

## Application Example

### ➤ Limit Switches; Homing

**Figure 7** is the next example, it uses **limit switches** on a stage to perform **homing**. The stage has X and Y axes limit switches installed at its lower right corner but no home switches on the left. Our objective is to initialize X & Y to zero at the lower left corner of the stage. Thereafter, an application may address the stage in the 1<sup>st</sup> quadrant. The procedure commands the X axis to move to a point beyond its limit switch in a positive direction. OMS controllers automatically stop motion on an axis if its limit is detected. Upon hitting the limit it will be commanded to pull back 190000 steps and set the X position counter to 0. The Y axis is then moved negative till its limit switch is hit. A zero is loaded into the Y axis position counter upon reaching the Y axis limit switch. Both axes are now recognized as 0,0 at the lower left and 190000,120000 as the upper right corner of the stage.

```
AA
AC500000,500000
VL100000,100000
BL8
AX
MR193000;GO
WQ
LP0
AY
MR-130000;GO
WQ
LP0
AX
MR-190000;GO
WQ
LP0
AA
RP BH8
```

- \* Define a homing rate for both X & Y axes as they seek limit switches
- \* Accelerate at 500,000 steps per/sec/sec
- \* Once up to speed move at this rate
- \* Light a LED, attached to User I/O line 8, to indicate "in motion"
- \* Start the home sequence for X axis
- \* From anywhere, move right
- \* Wait till move is complete
- \* Make this X position 0
- \* Home sequence for Y axis
- \* From anywhere move down
- \* Wait till move is complete
- \* Define this point 0 (lower limit)
- \* X is sitting at its upper limit
- \* Move 190000 steps left on X axis
- \* Wait till 190000 is reached
- \* Now define the left most X position as 0
- \* Switch to Axes-All mode
- \* Request report and turn off LED. The reply will indicate the stage is at 0,0
- \* If homing sensors were installed at 0,0 the HM (Home) command could replace most of this procedure simply and automatically

