

UNIVERSITY OF ILLINOIS
DIGITAL COMPUTER

LIBRARY ROUTINE XAL-223

TITLE Constant Listing Auxiliary for Floating Decimal
 TYPE Input routine which modifies D.O.I.
 NUMBER OF WORDS 18 + Floating Decimal Routine
 TEMPORARY STORAGE Same as Floating Decimal
 PRESET PARAMETERS S3 for location of floating decimal accumulator,
 S4 for location of first word of floating decimal routine.

DESCRIPTION This routine requires for its use both the Floating Decimal Routine and the Decimal Order Input. When a constant is wanted, as for example, "add .005 into the accumulator" the constant itself is used for the address of the 84 order. Routine XA 1 stores it in a list starting at location 16 and furnishes the 84 order with the correct address. If the list already has this constant, the constant is not stored again but the address of the order refers to the earlier constant.

Constants are written in the proper form to be read by the floating decimal program, that is as a sign followed by the digits of the constant, and a second sign followed by two digits for the exponent. When a constant is being listed, the function digits of the order which refers to it are followed by N. In the above example we would write: $84N +5-02$

EXAMPLE

Multiply the numbers in 200-299 by 3.1416.

0	OK 100F
	05 200F
1	87N + 31416 + 01
	0S 200F
2	02 L

NOTES

- (a) Zero cannot be listed as a constant.
- (b) The list is started at 16. This may be changed by adjusting the last order of the routine appropriately; it is now 00 16F.

- (c) Post Mortem CI may not be used with this routine.
- (d) This routine requires that a sufficient amount of the memory be cleared initially to provide room for the stored constants.

DATE <u>October 15, 1956</u>
REVISED BY <u>G. Belford</u>
APPROVED BY <u>J. E. Muller</u>

LOCATION	ORDER		NOTES	PAGE 1
	00 944K			
0	L5 2L		Alter D.O.I.	
	40 1012F			
1	50 3L		New word for D.O.I.	
	26 999F			
2	26 2L			
	00 1F			
3	00 F			
	00 L			
4	00 F			
	26 L			
	26 1N			
0	00 F		Temporary Storage	
	00 F			
1	00 F		Store address	
	00 F			
2	42 1F		N follows function digits	
	L3 F			
3	32 5L		Obey order	
	22 1F			
4	L5 L		Store constant in list	
	40 ()F			
5	27 1017F		Save order	
	L5 1F			
6	40 1L		Read in and store constant	
	50 6L			
7	26 S4			
	88 F			
8	8S L		Replace order	
	8J 9L			
9	L5 1L			
	40 1F			
10	L5 17L			
	42 4L			

XAL

LOCATION	ORDER	NOTES	PAGE 2	XA1
11	42 12L 42 13L			
12	42 1F L3 ()F	Preset list location.		
13	36 4L L1 ()F	Test for zero		
14	L4 L 40 F			
15	L3 F 36 4L	Test for equality		
16	F5 4L 22 10L			
17	00 F 00 16F			