







Truth Table			Inputs			NS		
P5			gt	eq	start	N2	N1	N0
P2	P1	PO						
0	0	0	-	-	0	0	0	0
0	0	0	-	-	1	0	0	1
0	0	1	-	-	-	0	1	0
0	1	0	-	-	-	0	1	1
0	1	1	1	0	-	1	0	0
0	1	1	0	1	-	1	0	1
1	0	0	-	-	-	0	1	1
1	0	1	-	-	-	0	0	0

P5			Outputs					
P2	P1	PO	Lm	La	Lb	Sm	Sa	Sr
	S0		0	0	0	0	0	1
	S1		1	0	0	0	0	0
	S2		0	1	1	0	0	0
	S3		0	0	0	0	0	0
	S4		1	1	0	1	1	0
	S5		0	0	0	0	0	1

Boolean expressions

$$N2 = P2' \cdot P1 \cdot PO \cdot gt + P2' \cdot P1 \cdot PO \cdot eq = P2' \cdot P1 \cdot PO (gt + eq)$$

$$N1 = P2' \cdot P1' \cdot PO + P2' \cdot P1 \cdot PO' + P2 \cdot P1' \cdot PO'$$

$$= P2' \cdot (P1' \cdot PO + P1 \cdot PO') + P2 \cdot P1' \cdot PO'$$

$$= P2' \cdot (P1 \oplus PO) + P2 \cdot P1' \cdot PO'$$

$$N0 = P2' \cdot P1' \cdot PO' \cdot start + P2' \cdot P1 \cdot PO' + P2' \cdot P1 \cdot PO \cdot eq + P2 \cdot P1' \cdot PO'$$

$$= P1' \cdot PO' \cdot (P2' \cdot start + P2) + P2' \cdot P1 \cdot (PO' + PO \cdot eq)$$

