Linde	**INSTALLATION CONSIDERATION FOR USING LINDE SYNCHRON CONTROL (LSC) WITHOUT A RELIEF VALVE OR PRESSURE CUT OFF (PCO) VALVE TO LIMIT LOAD SENSE PRESSURE**	**Bulletin No. LSC 10.96/011/04**

The advantage of Linde Synchron Control (LSC) is that it maintains proportional flow to all functions even if the total flow demand exceeds the pump's supply. The most important element in LSC's ability to do this is the presence of an identical pressure drop which meters flow through each valve independent of the valve's individual operating pressures. The pressure drop is the difference between the pump's output pressure and the load sensing pressure as set by the highest pressure requirememt of all the functions in the LSC system.

Having a pressure drop under all operating conditions is crucial to the success of LSC's metering capability. Should conditions exist that pump outlet pressure and load sensing pressure becomes equal, the pressure drop will disappear and pressures on both sides of the load compensators in the VW valves will equalize. When this happens, the light biasing springs will push the load compensators to a closed position prohibiting flow from passing though any of the valves.

Such conditions are apt to occur when the load sensing pressure of LSC valves is not limited by a load sensing pressure relief valve, i.e, pressure cut-off (PCO) valve, but the maximum pressure of the pump is; as in the case when a load sensing, pressure compensated pump is used to supply LSC valves. If a function deadheads, the load sensing signal pressure climbs unabated as the demand for pump pressure increases. The pump responses, but only to the pressure limit set on the pump's pressure compensator and the two pressures become equal.

How to Avoid a Problem:

Always use a pressure cut-off (PCO) valve, ie., relief valve in the load sensing pressure line to limit pressure of the LSC system. If a load sensing, pressure compensated pump is use, set the pump's internal pressure compensator to a higher level than the PCO relief valve, of disable the control entirely. In this way, the pump's pressure will always be above the load sensing pressure and the full benefit and advantage of Linde Synchron Control can be realized.