

**Subject:** MotionWorks+ Version 2.91 Changes and Enhancements

**Product:** MotionWorks+

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**Status:** Released August 2005

**Summary:** This document describes the modifications and upgrades to MotionWorks+ version 2.91 from the previous version, 2.83.

**Changes:**

- Windows XP Service Pack 2 compatibility
- System Ladder Updates (since 283)
  - Fixed CAM SHIFT, SLAVE OFFSET bug when Duration = 0.
  - Fixed Virtual Master bug with very small speed changes causing zero scans to change the speed. (A.9F, division by zero resulted)
  - Fixed speed ranges for DD motor. Pulse/scan limits changed from constant to calculation.
  - Fixed power-up position error with absolute encoder. (Position would be off by the maximum pulses the servo can move in one scan). Scan delta “jump” blocked out when Absolute encoder read.
  - DEFINE POSITION for external encoder fixed. There rising edge bit had been used for two purposes (crossed with Virtual Encoder).
  - Rotary Mode bug fixed. The target register (ILC004) is invalid when in speed mode, so it has a value of zero. If the servo crosses the 32-bit rollover and this register is zero, the calculations do not properly determine the modulated position on the other side. The calculations see:
    - High positive
    - Zero
    - High Negative
    - Fixed by copying ILC008 into an intermediate register used for mPosition\_Target when anything other than speed mode is running. The target register is used with the MOVE AXIS block to determine a new rotary position.
- sCamHeadAddress added to allow dynamic cam table changes.
- mCam\_Shift\_Remaining added to use in calculation where it is required to know the master position at the end of the current cam shift.

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