

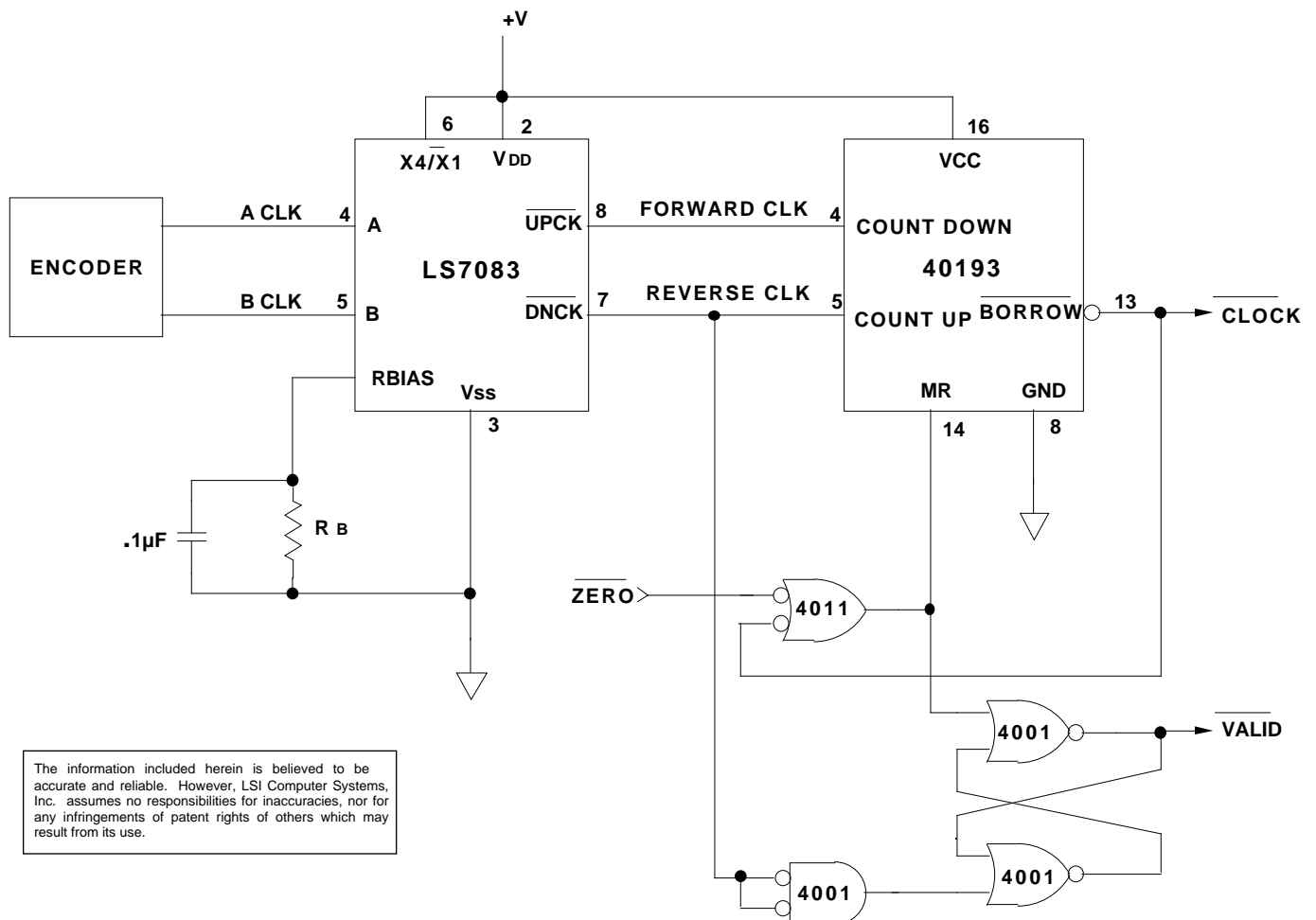
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BACKLASH COMPENSATION WITH LS7083 IN UNIDIRECTIONAL MOTION CONTROLLERS

December 1996

In unidirectional motion controllers, such as ink-jet printers, press-feed controllers, etc., any backlash of the drive mechanism that may creep in during a start/stop or a load/unload, is highly undesirable. Such backlash may be cancelled out with the Quadrature Clock Converter Circuit, LS7083, in conjunction with a standard Up/Down Counter, such as 40193. The Application Circuit shown in Figure 1 allows the measurement clocks (CLOCK) to be generated only when the drive mechanism is in forward motion. Whenever there is a backward motion the clocks

are inhibited. The clocks are enabled again only after the backward displacement has been compensated by equal amount of forward displacement and thus the positional reference is always maintained correctly. In addition to the CLOCK output, an output called VALID is shown in the circuit. The status of VALID indicates whether the motion of the drive mechanism at any instant is valid or invalid, logic zero indicating valid motion. An optional ZERO input can be incorporated to reset the 40193 counter for absolute positional reference.



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FIGURE 1. BACKLASH COMPENSATION APPLICATION SCHEMATIC