

# MODEL LV

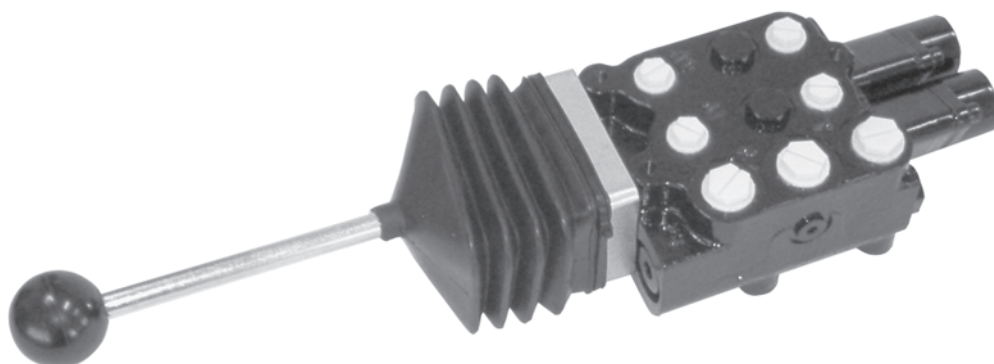
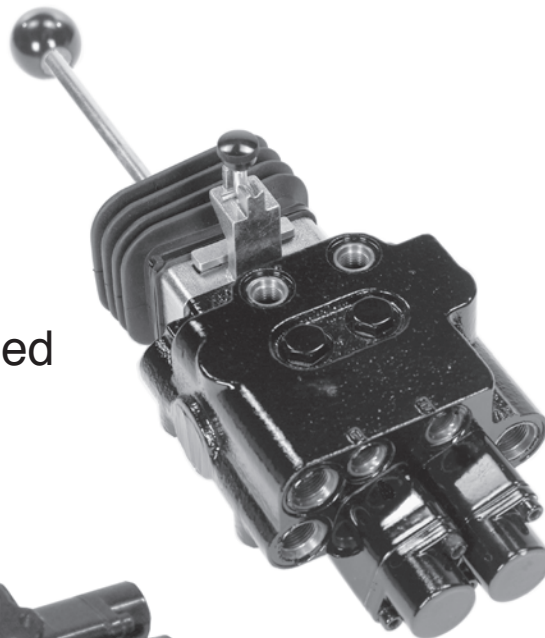
## MONO-BLOCK

Directional Control Valves

Especially Suited for Front Loader Market

### LVS Series Circuit

Top Ported or Semi-Rear Ported



### LVT Parallel Circuit

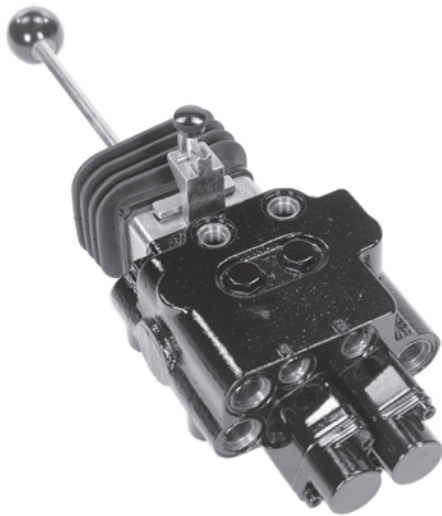
Top Ported



### LVR Parallel Circuit

Rear Ported

# MODEL LVS SERIES LOADER VALVE



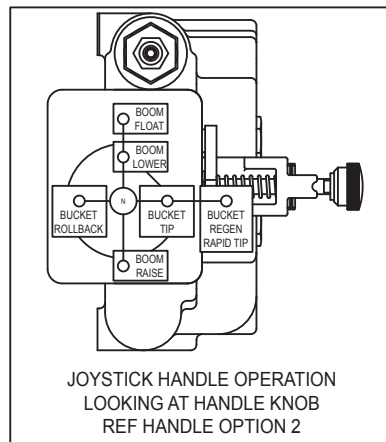
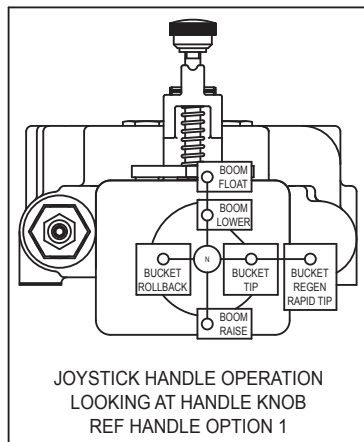
## LVS SPECIFICATIONS

SERIES CIRCUIT (multifunction operation, simultaneous operation of both boom and bucket)  
 MAXIMUM OPERATING PRESSURE ..... 3000 PSI  
 MAXIMUM TANK PRESSURE ..... 500 PSI  
 MAXIMUM OPERATING TEMPERATURE ..... 180°F  
 RECOMMENDED SYSTEM FILTRATION ..... ISO 4406 19/17/14  
 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						
MODEL NUMBER	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  C Work ports on top, #8 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  GB A-B 4 way 4 position float, spring center with float detent C-D 4 way 3 position spring center	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)  *For other relief settings please specify (see example on the left)	A Standard open center (field convertible to #8 SAE ORB top power beyond)  B #8 SAE rear power beyond  Note: Not for use with closed center systems	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)
<b>*LVS1AGR5B1-25</b> THE LAST TWO DIGITS ARE THE RELIEF SETTING IN HUNDREDS. EX: 25=2500 PSI @ 10 GPM ALL RELIEFS ARE SET AT 10 GPM.						

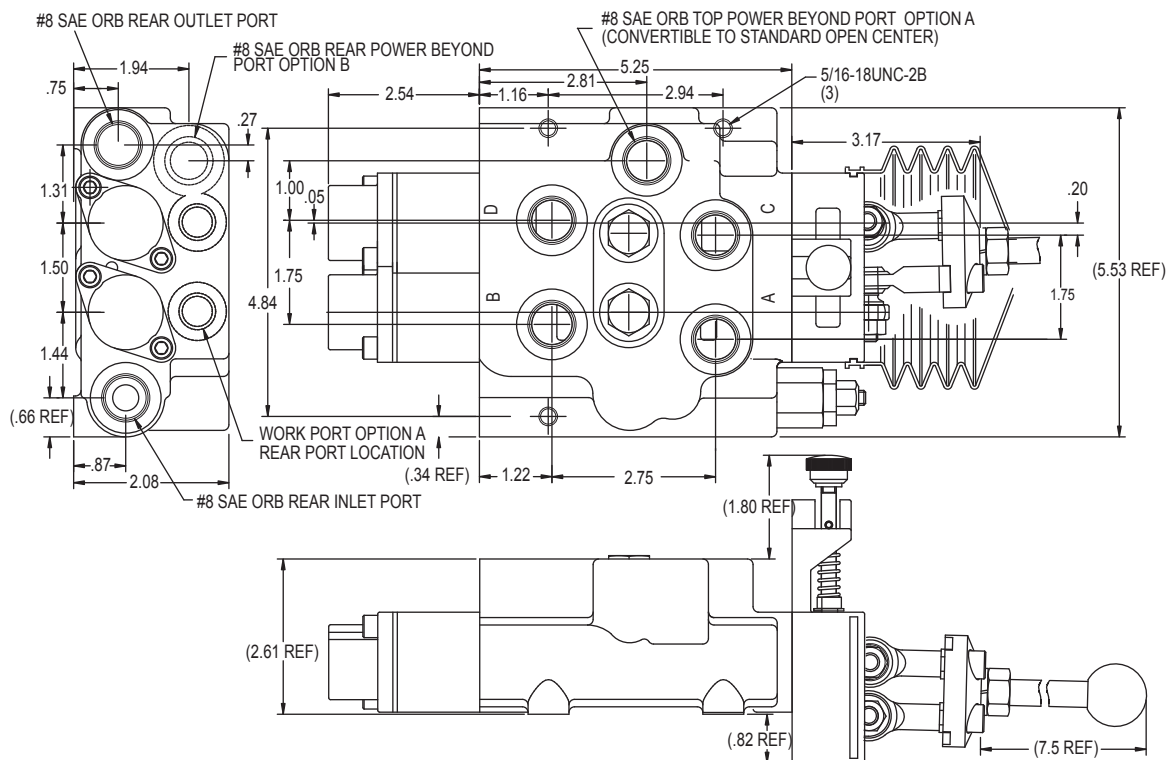


## LVS PRESSURE DROP

110 SUS OIL AT 115°F			
Δ P-PSI			
FLOW (GPM)	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.

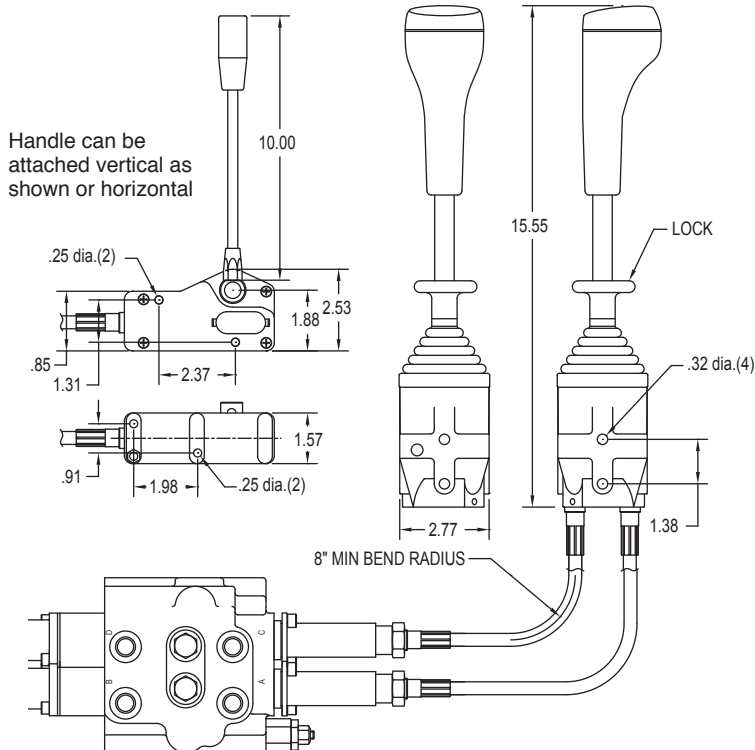
\*\*Order loader valve handle option 8, tang end only.

\*\*\*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

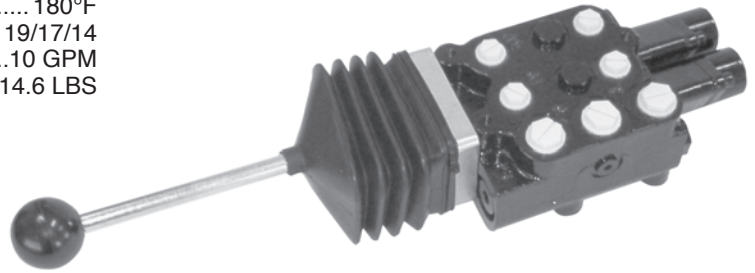
## LVT SPECIFICATIONS

PARALLEL CIRCUIT

MAXIMUM OPERATING PRESSURE .....3000 PSI  
 MAXIMUM TANK PRESSURE .....500 PSI  
 MAXIMUM OPERATING TEMPERATURE ..... 180°F  
 RECOMMENDED SYSTEM FILTRATION .....ISO 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						
MODEL NUMBER	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 Beyond 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				A		
MODEL NUMBER	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
*LVR1GB5AB7-25 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.

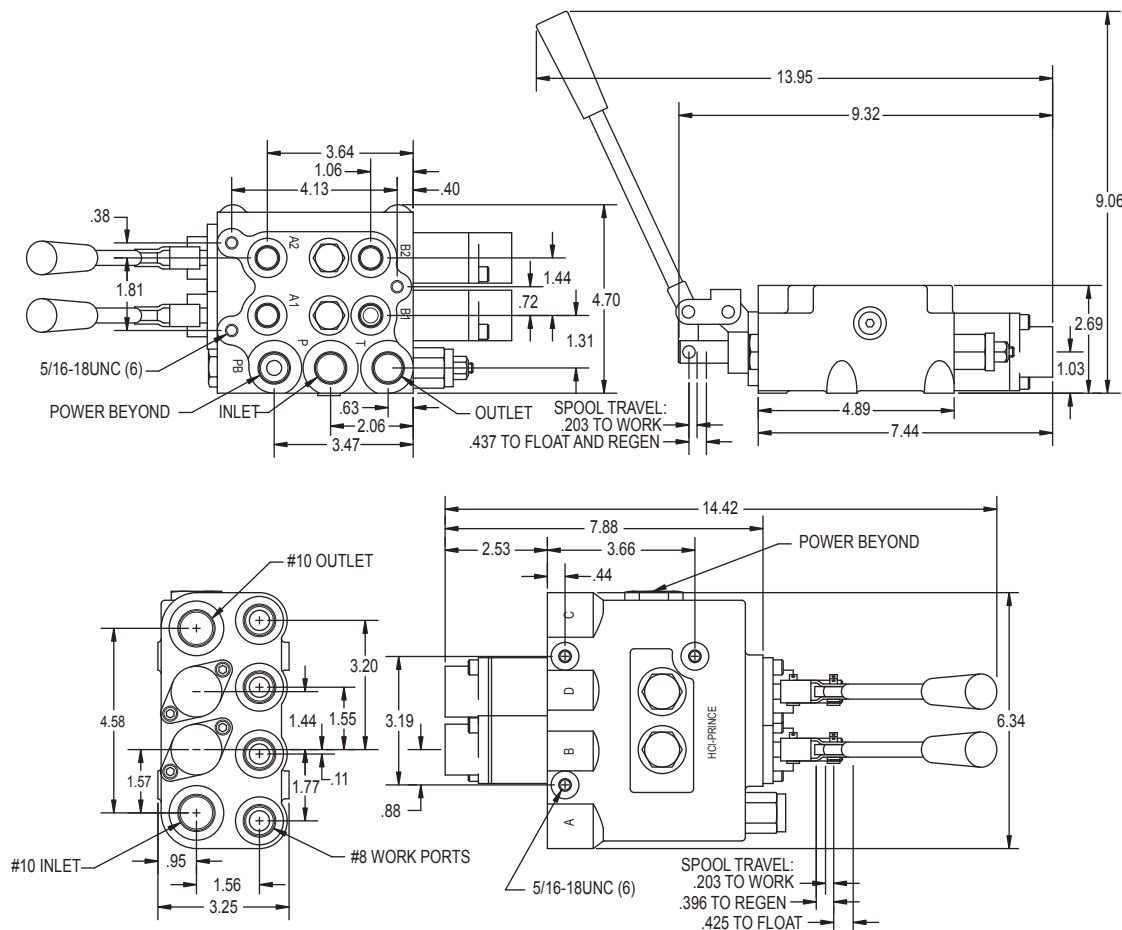
VALVE PART NUMBER	SPOOL TYPE				SPOOL ACTION	
	4 WAY 4 POSITION FLOAT A-B SPOOL	4 WAY 3 POSITION A-B SPOOL	4 WAY 4 POSITION FLOAT C-D SPOOL	4 Way 3 POSITION C-D SPOOL	A-B SPOOL	C-D SPOOL
LVR1GB5AB6	X			X	FLOAT DETENT	SPRING CENTER
LVR1BG5AB4		X	X		SPRING CENTER	FLOAT DETENT

## LVR PRESSURE DROP

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

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



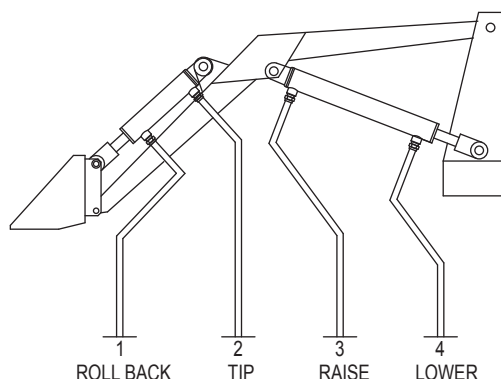


## 4 WAY 4 POSITION REGEN SPOOL OPERATION

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.

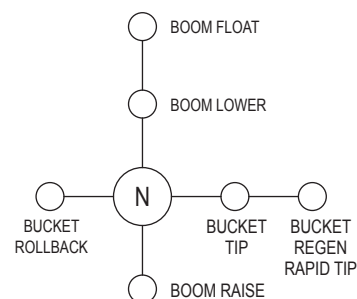
## 4 WAY 4 POSITION FLOAT SPOOL OPERATION

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