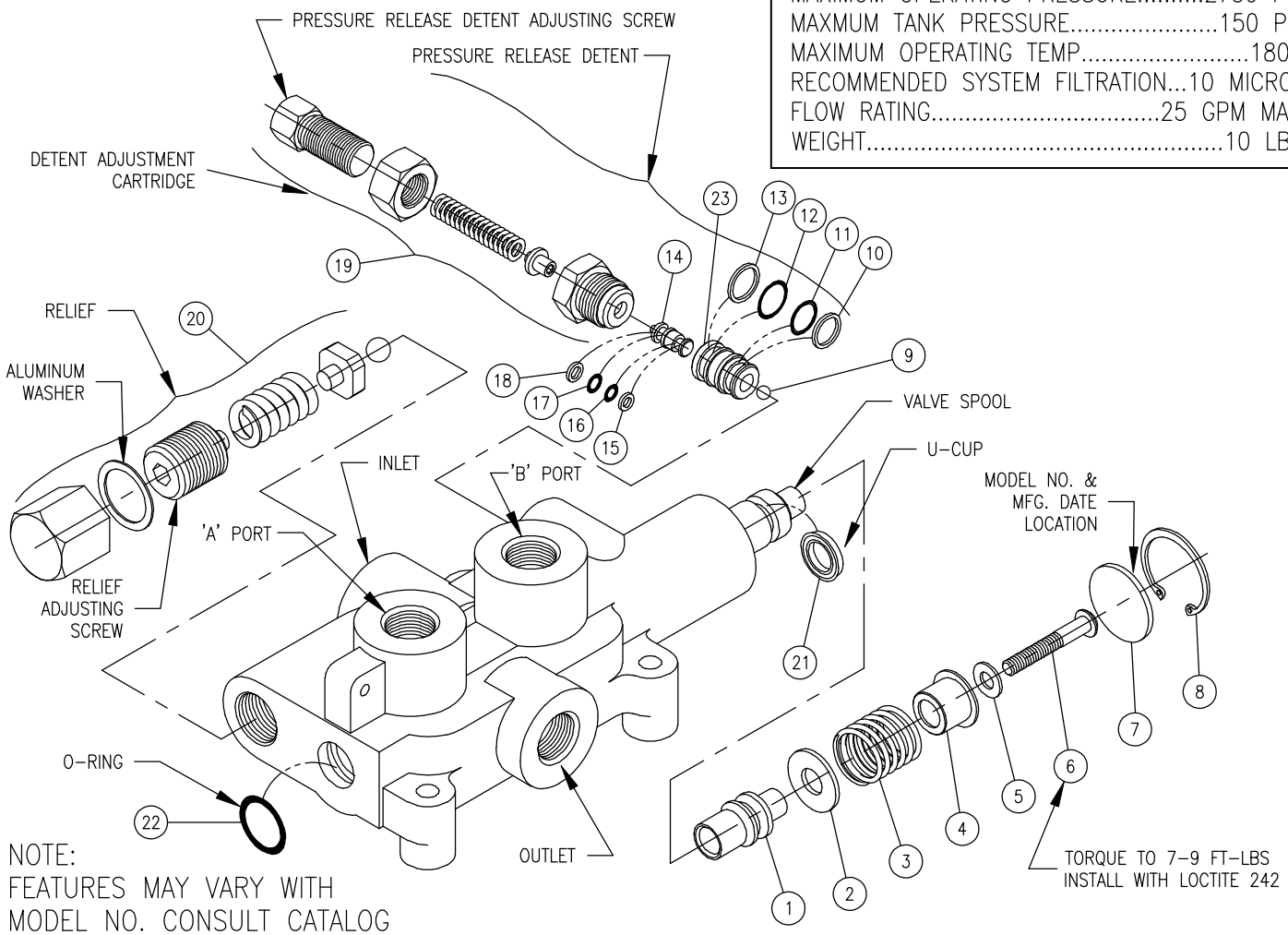
LS-3000 TYPICAL

LS-3000 SPECIFICATIONS:
MAXIMUM OPERATING PRESSURE.....2750 PSI
MAXMUM TANK PRESSURE.....150 PSI
MAXIMUM OPERATING TEMP.....180°F
RECOMMENDED SYSTEM FILTRATION...10 MICRON
FLOW RATING.....25 GPM MAX.
WEIGHT.....10 LBS



NOTE:
FEATURES MAY VARY WITH
MODEL NO. CONSULT CATALOG

PLEASE NOTE:
BEFORE REMOVING VALVE SPOOL OR SPOOL SLEEVE, REMOVE DETENT ADJUSTING CARTRIDGE, DETENT PISTON AND STEEL BALL. INSTALL SPOOL AND SPOOL SLEEVE BEFORE REINSTALLING STEEL BALL.

PRESSURE RELEASE DETENT
This feature provides a pressure release detent for the spool 'out' (handle in) position. When the spool is manually placed in the detent position oil is directed to the 'B' work port (the port away from the handle). When the pressure in the 'B' port reaches a preset level the detent will release and the spool will center. The factory setting is 1400 psi. The detent release pressure is adjustable by loosening the jam nut and turning the adjusting screw. Turning the adjusting screw clockwise will increase the detent release pressure and counterclockwise will decrease the detent release pressure. NOTE: if the detent release pressure is set too high the spool will not center, if the pressure is too low the detent will not hold. If cap screw item 6 becomes loose detent will not function properly.

RELIEF VALVE
An adjustable ball spring relief valve is standard on all LS-3000 valves. The standard factory setting is 2250 psi @ 3 gpm and 120°F.
Other settings can be specified.
The relief pressure is adjusted by removing acorn nut, and turning the adjusting screw. Turning the adjusting screw clockwise will increase the pressure and counterclockwise will decrease the pressure (a pressure gauge must be installed in the inlet line whenever the relief pressure is adjusted). Do not backout adjusting screw to the point it falls out.

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.

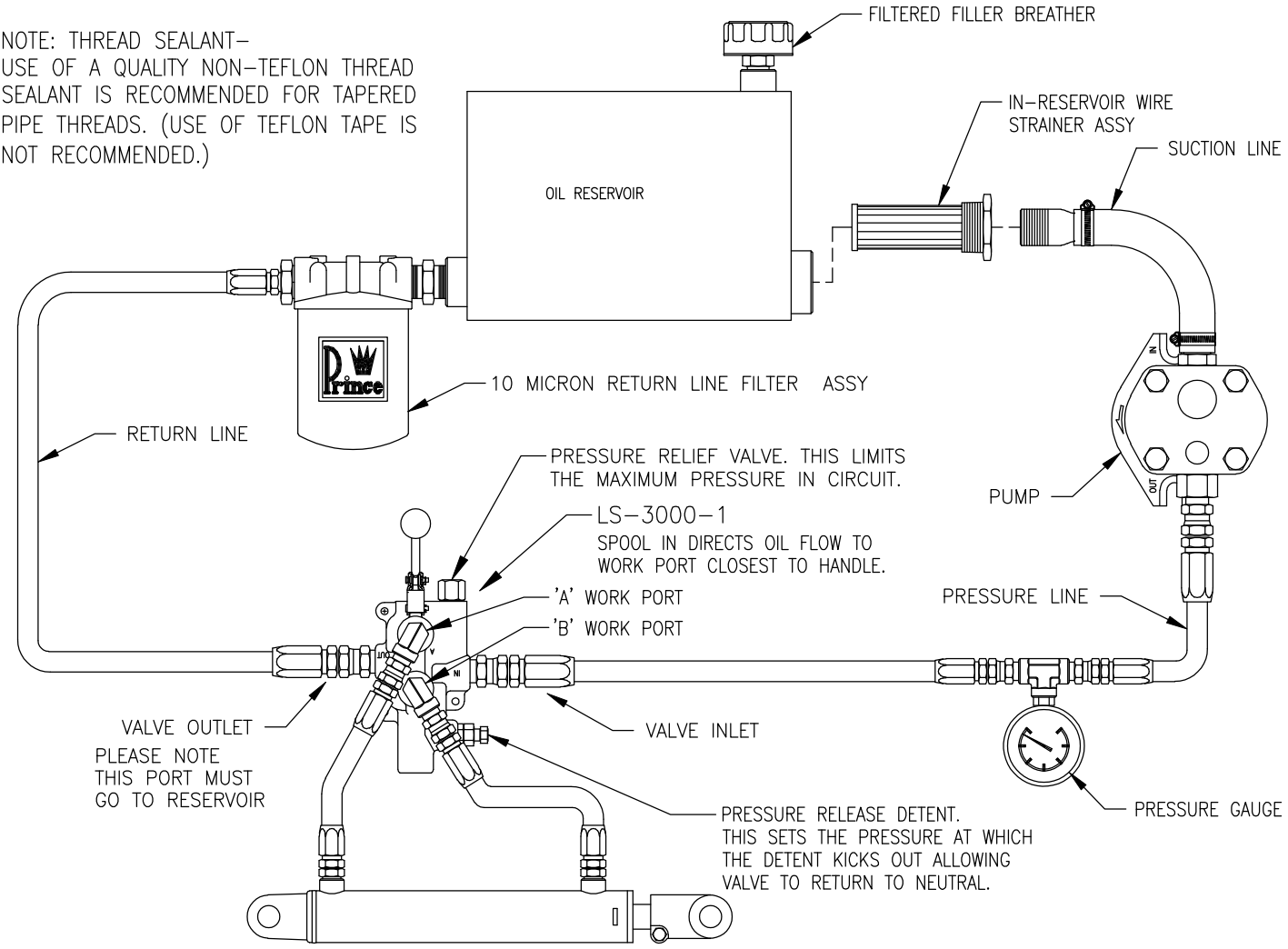
LS-3000 KITS AND CARTRIDGES

ITEM	QTY	PART NO.	DESCRIPTION
1	1	670700019	DETENT SLEEVE
2	1	670500033	WASHER
3	1	670300020	SPRING, CENTERING
4	1	671400010	STOP CUP
5	1	670500026	WASHER
6	1	220000953	CAP SCREW
7	1	670500032	SPACER
8	1	230001125	SNAP RING
9	1	230009009	STEEL BALL
10	1	240019013	BACK-UP WASHER
11	1	240016737	O-RING
12	1	240000014	O-RING
13	1	240019014	BACK-UP WASHER
14	1	671100011	PISTON
15	1	240019007	BACK-UP WASHER
16	1	240016736	O-RING
17	1	240016068	O-RING
18	1	240019008	BACK-UP WASHER
19	1	660330002	DETENT ADJUSTING CARTRIDGE
20	1	660125004	RELIEF KIT
21	1	240016735	U-CUP
22	1	240000210	O-RING
23	1	671100012	PISTON SLEEVE
		660530001	LS-3000 SEAL KIT
		660125004	RELIEF KIT
		660330002	DETENT ADJUSTING CARTRIDGE
		660130007	PRESSURE RELEASE DETENT KIT
		660130001	COMPLETE HANDLE KIT

REV 2, 11-22-95	REV C ECN-18645 12/06/05	REV D ECN-21453 8/10/11	REV E ECN-21623 1/25/12	REV F ECN-21864 9/4/12	REV G ECN-21936 12/5/12

EXAMPLE LS-3000 HYDRAULIC CIRCUIT

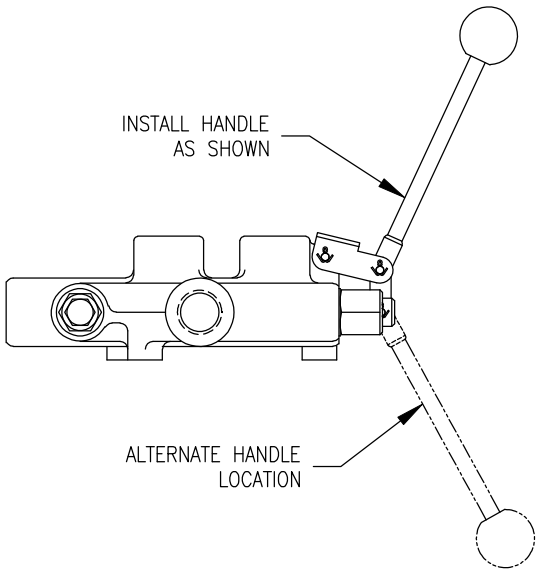
NOTE: THREAD SEALANT-
USE OF A QUALITY NON-TEFLON THREAD SEALANT IS RECOMMENDED FOR TAPERED PIPE THREADS. (USE OF TEFLON TAPE IS NOT RECOMMENDED.)



SPOOL U-CUP REPLACEMENT

To replace the u-cup on the spool the following procedure must be followed.

1. Remove the detent adjuster cartridge by loosening the inner hex and then removing the cartridge.
2. Use a needle nose pliers to reach into the cavity and to grip onto the small stem on the piston. Remove the piston.
3. Remove the steel ball at the bottom of the piston cavity (a magnet may help in removal).
4. After removing the snap ring and end plate at the rear, remove the spool assembly by pushing the spool out the rear.
5. Secure the spool and remove the button head cap screw. The spool may be secured by using a vice to clamp over the handle end clevis slot (with the slot perpendicular to the jaws) or by placing the clevis slot over a rigid bar. Do not clamp on the outside surface of the spool. Remove the cap screw from the spring end of the spool. Note the cap screw was installed using high strength thread locker and will be difficult to remove. There is a possibility that the hex socket on the cap screw can be rounded out. It is recommended that a hex wrench with no wear be used. It is also recommended to soften the thread locker by using a high wattage (approximately 1400 watt/1000 °F) heat gun aimed at the interface between the spool and the detent sleeve. If the cap screw socket is rounded out, it can be removed by using a drill to remove the button head, then removing the attachment parts and then using a locking pliers to grasp and remove the screw shank.
6. The existing u-cup can be cut off by using a box cutter type knife. The new u-cup is installed from the attachment end, with the lip towards the handle end of the spool. A small flat bladed screw driver or similar tool should be used to aid installation. One portion of the u-cup should be started over the full diameter of the spool and held in place with a finger. The flat tool is inserted between the inside of the u-cup and the spool and then worked around with the u-cup being gradually pushed onto the spool as the tool is worked around the spool. The seal groove on the spool may be used to help anchor the tool as it is being rotated around the spool. The U-cup will stretch slightly as it is installed and may fit loosely in the seal groove to begin with. After a few minutes, the u-cup will go back to it's normal shape and the inside of the u-cup will fit snuggly to the bottom of the seal groove. Allow the u-cup to regain it's shape before reinstalling the spool.
7. The valve is reassembled by following the directions in reverse. The u-cup and lead in chamfer in the casting should be lubricated with oil before installation. The spool should be inserted into the body using a twisting motion.



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