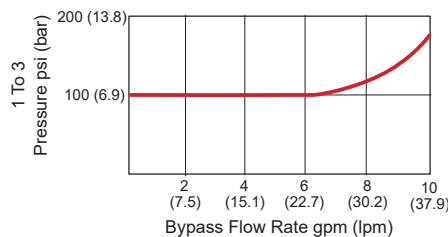


LPFR-10



$$\text{FLOW IN GPM} = \frac{C_v \sqrt{P1-P2}}{G_f}$$

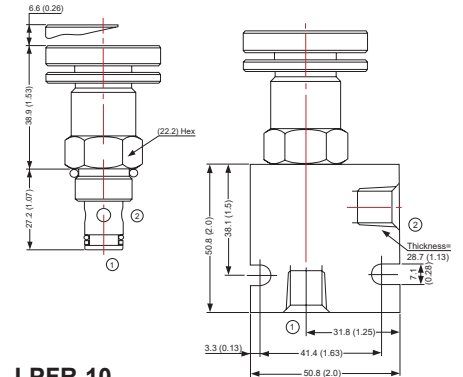
Cv=Flow Coefficient
P1=Inlet Pressure (psi)
P2=Outlet Pressure (psi)
Gf=specific gravity of medium at operating temperature in F.



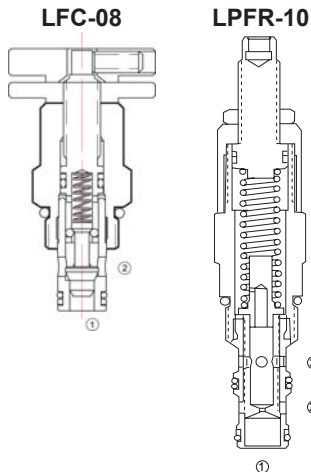
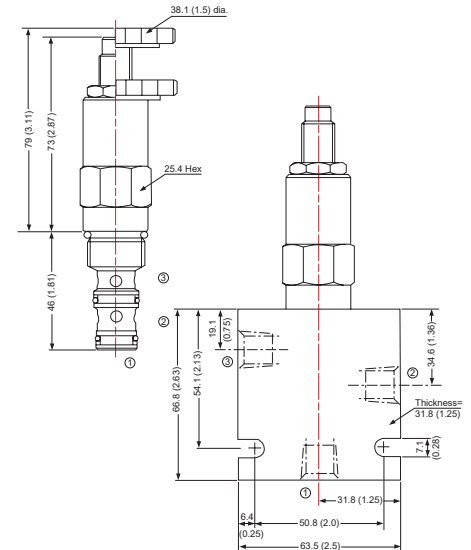
Dimensional Data

Units: mm (inch)

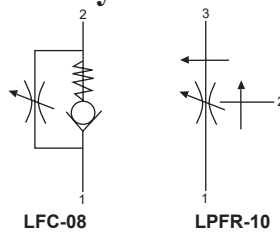
LFC-08



LPFR-10



Symbols



Ordering Information

LFC - 08 - K - 6T

Type	Cavity	1-1/2" Dia. Knob	Body Porting
LFC = Adjustable, Flow Control Valve	08		omit = Cartridge Only
LPFR = Regulator, Pressure Compensated Flow Control Valve	10		6T = SAE6
			8T = SAE8

Needle, Shut Off, Shuttle Valves

SAE6 & SAE8



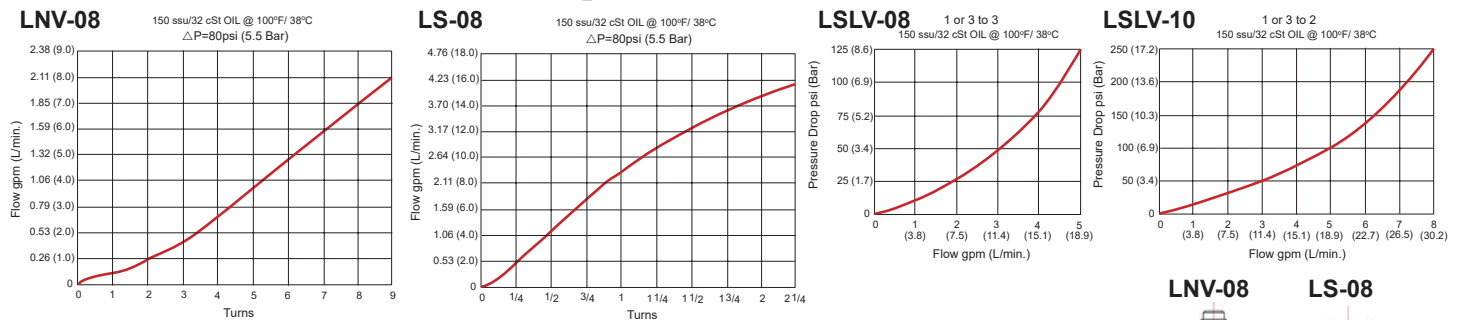
Specifications

- Operating Pressure:** 3000 psi (207 Bar)
- Temperature:** -15°F - +250°F (-26°C - +120°C)
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** Critical Application: ISO 16/12
Non-Critical Application: ISO 19/15
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar)

Features

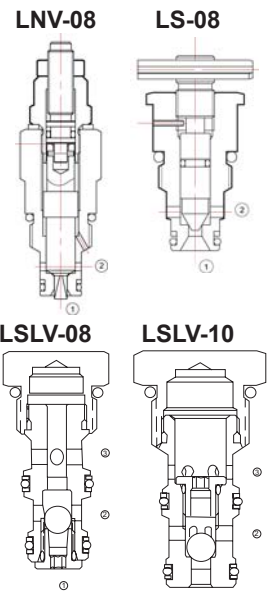
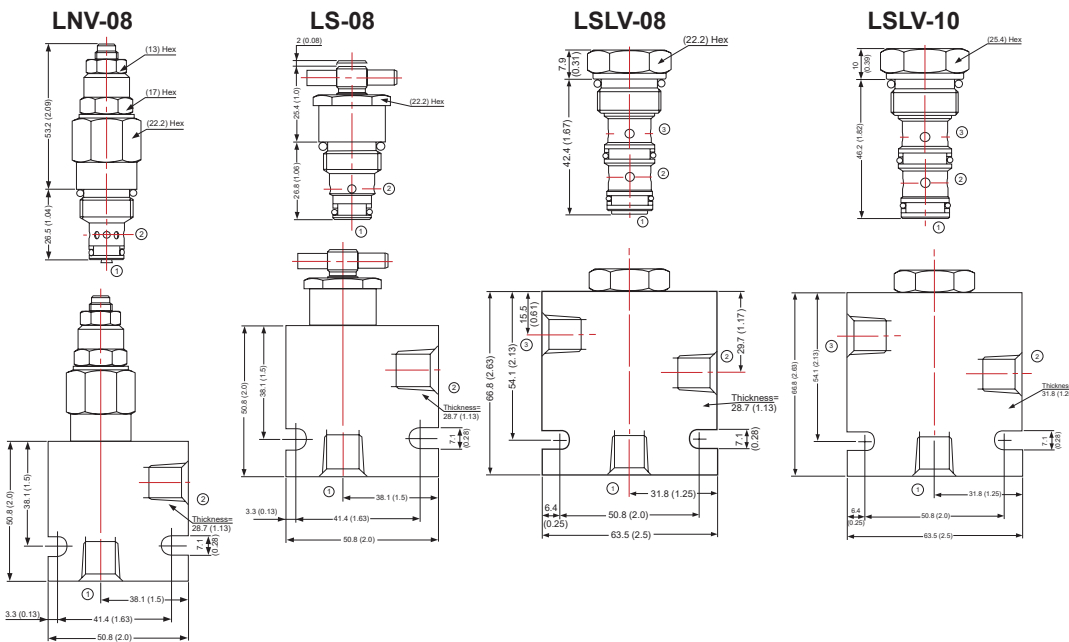
- Hardened Seat for Long Life
- Low Leakage
- Industry Common Cavity
- Compact Size

Pressure Drop Curves/ Flow Characteristics

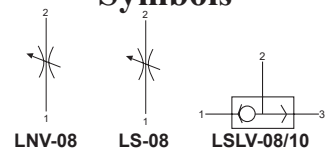


Dimensional Data

Units: mm (inch)



Symbols



Ordering Information

LNV - 08 - 6T

Type	Cavity	Body Porting
LNV = Adjustable, Needle Valve	08	omit = Cartridge Only
LS = Adjustable, Shut Off Valve	10	6T = SAE6
LSLV = Ball Type, Shuttle Valve		8T = SAE8

Pressure Reducing/ Relieving Valves

SAE8



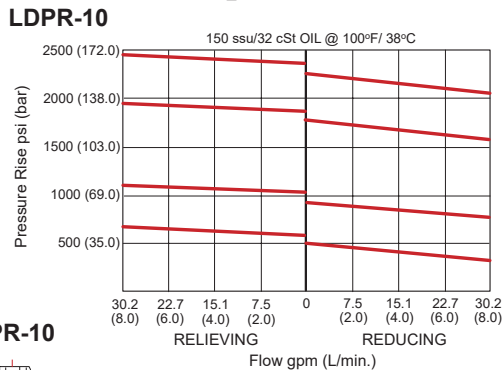
Specifications

- Operating Pressure:** 3000 psi (207 Bar)
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Recommended Filtration:** Critical Application: ISO 16/12
Non-Critical Application: ISO 19/15
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar)

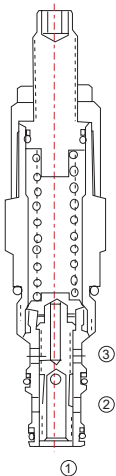
Features

- Adjustments Cannot be Backed Out of the Valve
- Adjustments Prohibit Springs from Going Solid
- Optional Spring Ranges to 2250 psi (155 Bar)
- Industry Common Cavity

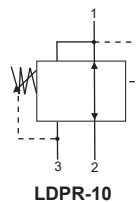
Pressure Drop Curves



LDPR-10



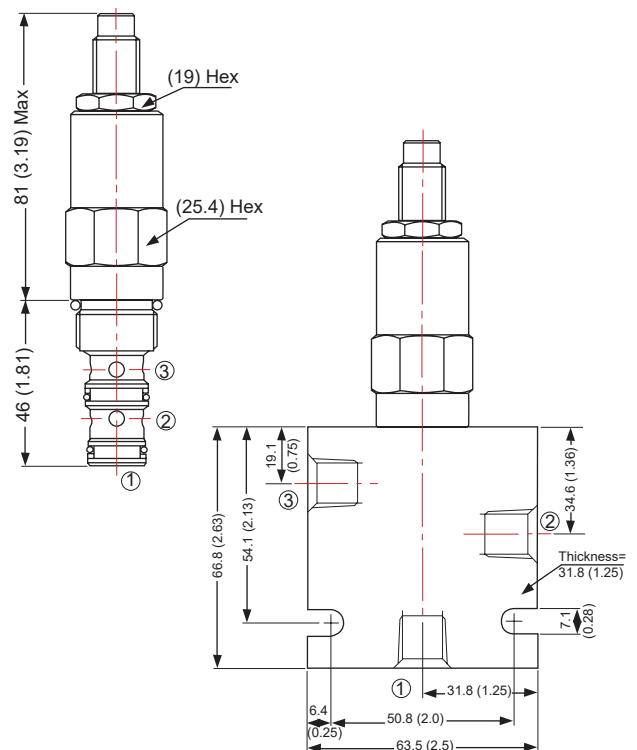
Symbols



Dimensional Data

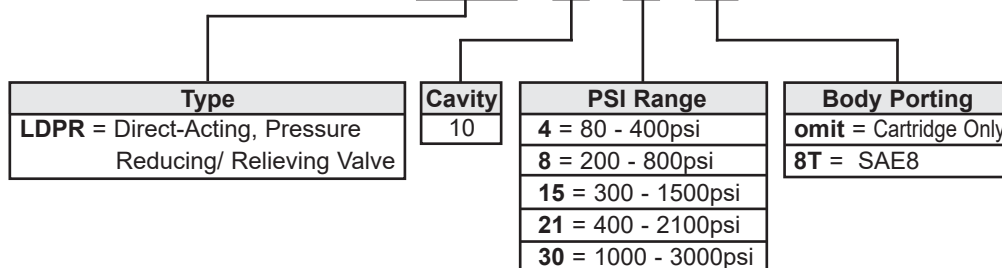
Units: mm (inch)

LDPR-10



Ordering Information

LDPR - 10 - 21 - 8T



Counterbalance Valves

SAE6 & SAE8



Specifications

- Load Holding Pressure:** 3100 psi (215 Bar)
- Temperature:** -30°F - +250°F (-35°C - +120°C)
- Fluids:** Mineral based fluids. For other fluid compatibility consult factory.
- Body Material:** Anodized 6061T6 aluminum alloy rated at 3000 psi (207 Bar)

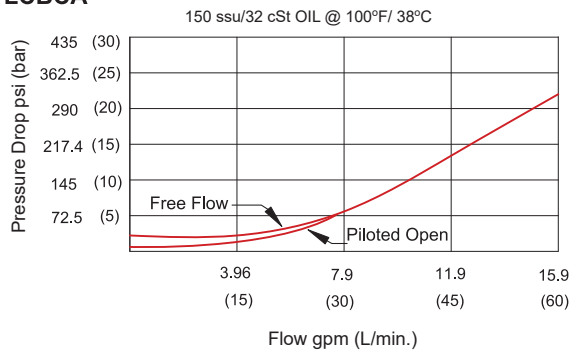
Features

- Counterbalance Valves Should be Set at Least 1.3x the Maximum Load Induced Pressure
- Turn Adjustment Clockwise to Decrease Setting and Release Load
- Backpressure at Port 2 Adds to the Effective Relief Setting at a Ratio of: 1 + the Pilot x the Backpressure

Pressure Drop Curves

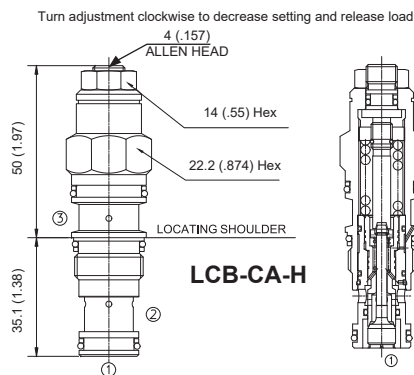
Dimensional Data

LCBCA

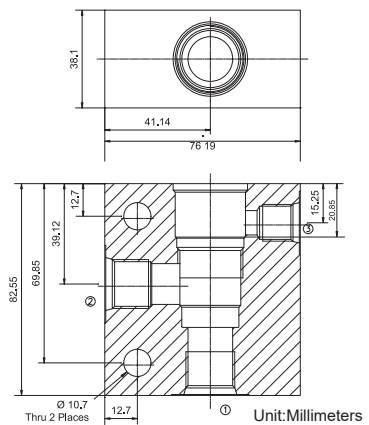


Units: mm (inch)

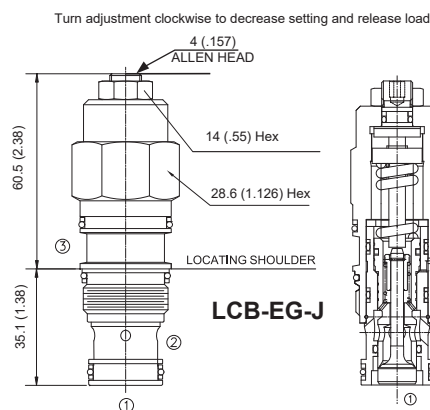
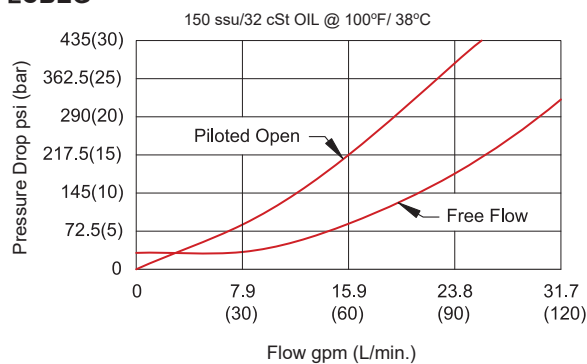
Unit: Millimeters



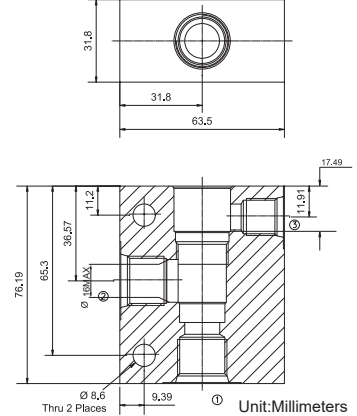
LECJ (T-11A)



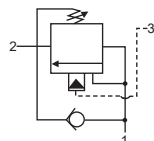
LCBEG



LBCL (T-2A)



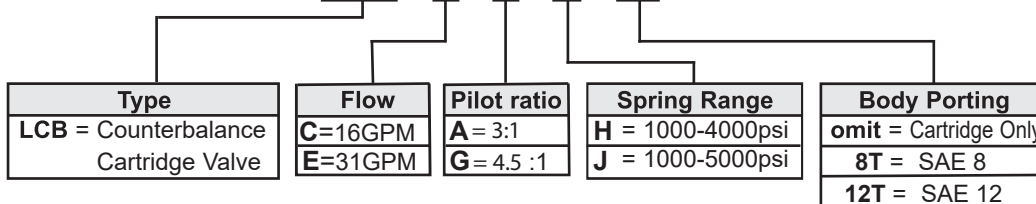
Symbol



*Dual cavity body available 3/4" (#12) SAE: LYAL-S (Pg. 13)

Ordering Information

LCB - C - A - H - 8T



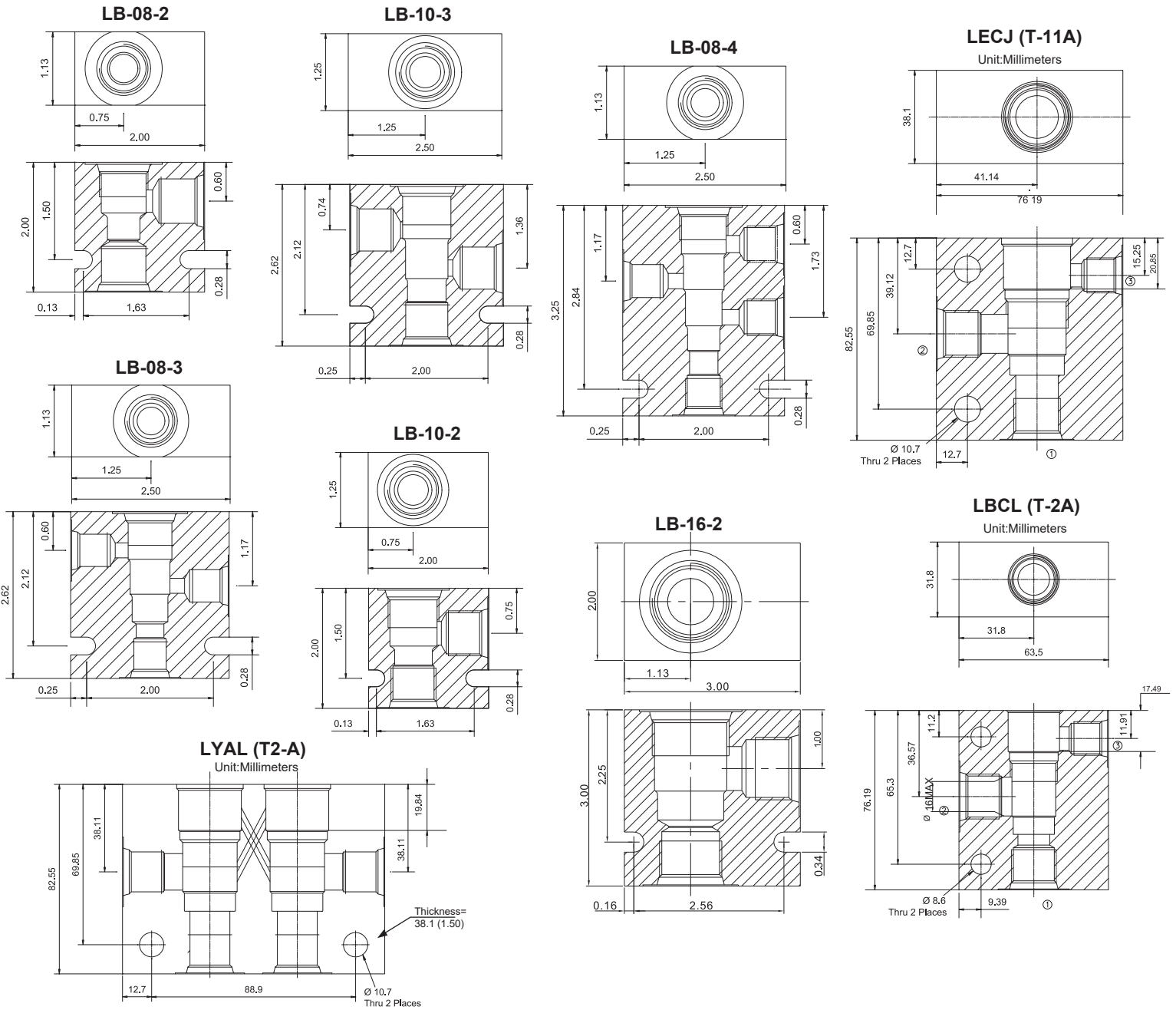
STOCK VALVES
LCBCA-H-8T
LCBEG-J-12T

Line Bodies

Units: inch

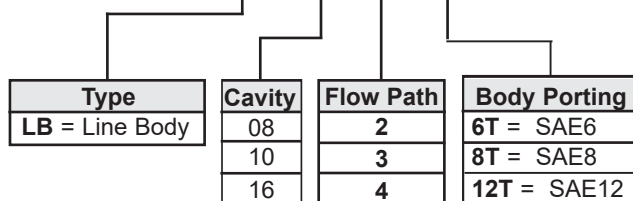
Size: 08,10,16,T-2A, & T-11A

Dimensional Data



Ordering Information

LB - 08 - 2 - 6T



LECJ, LBCL, LYAL

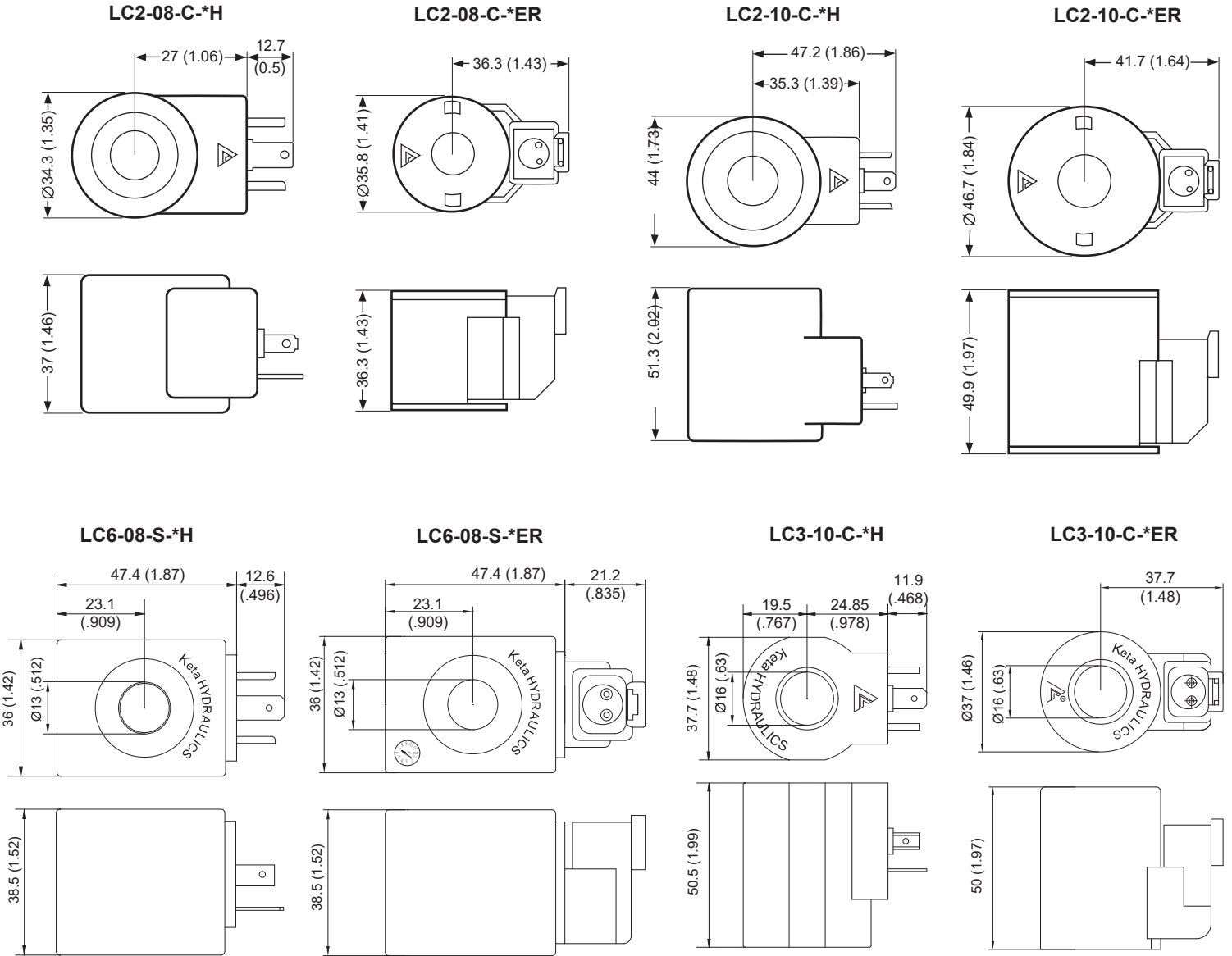
Line Body for CB/
P.O. Check Valves

Solenoid Coils

SIZE 08 & 10

Dimensional Data

Units: mm (inch)



Ordering Information



LC2-08-C-3H

LC2 - 08 - C - 2 H

Type	Series	Style	Voltage	Connection
LC2 = Solenoid Coil	08	C = Cylindrical	1 = 12VDC	H = Din Coil
LC3 = Solenoid Coil	10	S = Square	2 = 24VDC	ER = Deutsch Connector
LC6 = Solenoid Coil			3 = 110VAC	
			4 = 220VAC	