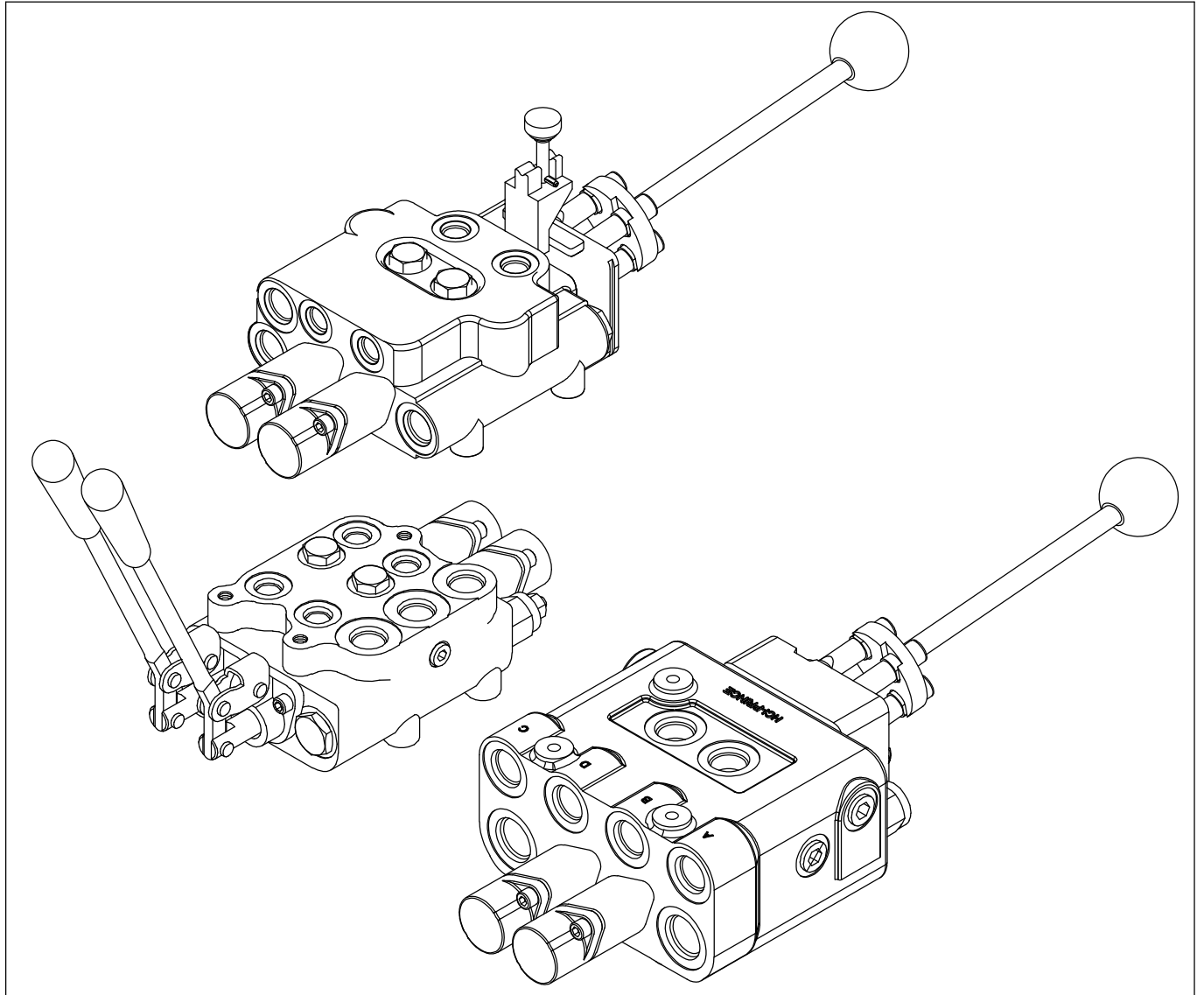
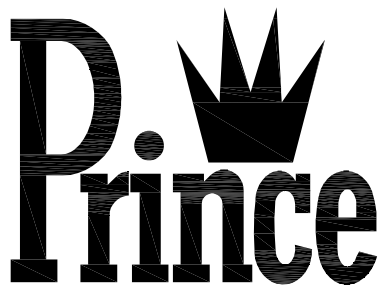


# LVR, LVS AND LVT MONO-BLOCK DIRECTIONAL CONTROL LOADER VALVE PARTS MANUAL



## PRINCE MANUFACTURING CORPORATION



Date: July 2018

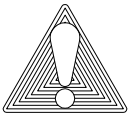
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3	PORT IDENTIFICATION, MOUNTING DIMENSIONS AND SPECS.
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## GENERAL SAFETY PRECAUTIONS FOR HYDRAULIC VALVES

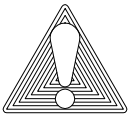
1) ALL HYDRAULIC VALVES MUST BE PROPERLY INSTALLED INTO THE HYDRAULIC SYSTEM TO PREVENT PERSONAL INJURY AND/OR PROPERTY DAMAGE. FURTHER, THE IMPROPER SERVICING OF A VALVE MAY RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE. PLEASE READ AND UNDERSTAND ALL CATALOG AND SERVICE INFORMATION BEFORE STARTING. AS WITH ALL MECHANICAL WORK THE PROPER TOOLS, KNOWLEDGE, AND SAFETY EQUIPMENT ARE REQUIRED. ALWAYS WEAR SAFETY GLASSES.

2) MAKE SURE ALL PRESSURE HAS BEEN RELIEVED IN THE HYDRAULIC LINES BEFORE INSTALLING OR SERVICING A HYDRAULIC VALVE.



WARNING: ESCAPING HYDRAULIC FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE SKIN, CAUSING SERIOUS PERSONAL INJURY. DO NOT USE YOUR HAND TO CHECK FOR HYDRAULIC LEAKS.

3) BEFORE INSTALLING OR SERVICING A HYDRAULIC COMPONENT MAKE SURE ALL WEIGHT HAS BEEN REMOVED FROM THE CYLINDERS OR MOTORS BEFORE DISCONNECTING HYDRAULIC LINES.



WARNING: DISCONNECTING THE HYDRAULIC LINES WHILE THE CYLINDER OR MOTOR IS UNDER LOAD MAY RESULT IN THE UNEXPECTED RAPID MOVEMENT OF MACHINE RESULTING IN SERIOUS PERSONAL INJURY.

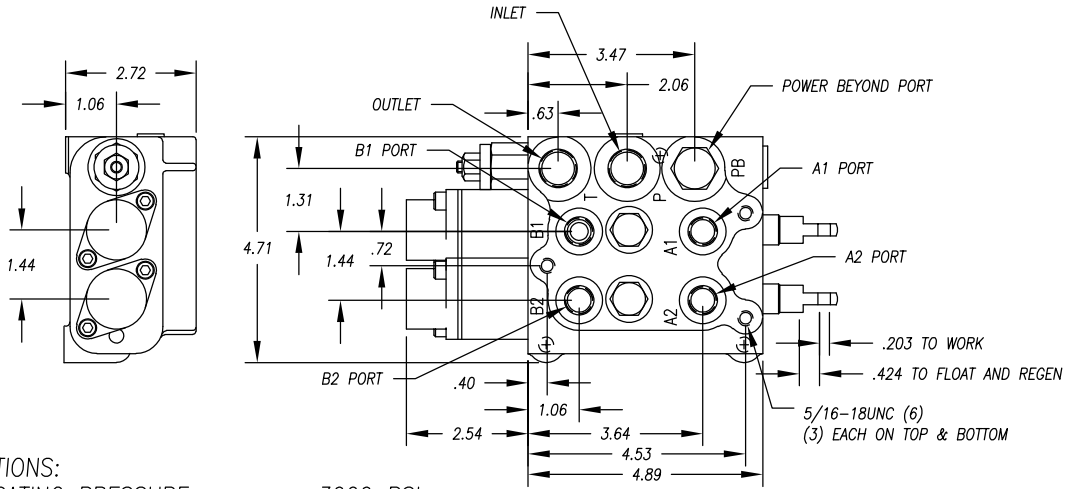
4) DO NOT EXCEED THE OPERATING SPECIFICATIONS FOR PRESSURE, FLOW OR TEMPERATURE. ALL HYDRAULIC SYSTEMS REQUIRE A MEANS TO LIMIT THE MAXIMUM PRESSURE. THIS REQUIRES EITHER A PRESSURE RELIEF VALVE IN THE SYSTEM OR A PUMP THAT HAS PRESSURE COMPENSATION.



WARNING: OVERPRESSURE MAY CAUSE SUDDEN AND UNEXPECTED FAILURE OF A COMPONENT IN THE HYDRAULIC SYSTEM RESULTING IN SERIOUS PERSONAL INJURY. ALWAYS USE A GAUGE WHEN ADJUSTING A RELIEF VALVE.

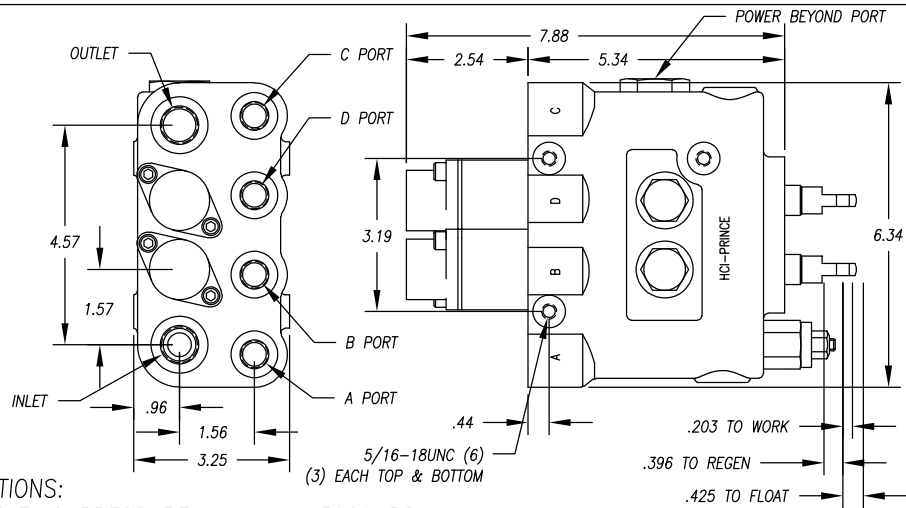
# PORT IDENTIFICATION

## LVT



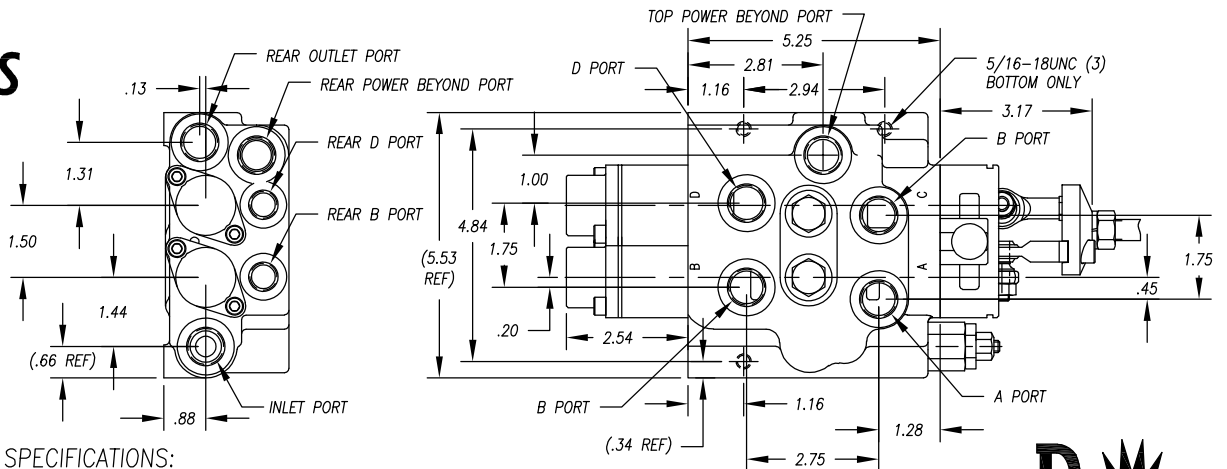
LVT SPECIFICATIONS:  
 MAXIMUM OPERATING PRESSURE.....3000 PSI  
 MAXIMUM OPERATING TEMPERATURE.....180°F  
 RECOMMENDED SYSTEM FILTRATION.....10 MICRON, ISO 4406 19/17/14  
 FLOW RATING.....10 GPM

## LVR



LVR SPECIFICATIONS:  
 MAXIMUM OPERATING PRESSURE.....3000 PSI  
 MAXIMUM OPERATING TEMPERATURE.....180°F  
 RECOMMENDED SYSTEM FILTRATION.....10 MICRON, ISO 4406 19/17/14  
 FLOW RATING.....14 GPM

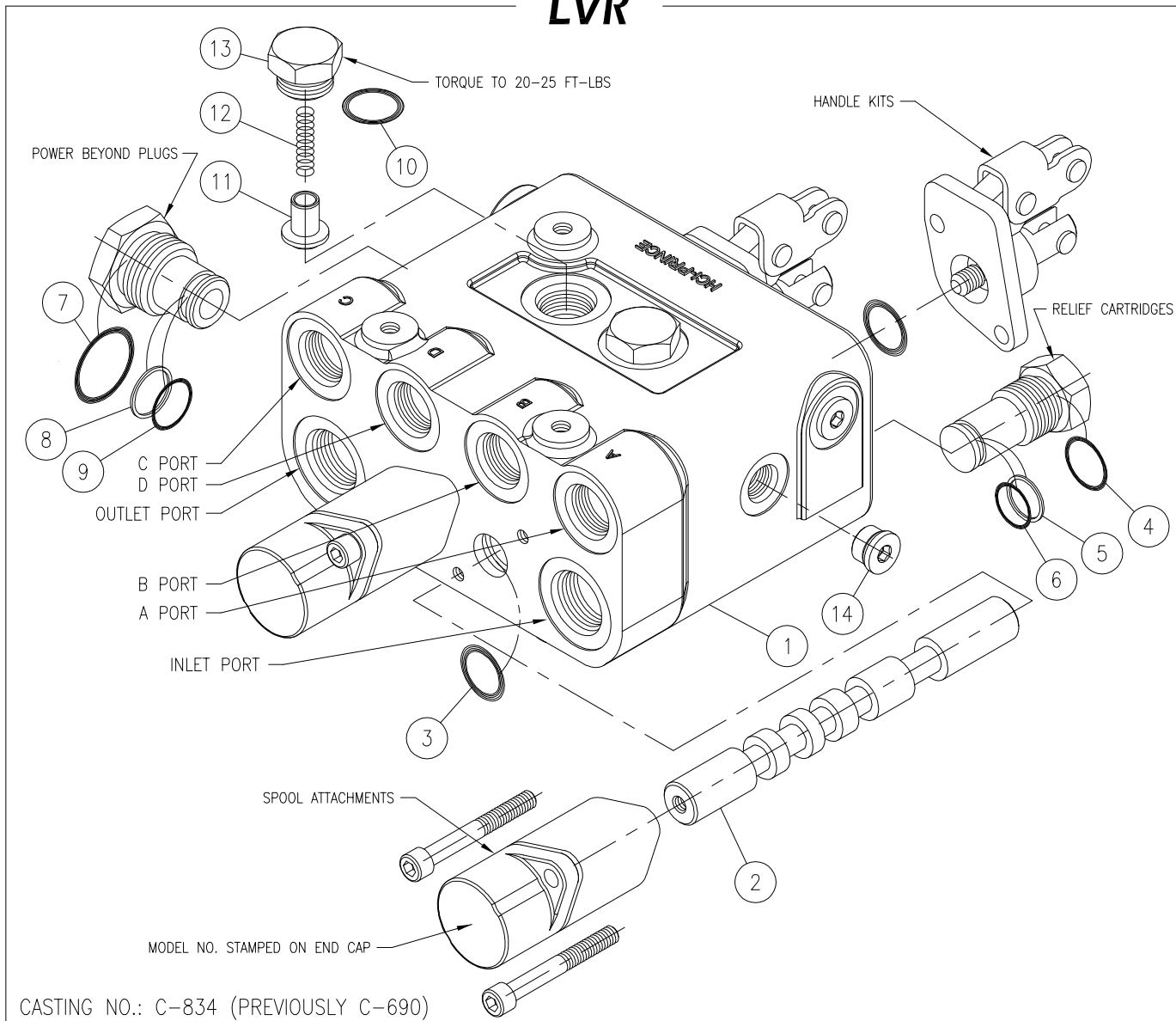
## LVS



LVS SPECIFICATIONS:  
 MAXIMUM OPERATING PRESSURE.....3000 PSI  
 MAXIMUM OPERATING TEMPERATURE.....180°F  
 RECOMMENDED SYSTEM FILTRATION.....10 MICRON, ISO 4406 19/17/14  
 FLOW RATING.....11 GPM



# LVR



## LVR 2 SPOOL MONO-BLOCK VALVE

ITEM	QTY	PART NO.	DESCRIPTION
1	1		2 SPOOL VALVE BODY
2	2	SEE NOTE 1	SPOOL
3	4	240000114*	114 O-RING*
4	1	240000908	908 O-RING
5	1	240005014	014 BACK-UP
6	1	240000014	014 O-RING
7	1	240000912	912 O-RING
8	1	240005016	016 BACK-UP
9	1	240000016	016 O-RING
10	2	240000908	908 O-RING
11	2	670100039	LOAD CHECK POPPET
12	2	670300007	LOAD CHECK SPRING
13	2	671600001	LOAD CHECK PLUG
14	3	200300094	PLUG, HEX SOCKET

These are matched parts and are not sold separately.

660590018 SEAL KIT

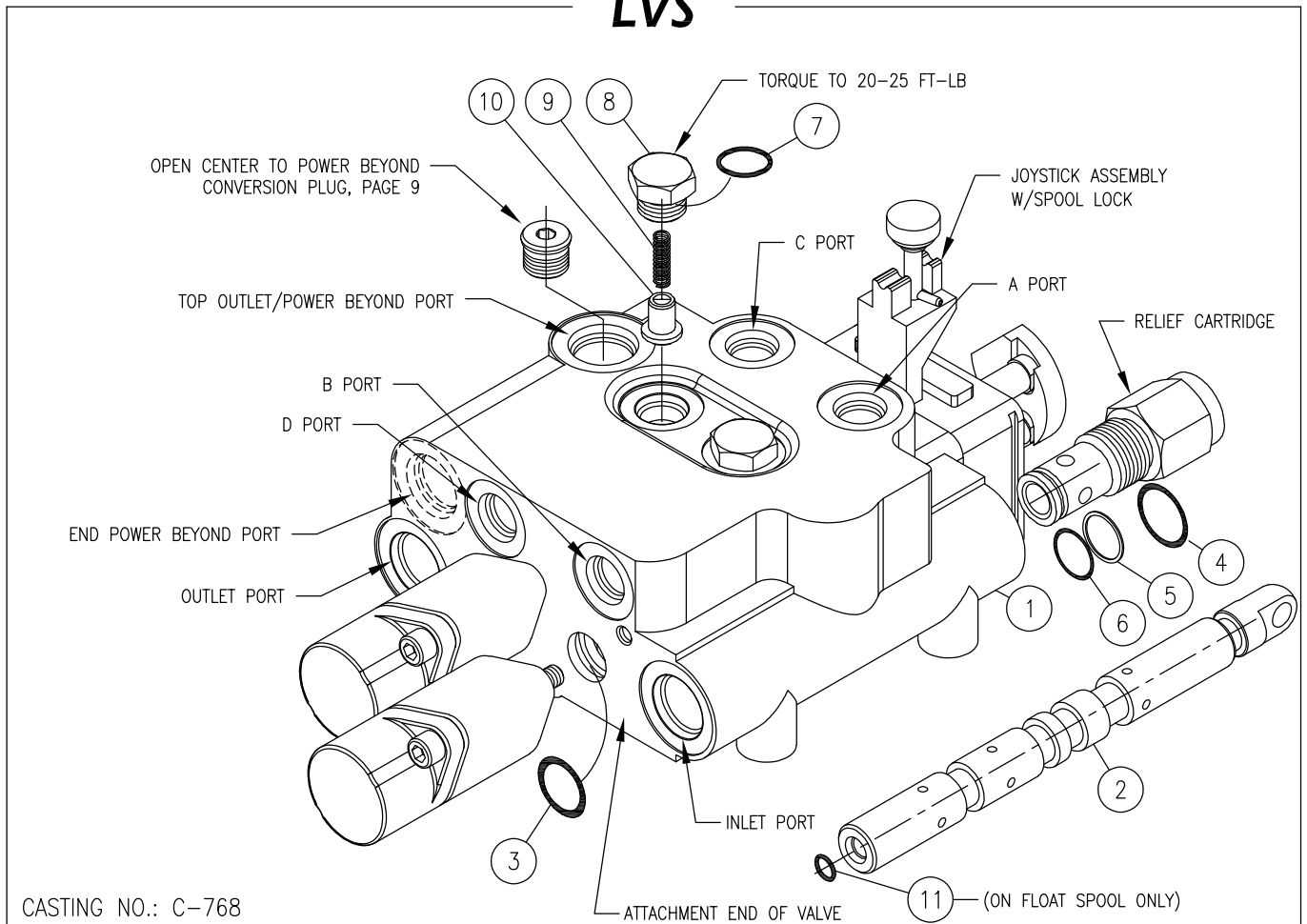
660180112 LOAD CHECK KIT (2 REQ'D PER VALVE)

\*SEE NOTE 2

### NOTES:

- SEE SPOOL IDENTIFICATION CHART ON PAGE 7.
- SPOOL SEAL REPLACEMENT PROCEDURE: REMOVE ALL SPRING END AND HANDLE END PARTS. REMOVE SPOOLS FROM BODY. REMOVE ORIGINAL O-RINGS. INSTALL NEW O-RINGS IN THE GROOVES ON SPRING END OF VALVE. PUSH SPOOL THRU FROM HANDLE END JUST FAR ENOUGH TO EXPOSE O-RING GROOVE. INSTALL O-RING AND PUSH SPOOL BACK. LUBRICATE SEALS BEFORE INSTALLATION.

# LVS



## LVS 2 SPOOL MONO-BLOCK VALVE

ITEM	QTY	PART NO.	DESCRIPTION
1	1		VALVE BODY
2	2	SEE NOTE 1	SPOOL
3	4	240000114*	114 O-RING*
4	1	240000908	908 O-RING
5	1	240005014	014 BACK-UP
6	1	240000014	014 O-RING
7	2	240000906	906 O-RING
8	2	671600114	LOAD CHECK PLUG
9	2	670300104	LOAD CHECK SPRING
10	2	670100038	LOAD CHECK POPPET
11	1	240000902	902 O-RING, FLOAT SPOOL DETENT

} These are matched parts and are not sold separately.  
 } 660590029 SEAL KIT  
 } 660180175 LOAD CHECK KIT (2 REQ'D PER VALVE)

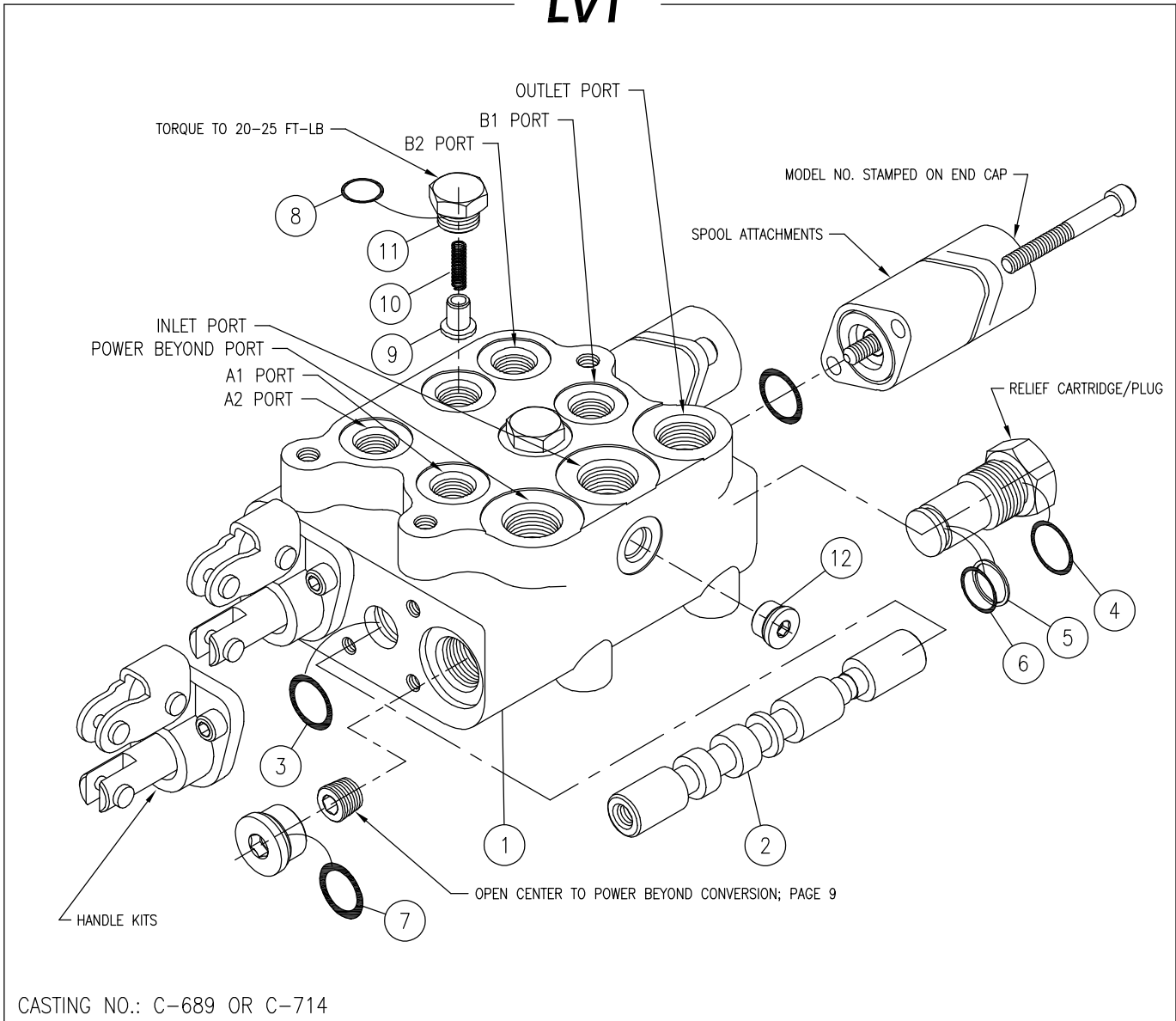
\*SEE NOTE 2

### NOTES:

1. SEE SPOOL IDENTIFICATION CHART ON PAGE 7.

2. SPOOL SEAL REPLACEMENT PROCEDURE: REMOVE ALL SPRING END AND HANDLE END PARTS. REMOVE SPOOLS FROM BODY. REMOVE ORIGINAL O-RINGS. INSTALL NEW O-RINGS IN THE GROOVES ON HANDLE END OF VALVE. PUSH SPOOL THRU FROM ATTACHMENT END JUST FAR ENOUGH TO EXPOSE O-RING GROOVE. INSTALL O-RING AND PUSH SPOOL BACK. LUBRICATE SEALS BEFORE INSTALLATION.

# LVT



## LVT 2 SPOOL MONO-BLOCK VALVE

ITEM	QTY	PART NO.	DESCRIPTION
1	1	-	VALVE BODY
2	2	SEE NOTE 1	SPOOL
3	4	240000114*	114 O-RING*
4	1	240000908	908 O-RING
5	1	240005014	014 BACK-UP
6	1	240000014	014 O-RING
7	1	240000908	908 O-RING
8	2	240000906	906 O-RING
9	2	670100038	LOAD CHECK POPPET
10	2	670300104	LOAD CHECK SPRING
11	2	671600114	LOAD CHECK PLUG
12	1	200200083	HEX SOCKET PLUG, #4 SAE

\*SEE NOTE 2

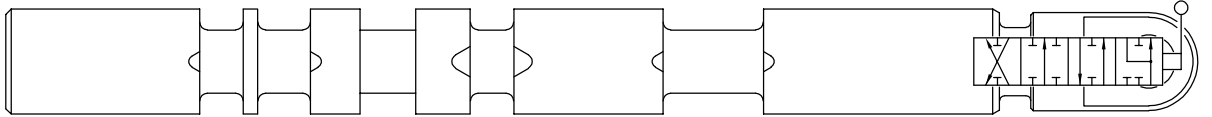
### NOTES:

- SEE SPOOL IDENTIFICATION CHART ON PAGE 7.
- SPOOL SEAL REPLACEMENT PROCEDURE: REMOVE ALL SPRING END AND HANDLE END PARTS. REMOVE SPOOLS FROM BODY. REMOVE ORIGINAL O-RINGS. INSTALL NEW O-RINGS IN THE GROOVES ON HANDLE END OF VALVE. PUSH SPOOL THRU FROM ATTACHMENT END JUST FAR ENOUGH TO EXPOSE O-RING GROOVE. INSTALL O-RING AND PUSH SPOOL BACK. LUBRICATE SEALS BEFORE INSTALLATION.

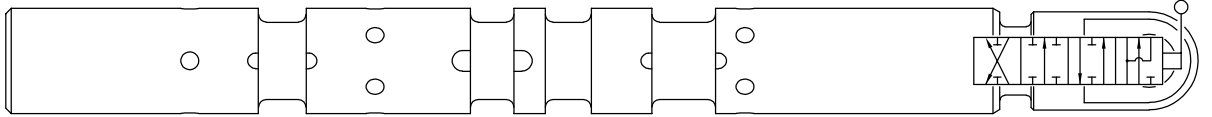
# LVR, LVS & LVT

## LVS

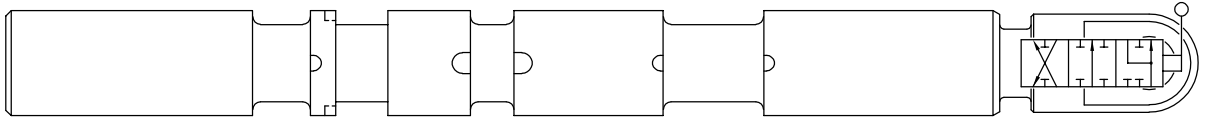
OPTION "R" LVS, 4 WAY 4 POSITION TANDEM CENTER REGEN, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN C-D LOCATION.



OPTION "G" LVS, 4 WAY 4 POSITION TANDEM CENTER FLOAT, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN A-B LOCATION.

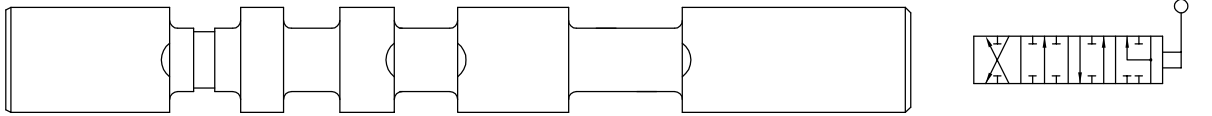


OPTION "F" LVS, 4 WAY 3 POSITION TANDEM CENTER (REGEN SPOOL IN), WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN C-D LOCATION.

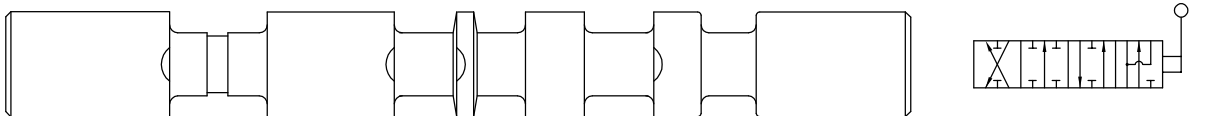


## LVT

OPTION "R" LVT, 4 WAY 4 POSITION TANDEM CENTER REGEN, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN A2-B2 LOCATION.

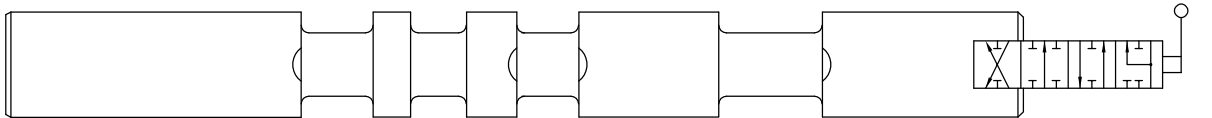


OPTION "G" LVT, 4 WAY 4 POSITION TANDEM CENTER FLOAT, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN A1-B1 LOCATION.

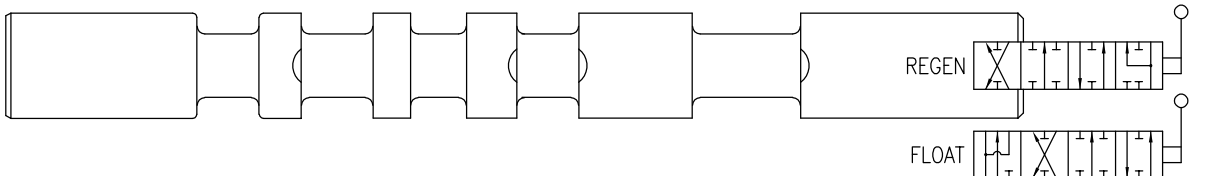


## LVR

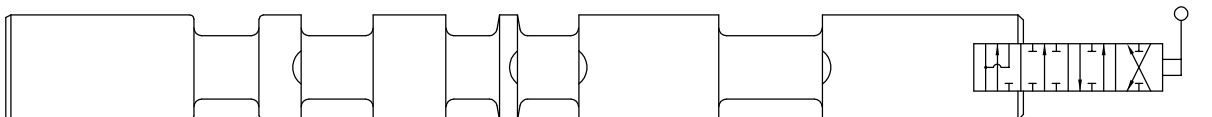
OPTION "R" LVR, 4 WAY 4 POSITION TANDEM CENTER REGEN, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN 2ND SPOOL (C-D PORTS) LOCATION.



OPTION "G & R" LVR, 4 WAY 4 POSITION TANDEM CENTER REGEN/FLOAT, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN 1ST SPOOL (A-B PORTS) LOCATION.

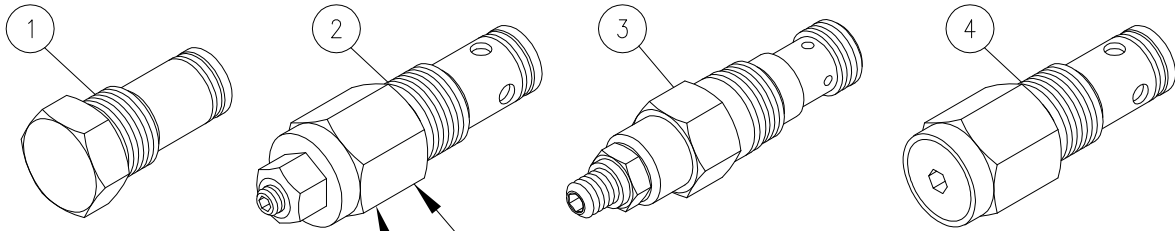


OPTION "G" LVR, 4 WAY 4 POSITION TANDEM CENTER FLOAT, WORK PORTS BLOCKED IN NEUTRAL. THIS SPOOL WILL ONLY FUNCTION IN 2ND SPOOL (C-D PORTS) LOCATION.



NOTE:

SPOOLS ARE NOT AVAILABLE AS REPAIR PARTS. THIS INFORMATION IS FOR IDENTIFICATION PURPOSES.



RELIEF PRESSURE ON ITEM 2 CAN BE ADJUSTED BY LOOSENING LOCK NUT AND TURNING SET SCREW CLOCKWISE TO INCREASE PRESSURE & COUNTERCLOCKWISE TO DECREASE PRESSURE.

INSTALLATION TORQUE FOR ALL RELIEF CARTRIDGES 20-25 FT-LBS



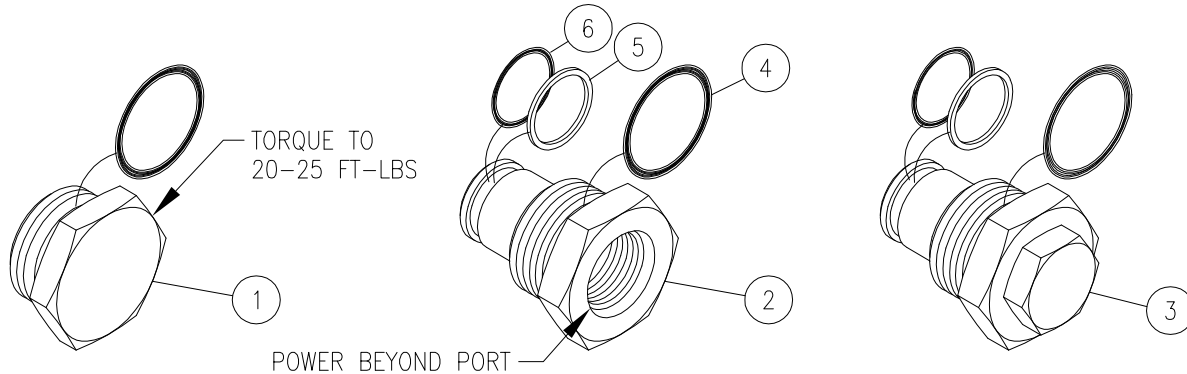
WARNING: OVERPRESSURE MAY CAUSE SUDDEN AND UNEXPECTED FAILURE OF A COMPONENT IN THE HYDRAULIC SYSTEM RESULTING IN SERIOUS PERSONAL INJURY. ALWAYS USE A GAUGE WHEN ADJUSTING A RELIEF VALVE.

### LVR, LVS & LVT RELIEF CARTRIDGES

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	660280004	NO RELIEF PLUG (OPTION 1)
2	1	660280011*	ADJUSTABLE DIRECT ACTING RELIEF 500-1500 PSI (OPTION 4)
2	1	660280009*	ADJUSTABLE DIRECT ACTING RELIEF 1500-3000 PSI (OPTION 5)
3	1	270006122*	ADJUSTABLE PILOT OPERATED RELIEF 500-3000 PSI (OPTION 6)
4	1	660280010*	NON-ADJUSTABLE DIRECT ACTING RELIEF 500-1500 PSI (OPTION 2)
4	1	660280003*	NON-ADJUSTABLE DIRECT ACTING RELIEF 1500-3000 PSI (OPTION 3)
		660180215	SHIM KIT FOR NON-ADJUSTABLE CARTRIDGES

\* CARTRIDGES ORDERED AS SEPARATE PARTS ARE NOT PRESET. (USE PR-0xx; EXCEPT ITEM 3).

### LVR



### LVR POWER BEYOND OPTIONS

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	660301001	OPTION B, OPEN CENTER PLUG ASSY (INCLUDES SEALS)
2	1	660390008	OPTION C, POWER BEYOND OUTLET W/ #8 SAE BEYOND PORT (INCLUDES SEALS)
3	1	660180111	OPTION D, CLOSED CENTER PLUG ASSY (INCLUDES SEALS)
4	1	240000912	-912 O-RING
5	1	240005016	BACK-UP WASHER
6	1	240000016	-016 O-RING

} SEAL KIT 660590016

**OPTION B: OPEN CENTER CONVERSION PLUG**  
This is the standard outlet option. This option allows for conversion in the field for power beyond or closed center applications. When the spool is in neutral the inlet is unloaded to tank.

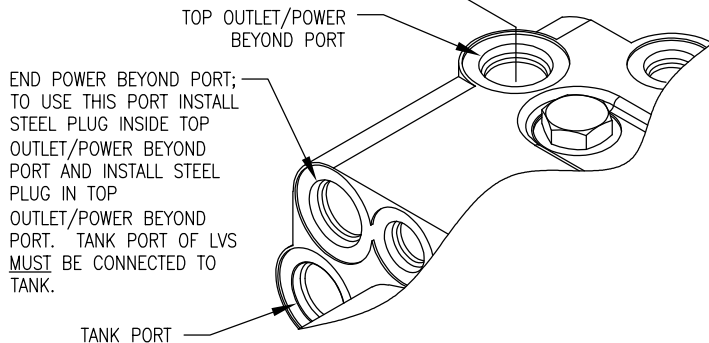
**OPTION D: CLOSED CENTER PLUG ASSY**  
This option allows for closed center valve operation.

**OPTION C: POWER BEYOND PLUG WITH #8 SAE BEYOND PORT**  
This option provides for a high pressure power beyond port. This would be used if a valve is to be added downstream. The outlet must be connected to tank. When spool is in neutral the inlet is connected to power beyond port.



# LVS & LVT

FOR POWER BEYOND APPLICATIONS:  
INSTALL THIS PLUG INSIDE VALVE  
BODY. THE POWER BEYOND PORT  
IS THEN CONNECTED TO THE  
DOWNSTREAM VALVE.  
PLEASE NOTE THE TANK PORT OF  
LVS MUST BE CONNECTED TO  
TANK, SEE APPLICATION PAGE.

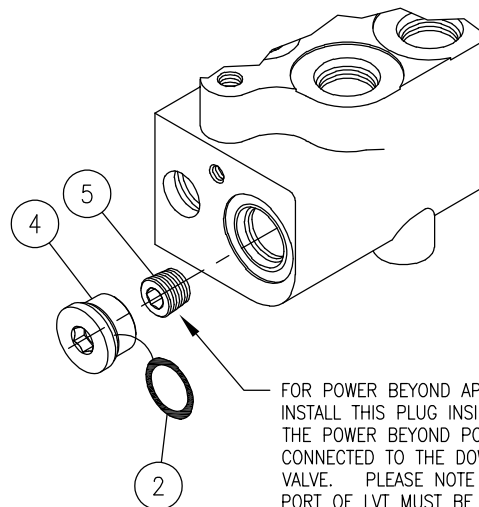


END POWER BEYOND PORT;  
TO USE THIS PORT INSTALL  
STEEL PLUG INSIDE TOP  
OUTLET/POWER BEYOND  
PORT AND INSTALL STEEL  
PLUG IN TOP  
OUTLET/POWER BEYOND  
PORT. TANK PORT OF LVS  
MUST BE CONNECTED TO  
TANK.

FOR STANDARD OPEN CENTER APPLICATIONS  
DISCARD CONVERSION PLUG, ITEM 3, AND INSTALL  
STEEL PORT PLUGS IN THE POWER BEYOND PORTS.

CLOSED CENTER NOT AVAILABLE ON LVS.

## LVS



FOR POWER BEYOND APPLICATIONS:  
INSTALL THIS PLUG INSIDE VALVE  
BODY. THE POWER BEYOND PORT IS  
CONNECTED TO THE DOWNSTREAM  
VALVE. PLEASE NOTE THE TANK  
PORT OF LVT MUST BE CONNECTED TO  
TANK, SEE APPLICATION PAGE.

FOR STANDARD OPEN CENTER APPLICATIONS  
DISCARD PIPE PLUG AND INSTALL THE STEEL  
PORT PLUGS IN THE POWER BEYOND PORTS.

FOR CLOSED CENTER APPLICATIONS INSTALL  
STEEL PIPE PLUG INSIDE VALVE BODY. INSTALL  
STEEL PORT PLUGS IN POWER BEYOND PORTS,  
& INSTALL NO-RELIEF PLUG IN RELIEF CAVITY.

## LVT

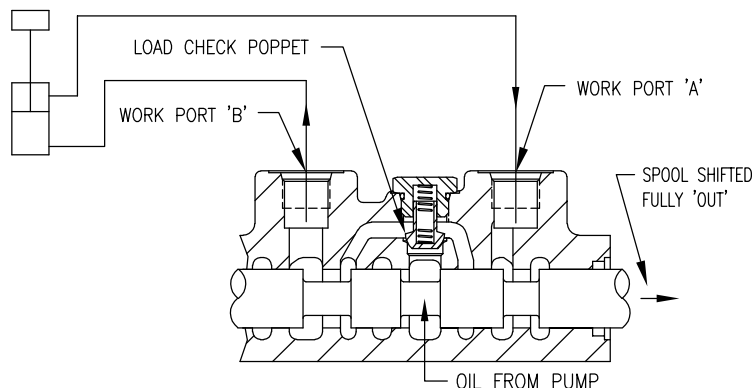
### LVS AND LVT POWER BEYOND OPTION

ITEM	QTY	PART NO.	DESCRIPTION
1	1	200300040	PLUG, HEX STEEL, #8 ORB (INCLUDES O-RING)
2	1	240000908	-908 O-RING
3	1	200026005-*	PLUG, STEEL, #5 ORB (INSTALL FOR POWER BEYOND/CLOSED CENTER ONLY)
4	1	200300104	PLUG, HEX SOCKET, #8 ORB (INCLUDES O-RING)
5	1	200018001	PIPE PLUG, 1/4-NPTF (INSTALL FOR POWER BEYOND/CLOSED CENTER ONLY)

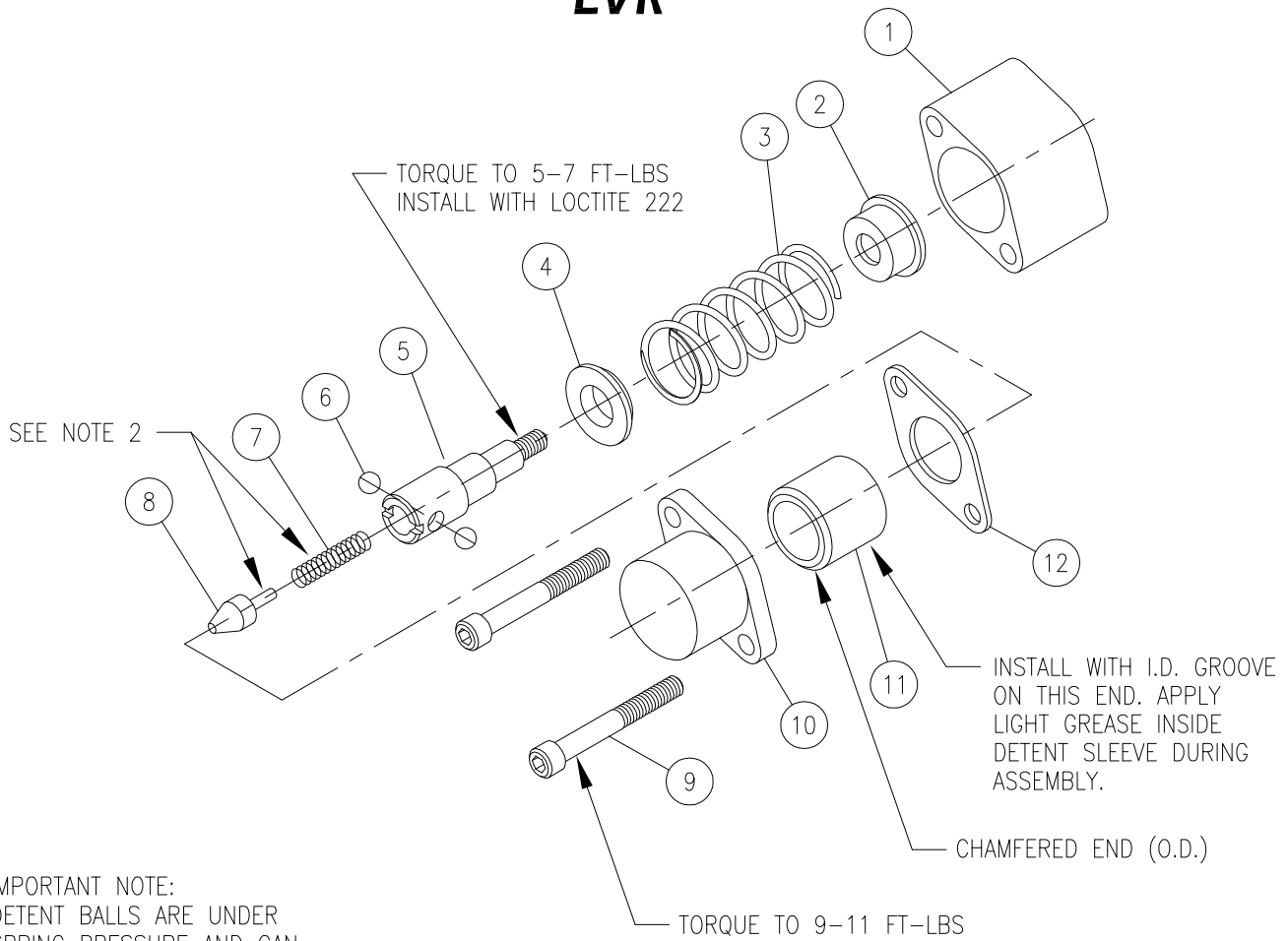
\* PRIOR LVS CONVERSION PLUG USAGE WAS 200018001, 1/4-NPTF PIPE PLUG

#### LOAD CHECK DESCRIPTION:

The load check feature is standard on all LVR, LVS & LVT series valves. Each spool has a separate load check. The load check will prevent the fall of a cylinder as the spool is shifted. It also prevents the backflow of oil from the work port to the inlet. As shown to the right, the pump must build up enough pressure to overcome the pressure on the work port caused by the weight of the load before the cylinder can move. PLEASE NOTE that the load check has nothing to do with how well the valve will hold up a cylinder with the spool in neutral. The load check is functional only while the spool is being shifted.



# LVR



IMPORTANT NOTE:  
 DETENT BALLS ARE UNDER  
 SPRING PRESSURE AND CAN  
 FLY OUT WHEN DETENT  
 SLEEVE IS REMOVED.  
 WEAR SAFETY GLASSES.

## LVR SPRING CENTER FLOAT DETENT SPOOL ATTACHMENT (OPTION G)

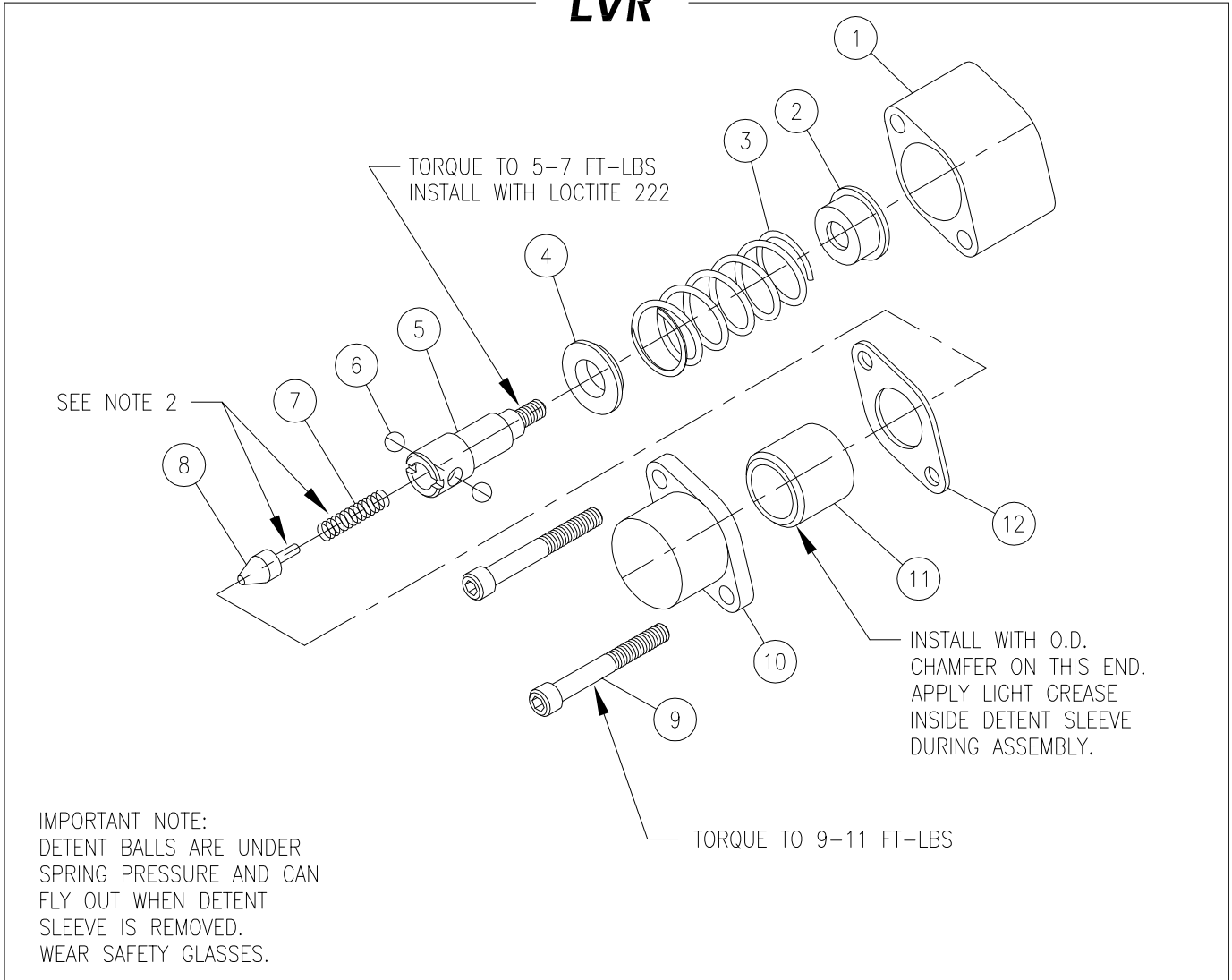
ITEM	QTY	PART NO.	DESCRIPTION
1	1	671200033	SPACER
2	1	671400202	STOP CUP, INNER
3	1	670300106	SPRING, CENTERING
4	1	670500085	STOP CUP, OUTER
5	1	670700063	FLOAT DETENT RETAINER (LONG)
6	2	230009009	STEEL BALL
7	1	670300123	SPRING, DETENT
8	1	670100009	POPPET
9	2	170003019	CAP SCREW
10	1	671400195	END CAP
11	1	670700064	FLOAT DETENT SLEEVE
12	1	670500087	RETAINER PLATE

LVR FLOAT HARDWARE  
 KIT 660180074

### NOTES:

1. INSTALL ITEMS 7 & 8 INTO ITEM 5 AND COMPRESS DETENT SPRING. INSTALL STEEL BALLS, ITEM 6, AND SLIDE DETENT SLEEVE, ITEM 11, OVER RETAINER, ITEM 5. DURING ASSEMBLY ITEM 11 MAY BE SLID OVER A DOWEL, WHICH MAY BE USED TO DEPRESS THE POPPET, ITEM 8. ONCE DEPRESSED THE FLOAT DETENT SLEEVE MAY BE SLID OVER THE BALLS.

# LVR



IMPORTANT NOTE:  
 DETENT BALLS ARE UNDER  
 SPRING PRESSURE AND CAN  
 FLY OUT WHEN DETENT  
 SLEEVE IS REMOVED.  
 WEAR SAFETY GLASSES.

## LVR SPRING CENTER REGEN SPOOL ATTACHMENT (OPTION R)

ITEM	QTY	PART NO.	DESCRIPTION
1	1	671200033	SPACER
2	1	671400202	STOP CUP, INNER
3	1	670300106	SPRING, CENTERING
4	1	670500085	STOP CUP, OUTER
5	1	670700065	REGEN DETENT RETAINER (SHORT)
6	2	230009009	STEEL BALL
7	1	670300123	SPRING, DETENT
8	1	670100009	POPPET
9	2	170003019	CAP SCREW
10	1	671400195	END CAP
11	1	670700061	REGEN SLEEVE
12	1	670500087	RETAINER PLATE

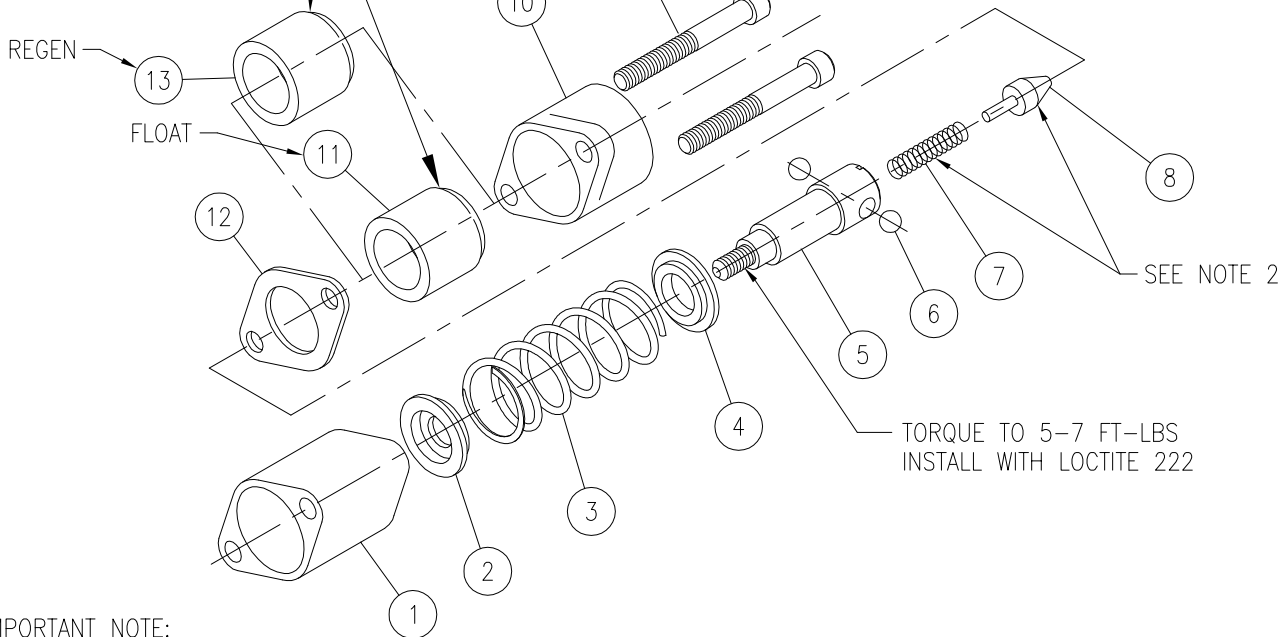
LVR REGEN HARDWARE  
 KIT 660180075

NOTES:

1. INSTALL ITEMS 7 & 8 INTO ITEM 5 AND COMPRESS DETENT SPRING. INSTALL STEEL BALLS, ITEM 6, AND SLIDE REGEN SLEEVE, ITEM 11, OVER RETAINER, ITEM 5. DURING ASSEMBLY ITEM 11 MAY BE SLID OVER A DOWEL, WHICH MAY BE USED TO DEPRESS THE POPPET, ITEM 8. ONCE DEPRESSED THE REGEN SLEEVE MAY BE SLID OVER THE BALLS.

# LVT

INSTALL WITH O.D. CHAMFER ON THIS END. APPLY LIGHT GREASE INSIDE DETENT SLEEVE DURING ASSEMBLY.



IMPORTANT NOTE:  
DETENT BALLS ARE UNDER SPRING PRESSURE AND CAN FLY OUT WHEN DETENT SLEEVE IS REMOVED.  
WEAR SAFETY GLASSES.

## LVT SPRING CENTER FLOAT DETENT OPTION G AND LVT SPRING CENTER REGEN OPTION R SPOOL

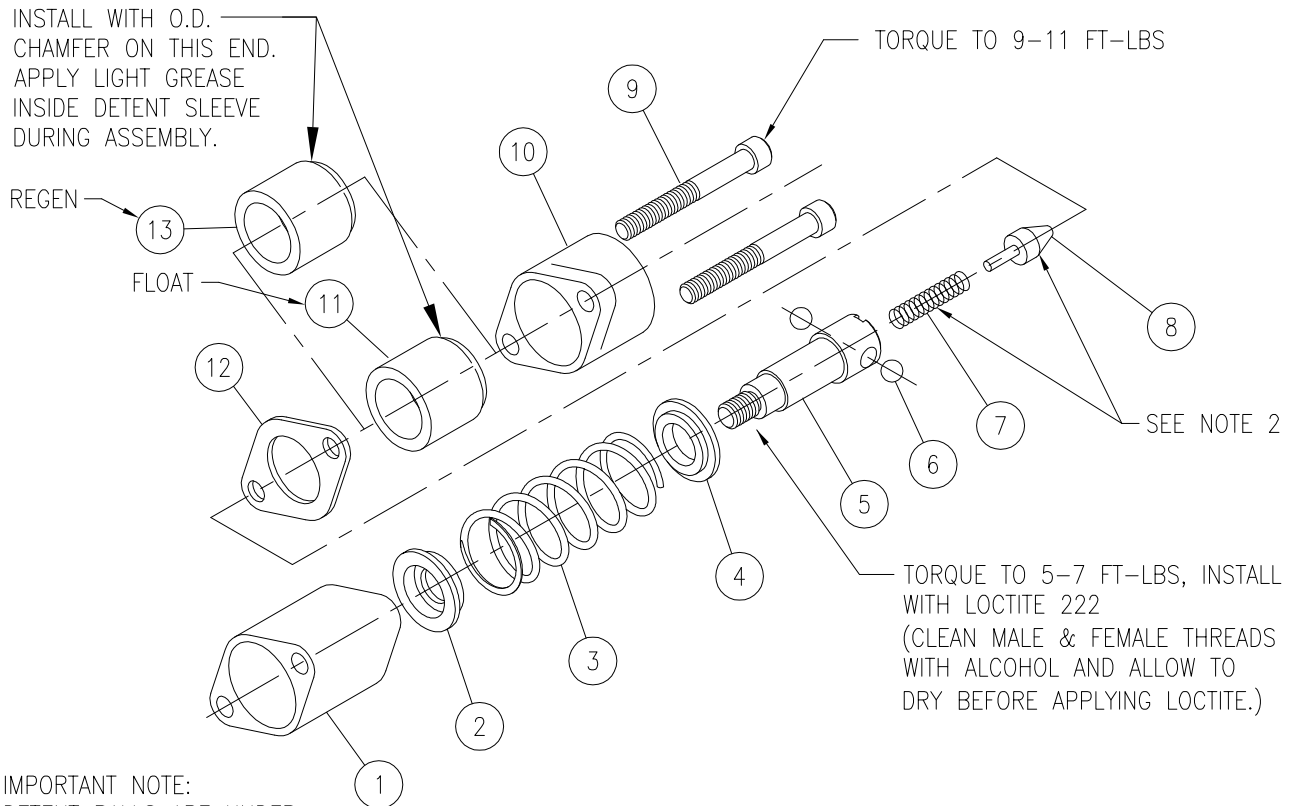
ITEM	QTY	PART NO.	DESCRIPTION	
1	1	671200033	SPACER	OPTION G; SPRING CENTER WITH FLOAT DETENT, <u>KIT 660180076 *</u> (ALL ITEMS EXCEPT 13)
2	1	671400196	STOP CUP, INNER	
3	1	670300106	SPRING, CENTERING	
4	1	670500085	WASHER	
5	1	670700062	DETENT RETAINER	
6	2	230009009	STEEL BALL	* INCLUDES ITEM 11
7	1	670300123	SPRING, DETENT	OPTION R; SPRING CENTER WITH REGEN, <u>KIT 660180077 **</u> (ALL ITEMS EXCEPT 11)
8	1	670100009	POPPET	
9	2	170003019	CAP SCREW	
10	1	671400195	END CAP	
11	1	670700060 *	FLOAT DETENT SLEEVE (A1-B1 SPOOL)	
12	1	670500087	RETAINER PLATE	
13	1	670700061 **	REGEN SLEEVE (A2-B2 SPOOL)	

### NOTES:

1. INSTALL ITEMS 7 & 8 INTO ITEM 5 AND COMPRESS DETENT SPRING. INSTALL STEEL BALLS, ITEM 6, AND SLIDE DETENT SLEEVE, ITEM 11 OR 13, OVER RETAINER, ITEM 5. DURING ASSEMBLY ITEM 11 OR 13 MAY BE SLID OVER A DOWEL, WHICH MAY BE USED TO DEPRESS THE POPPET, ITEM 8. ONCE DEPRESSED THE DETENT SLEEVE MAY BE SLID OVER THE BALLS.
2. FLOAT DETENT SLEEVE HAS A DETENT GROOVE ON THE INSIDE. THE REGEN SLEEVE DOES NOT.

# LVS

INSTALL WITH O.D. CHAMFER ON THIS END. APPLY LIGHT GREASE INSIDE DETENT SLEEVE DURING ASSEMBLY.



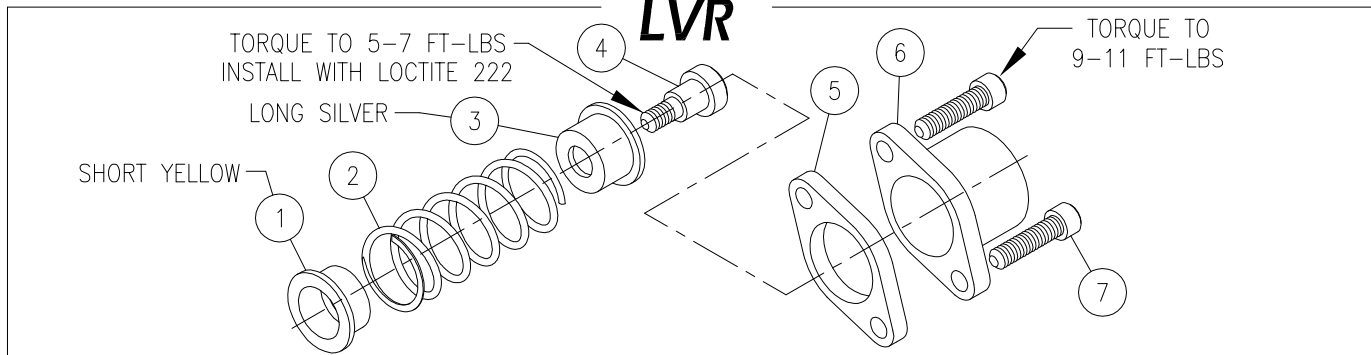
IMPORTANT NOTE:  
DETENT BALLS ARE UNDER SPRING PRESSURE AND CAN FLY OUT WHEN DETENT SLEEVE IS REMOVED.  
WEAR SAFETY GLASSES.

## LVS SPRING CENTER FLOAT DETENT OPTION G AND LVS SPRING CENTER REGEN OPTION R SPOOL

ITEM	QTY	PART NO.	DESCRIPTION	
1	1	671200033	SPACER	OPTION G: SPRING CENTER WITH FLOAT DETENT, KIT 660180170 * (ALL ITEMS EXCEPT 13) * INCLUDES ITEM 11 OPTION R: SPRING CENTER WITH REGEN, KIT 660180169 ** (ALL ITEMS EXCEPT 11) ** INCLUDES ITEM 13
2	1	671400261	STOP CUP, INNER	
3	1	670300106	SPRING, CENTERING	
4	1	670500085	WASHER	
5	1	670700090	DETENT RETAINER	
6	2	230009009	STEEL BALL	
7	1	670300123	SPRING, DETENT	
8	1	670100009	POPPET	
9	2	170003019	CAP SCREW	
10	1	671400195	END CAP	
11	1	670700091 *	FLOAT DETENT SLEEVE (A-B SPOOL)	
12	1	670500087	RETAINER PLATE	
13	1	670700092 **	REGEN SLEEVE (C-D SPOOL)	

### NOTES:

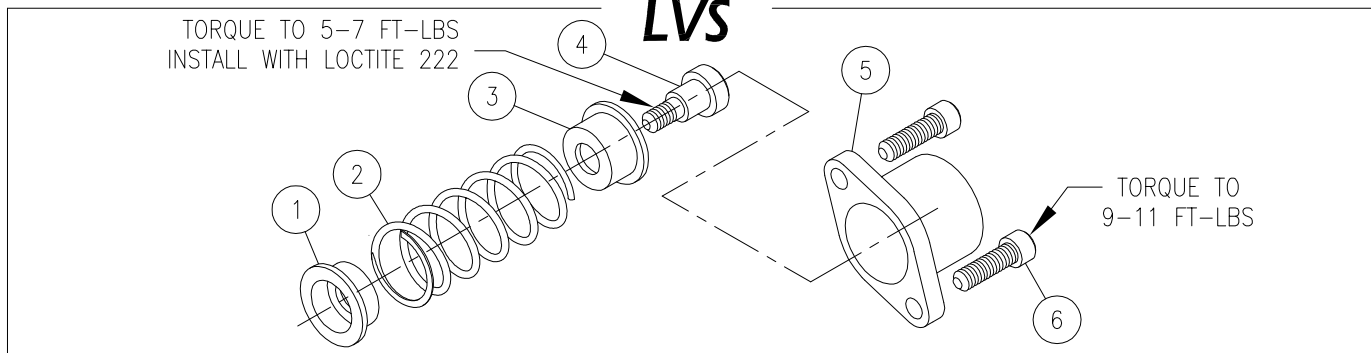
- INSTALL ITEMS 7 & 8 INTO ITEM 5 AND COMPRESS DETENT SPRING. INSTALL STEEL BALLS, ITEM 6, AND SLIDE DETENT SLEEVE, ITEM 11 OR 13, OVER RETAINER, ITEM 5. DURING ASSEMBLY ITEM 11 OR 13 MAY BE SLID OVER A DOWEL, WHICH MAY BE USED TO DEPRESS THE POPPET, ITEM 8. ONCE DEPRESSED THE DETENT SLEEVE MAY BE SLID OVER THE BALLS.
- FLOAT DETENT SLEEVE HAS A DETENT GROOVE ON THE INSIDE. THE REGEN SLEEVE DOES NOT.



**LVR OPTION B SPRING CENTER**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	671400202	STOP CUP (SHORT YELLOW)
2	1	670300108	SPRING
3	1	671400201	STOP CUP (LONG SILVER)
4	1	671900067	SPOOL ADAPTER
5	1	671200034	SPACER
6	1	671400195	END CAP
7	2	170003008	CAP SCREW

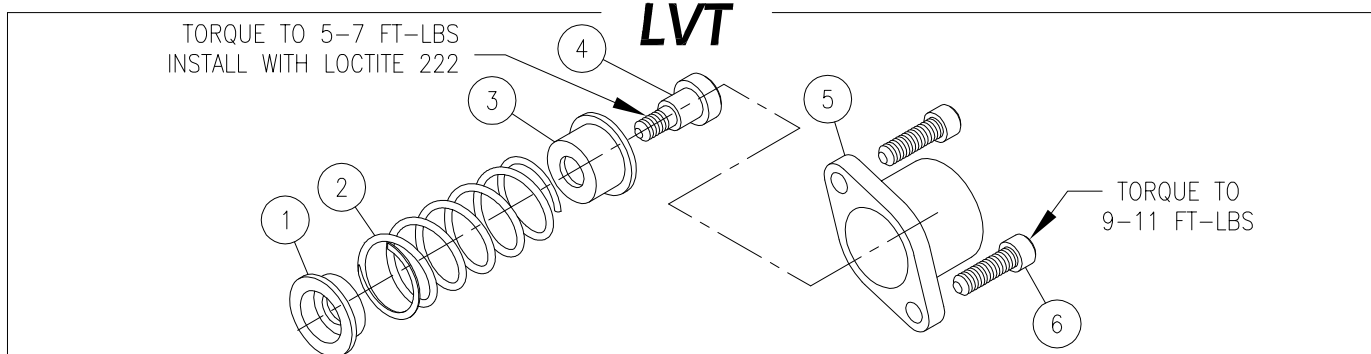
} LVR SPRING CENTER  
KIT 660180079



**LVS OPTIONS B & F SPRING CENTER**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	671400261	STOP CUP
2	1	670300108	SPRING
3	1	671400269	STOP CUP
4	1	671900094	SPOOL ADAPTER
5	1	671400195	END CAP
6	2	170003080	CAP SCREW

} LVS SPRING CENTER  
KIT 660180173

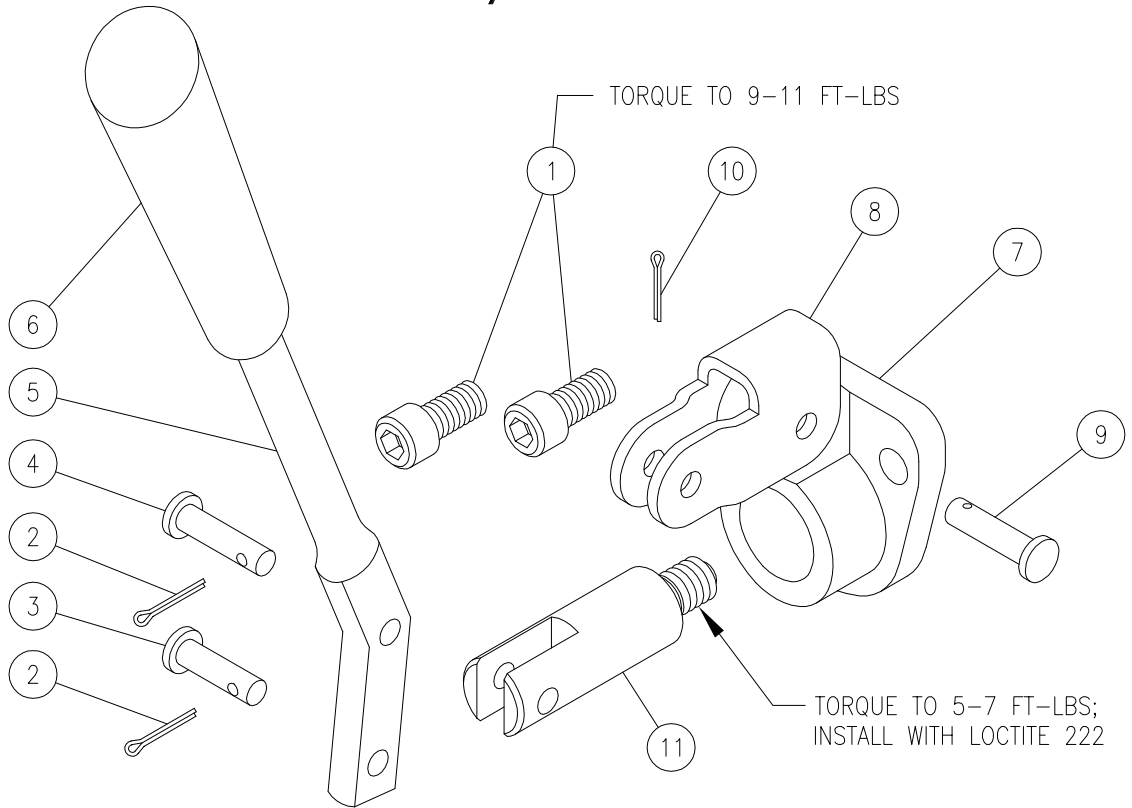


**LVT OPTION B SPRING CENTER**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	671400196	STOP CUP
2	1	670300108	SPRING
3	1	671400201	STOP CUP
4	1	671900067	SPOOL ADAPTER
5	1	671400195	END CAP
6	2	170003080	CAP SCREW

} LVT SPRING CENTER  
KIT 660180078

# LVR/LVT



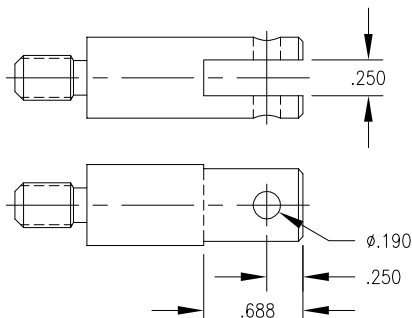
## LVR/LVT STANDARD LEVER HANDLE (OPTION 1)

ITEM	QTY	PART NO.	DESCRIPTION
1	2	170003017	CAP SCREW
2	2	220001512	COTTER PIN
3	1	671700012	CLEVIS PIN
4	1	671700014	CLEVIS PIN
5	1	670400012	HANDLE
6	1	670400020	HANDLE KNOB
7	1	671400197	CLEVIS
8	1	670500047	LINK
9	1	671700014	CLEVIS PIN
10	1	220001512	COTTER PIN
11	1	671900011	SPOOL ADAPTER

HANDLE KIT 660180011 (Items 1, 2, 3, 4, 5, 6)  
 CLEVIS ASSY 660180072 (Items 7, 8, 9, 10)  
 COMPLETE HANDLE KIT 660180073 (Items 1-11)

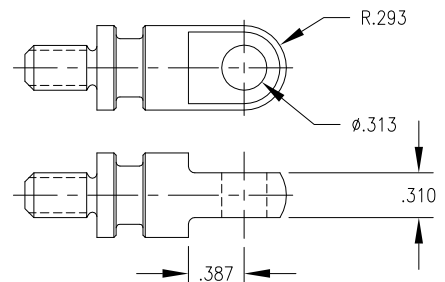
## LVR/LVT HANDLE OPTION 2

CLEVIS SPOOL END ONLY; P/N 671900011  
 TORQUE TO 5-7 FT-LBS, INSTALL WITH LOCTITE 222



## LVR HANDLE OPTION 8

TANG SPOOL END ONLY;  
 REGEN SPOOL USES P/N 671900097 (YELLOW)  
 FLOAT SPOOL USES P/N 671900096  
 TORQUE TO 5-7 FT-LBS, INSTALL WITH LOCTITE 222.  
 (LVS/LVT MODELS INCORPORATE TANG INTO SPOOL)



# JOYSTICK INSTALLATION OF PMC MODEL LVR AND LVS VALVES USED WITH FRONT END LOADERS

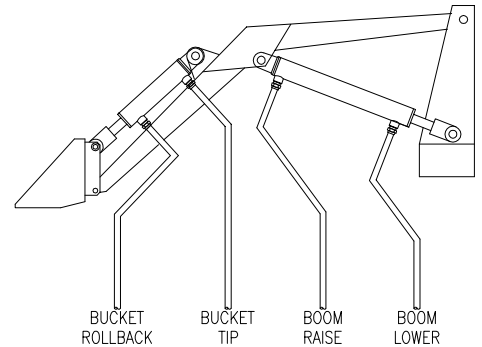
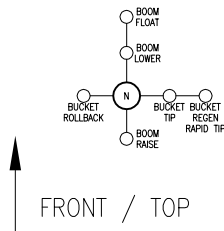


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 North Sioux City, South Dakota 57049-7000  
 www.princehyd.com

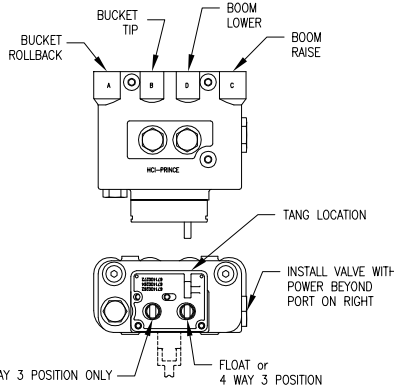
MODEL CODE	FIGURE	JOYSTICK KIT (NO LOCK)	JOYSTICK KIT (LOCKING)
<b>LVR MODELS</b>			
LVRxGRxxx3	B	660180167	660180164
LVRxGRxxx6	F	660180178	660180153
LVRxGRxxx7	B or F	660180182*	NA
LVRxRGxxx4	C	660180178	660180153
LVRxRGxxx5	E	660180167	660180164
LVRxRGxxx7	C or E	660180182*	NA
LVRxGBxxx3	B	660180167	660180164
LVRxGBxxx5	D	660180178	660180153
LVRxGBxxx6	F	660180178	660180153
LVRxGBxxx7	B,D or F	660180182*	NA
LVRxBGxxx3	A	660180178	660180153
LVRxBGxxx4	C	660180178	660180153
LVRxBGxxx5	E	660180167	660180164
LVRxBGxxx7	A,C or E	660180182*	NA
LVRxBBxxx3	B	660180167	660180164
LVRxBBxxx4	C	660180178	660180153
LVRxBBxxx5	E	660180167	660180164
LVRxBBxxx6	F	660180178	660180153
LVRxBBxxx7	B,C,E or F	660180182*	NA
<b>LVS MODELS</b>			
LVSxxxxx1	G	660180178	660180153
LVSxxxxx2	H	660180167	660180164
LVSxxxxx3	G	660180178	660180153
LVSxxxxx4	H	660180167	660180164
LVSxxxxx7	G,H	660180182*	NA

\*NOTE: HANDLE OPTION 7 KIT CONTAINS JOYSTICK COMPONENTS REQUIRED TO ASSEMBLE JOYSTICKS ON ANY OF THE VALVE MODELS SHOWN.  
 REF: KIT 660180157 ("LONG" CLEVIS) IS SIMILAR TO 660180178 ("SHORT" CLEVIS)

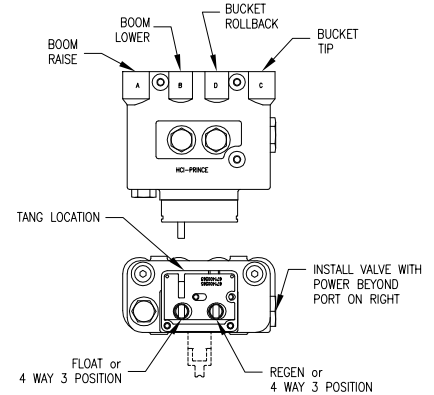
## JOYSTICK HANDLE MOVEMENT PATTERN



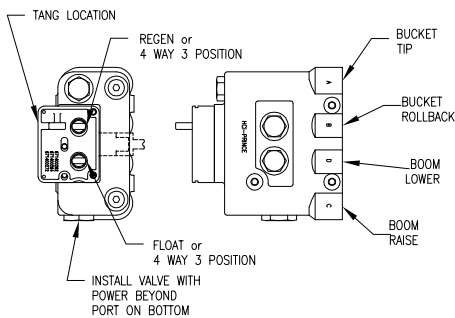
**FIGURE A. (LVR HANDLE OPTION 3)**  
 USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



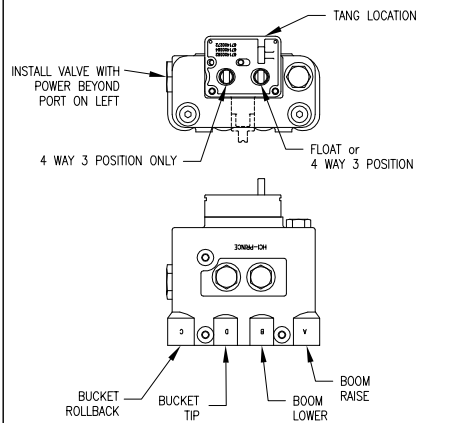
**FIGURE B. (LVR HANDLE OPTION 3)**  
 USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)



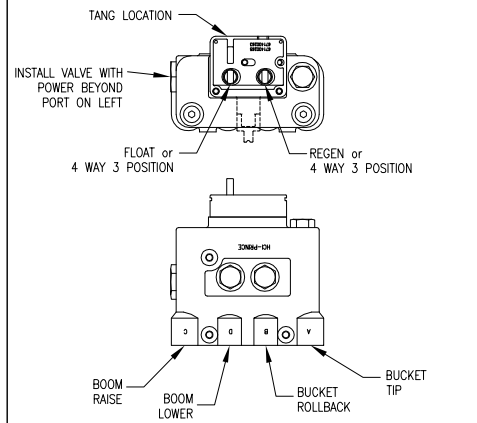
**FIGURE C. (LVR HANDLE OPTION 4)**  
 USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



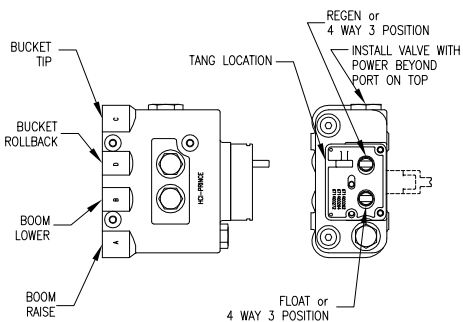
**FIGURE D. (LVR HANDLE OPTION 5)**  
 USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



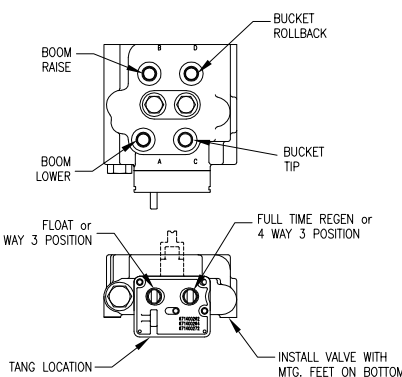
**FIGURE E. (LVR HANDLE OPTION 5)**  
 USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)



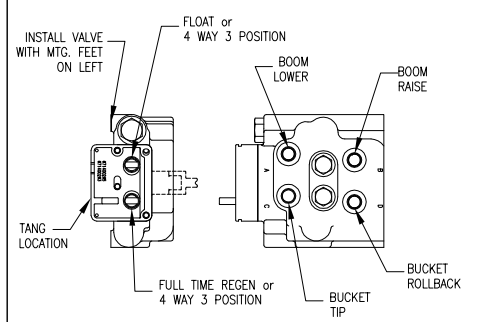
**FIGURE F. (LVR HANDLE OPTION 6)**  
 USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



**FIGURE G. (LVS HANDLE OPTION 1 OR 3)**  
 USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



**FIGURE H. (LVS HANDLE OPTION 2 OR 4)**  
 USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)





# JOYSTICK INSTALLATION OF PMC MODEL LVT VALVE USED WITH FRONT END LOADERS



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MODEL CODE	FIGURE	JOYSTICK KIT (NO LOCK)	JOYSTICK KIT (LOCKING)
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**LVT MODELS**

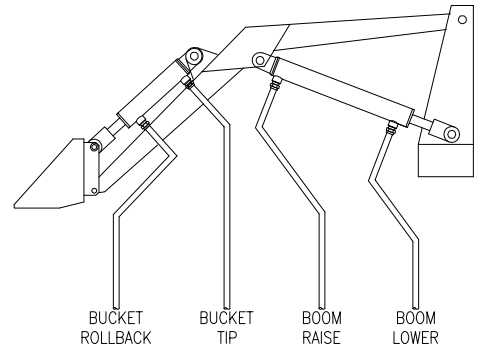
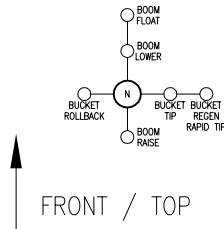
LVTxGRxxx3	A	660180178	660180153
LVTxGRxxx4	C	660180167	660180164
LVTxGRxxx7	A or C	660180182*	NA
LVTxRGxxx5	E	660180178	660180153
LVTxRGxxx6	G	660180167	660180164
LVTxRGxxx7	E or G	660180182*	NA
LVTxGBxxx3	A	660180178	660180153
LVTxGBxxx4	C	660180167	660180164
LVTxGBxxx5	F	660180167	660180164
LVTxGBxxx7	A,C,D or F	660180182*	NA
LVTxBGxxx3	B	660180167	660180164
LVTxBGxxx5	E	660180178	660180153
LVTxBGxxx6	G	660180167	660180164
LVTxBGxxx7	B,E or G	660180182*	NA
LVTxBBxxx3	A	660180178	660180153
LVTxBBxxx4	C	660180167	660180164
LVTxBBxxx5	E	660180178	660180153
LVTxBBxxx6	G	660180167	660180164
LVTxBBxxx7	A,C,E or G	660180182*	NA

\*NOTE: HANDLE OPTION 7 KIT CONTAINS JOYSTICK COMPONENTS REQUIRED TO ASSEMBLE JOYSTICKS ON ANY OF THE VALVE MODELS SHOWN.

REF: GR & GB USE CASTING C-689 AND  
RG & BG USE CASTING C-714

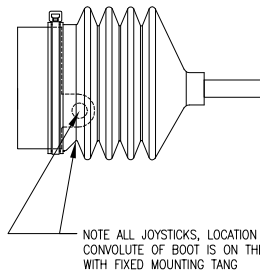
KIT 660180157 ("LONG" CLEVIS) IS SIMILAR TO  
660180178 ("SHORT" CLEVIS)

## JOYSTICK HANDLE MOVEMENT PATTERN



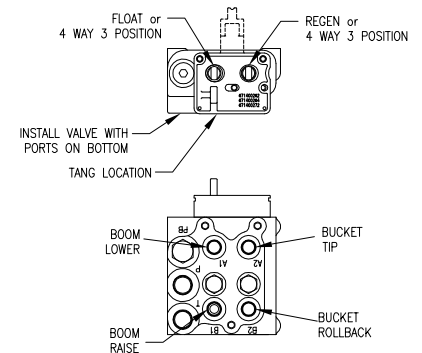
### BOOT INSTALLATION:

NOTE: BOOT AND CABLE TIE ARE NOT INCLUDED WITH THE JOYSTICK KITS LISTED. THEY MAY BE ORDERED IN THE BOOT & CABLE TIE KIT, PN 660180165. WHEN INSTALLING BOOT, PLEASE ASSEMBLE AS INDICATED BELOW:



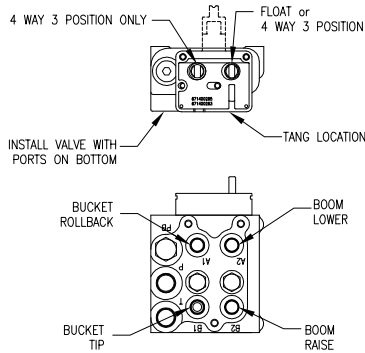
**FIGURE A. (LVT HANDLE OPTION 3)**

USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



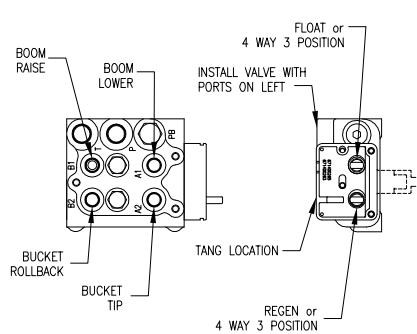
**FIGURE B. (LVT HANDLE OPTION 3)**

USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)



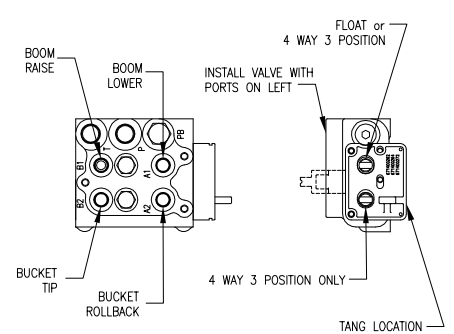
**FIGURE C. (LVT HANDLE OPTION 4)**

USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)



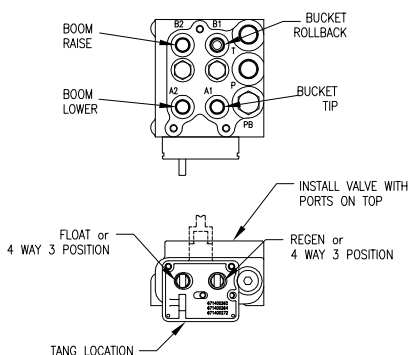
**FIGURE D. (LVT ALTERNATE HANDLE OPTION 4)**

USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



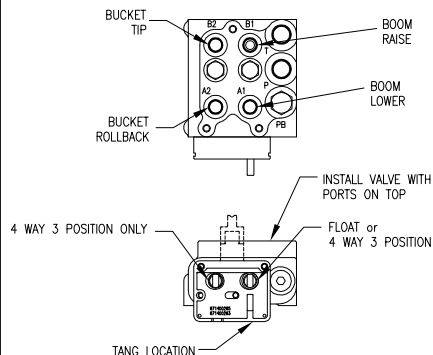
**FIGURE E. (LVT HANDLE OPTION 5)**

USE LEFT HAND CLEVIS, PN 671400272 (NO LOCK), OR 671400262 (LOCKING)



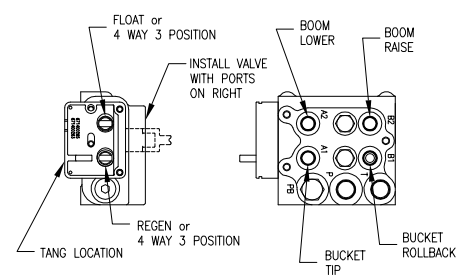
**FIGURE F. (LVT HANDLE OPTION 5)**

USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)



**FIGURE G. (LVT HANDLE OPTION 6)**

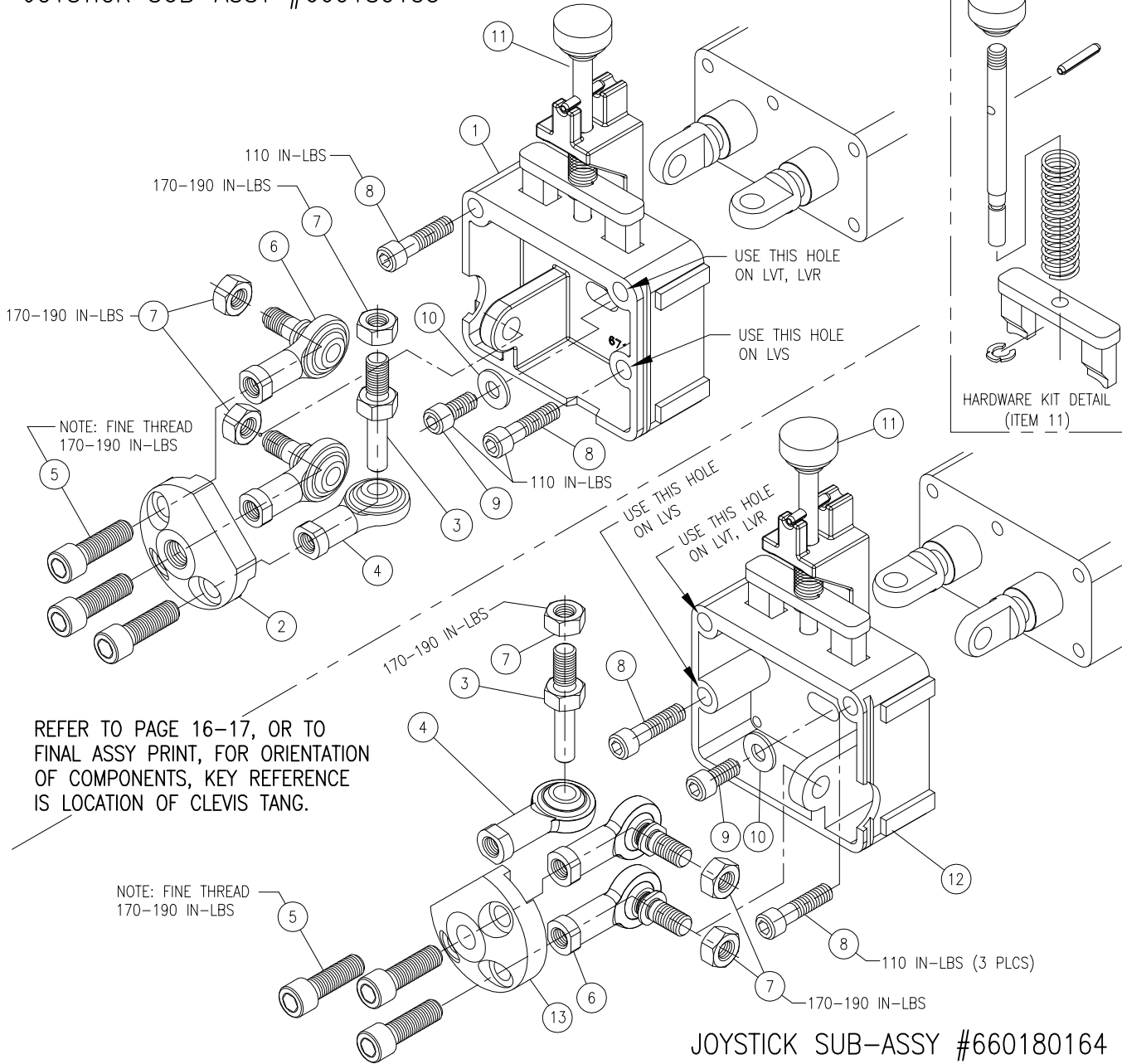
USE RIGHT HAND CLEVIS, PN 671400265 (NO LOCK) OR 671400263 (LOCKING)



REF 672100032 @ REV D; SHT. 2 OF 2

JOYSTICK SUB-ASSY #660180153

LV



JOYSTICK SUB-ASSY #660180164

LV JOYSTICK SUB-ASSY WITH DUAL SPOOL LOCK

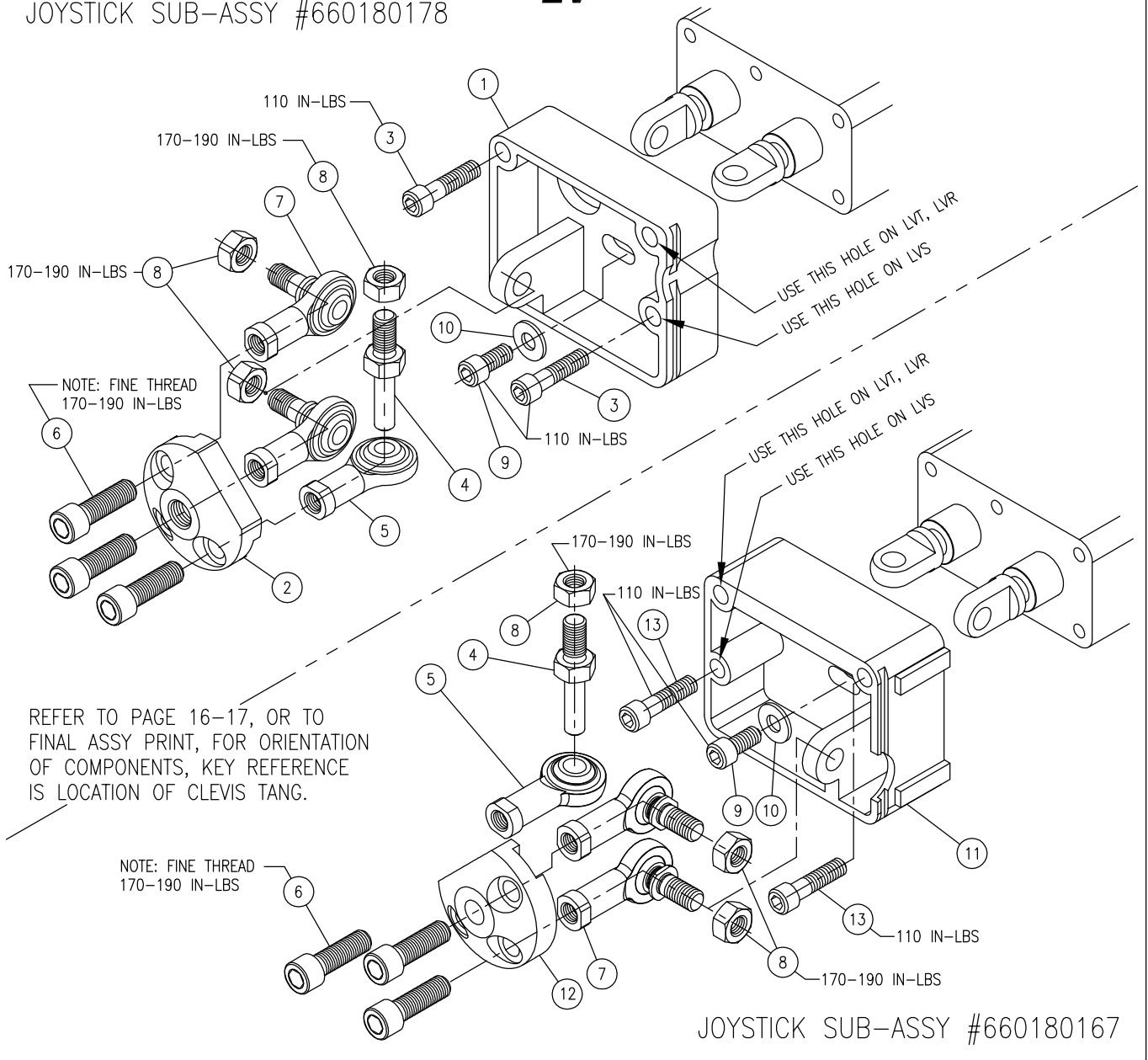
ITEM	QTY	PART NO.	DESCRIPTION	
1	1	671400262	SPOOL LOCK CLEVIS	ITEMS 1-11 INCL. IN KIT 660180153*
2	1	671400267	ADAPTER PLATE	
3	1	671900084	SPOOL STUD	
4	1	671400252	ROD END	
5	3	170003094	CAP SCREW (FINE THD)	
6	2	660390016	ROD END ASSY	
7	3	220000125	HEX NUT (FINE THD)	
8	2	170003034	CAP SCREW	
9	1	170003008	CAP SCREW	
10	1	670500026	WASHER, FLAT	
11	1	660180154	SPOOL LOCK HDWRE KIT	
12	1	671400263	SPOOL LOCK CLEVIS	
13	1	671400268	ADAPTER PLATE	
14	1	660180069	STRAIGHT HANDLE KIT (page 21) *	ITEMS 3-13 INCL. IN KIT 660180164*
15	1	660180165	BOOT & CABLE TIE KIT (page 21) *	

INSTALLATION PROCEDURE:  
 PRE-ASSEMBLE ROD ENDS. ALIGN  
 SPOOL TANGS WITH BRACKET TANG.  
 LOOSELY INSERT ROD END STUDS  
 INTO TANGS. ROTATE 2ND SPOOL  
 TANG 90°. INSERT SPOOL STUD  
 INTO ROD END & ROTATE ASSY  
 SUCH THAT THE SPOOL STUD  
 THREAD CAN BE INSERTED INTO  
 2ND SPOOL TANG. APPLY LOCTITE  
 & TORQUE ALL FASTENERS AS  
 INDICATED.  
 NOTE:  
 CLEAN ALL THREADED PARTS WITH  
 ALCOHOL, DRY AND INSTALL WITH  
 LOCTITE 680, 277 OR 281.

\*-NOTE: COMPLETE JOYSTICK HANDLE OPTIONS CONSIST OF JOYSTICK SUB-ASSY PLUS HANDLE KIT AND BOOT KIT.

LV

JOYSTICK SUB-ASSY #660180178



LV JOYSTICK SUB-ASSY (W/O SPOOL LOCK)

ITEM	QTY	PART NO.	DESCRIPTION
1	1	671400272	CLEVIS HOUSING
2	1	671400267	ADAPTER PLATE
3	2	170003032	CAP SCREW (1.25)
4	1	671900084	SPOOL STUD
5	1	671400252	ROD END ASSY
6	3	170003094	CAP SCREW (FINE THD)
7	2	660390016	ROD END ASSY
8	3	220000125	HEX NUT (FINE THD)
9	1	170003008	CAP SCREW (.75)
10	1	670500026	WASHER, FLAT
11	1	671400265	CLEVIS HOUSING
12	1	671400268	ADAPTER PLATE
13	2	170003034	CAP SCREW (1.75)
14	1	660180069	STRAIGHT HANDLE KIT (page 21) *
15	1	660180165	BOOT & CABLE TIE KIT (page 21) *

ITEMS 1-10  
INCL. IN KIT  
660180178\*

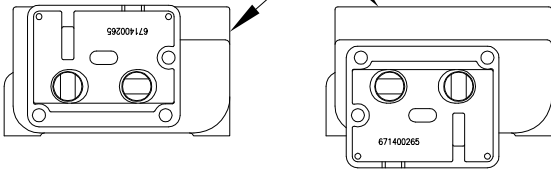
ITEMS 4-13  
INCL. IN KIT  
660180167\*

INSTALLATION PROCEDURE:  
PRE-ASSEMBLE ROD ENDS TO  
ADAPTER. ALIGN SPOOL TANGS WITH  
CLEVIS TANG. LOOSELY INSERT ROD  
END STUDS INTO TANGS. ROTATE  
2ND SPOOL TANG 90°. INSERT  
SPOOL STUD INTO ROD END &  
ROTATE ASSY SUCH THAT THE  
SPOOL STUD THREAD CAN BE  
INSERTED INTO 2ND SPOOL TANG.  
APPLY LOCTITE & TORQUE ALL  
FASTENERS AS INDICATED.  
NOTE:  
CLEAN ALL THREADED PARTS WITH  
ALCOHOL, DRY AND INSTALL WITH  
LOCTITE 680, 277 OR 281.

\*-NOTE: COMPLETE JOYSTICK HANDLE OPTIONS CONSIST  
OF JOYSTICK SUB-ASSY PLUS HANDLE KIT AND BOOT KIT.

UNIVERSAL JOYSTICK SUB-ASSY #660180182

TYPICAL LVT MODEL SHOWN



TANG UPPER LEFT

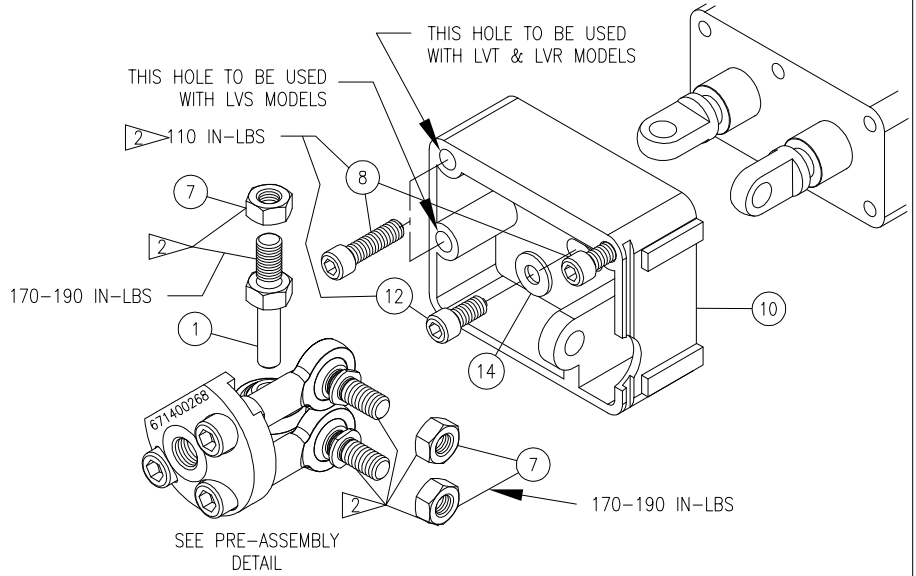
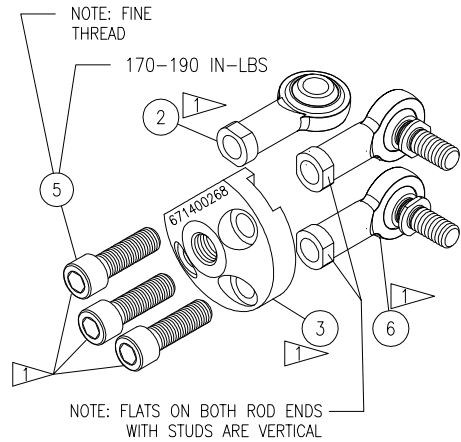
TANG LOWER RIGHT

ASSY USING RIGHT HAND CLEVIS HOUSING:

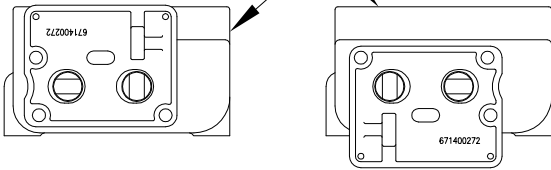
TANG LOWER RIGHT SHOWN BELOW. REFER TO PAGE 16-17, OR TO FINAL ASSEMBLY PRINT, FOR ORIENTATION OF COMPONENTS, KEY REFERENCE IS LOCATION OF CLEVIS TANG.

CUSTOMER TO ASSEMBLE ROD ENDS TO ADAPTER PLATE AS FIRST STEP

SEE NOTE



TYPICAL LVT MODEL SHOWN



TANG UPPER RIGHT

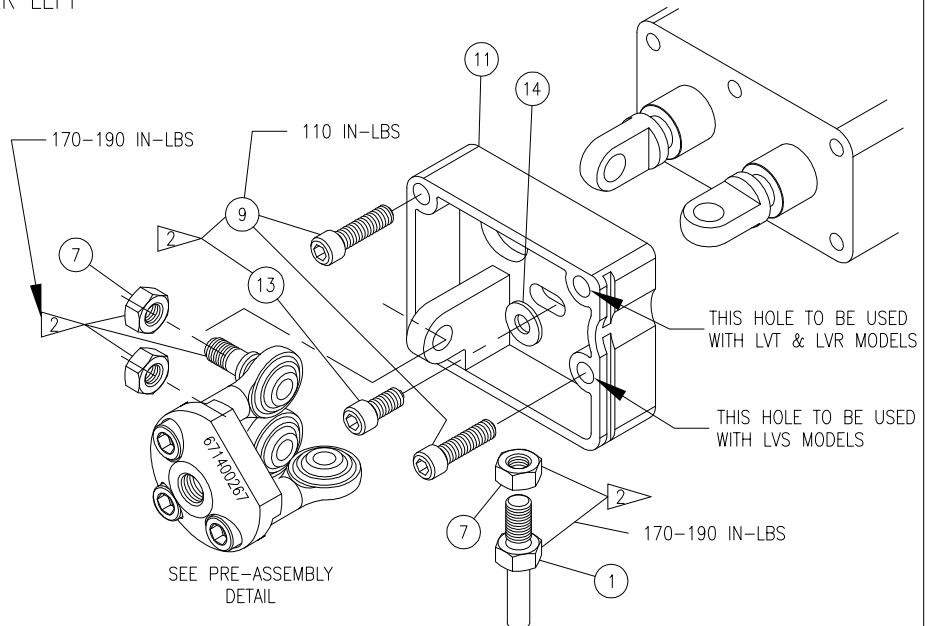
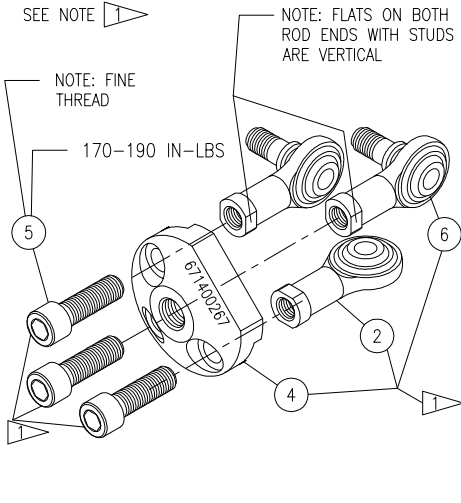
TANG LOWER LEFT

ASSY USING LEFT HAND CLEVIS HOUSING:

TANG LOWER LEFT SHOWN BELOW. REFER TO PAGE 16-17, OR TO FINAL ASSEMBLY PRINT, FOR ORIENTATION OF COMPONENTS, KEY REFERENCE IS LOCATION OF CLEVIS TANG.

CUSTOMER TO ASSEMBLE ROD ENDS TO ADAPTER PLATE AS FIRST STEP

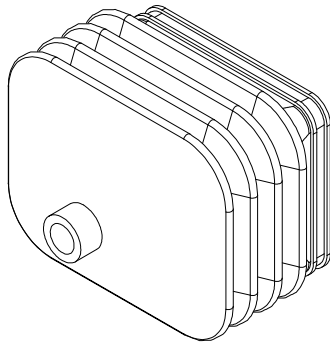
SEE NOTE



UNIVERSAL JOYSTICK SUB-ASSY #660180182 (CONT'D)

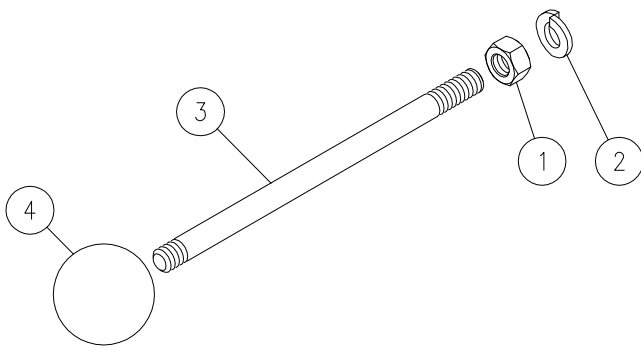
UNIVERSAL JOYSTICK KIT BILL OF MATERIAL			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	671900084	SPOOL STUD
2	1	671400252	ROD END
3 *	1	671400268	ADAPTER PLATE
4 **	1	671400267	ADAPTER PLATE
5	3	170003094	CAP SCREW (FINE THD)
6	2	660390016	ROD END ASSY
7	3	220000125	HEX NUT (FINE THD)
8 *	2	170003034	CAP SCREW (1.75)
9 **	2	170003032	CAP SCREW (1.25)
10*	1	671400265	CLEVIS HOUSING, RIGHT HAND
11**	1	671400272	CLEVIS HOUSING, LEFT HAND
12*	1	170003008	CAP SCREW (.75)
13**	1	170003080	CAP SCREW (.62)
14	1	670500026	WASHER
15	1	671300027	LOCTITE 262 (NOT SHOWN)
16	1	660180182	INSTRUCTION SHEET

\* DESIGNATES ITEMS NOT USED WITH LEFT HAND CLEVIS  
 \*\* DESIGNATES ITEMS NOT USED WITH RIGHT HAND CLEVIS



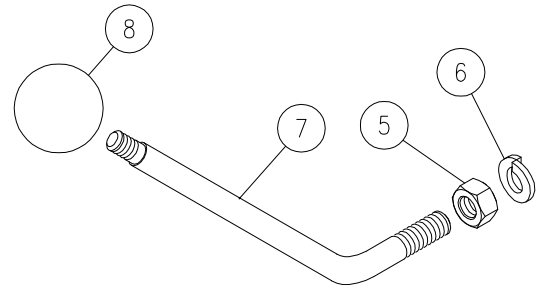
BOOT/CABLE TIE KIT (660180165)

ITEM	QTY	PART NO.	DESCRIPTION
1	1	671300047	BOOT
2	1	671300049	CABLE TIE (NOT SHOWN)



HANDLE KIT, STRAIGHT JOYSTICK (660180069)

ITEM	QTY	PART NO.	DESCRIPTION
1	1	220000121	HEX NUT
2	1	220001004	LOCK WASHER
3	1	670400061	HANDLE, STRAIGHT
4	1	670400060	KNOB



HANDLE KIT, BENT, JOYSTICK (660180081)

ITEM	QTY	PART NO.	DESCRIPTION
5	1	220000121	HEX NUT
6	1	220001004	LOCK WASHER
7	1	670400062	HANDLE, BENT
8	1	670400010	KNOB

# REMOTE CABLE CONTROL JOYSTICK INSTALLATION FOR PMC VALVES USED WITH FRONT END LOADERS

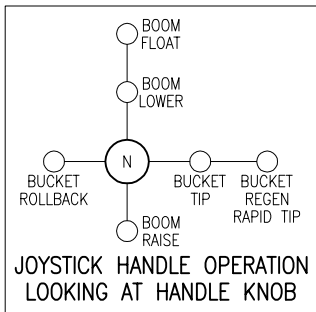
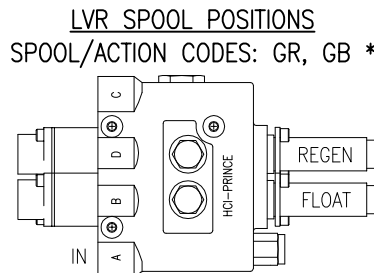
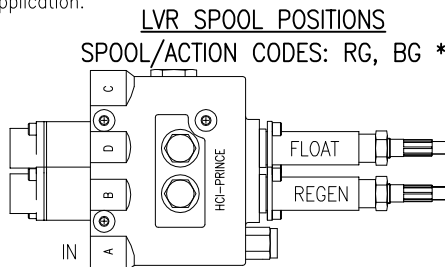
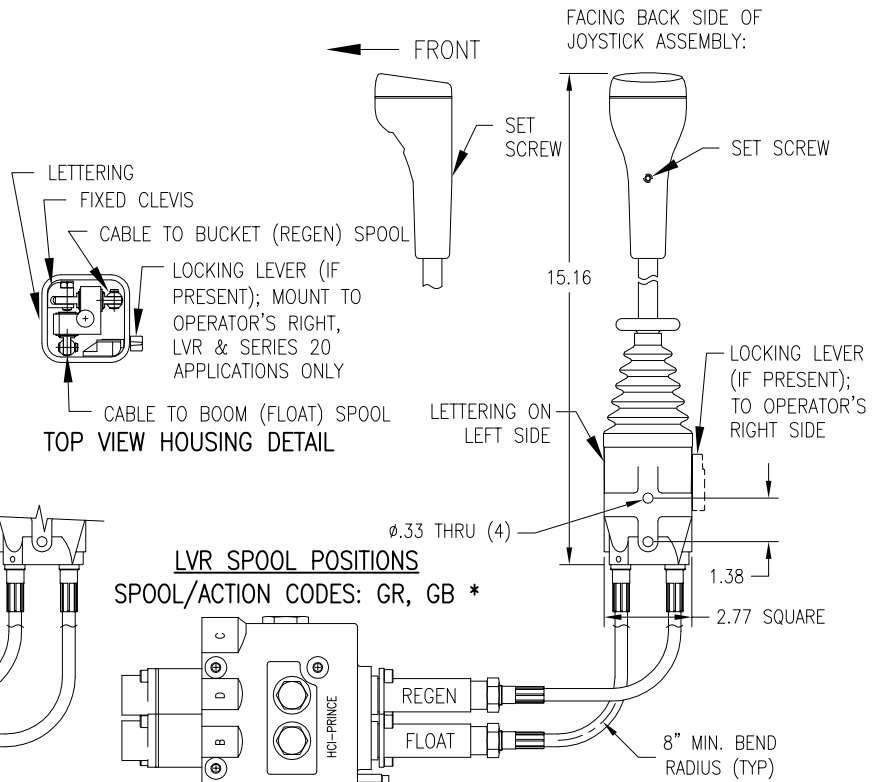
**ALL MODELS:** To maintain the proper handle function & pattern, the cables must be connected to the joystick and valve spools as shown. The joystick housing must be mounted with the lock lever (if present, or side w/three holes) oriented as shown, relative to the operator's position. Confirm that hoses and cables are connected correctly for proper bucket & boom operation before use.

**HANDLE:** If required, loosen the setscrew found in the rear side of the handle until handle can be moved freely. Orient handle as shown, relative to the housing. Tighten setscrew to hold the handle in position.

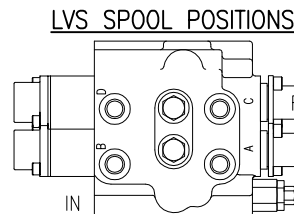
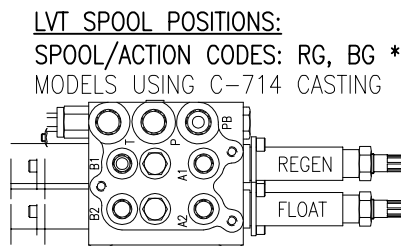
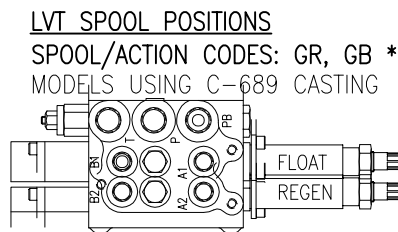
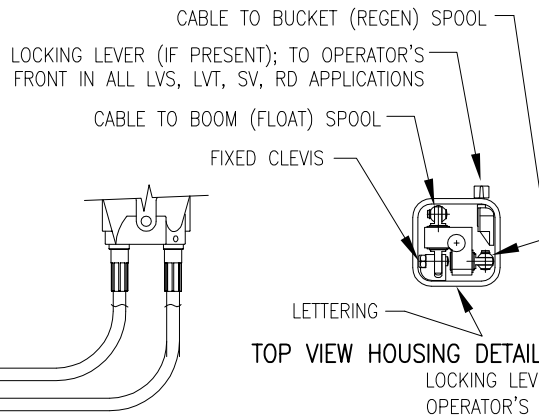
**"SERIES 20" MODELS:** Orient handle as shown with the locking lever (if present) to the right, lettering to the left. Connect the cable labeled "to boom spool" to the float (boom) section of a stack valve. Connect the cable labeled "to bucket spool" to the bucket section of the stack valve.

**\* "BB" SPOOL/ACTION:** LVR/LVT models having "BB" spool/action may use either joystick orientation depending on how the hoses are connected in the application.

## LVR & SERIES 20 MODELS:



## LVS, LVT, SV & RD5200 MODELS:



## 'SV' & 'RD5200' MODELS:

Orient the housing and handle as shown with the locking lever (if present, or side with three holes) toward the operator's front and lettering to the rear. Connect the cable labeled "To Boom Spool" to the 1st spool (A-B) of an RD5200, or to the float (boom) section's spool of a stack valve. Connect the cable labeled "To Bucket Spool" to the 2nd spool (C-D) of an RD5200, or to the bucket section's spool of a stack valve.

# REMOTE CABLE CONTROL JOYSTICK INSTALLATION FOR PMC VALVES USED WITH FRONT END LOADERS

## REMOTE CABLE CONTROL

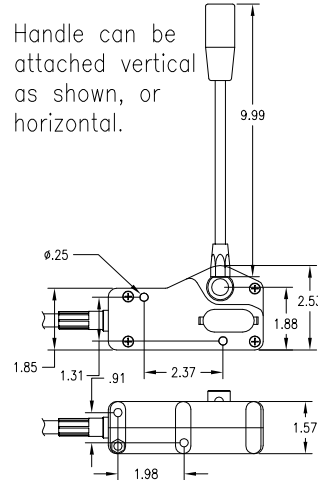
Heavy duty remote cable controls are available for most Prince directional control valves. The compact controller bodies are of die-cast metal construction and are available in either dual axis or single axis configurations. Dual axis joysticks are constructed with steel swivels and anti-wear bushings.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

### REMOTE CONTROLLERS

Dual Axis Joystick with lock	660170038
Dual Axis Joystick with lock & single normally open momentary switch	660170041
Single Axis Joystick	660170039

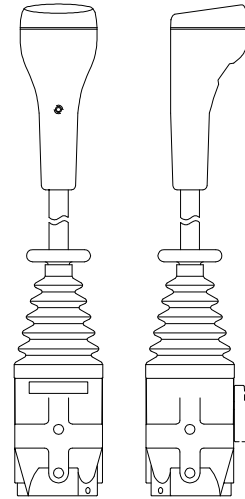
### Prince Part No.

### SINGLE SPOOL CONTROLLER



### DUAL AXIS CONTROLLER

(LVT, RD5000 orientation shown)



### CONTROL CABLES

49 inches long (1.25 M)	660171125
59 inches long (1.50 M)	660171150
79 inches long (2.00 M)	660171200
98 inches long (2.50 M)	660171250

### VALVE CONNECTION KITS

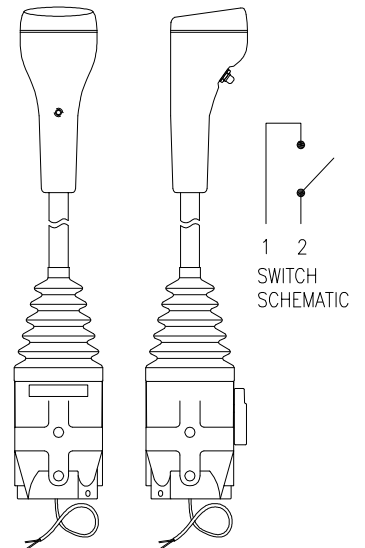
RD5000 series kit*	660170037
LVS kit (Series loader valve)**	660170029
LVR or LVT kit (Rear or Top ported loader valve)**	660170029
SV stack valve or RD4100 kit***	660170031
Series 20 stack valve kit****	660170035

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.

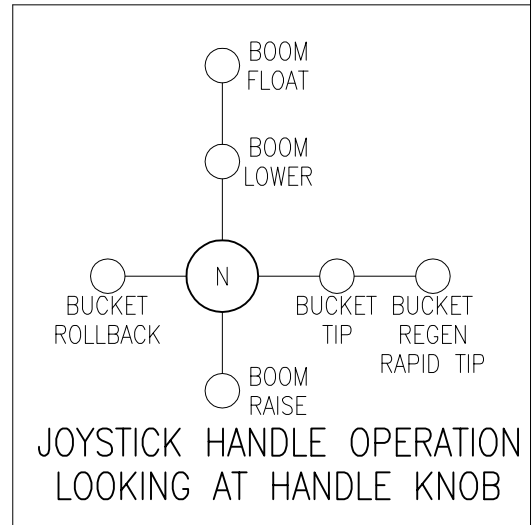
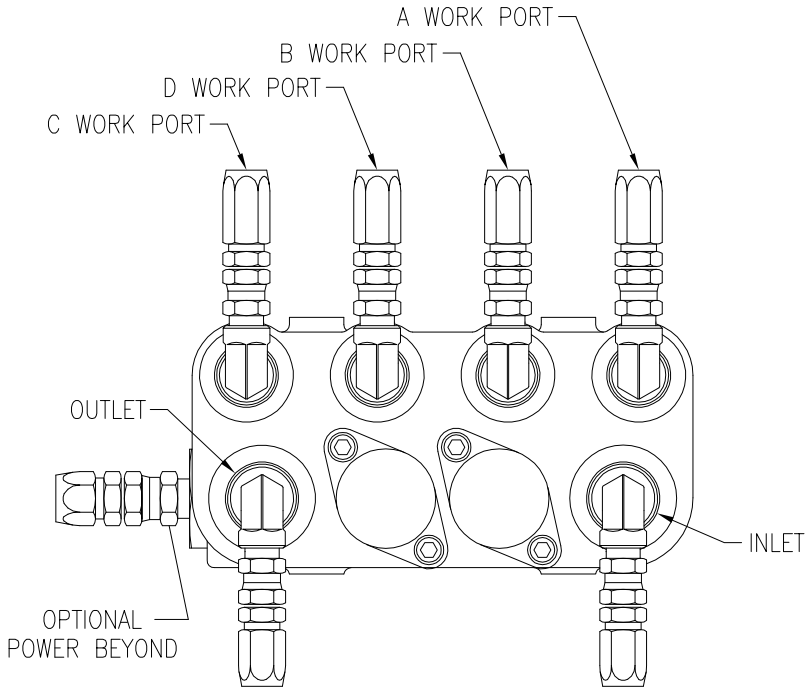
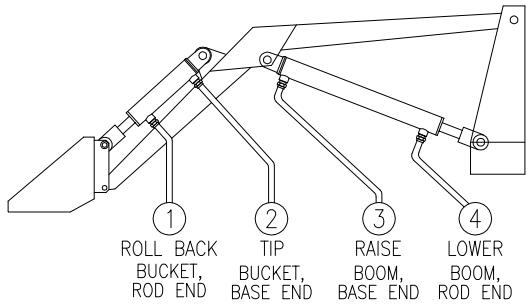
- \* Field convertible or order option 3, less handle assembly.
- \*\* Order loader valve with handle option 8, tang end only.
- \*\*\* Field convertible from standard handle or order option 6, clevis spool end only.
- \*\*\*\* Field convertible or order option 3, less complete handle.

### DUAL AXIS CONTROLLER WITH SWITCH

(LVT, RD5000 orientation shown)



# LVR VALVE PORT CONNECTION CHART



PART NO.	A WORK PORT	B WORK PORT	C WORK PORT	D WORK PORT
LVR1GRXXX3	BOOM, BASE	BOOM, ROD	BUCKET, BASE	BUCKET, ROD
LVR1RGXXX4	BUCKET, BASE	BUCKET, ROD	BOOM, BASE	BOOM, ROD
LVR1RGXXX5	BUCKET, BASE	BUCKET, ROD	BOOM, BASE	BOOM, ROD
LVR1GRXXX6	BOOM, BASE	BOOM, ROD	BUCKET, BASE	BUCKET, BASE

## 4 WAY 4 POSITION REGEN SPOOL OPERATION

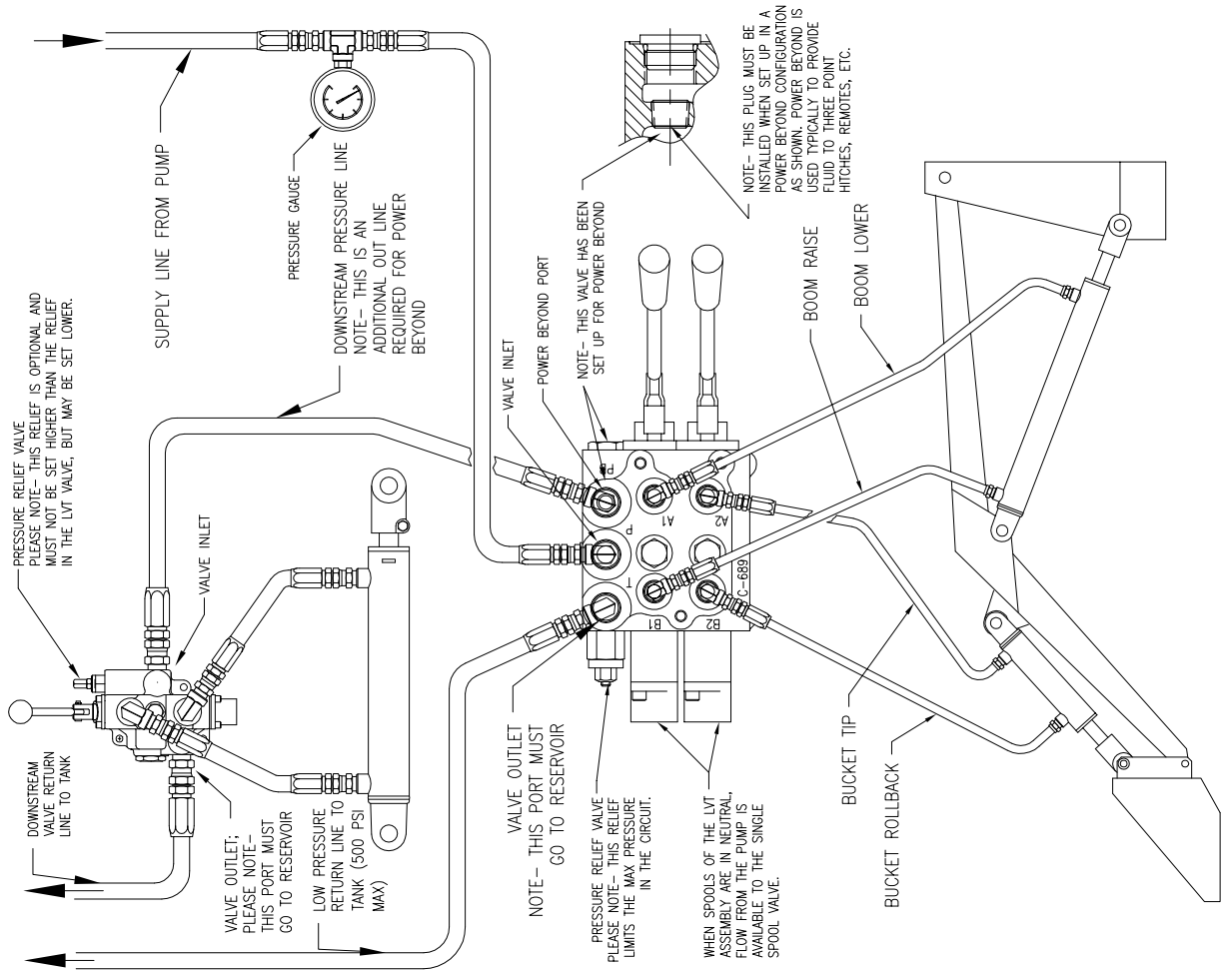
THIS SPOOL OPTION ALLOWS FOR THESE FOUR FUNCTIONS OF THE LOADER BUCKET CYLINDERS: "NEUTRAL", CYLINDER PORTS BLOCKED TO HOLD BUCKET IN PLACE; "BUCKET ROLLBACK" DIRECTS OIL TO HOSE 1 TO RETRACT BUCKET CYLINDER; "BUCKET TIP" DIRECTS OIL TO HOSE 2 TO EXTEND THE BUCKET CYLINDER WITH FULL PRESSURE (PLEASE 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 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

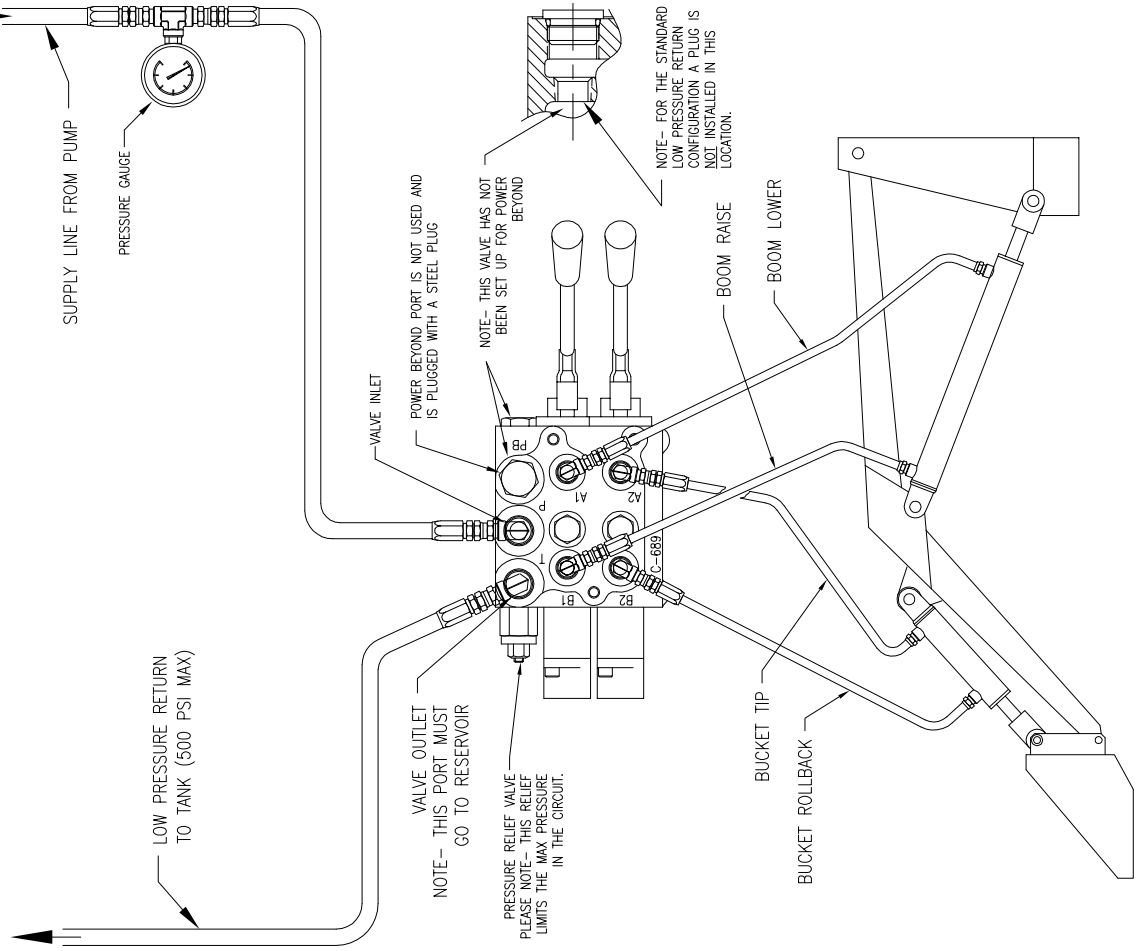
THIS SPOOL FUNCTION ALLOWS FOR THESE FOUR FUNCTIONS OF THE LOADER BOOM CYLINDERS: "NEUTRAL", CYLINDER PORTS BLOCKED TO HOLD THE BOOM IN PLACE; "BOOM RAISE" DIRECTS OIL TO HOSE 3 TO EXTEND THE BOOM CYLINDERS; "BOOM LOWER" DIRECTS OIL TO HOSE 4 TO RETRACT THE BOOM CYLINDERS WITH FULL PRESSURE (PLEASE NOTE 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 BOOM DOWN POSITION. THERE IS A DETENT THAT WILL HOLD THE HANDLE IN THE FLOAT POSITION. WHILE IN THE FLOAT POSITION THE LOADER BOOM CYLINDERS WILL MOVE UP OR DOWN OR "FLOAT" TO MATCH THE GROUND LEVEL AS THE TRACTOR MOVES FORWARD OR BACKWARD.

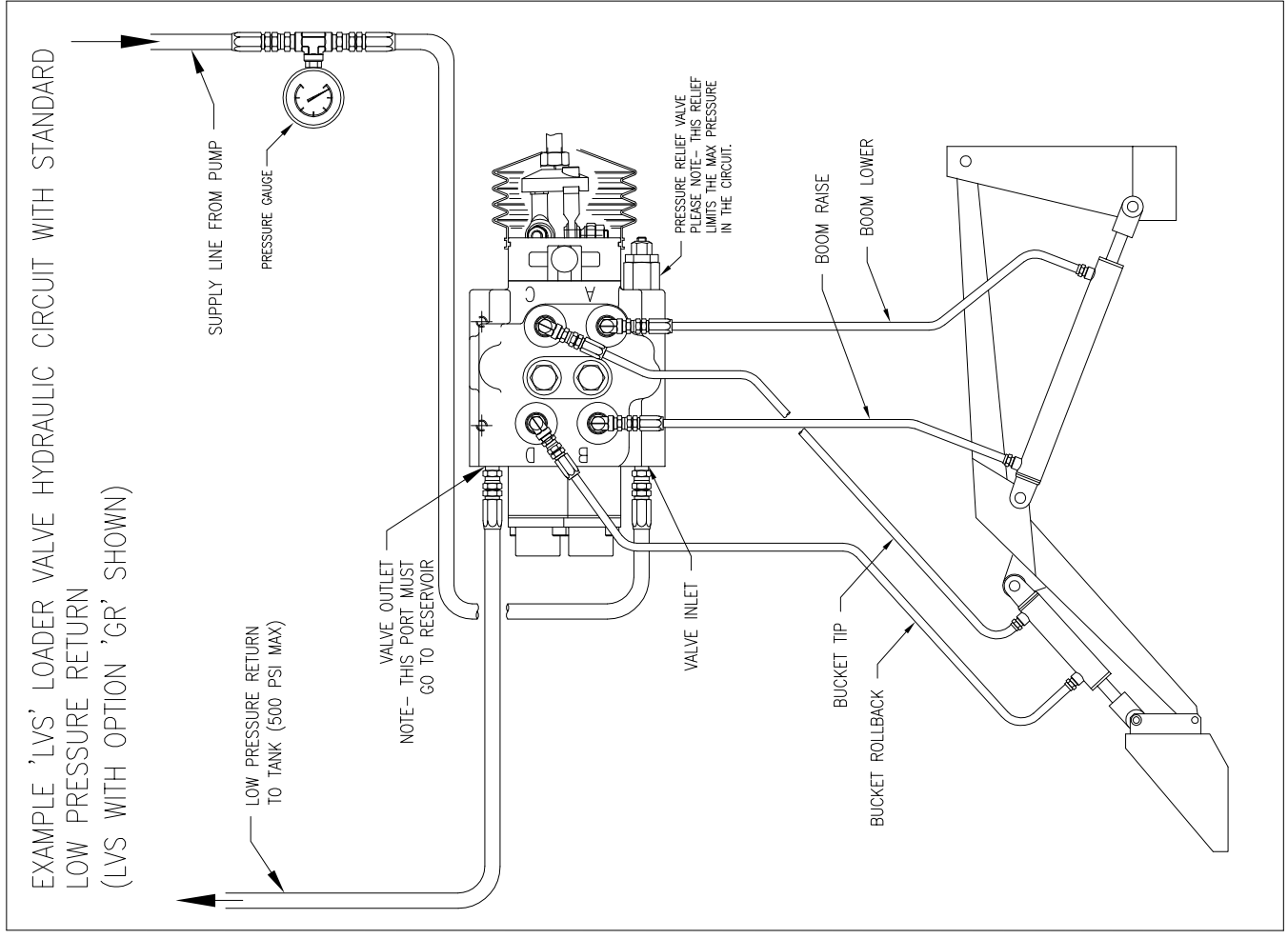
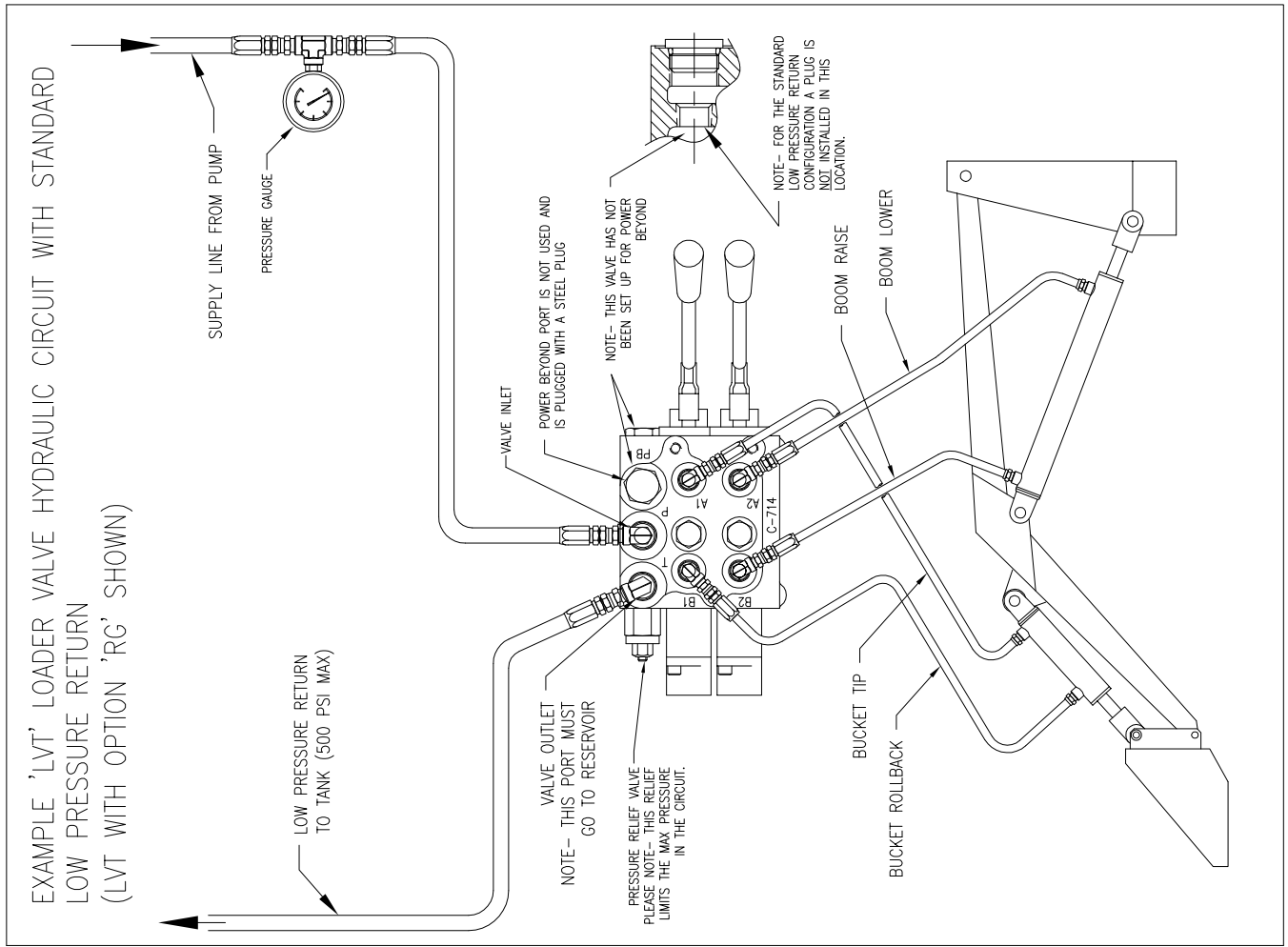


**EXAMPLE 'LVT' LOADER VALVE HYDRAULIC CIRCUIT WITH POWER BEYOND**  
(LVT WITH OPTION 'GR' SHOWN)



**EXAMPLE 'LVT' LOADER VALVE HYDRAULIC CIRCUIT WITH STANDARD LOW PRESSURE RETURN**  
(LVT WITH OPTION 'GR' SHOWN)









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