```
      REM VAL I Program to move 9 blocks from a conveyor onto a pallet
      REM
      REM Initialise PALLET and CON vectors and APP transform matrix to:
      REM
      REM     PALLET = (2000,2000,1000)  CON = (1000,1000,1000)
      REM
      REM             1 0 0  0
      REM     APP =   0 1 0  0
      REM             0 0 1 50
      REM             0 0 0  1
      REM
      REM Absolute locations will be used so Robot position is immaterial
      REM
      REM Initialise PX and PY which will count the number of boxes
      REM placed in each column and row respectively
    SETI PX = 0
    SETI PY = 1
      REM Move next block
10  GOSUB 100
      REM End of row?
    IF PX=3 THEN 20
      REM Redefine X co-ordinate of PALLET
    SHIFT PALLET BY 100,0,0
    GOTO 10
      REM End of column?
20  IF PY=3 THEN 200
      REM Reset row counter and increment column counter
    SETI PX=0
    SETI PY=PY+1
      REM Redefine X and Y co-ordinates of PALLET
    SHIFT PALLET BY -200,100,0
    GOTO 10
        REM
        REM SUBROUTINE TO MOVE A BLOCK FROM CONVEYOR TO PALLET
        REM
          REM Move to a point 50mm above CON using joint interpolation
100     APPRO CON,50
          REM Wait for the conveyor to position the next box if necessary
        WAIT CONRDY
          REM Move down to CON using straight line motion
        MOVES CON
          REM Grip a box - signal an error if no box present (indicated
          REM by the jaws of the gripper becoming less than 25mm apart)
        GRASP 25
          REM Move back 50mm - Ie. 50mm up
        DEPART 50
          REM Move to the product of the PALLET vector and APP transform
          REM using joint interpolation - I.e. 50mm above next position
        MOVE PALLET : APP
          REM Move down to PALLET using straight line motion
        MOVES PALLET
          REM Open the gripper (depositing a box)
        OPENI
          REM Move back 50mm
        DEPART 50
          REM Signal conveyor to move next box into position
        SIGNAL GOCON
          REM
          REM Increment row counter
        SETI PX=PX+1
        RETURN
200 STOP
```