

MODEL LV

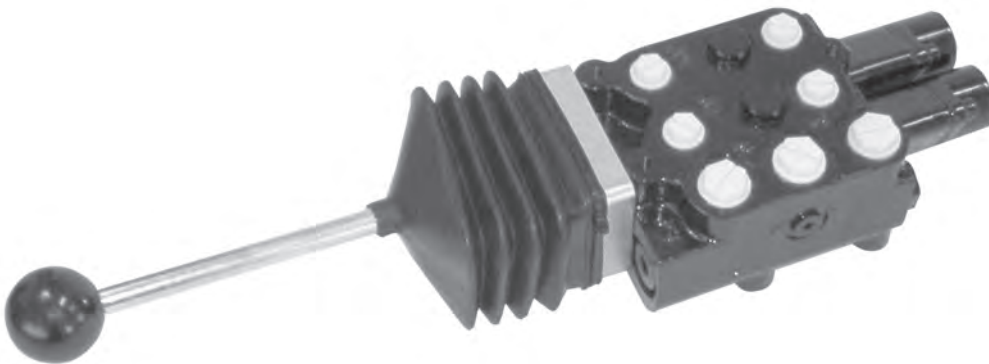
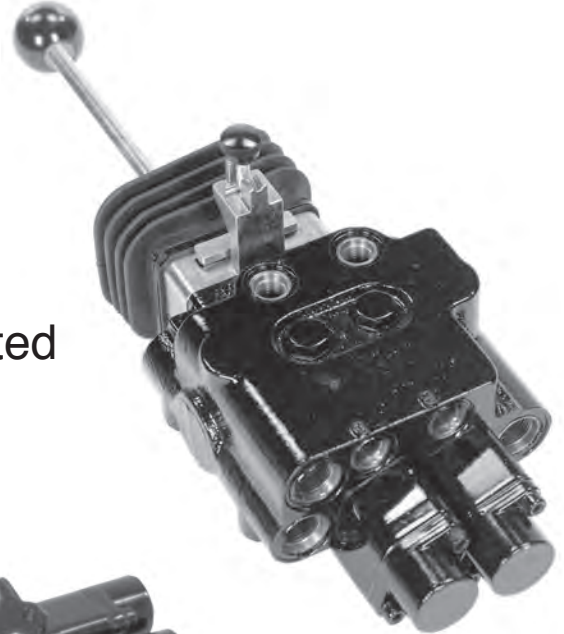
MONO-BLOCK

Directional Control Valves

Especially Suited for Front Loader Market

LVS Series Circuit

Top Ported or Semi-Rear Ported



LVT Parallel Circuit

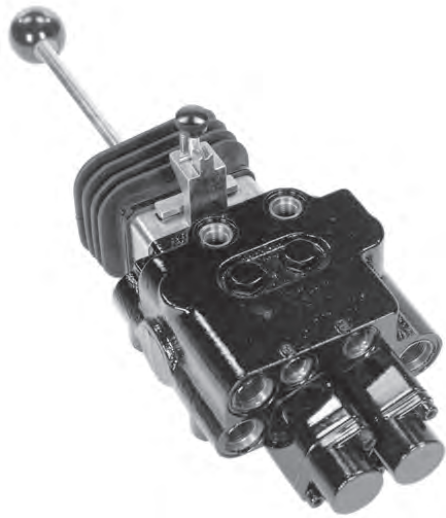
Top Ported



LVR Parallel Circuit

Rear Ported

MODEL LVS SERIES LOADER VALVE



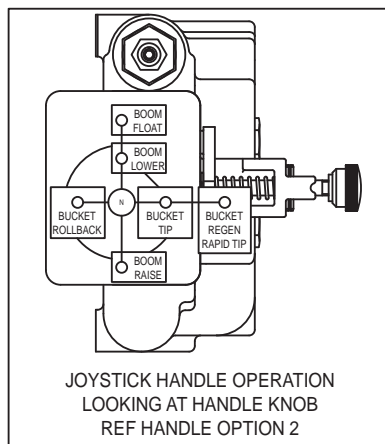
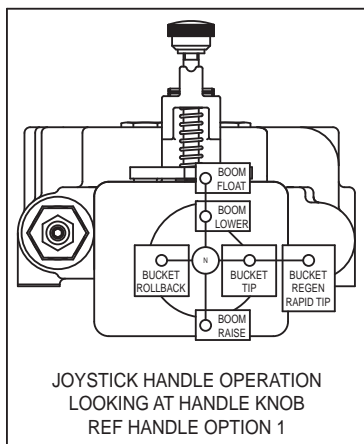
LVS SPECIFICATIONS

SERIES CIRCUIT (multifunction operation, simultaneous operation of both boom and bucket)
 MAXIMUM OPERATING PRESSURE 3000 PSI
 MAXIMUM OPERATING TEMPERATURE 180°F
 RECOMMENDED SYSTEM FILTRATION ISO 4406 19/17/14
 NOMINAL FLOW RATING..... 11 GPM
 WEIGHT 18.5lbs

STANDARD FEATURES

- Economical monoblock construction of high tensile strength gray cast iron
- Load check on each spool
- Hard chrome plated spools
- No face seals on spools
- Adjustable cartridge relief
- Power beyond available
- 4 Position Series Float Spool for loader boom
- 4 Position Regen Spool for loader bucket
- Molded rubber boot
- Patented dual spool lock joystick available

| LVS | INLET & TANK PORT OPTION | WORK PORT OPTION | SPOOL & ACTION | RELIEF OPTIONS | POWER BEYOND OPTIONS | HANDLE OPTIONS |
|---|---|--|--|--|---|--|
| LVS Two spool loader valve Series circuit | 1 Rear inlet & tank port #8 SAE ORB | A A & C work ports on top and B & D work ports on rear, #6 SAE ORB B Work ports on top, #6 SAE ORB | GR Standard A-B 4 way 4 position float, spring center with float detent C-D 4 way 4 position selective regen, spring center with soft stop | 1 No Relief 4 Direct acting adjustable 500-1500 PSI set at 1000 PSI 5 Standard: Adjustable direct acting relief 1500-3000 PSI (set at 2000 PSI) 6 Pilot relief 500-3000 PSI (set at 2000 PSI) | A Standard open center (field convertible to #8 SAE ORB top power beyond) B #8 SAE rear power beyond | 1 Joystick & boot w/ dual spool lock, mounting feet down/to rear 2 Joystick & boot w/ dual spool lock, mounting feet to the left 3 Joystick & boot without spool lock, mounting feet down/to rear 4 Joystick & boot without spool lock, mounting feet to the left 8 No joystick or handle (tang ends on spool only) |
| <p>*LVS1AGR5B1-25</p> <p>THE LAST TWO DIGITS ARE THE RELIEF SETTING IN HUNDREDS. EX: 25=2500 PSI @ 10 GPM ALL RELIEFS ARE SET AT 10 GPM.</p> | | | | | | |
| | | C Work ports on top, #8 SAE ORB | GB A-B 4 way 4 position float, spring center with float detent C-D 4 way 3 position spring center GF A-B 4 way 4 position float, spring center with float detent C-D 4 way 3 position (full time regen on bucket rollout) spring center | *For other relief settings please specify (see example on the left) | Note: Not for use with closed center systems | |

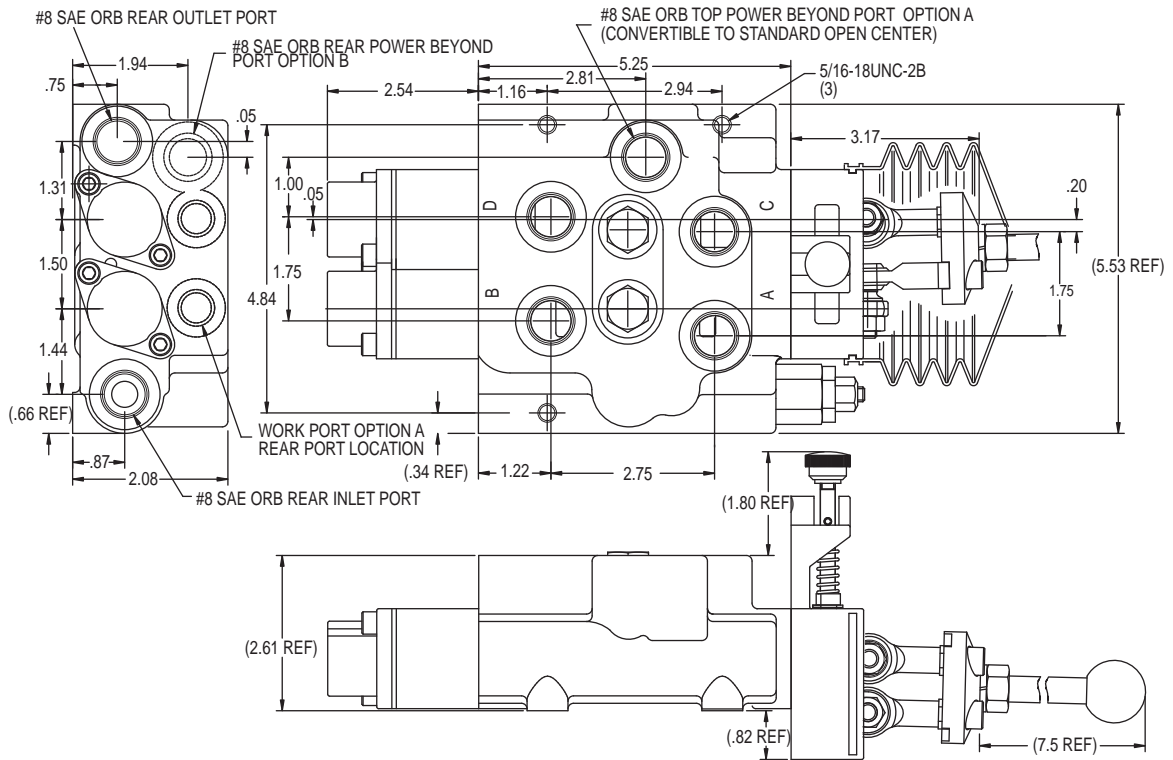


LVS PRESSURE DROP

| FLOW (GPM) | 110 SUS OIL AT 115°F | | |
|------------|----------------------|---------------|----------------------|
| | Δ P-PSI | | |
| | INLET TO OUTLET | INLET TO WORK | WORK PORTS TO OUTLET |
| 4 | 6 | 22 | 4 |
| 6 | 18 | 44 | 19 |
| 10 | 64 | 100 | 60 |

| PART NUMBER | DESCRIPTION |
|-------------|-------------------------|
| 660590029 | SEAL KIT |
| 660180170 | SPRING CENTER FLOAT KIT |
| 660180169 | SPRING CENTER REGEN KIT |
| 671400252 | ROD END |
| 660390016 | ROD END W/STUD |
| 671900084 | SLIDING SPOOL STUD |
| 660180154 | SPOOL LOCK HARDWARE |

LVS SERIES LOADER VALVE DIMENSIONAL DATA



REMOTE CABLE CONTROLS FOR PRINCE VALVES

REMOTE CABLE CONTROL

Heavy duty remote cable controls are available for most Prince directional control valves. The compact controller bodies are of die-cast metal construction and are available in either dual axis or single axis configurations. Dual axis joysticks are constructed with steel swivels and anti-wear bushings. The high strength flexible control cables are jacketed and have quick attach connections.

REMOTE CONTROLLERS

Dual Axis Joystick with lock
Single Axis

Prince Part No.
660170038
660170039

CONTROL CABLES

49 inches long (1.25 M)
59 inches long (1.5 M)
79 inches long (2.0 M)
89 inches long (2.25 M)
98 inches long (2.5 M)

660171125
660171150
660171200
660171225
660171250

VALVE CONNECTION KITS

RD5000 series kit*
LVS, LVR or LVT, kit (loader valves)**
SV stack valve or RD4100 kit***
Series 20 stack valve kit****

660170037
660170029
660170031
660170035

Note: One control cable and one connection kit is required for each spool controlled. Order the remote controller, the control cables and the connection kits as necessary to complete the remote cable control assembly.

* Field convertible or order option 3, less handle assembly.

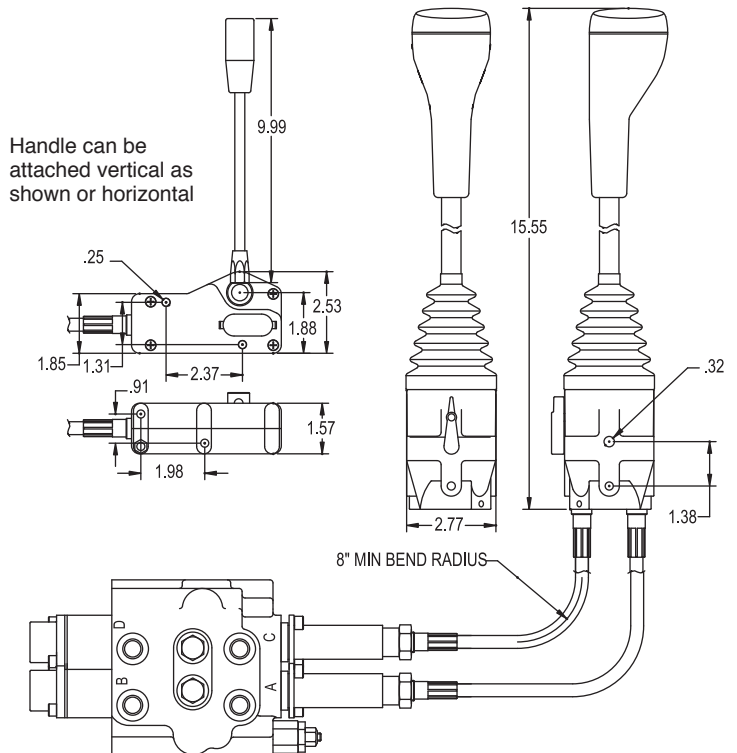
** Order loader valve handle option 8, tang end only.

*** Field convertible from standard handle or order option 6, clevis spool end only.

**** Field convertible or order option 3, less complete handle.

SINGLE SPOOL CONTROL

DUAL AXIS CONTROLLER



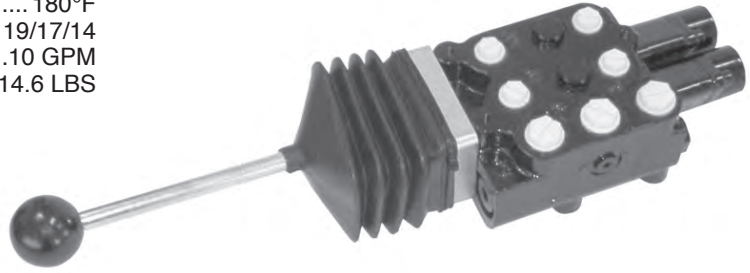
MODEL LVT TWO SPOOL MONO-BLOCK LOADER VALVE

LVT SPECIFICATIONS

PARALLEL CIRCUIT
 MAXIMUM OPERATING PRESSURE3000 PSI
 MAXIMUM TANK PRESSURE 500 PSI
 MAXIMUM OPERATING TEMPERATURE 180°F
 RECOMMENDED SYSTEM FILTRATIONISO 4406 19/17/14
 FLOW RATING.....10 GPM
 WEIGHT 14.6 LBS

STANDARD FEATURES

- Economical monoblock construction of high tensile strength gray cast iron
- Load check on each spool
- Hard chrome plated spool
- Adjustable cartridge relief
- Open center, and power beyond available
- 4 Position Float Spool for loader boom
- 4 Position Regen Spool for loader bucket



5/16-18 UNC MOUNTING HOLES ON BOTH TOP AND BOTTOM OF VALVE

NOTE: NEUTRAL POSITION SPOOL LOCK AVAILABLE

| LVT | PORT SIZE | SPOOL & ACTION | RELIEF VALVE | IN/OUT PORT | POWER BEYOND | HANDLE |
|--|---|---|---|---|---|--|
| LVT Top Ported Two Spool Loader Valve | 1 #8 SAE In & Out #6 SAE work ports | GR Standard: A1-B1 4 Way 4 Position Float, Spring Center with Float Detent A2-B2 4 Way 4 Position Regen, Spring Center with Soft Stop RG A1-B1 4 Way 4 Position Regen, Spring Center with Soft Stop A2-B2 4 Way 4 Position Float, Spring Center with Float Detent GB A1-B1 4 Way 4 Position Float, Spring Center with Float Detent A2-B2 4 Way 3 Position Spring Centered BG A1-B1 4 Way 3 Position Spring Centered A2-B2 4 Way 4 Position Float, Spring Center with Float Detent BB A1-B1 4 Way 3 Position Spring Centered A2-B2 4 Way 3 Position Spring Centered | 1 No Relief 4 Direct Acting Adjustable 500-1500 PSI Set at 1000 PSI 5 Standard: Direct Acting Adjustable 1500-3000 PSI Set at 2000 PSI 6 Pilot Operated Adjustable 500-3000 PSI Set at 2000 PSI *For other relief settings please specify (see example on the left) | A Standard: Top In, Out and Power Beyond B Side Inlet, Top Out & Power Beyond | B Standard: Open Center (Power Beyond Port Plugged) C #8 SAE Power D ** Closed Center (Often Used With No Relief. Review Application.) Note: Valve can be converted in the field. | 1 Standard Handles 2 Clevis Spool End Only 3 Joystick for ports on bottom (Use with GR, GB, BG or BB) 4 Joystick for ports on left (Use with GR, GB or BB) 5 Joystick for ports on top (Use with RG, GB, BG or BB) 6 Joystick for ports on right (Use with RG, BG or BB) 7 Universal joystick contains parts and instructions for all mountings 8 Tang Spool End Only |
| *LVT1GR5AB7-25 | | THE LAST TWO DIGITS ARE THE RELIEF SETTING IN HUNDREDS. EX: 25=2500 PSI @ 10 GPM. ALL RELIEFS ARE SET AT 10 GPM. | | | | |

** PLEASE NOTE that this closed center option does not provide for the drain off of standby spool leakage. This can allow a very small amount of oil to enter the work ports when in neutral. Closed center option is often used with no relief. Review application.

STANDARD VALVES AVAILABLE:

All standard valves have a load check, a complete handle assembly, and an adjustable relief.

| VALVE PART NUMBER | SPOOL TYPE | | | SPOOL ACTION | |
|-------------------|------------------------------|------------------------|------------------------------|----------------|----------------|
| | 4 WAY 4 POSITION FLOAT SPOOL | 4 WAY 3 POSITION SPOOL | 4 WAY 4 POSITION REGEN SPOOL | A1-B1 SPOOL | A2-B2 SPOOL |
| LVT1BB5AB1 | | X | | SPRING CENTER | SPRING CENTER |
| LVT1GB5AB1 | X | X | | FLOAT DETENT | SPRING CENTER |
| LVT1GB5AB3 | X | X | | FLOAT DETENT | SPRING CENTER |
| LVT1GR5AB3 | X | | X | FLOAT DETENT | REGEN POSITION |
| LVT1RG5AB5 | X | | X | REGEN POSITION | FLOAT DETENT |
| LVT1BG5AB5 | X | X | | SPRING CENTER | FLOAT DETENT |

LVT PRESSURE DROP

| FLOW (GPM) | 110 SUS OIL AT 115°F | | |
|------------|----------------------|---------------------|------------------|
| | Δ P-PSI | | |
| | INLET TO OUTLET | INLET TO WORK PORTS | A OR B TO OUTLET |
| 4 | 15 | 20 | 8 |
| 6 | 35 | 34 | 20 |
| 10 | 95 | 72 | 50 |

| PART NUMBER | DESCRIPTION |
|-------------|-----------------------------|
| 660590017 | SEAL KIT |
| 660180078 | SPRING CENTER KIT |
| 660180076 | SPRING CENTER FLOAT KIT |
| 660180077 | SPRING CENTER REGEN KIT |
| 660180073 | COMPLETE HANDLE KIT |
| 660180011 | HANDLE KIT |
| 660180072 | CLEVIS SUB-ASSY |
| 660280004 | RELIEF PLUG |
| 660280009 | RELIEF CART. OPTION 5 |
| 270006122 | PILOT RELIEF CART. OPTION 6 |

MODEL LVR TWO SPOOL MONO-BLOCK LOADER VALVE



LVR SPECIFICATIONS

PARALLEL CIRCUIT
 MAXIMUM OPERATING PRESSURE 3000 PSI
 MAXIMUM TANK PRESSURE 500 PSI
 MAXIMUM OPERATING TEMPERATURE 180°F
 RECOMMENDED SYSTEM FILTRATION ISO 4406 19/17/14
 FLOW RATING..... 14 GPM
 WEIGHT 22.6 LBS

STANDARD FEATURES

- Economical monoblock construction of high tensile strength gray cast iron
- Load check on each spool
- Hard chrome plated spool
- Adjustable cartridge relief
- Open center, and power beyond available
- 4 Position Float Spool for loader boom
- 4 Position Regen Spool for loader bucket

5/16-18 UNC MOUNTING HOLES ON BOTH TOP AND BOTTOM OF VALVE

NOTE: NEUTRAL POSITION SPOOL LOCK AVAILABLE

| LVR | PORT SIZE | SPOOL & ACTION | RELIEF VALVE | IN/OUT PORT | POWER BEYOND | HANDLE |
|---|--|--|--|-----------------------------------|--|---|
| LVR Rear Ported Two Spool Loader Valve | 1 Standard: #10 SAE in/out #8 SAE work ports 2 #8 SAE in/out #6 SAE work ports | GR Standard: A-B 4 Way 4 Position Float, Spring Center with Float Detent C-D 4 Way 4 Position Regen, Spring Center with Soft Stop RG A-B 4 Way 4 Position Regen, Spring Center with Soft Stop C-D 4 Way 4 Position Float, Spring Center with Float Detent GB A-B 4 Way 4 Position Float, Spring Center with Float Detent C-D 4 Way 3 Position Spring Centered BG A-B 4 Way 3 Position Spring Centered C-D 4 Way 4 Position Float, Spring Center with Float Detent BB A-B 4 Way 3 Position Spring Centered C-D 4 Way 3 Position Spring Centered (no float, no regen) | 1 No Relief 4 Direct Acting Adjustable 500-1500 PSI Set at 1000 PSI 5 Standard: Direct Acting Adjustable 1500-3000 PSI Set at 2000 PSI 6 Pilot Operated Adjustable 500-3000 PSI Set at 2000 PSI *For other relief settings please specify (see example on the left) | A All Ports On End of Valve | B Standard: Open Center (Power Beyond Port Plugged) C #8 SAE Power Beyond D ** Closed Center Note: Valve can be converted in the field. | 1 Standard Handles 2 Clevis Spool End Only 3 Joystick for power beyond on Right (Use with GR, GB, BG or BB) 4 Joystick for power beyond on Bottom (Use with RG, BG or BB) 5 Joystick for power beyond on Left (Use with RG, BG, GB or BB) 6 Joystick for power beyond on Top (Use with GR, GB or BB) 7 Universal joystick contains parts and instructions for all mounting options 8 Tang Spool End Only |
| <p>*LVR1GB5AB7-25</p> <p>THE LAST TWO DIGITS ARE THE RELIEF SETTING IN HUNDREDS. EX: 25=2500 PSI @ 10 GPM ALL RELIEFS ARE SET AT 10 GPM.</p> | | | | | | |

LVR PRESSURE DROP

| FLOW (GPM) | 110 SUS OIL AT 115°F | | |
|------------|----------------------|-----------------|------------------|
| | Δ P-PSI | | |
| | INLET TO OUTLET | INLET TO A OR B | A OR B TO OUTLET |
| 4 | 4 | 14 | 4 |
| 8 | 21 | 31 | 15 |
| 14 | 64 | 72 | 46 |

** PLEASE NOTE that this closed center option does not provide for the drain off of standby spool leakage. This can allow a very small amount of oil to enter the work ports when in neutral. Closed center option is often used with no relief. Review application.

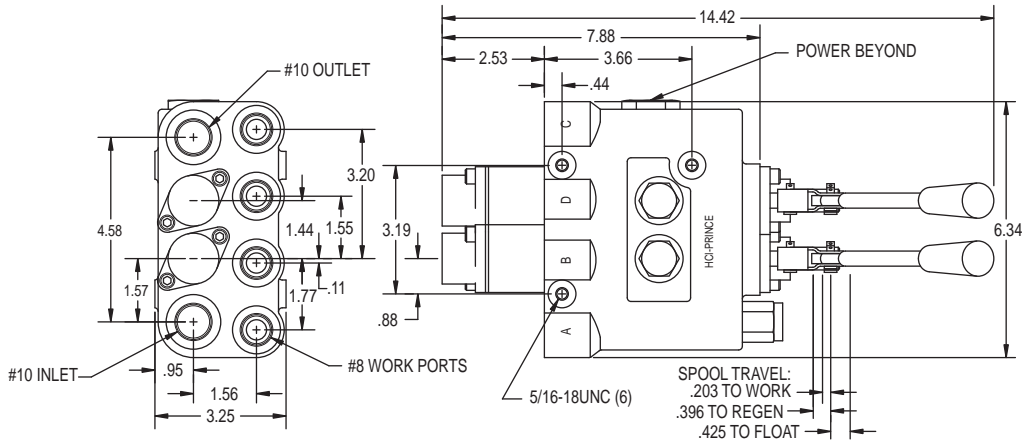
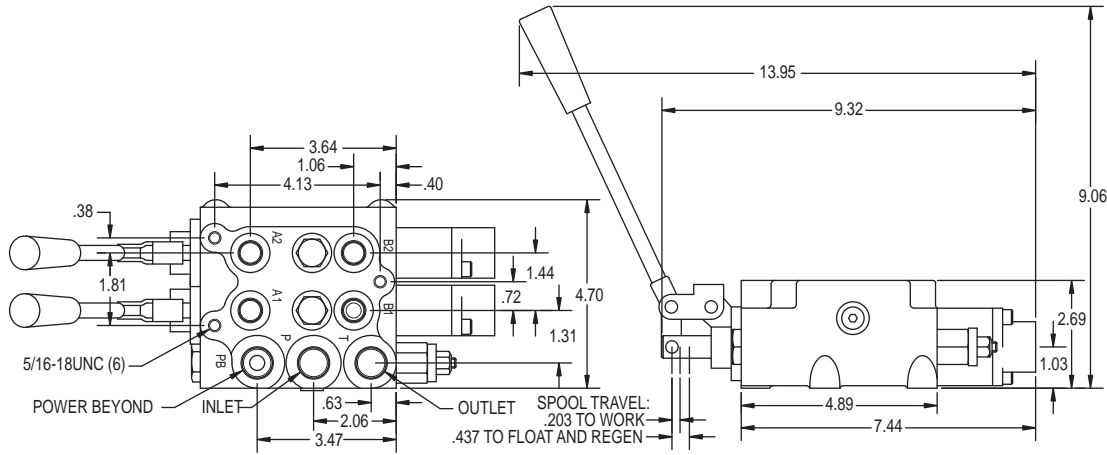
STANDARD VALVES AVAILABLE:

All standard valves have a load check, a complete handle assembly, and an adjustable relief.

| VALVE PART NUMBER | SPOOL TYPE | | | | SPOOL ACTION | |
|-------------------|----------------------------------|----------------------------|----------------------------------|----------------------------|---------------|---------------|
| | 4 WAY 4 POSITION FLOAT A-B SPOOL | 4 WAY 3 POSITION A-B SPOOL | 4 WAY 4 POSITION FLOAT C-D SPOOL | 4 Way 3 POSITION C-D SPOOL | A-B SPOOL | C-D SPOOL |
| LVR1GB5AB6 | X | | | X | FLOAT DETENT | SPRING CENTER |
| LVR1BG5AB4 | | X | X | | SPRING CENTER | FLOAT DETENT |

| PART NUMBER | DESCRIPTION |
|-------------|-----------------------------|
| 660590018 | SEAL KIT |
| 660590016 | POWER BEYOND SEAL KIT |
| 660180079 | SPRING CENTER KIT |
| 660180074 | SPRING CENTER FLOAT KIT |
| 660180075 | SPRING CENTER REGEN KIT |
| 660180073 | COMPLETE HANDLE KIT |
| 660180011 | HANDLE KIT |
| 660180072 | CLEVIS SUB-ASSY |
| 660280004 | RELIEF PLUG |
| 660280009 | RELIEF CART. OPTION 5 |
| 270006122 | PILOT RELIEF CART. OPTION 6 |
| 660301001 | OPEN CENTER PLUG |
| 660390008 | POWER BEYOND CART. (#8 SAE) |

MODEL LVT/VR MOUNTING DIMENSIONS AND OPERATIONS

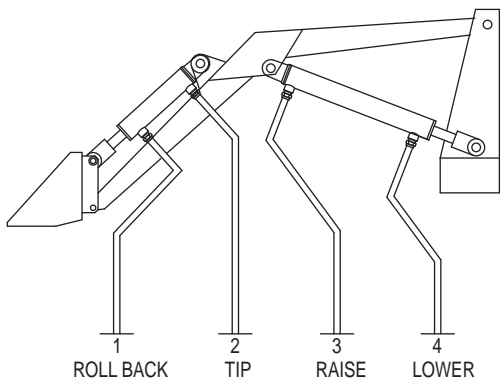


4 WAY 4 POSITION REGEN SPOOL OPERATION

This spool option allows for these four functions of the loader bucket cylinders: "NEUTRAL", cylinder ports blocked to hold bucket in place; "BUCKET ROLLBACK" directs oil to hose 1 to retract bucket cylinder; "BUCKET TIP" directs oil to hose 2 to extend the bucket cylinder with full pressure (Please Note there is a soft stop at this handle position); "BUCKET REGEN" combines the oil from the tractor pump with the oil returning from hose 1 and it directs it to hose 2 to tip the bucket faster (referred to as REGENERATION or "REGEN"). It is necessary to push the handle past the soft stop at the normal bucket tip position to get to the regen position. Also Please Note that the cylinder force will be reduced when in the regen position.

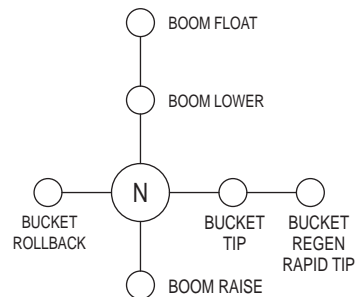
4 WAY 4 POSITION FLOAT SPOOL OPERATION

This spool option allows for these four functions of the loader boom cylinders: "NEUTRAL", cylinder ports blocked to hold boom in place; "BOOM RAISE" directs oil to hose 3 to extend boom cylinders; "BOOM LOWER" directs oil to hose 4 to retract the boom cylinders with full pressure (Please Note there is a soft stop at this handle position); "BOOM FLOAT" connects all boom cylinder ports to tank allowing the boom to fall to the ground. It is necessary to push the handle past the soft stop at the normal boom down position. There is a detent that will hold handle in the float position. While in the float position the loader boom cylinders will move up and down or "FLOAT" to match the ground level as the tractor moves forward or backward.



Joystick Handle

The joystick handle will operate both spools using one lever handle. The two spools can be operated independently or at the same time depending upon handle movement. Because we allow for maximum mounting flexibility, we have 4 options for the LVT, 2 options for the LVS and 4 options for the LVR. The handle shift pattern for all is shown at right.



**JOYSTICK HANDLE OPERATION
LOOKING AT HANDLE KNOB**