The following code reads the absolute position of the motor and determines the current position of the Molding Wheel. The absolute position information read from the servodrive is in encoder counts, therefore, in order to properly read and use the information the user units must be configured for encoder counts and modulo position operation disabled.

NOTE: The code below resets the user unit configuration variables to their default values. Before executing the code below, be sure that the desired user units configuration values are stored in temporary variables for later use.

```
FIND.STATION.POS:
AXIS.SET@={MOLD.WHEEL}
MODE@ =0 'disable the axis servodrive
MD.MODE@ =0 'set MotionDATA to "pass-thru"
POS.MUL@ =1 'reset the user units to counts
POS.DIV@ =1
POS.MOD@ =0 'disable modulo position
POS.ACT@ =POS.ABS@ 'read the absolute position in counts
```

The absolute position of the axis decrements in the clockwise direction and increments in the counter-clockwise direction. Therefore the system must interpret the information differently based on which direction is considered the forward direction.

The following code finds the distance, in encoder counts, between the home position and the current axis position. If the forward direction is clockwise, and the current axis position is between the home position and 0, then the position calculation must be scaled by the number of counts between the home position and the "wrap around" count. This allows the distance between the home position and the current position to be calculated in the forward direction through the "wrap around" point. Similar adjustments are made in the counter-clockwise direction.

```
IF CW.FWD@ THEN 'If the motor is rotating clockwise
    IF POS.ACT@ >HOME.POSITION& THEN
        POS.ACT@ =ABSOLUTE.WRAP& *CNT.REV@ +HOME.POSITION& -POS.ABS@
    ELSE
        POS.ACT@ =HOME.POSITION& -POS.ABS@
    ENDIF
ELSEIF NOT CW.FWD@ THEN 'If the motor is rotating cntr-clockwise
    IF POS.ACT@ <HOME.POSITION THEN
        POS.ACT@ =POS.ABS@ +ABSOLUTE.WRAP& *CNT.REV@ -HOME.POSITION&
    ELSE
        POS.ACT@ =POS.ABS@ -HOME.POSITION&
    ENDIF
ENDIF
```

The following code converts the current axis position from encoder counts to user units, degrees. With POS.ACT@ set to the travel distance, in the forward direction, between the home position and the current position, the modulo position feature takes care of calculating where in the current cycle the Molding Wheel is.
MD.MODE@ =0 'leave MotionDATA as "pass-thru"
POS.MUL@ =CNT.REV@*GEAR.REDUCTION/STATIONS/4
  'counts per station/4
POS.DIV@ =360/4 'degrees per station/4
POS.MOD@ =360 'degrees per station
RETURN

Additional Information

NOTE: Due to variances in the S-Series timing specifications, absolute encoders may not operate properly with versions for MotionBASIC prior to 2.1g.

For additional information on the MotionBASIC POS.ABS@ command refer to the MotionBASIC Hypertext Manual.