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## DC11SpaceCam

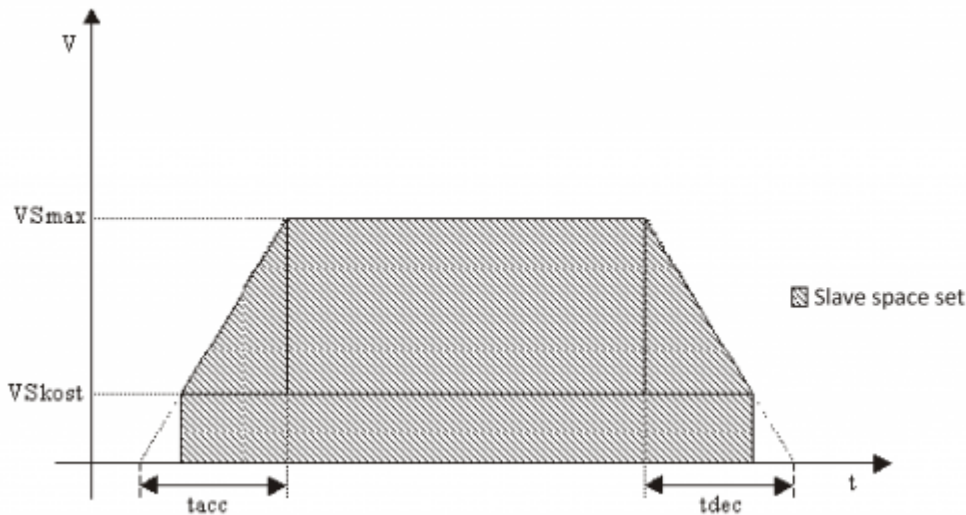
**D** = Device(CAMMING2, CAMMING3)

**C** = Calculation functions

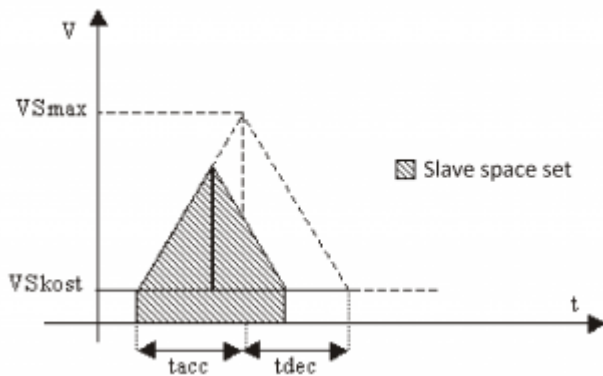
**\*** = Replaces the function **DC10SpaceCam**

The purpose of the DC10SpaceCam function is to calculate the minimum space Master can to run a space slave with a device type electronic cam. In addition to the calculation of space and to supply output variable, the function calculates the codes and spaces for programming a cam with an area of acceleration, one of constant speed (at full speed Slave), and one of the deceleration. The slope of acceleration and deceleration ramps depends on acceleration and deceleration parameters that you set.

The following graph shows how divided space Slave to cover:



In the event that the maximum speed cannot be reached because the slave space is insufficient, the velocity profile becomes the following:



## IMPLEMENTATION

**DC10SpaceCam (aslParam,codeG,codeM,codeQm,codeQs,codeQma,codeQsa,SpaceM,sbError)**

Parameters:

IN/OUT	VARIABLE TYPE	EXAMPLE NAME	DIM
IN	ARRSYS	aslParam [1]	L Space Slave to cover (UM)
IN	ARRSYS	aslParam [2]	L Master reference speed (UM/sec)
IN	ARRSYS	aslParam [3]	L Maximum speed of the Slave (UM/sec)
IN	ARRSYS	aslParam [4]	L Acceleration Slave time to go from zero to max speed (s/100)
IN	ARRSYS	aslParam [5]	L Deceleration Slave time to go from max speed to zero (s/100)
IN	ARRSYS	aslParam [6]	L Starting speed of the Slave (UM/sec) (opt.)
IN	ARRSYS	aslParam [7]	L "Measure" parameter of the used device
IN	ARRSYS	aslParam [8]	L "Pulse" parameter of the used device

IN/OUT	VARIABLE TYPE	EXAMPLE NAME	DIM	
OUT	ARRSYS	CodeG	L	Array containing calculated G Code (OUT)
OUT	ARRSYS	CodeM	L	Array containing calculated M Code (OUT)
OUT	ARRSYS	CodeQm	L	Array containing calculated CodeQm (OUT)
OUT	ARRSYS	CodeQs	L	Array containing calculated CodeQs (OUT)
OUT	ARRSYS	CodeQma	L	Array containing CodeQma (auxiliary code) (OUT)
OUT	ARRSYS	CodeQsa	L	Array containing CodeQsa (auxiliary code) (OUT)
OUT	SYSTEM	SpaceM	L	Var that contains the calculated Master space (OUT)
OUT	SYSTEM	Error	B	Error var on the writing cam (OUT)

## Error

Once called the function the variable takes certain values, the meaning of these values is summarized below:

- 0: calculation execute without errors
- 1: Slave max speed less than or equal to 0
- 2: Master speed less than or equal to 0
- 3: Slave Space equal to 0

## Example

```

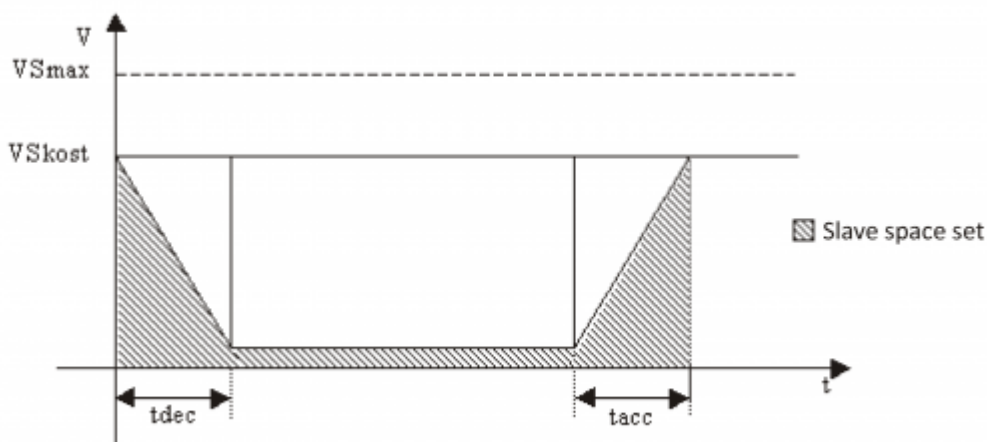
MAIN:
  IF gfCalcSpazio
    gfCalcSpazio = 0
    aslParam[1] = 3000 ;Slave space
    aslParam[2] = 1500 ;Master speed
    aslParam[3] = 4000 ;Maximum Slave speed
    aslParam[4] = 50 ;Acceleration time
    aslParam[5] = 50 ;Deceleration time
    aslParam[6] = 0 ;Starting speed Slave
    aslParam[7] = 1000 ;Device "measure" parameter
    aslParam[8] = 4000 ;Device "pulse" parameter

    DC10SpaceCam (aslParam,codeG,codeM,codeQm,codeQs,codeQma,codeQsa,SpaceM,sbError)
    IF NOT Error
      SettIniz = 1
      NumSet = 3
      DW20WrCam (cmCamma, CodeG, CodeM, CodeQm, CodeQs, CodeQma, CodeQsa, SettIniz, SettFine, NumSet, Error)
    ENDIF
  ENDIF

```

## Operation notes

- The constant speed of the Slave is the speed that the Slave has the time to take the space set. This speed can be set to zero or less than zero.
- Space Slave to set can also be negative, in this case, the calculation will be executed in order to turn back the Slave to the space set
- The number of sectors used is always 3
- In case the space to make the Slave is less than what the Slave would do at a constant speed, the resulting velocity profile is represented in the chart below (the same is true for negative speed).



N.B.: In the graph represented the speed could become negative (and then push back the Slave) if the case the Slave space set is less accomplished for the acceleration and deceleration ramps.

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