Mach4 Spindle Orientation

Spindle orientation is either requested by its Mcode (macro m19) or from Mach4s core in some cycles (for example G87).

Both the M19 macro and Mach4's core execute the spindleorient.mcs script (found in the profile's Macros folder).

Consider the m19 macro a way to conveniently execute (and optionally pass values to 2 parameters in) the spindleorient.mcs script using Gcode.

Consider the spindleorient.mcs script as the workhorse. It is what actually orients the spindle.

M19 is very dependent on the machine tool builder (MTB). So we really can't specify what the parameters to M19 are. So we leave it to the M19 script to determine what they are. To take advantage of automated spindle orientation it is almost guaranteed you will have to modify your spindleorient.mcs script and it is very likely your m19 macro will need to be modified as well. The responsibility of this task falls squarely on the shoulders of the controls integrator. They will have to understand how the hardware they are using works well enough to accomplish this.

The default M19 can be called with 2 optional parameters. The 2 parameters and their intended use are explained below.

1. The first parameter (R) is the position to rotate from 0 in degrees.
    - valid range is 0-360 (default is 0)
2. The second parameter (P) is the direction to rotate to position.
    - valid range is 0-2 (default is 0)
    - 0 rotate the smallest angular movement (default)
    - 1 always rotates clockwise (same as M3 direction)
    - 2 always rotates counterclockwise (same as M4 direction)
3. Example use of M19.
    - Correct: M19
    - Correct: M19 R180
    - Correct: M19 R180 P1
    - Correct: M19 P1