

P24T

This is a reconstruction of DEUCE subroutine, from a slightly modified version used in STAC III.

Given Binary coded decimal digits, packed 8 to a minor cycle, in DL 9₀₋₇, this subroutine punches the ^{decimal} values on a card. The order of digits ~~is~~ in DL 9 is shown in the accompanying table

DL 9	mc	0	64	63	62	61	60	59	58	57	
		1	56								
		2	48								
		3	40								
		4	32								
		5	24								
		6	16								
		7	8	7	6	5	4	3	2	1	

TS 13 Link

Uses TS 13

14

15

20_{2,3}

17₂

17₃

21_{2,3}

Time: 2 mc before first single shot

$\frac{3}{4}$ Mcs after 9's row single shot.

37 Mcs between rows of card (X row to 9's row)

Uses: DL 2

Entry: 24 First order.

Method: The words containing BCD are fetched two at a time,

An exclusive OR ~~at each~~ of all BCD digits in a word, with the row number in ^{each of} eight BCD digits is taken. Each BCD result is compared with zero, and if it is, a one-bit is introduced into the least-significant end of DS 21. After each pair of digits is processed, DS 21 is shifted up by 2 places. At the end of the processing of all 64 BCD digits, 21_{2,3} contain images of a row to be punched on a card.

DEUCE PROGRAM P24T

24 10-24

26 21-20₃d X Read Y-row

21 P₁, 5, 9, 13, 17, 21, 25, 29
22 P₂

23 13-130

plant link

213 30-13 X Read X-row

→ 228 230-17₂ (2, 9-19d 0(12) 9)

230 9₀-19₂d (0(12) 9)

→ 29 2₁₁-17₃ (2, 19-14, 31(14).0)

222 19₂-14

→ 225 13-15

227 26-15

229 23₁-14 15P₁

→ 20 21-22 (4 mcs)

25 25-28 Digit = row number?

Z / yes

NZ

27 24-14(4 mcs)

28 24-14(4 mcs)

212 20₂-22₂ inserts P₂

214 25-28 Digit = row number?

Z / yes

NZ

216 27-22₂

217 14-27 Done 8 digits?

218 14-27

+ / -

220 24-14(4 mcs)

221 (6P₁) 17₃-0₂ (+P₁₇+P₂₂)

Q23 (2₁₁) 19₂-14 31(14) 0

20

225 N 19₃

226 (7P₁) 17₂-0₂ (+P₁₈+P₂₂)

Q30(230) 9₀-19₂d 0(12) 9

Normal

spill on 9₆-19₂d

210 21₂-29 X punch alpha field

215 8-24l Switch fields

217 21₃-29 punch β field.

219 2-24 finished card?

223 20₃-25

yes / TIL

224 1-1 → 130 exit

P₁, 5, 9, 13, 17, 21, 25, 29
Increment the row number
by 1