

## RCP02 V17 Release Notes

These notes cover changes made to the RCP02 code since release V16 of 8 November 1998. If you are upgrading from an earlier release, please read those notes also.

### Bug Repairs

1. Repaired an error in the “restore” command, in which a minor release would not successfully restore newly introduced setup parameters, even if that release itself had just saved them. This bug only affected the minor interim releases such as Rev16.1, Rev16.2, etc. The normal mainstream code worked fine.

### Setup Changes

1. A new setup question has been added to give finer control of the extent to which the model-based acceleration limiter is willing to extend the allowable drive interval down to include zero volts.

**Extension of bound toward zero drive: 50%**

Acceleration limiting works by keeping the motor drive bounded within an interval that is centered on the voltage that would maintain the present velocity. If the simulated model of the antenna is tuned properly, this algorithm limits both the maximum acceleration (increasing drive) and maximum deceleration (decreasing drive) of the antenna.

To insure that the antenna could always be stopped, even if the numerical model were badly mistuned, the original implementation of the acceleration limiter extended the valid drive interval to include zero volts. This meant that zero drive could always be applied to bring the antenna to a stop; but as a result, the maximum deceleration limit would sometimes be exceeded. In some cases this would lead to gear strain as the antenna coasted to a stop from high speed under zero drive.

This new setup question allows the deceleration region to be controlled. If the antenna can safely coast to a stop from any velocity, then the safest setting is the previous default value of 100%, i.e., the allowable drive interval is extended all the way to zero. A value of 0% would enforce the deceleration limit just as strongly as the acceleration limit, but should only be used if the model is properly tuned and if the antenna could be strained by coasting to a stop. The new default value of 50% is usually a reasonable compromise.