for

After checking that for is used at the start of a statement (using M, F and EXP) DECSTA is set to /o o since this is a statement. A stack entry is made of for together with its address in the object program. This address will be used by do to update the pointer to controlled statement. The current block name is stacked before being updated to the next highest block name for the for block.

The object program compiled contains two markers which will be updated by the addresses to the controlled statement and the statement following this for statement.

The subroutine BCR is used to read the next ALGOL section which should be 'controlled variable := '

e.g. for cv := 1 step 1 until n do _____ ;

TAKE compiles the correct object instruction for the controlled variable and a stack entry is made for the first list element with the type, held in TYPBOX, of the controlled variable. If the controlled variable is type real, the list elements must all be real and similarly when the controlled variable is type integer. The stack entry 'simple' is used to distinguish a simple list element from a 'step' or 'while' element.

Finally, ARITH and E are set for the following list element expression and F is set to 1 to show that this is a for clause.

ERRORS

FAIL 21 ; controlled variable is not a simple variable.

FAIL 44 ; for doesn't start a statement