BRAND
Hydraulics Co.

Made in the Heartland of America
Serving the World

Engineering & Manufacturing Solutions

LV

Loader Directional Control Valve

Specifications:

- 10 gpm (38 lpm) Nominal Capacity

- Rated up to 4000 psi (275 bar)

- Port Sizes:
    - Inlet/Outlet #8 SAE
    - Work Ports #6 or #8 SAE

- Weighs 10.9 lbs. (4.9 kg)

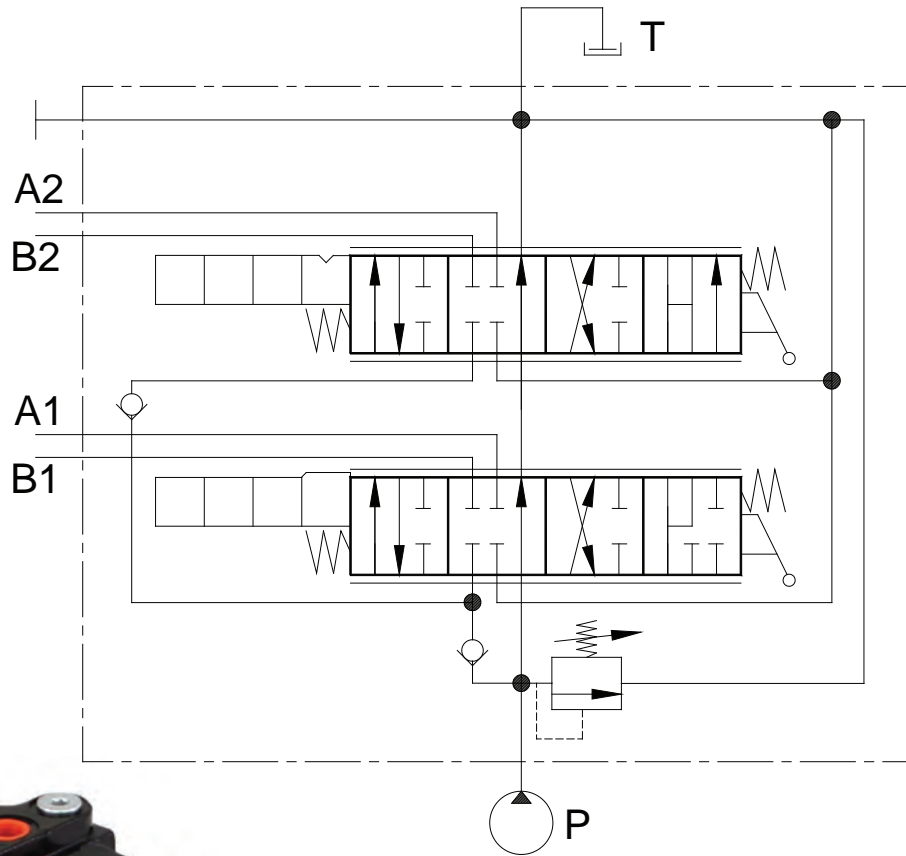- 25 – Micron Filtration Recommended

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LV
Loader Directional Control Valve

LV22RFSTKLB

T

A2
B2

A1
B1

P

MATERIALS:
- Cast Iron Body
- Buna N O'Rings
- IOSSO Plated Steel Spools
- Black Nylon Ball Knob

FEATURES:
- O'RING PORTS to eliminate leakage.
- FOURTH POSITION REGEN allows cylinder to rapidly extend.
- POWER BEYOND CAPABILITY to fit your multi valve circuits.
- PRECISION GROUND IOSSO PLATED SPOOLS that assure long life.
- INDIVIDUAL DROP LOAD CHECKS prevent the load from dropping when the spool is shifted.
- FOURTH POSITION FLOAT allows spool movement to a fourth position and makes all ports common to each other (last spool only).

LV – GENERAL INFORMATION:

The Brand LV22, loader directional control valve, is a superbly designed two spool mono-block valve suitable for Front End Loaders. The LV22 offers two parallel, tandem center 4-way work sections available with two of the following spool actions: float, regenerative or spring-to-center. The valve is also field convertible to closed center or power beyond with the appropriate cartridge.

SPOOL TYPE
– The Tandem center 4-way (T, in model code) powers a cylinder or a motor in both directions. Regen 4-way (R, in model code) acts just like a Tandem center spool in the standard three positions, but also has a fourth position that allows for rapid extension of a cylinder (uses FS spool action). For more information, see the Spool Schematics on next page.

HANDLE OPTIONS –
- **Standard joystick handle** (A, in model code) is used to actuate two adjacent spools with one handle.
- **Optional joystick handles** (A1, A2 & A3, in model code) also actuate two adjacent spools with one handle, but have different actuation patterns (See joystick diagrams on further pages).
- **Enclosed lever handle** (L, in model code) pressurizes the "B" port when the handle is pushed towards the valve body and is convertible from the vertical to the horizontal position.
- **No actuator** (N, in model code) is used when it is necessary to connect the spool to an external actuator.

SPOOL ACTION –
- **Spring-to-center** (S, in model code) returns the handle to neutral when the handle is released.
- **Fourth position spring centering** (FS, in model code) is similar to spring-to-center except it has a fourth position that allows a cylinder to rapidly extend (must use Regen spool).
- **Fourth position float** (K, in model code) is similar to spring-to-center except it has a fourth position detent that makes all ports common to each other (used with tandem center spool only).

OPTIONS -
Power beyond (W, in model code) offers high pressure carryover for valves downstream. The LV22 valve is also field convertible to power beyond with the LV2-W power beyond cartridge kit. Closed center (C, in model code) blocks the neutral flow path and is required in pressure compensating, i.e. closed center systems. The LV22 valve is also field convertible to closed center with the LV2-C closed center cartridge kit. Adjustable relief (B, in model code) is factory preset at 2000psi, but is adjustable from 1200 to 3100 psi.
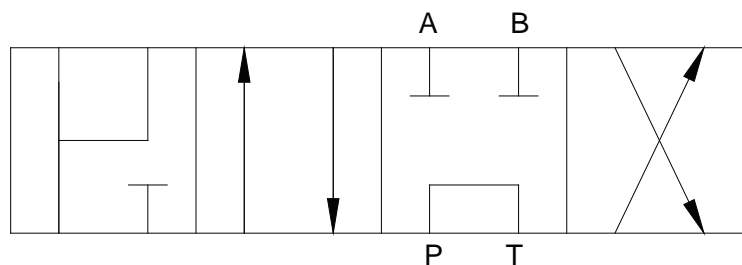
For additional pressure setting ranges:
- 500-1200 PSI use spring P/N "S065"
- 3100-4000 PSI use spring P/N "S064"
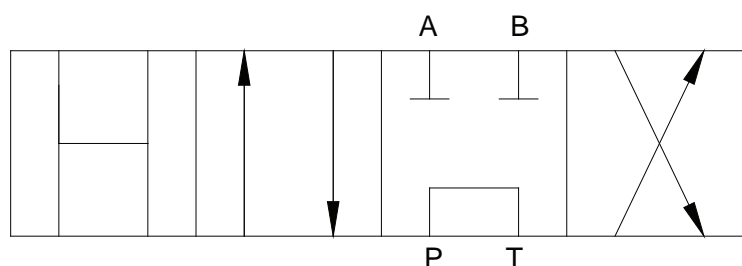
LV

Loader Directional Control Valve

SPOOL SCHEMATICS:
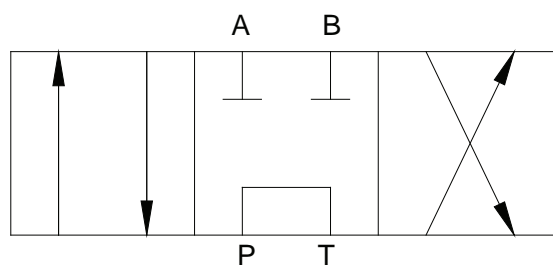
Tandem Center (T) - Powers cylinder or motor in both directions. Pump unloads to tank when spool is in neutral. Cylinder or motor blocked when spool in neutral.
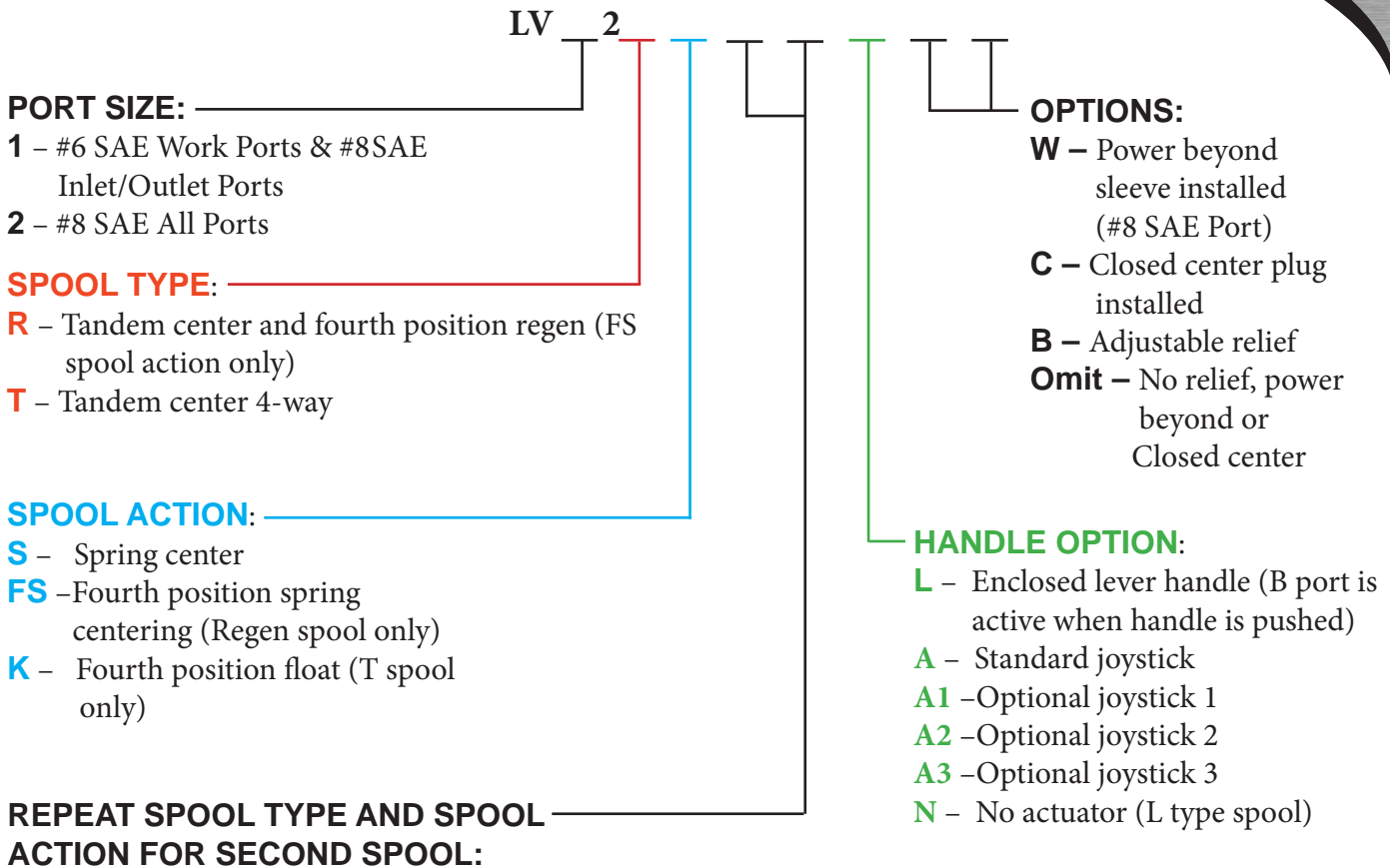

Regen (R) - Same as Tendem spool in standard three positions. Fourth position allows for rapid extension of cylinder.

Float (K) - Same as Tendem spool in standard three positions. Detented fourth position allows cylinder to move or motor to rotate when spool is detented.
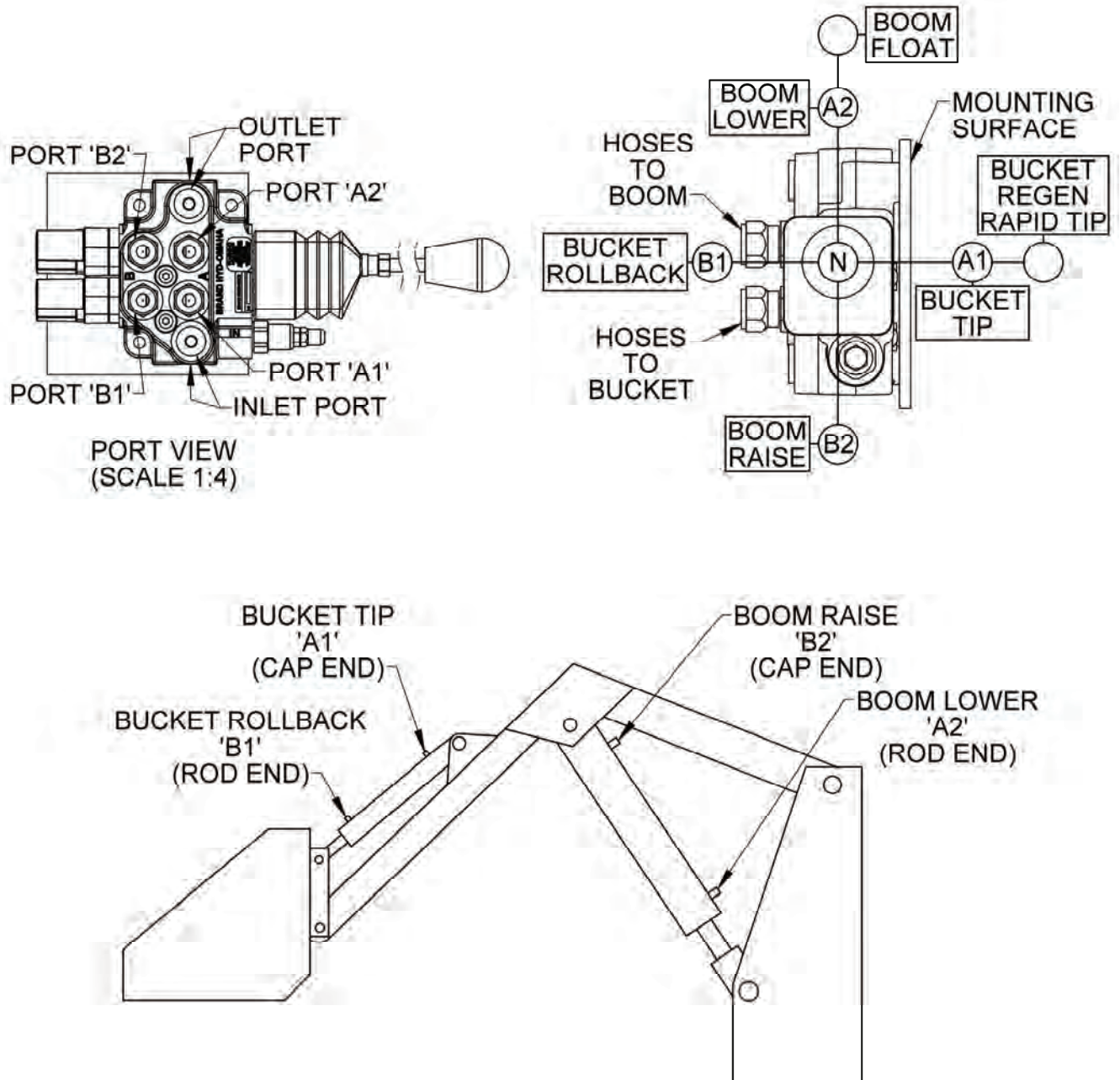
LV – CREATING A MODEL CODE FOR LV'S:

LV __ 2 __

PORT SIZE:
1 – #6 SAE Work Ports & #8SAE
     Inlet/Outlet Ports
2 – #8 SAE All Ports

SPOOL TYPE:
R – Tandem center and fourth position regen (FS
     spool action only)
T – Tandem center 4-way

SPOOL ACTION:
S – Spring center
FS – Fourth position spring
     centering (Regen spool only)
K – Fourth position float (T spool
     only)

**REPEAT SPOOL TYPE AND SPOOL
ACTION FOR SECOND SPOOL:**

OPTIONS:
W – Power beyond
     sleeve installed
     (#8 SAE Port)
C – Closed center plug
     installed
B – Adjustable relief
Omit – No relief, power
     beyond or
     Closed center

HANDLE OPTION:
L – Enclosed lever handle (B port is
     active when handle is pushed)
A – Standard joystick
A1 – Optional joystick 1
A2 – Optional joystick 2
A3 – Optional joystick 3
N – No actuator (L type spool)

LV – EXAMPLES OF COMMON MODEL CODES:

LV22RFSTKABW…..… Two spool valve, tandem center fourth position regen spool (R), fourth position spring center (FS), tandem center (T), fourth position float (K), joy stick assembly (A), adjustable relief (B) 2000 psi (138 bar) setting and power beyond (W).

LV22TSTKLB………….. Two spool valve, tandem center (T), spring centering (S), tandem center (T), fourth position float (K), enclosed handle assembly (L) and adjustable relief (B) 2000 psi (138 bar) setting.
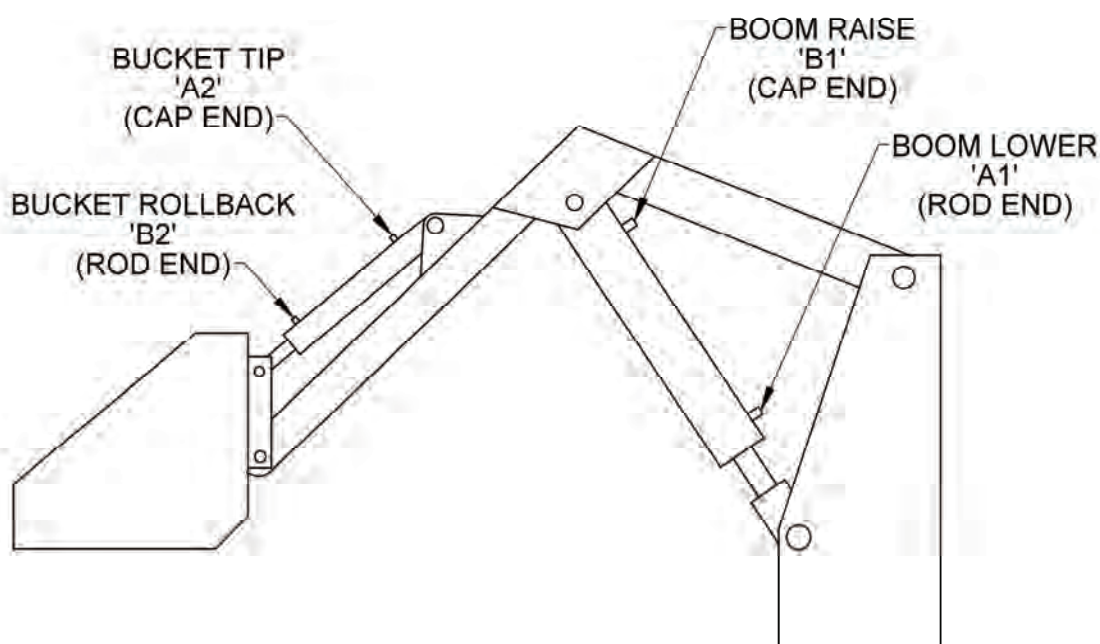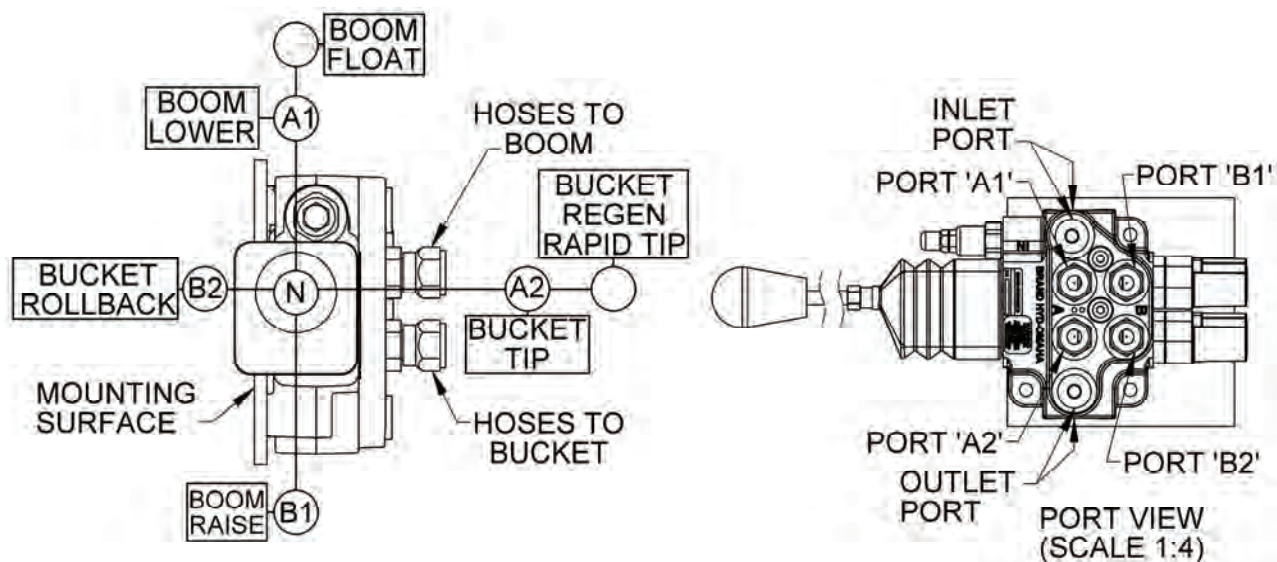
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LV - JOYSTICK MOVEMENT SCHEMES:

LV22**RFSTKA**B (SHOWN) & LV22**TSTKA**B

PORT 'B2'
OUTLET PORT
PORT 'A2'
PORT 'A1'
PORT 'B1'
INLET PORT

PORT VIEW
(SCALE 1:4)

BOOM FLOAT
BOOM LOWER A2
MOUNTING SURFACE
HOSES TO BOOM
BUCKET REGEN RAPID TIP
BUCKET ROLLBACK B1
N
A1
BUCKET TIP
HOSES TO BUCKET
BOOM RAISE B2

BUCKET TIP 'A1' (CAP END)
BUCKET ROLLBACK 'B1' (ROD END)
BOOM RAISE 'B2' (CAP END)
BOOM LOWER 'A2' (ROD END)

LV - JOYSTICK MOVEMENT SCHEMES: - Continued:

LV22**TKRFSA1**B (SHOWN) & LV22**TKTSA1**B

LV - JOYSTICK MOVEMENT SCHEMES: - Continued:

LV22**RFSTKA2**B (SHOWN) & LV22**TSTKA2**B
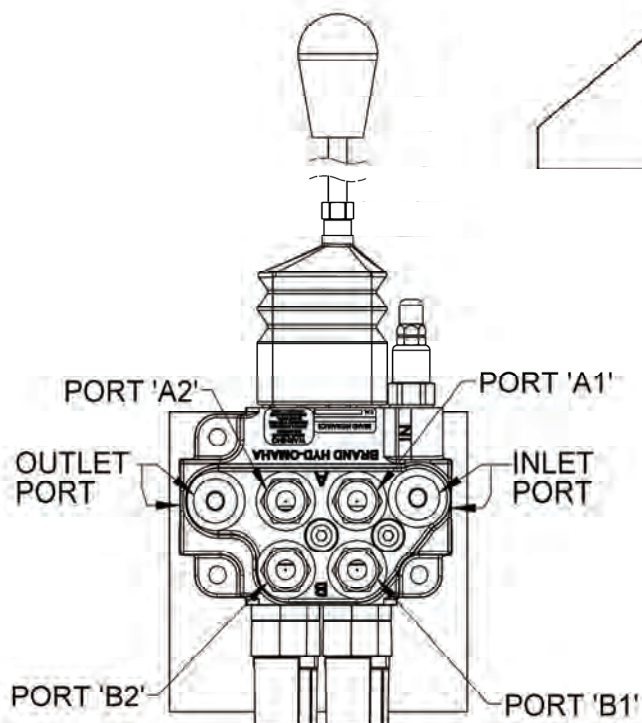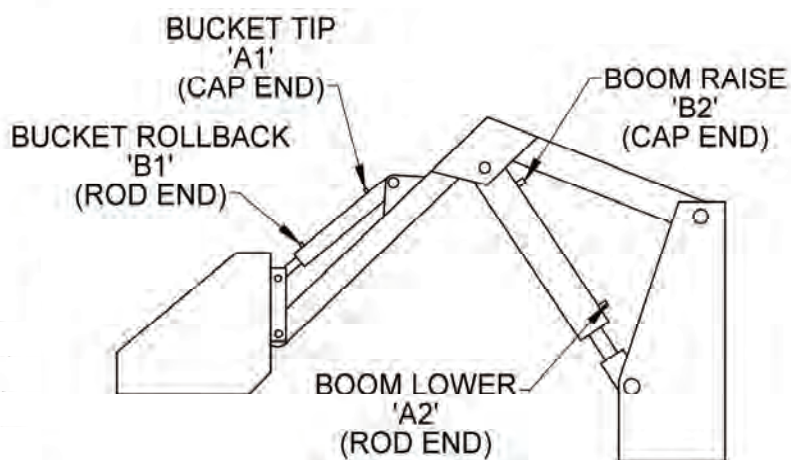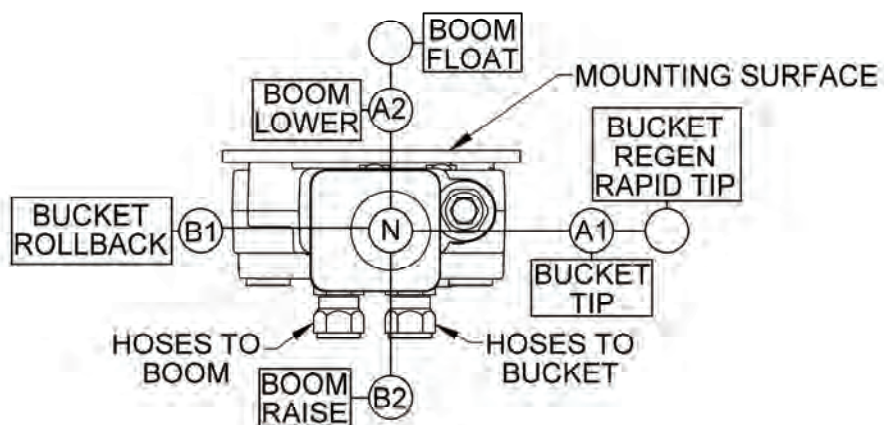
LV - JOYSTICK MOVEMENT SCHEMES: - Continued:

LV22**TKRFSA3**B (SHOWN) &LV22**TKTSA3**B

LV

Loader Directional Control Valve
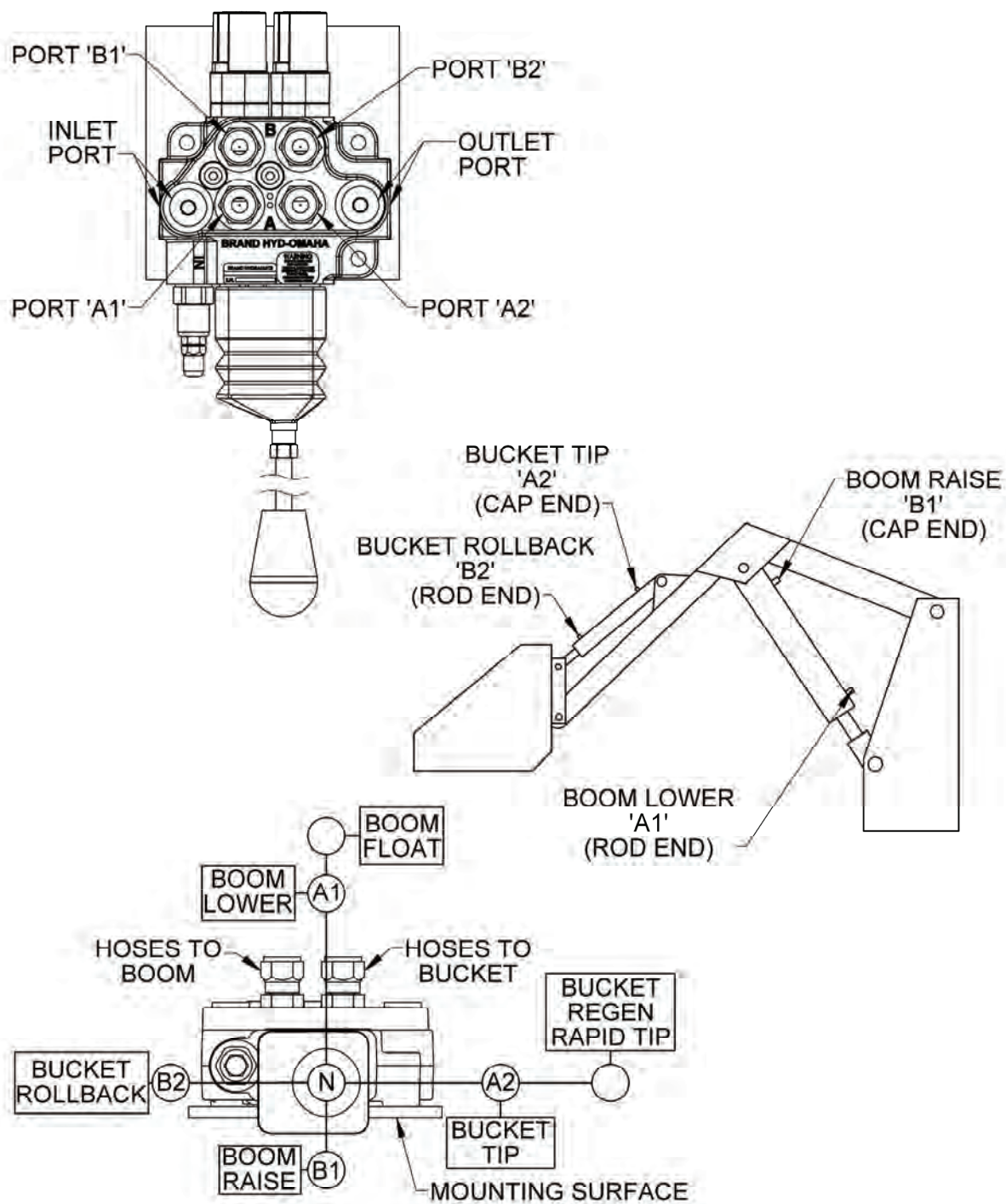
LV – COMPLETE LIST OF OPTIONS AND ACCESSORIES:

LV2-C………………….....Closed center cartridge kit.
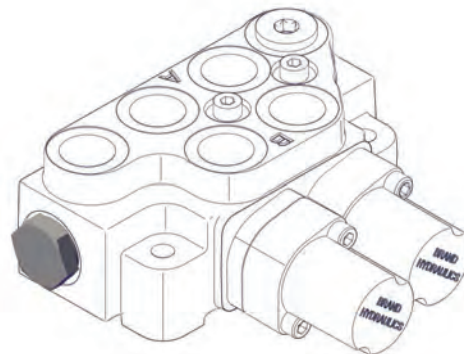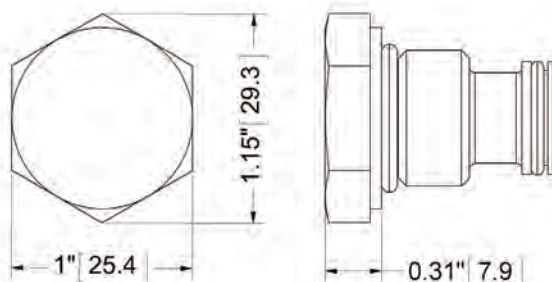
LV2-FS…………………….Fourth position spring centering (Use with Regen spool)
LV2-K………………….. Fourth position float (Use with Tandem spool).
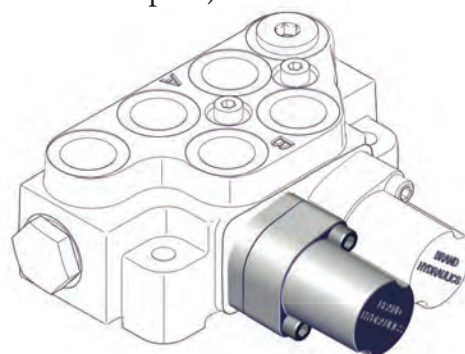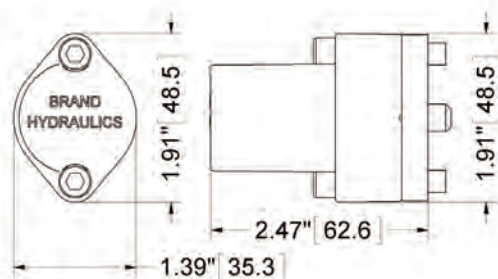
External dimensions are the same for all kits listed above.

LV2-HA…………………A and A1-style joystick kit (Operates two spools simultaneously)
LV2-HA2………………..A2 and A3-style joystick kit (Operates two spools simultaneously)
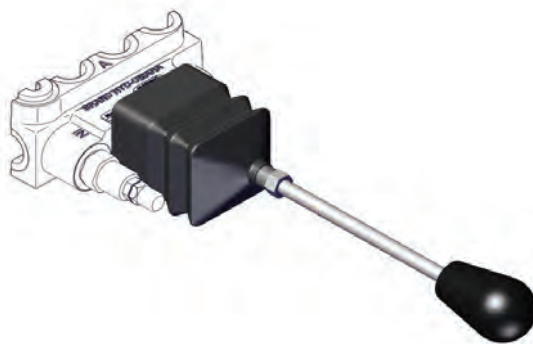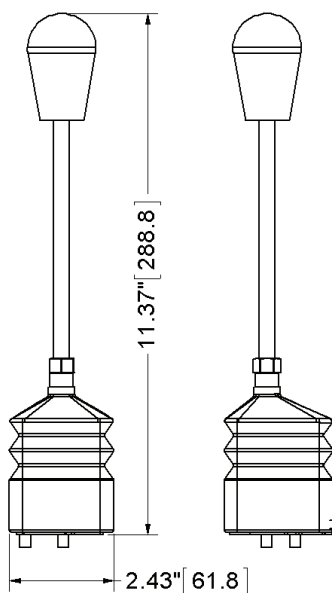
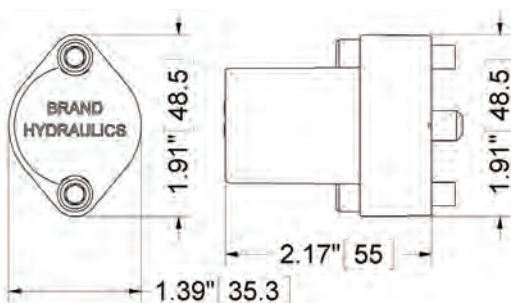**External dimensions are the same for all kits listed above.**
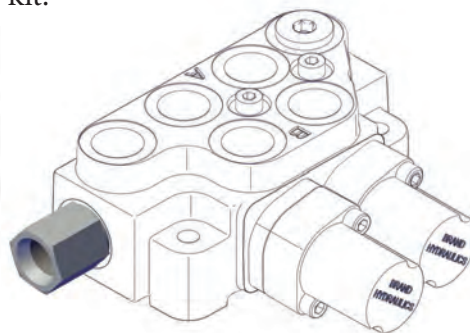
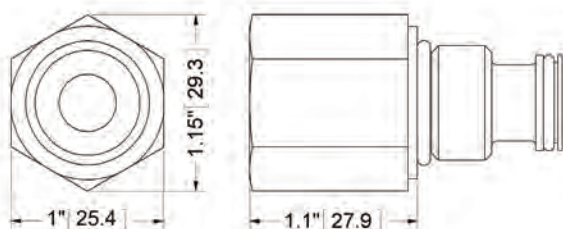## LV – COMPLETE LIST OF OPTIONS AND ACCESSORIES:

LV2-HL……………………L-style enclosed handle kit (Operates one spool only).

10.12"[257.1] 10.12"[257.1]

1.87"[47.4]

1.25"[31.8]
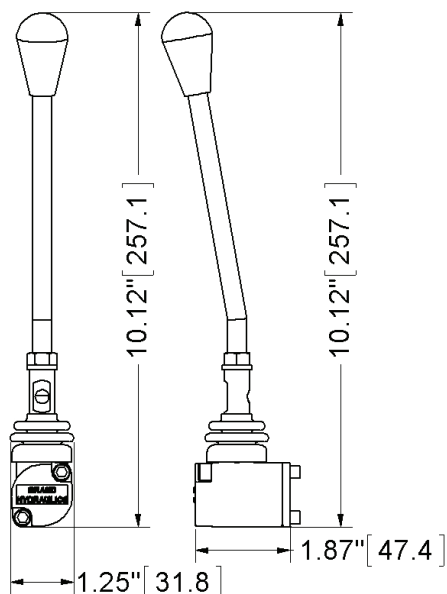
LV2-S……………………Spring centering kit.

1.91" 48.5 1.91" 48.5

2.17" 55

1.39" 35.3

LV2-W…………………..Power beyond cartridge kit.

1.15"[29.3]

1" 25.4   1.1" 27.9
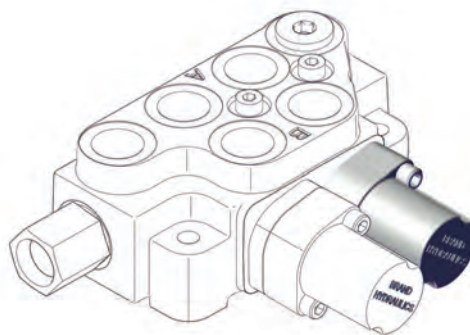
LV2-SK………..…………Seal kit for spool, relief, load checks and cartridge.

LV Loader Directional Control Valve

LV – FLOW AND PRESSURE INFO:

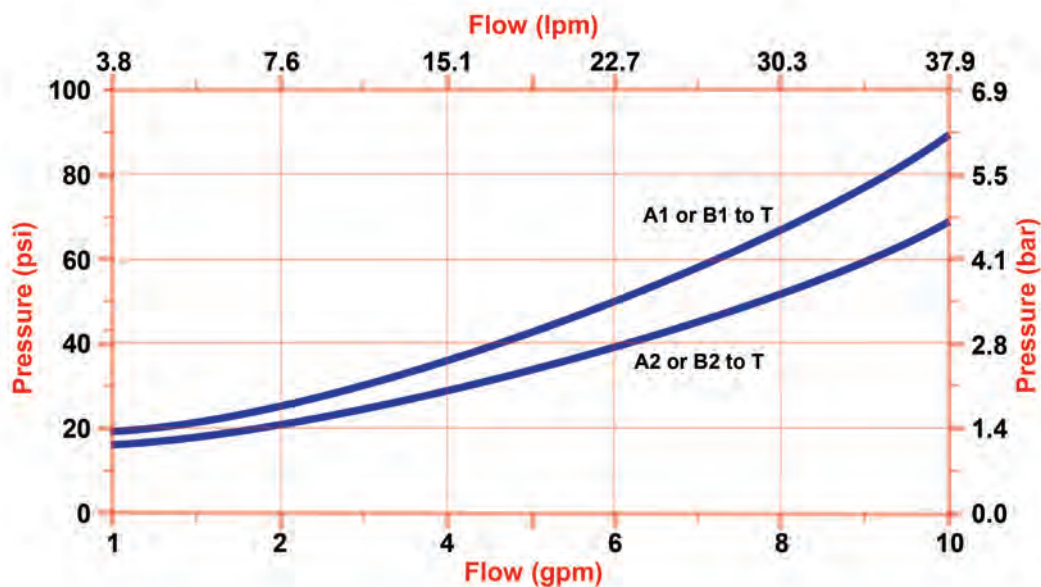**Neutral Flow And Pressure Drop**
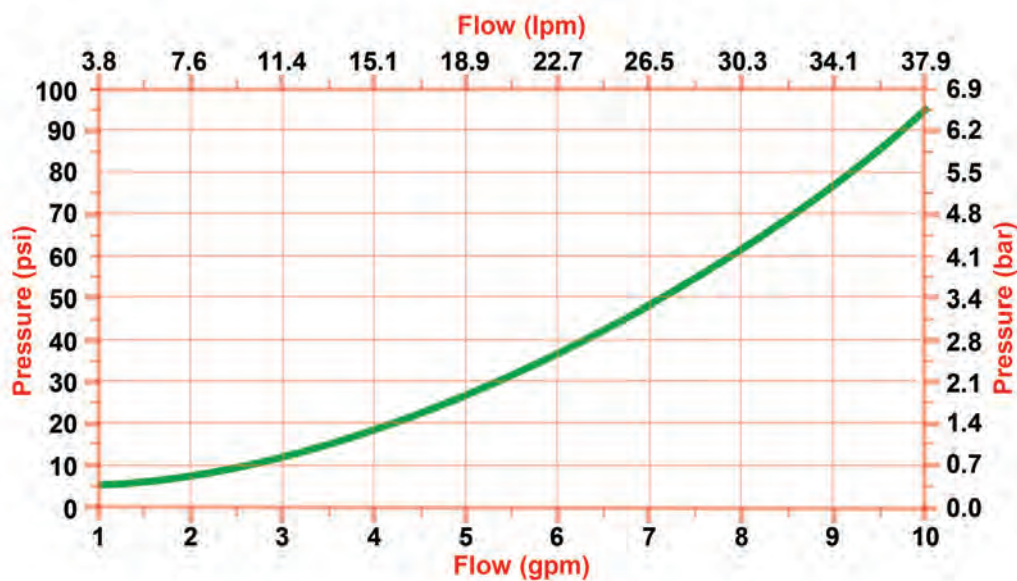
Pressure Drop VS. Flow for P to A or B

LV REV(D)
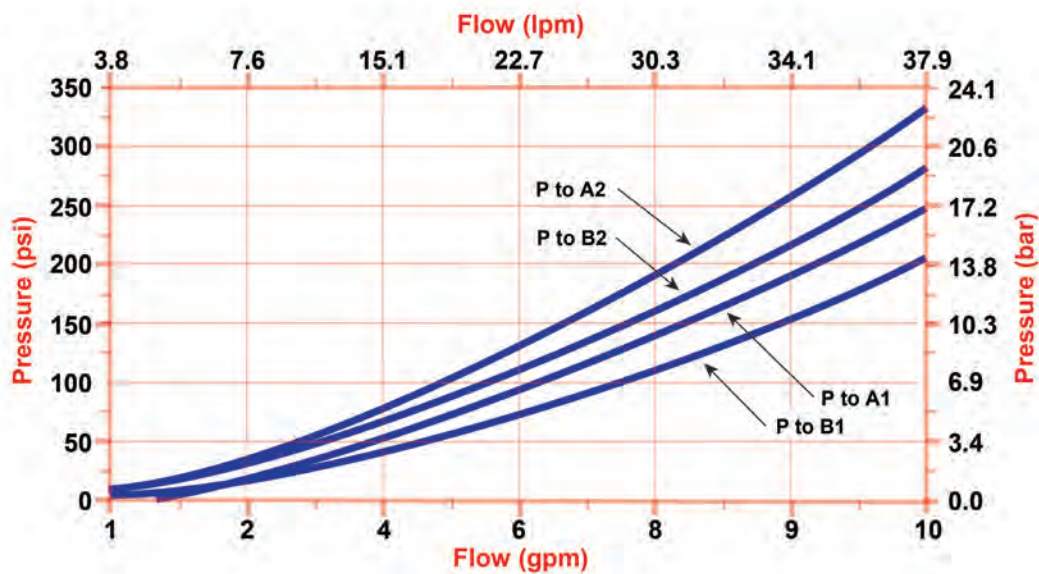
LV – FLOW AND PRESSURE INFO:
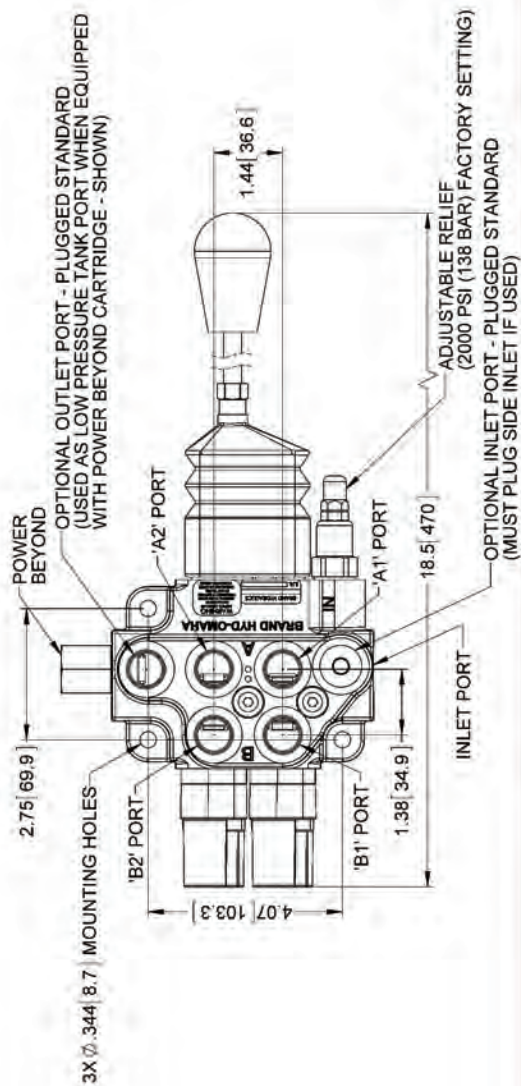
Pressure Drop VS. Flow for A to B-T

Pressure VS. Flow for LV Relief

LV Loader Directional Control Valve
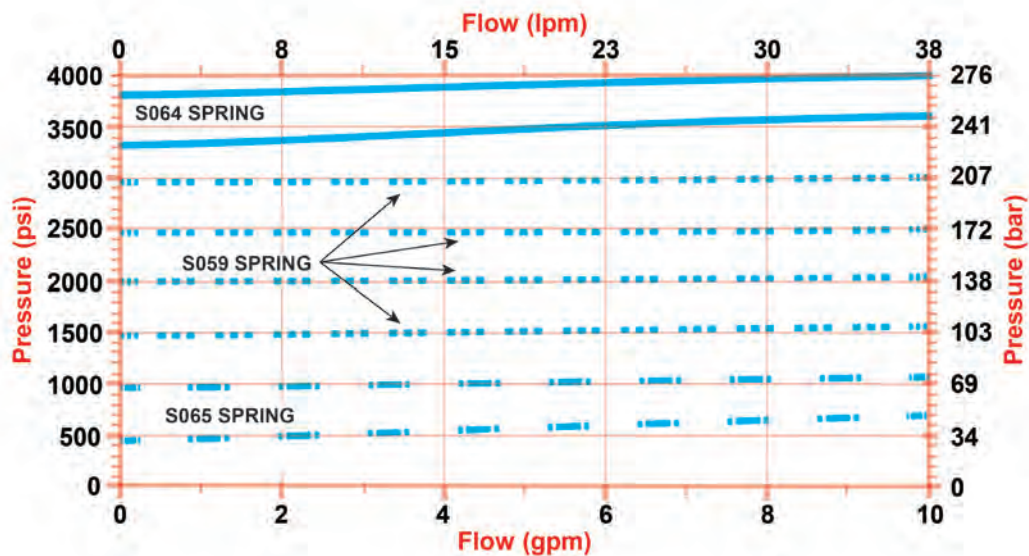
DIMENSIONAL DATA: inches & [millimeters]

LV22TKRFSA3BW SHOWN

LV22TSTSLB SHOWN

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