GENERAL COMMANDS

!1	Repeat the previous command
!IOFF	Disable timed homing
!IDON	Enable timed homing
!INIT or **!HOME**	Initialize (home) all axes
!SERN	Show the serial number, returns: "-SERN: xxxx"
!POSI	Display position of all axes
!STAT	Display temperatures, vacuum, pressure, status of bottles
!REVS	Report the software revisions

PLATE X/Y CONTROL

!PLXH	Move plate X-axis to home
!PLYH	Move plate Y-axis to home
!PLTH	Move both plate X & Y to home
!PLXMxxxx	Move plate X-axis to coordinate xxxx
!PLYMyyyy	Move plate Y-axis to coordinate yyyy
!PLTMxxxxyyy	Move plate X & Y to coordinates
!YREF	Reference the plate Y-axis again the indexing sensor
!PLXT	Move plate X, time the plate moving in the X axis for N number of times
!PLYT	Move plate Y, time the plate moving in the Y axis for N number of times

MIXING

!MXONtttt	Turn on plate mixer, tttt = time in seconds
!MXOF	Turn off mixer

WASH HEAD CONTROL

!WSHH	Move wash head to home
!WSHMzzzz	Move wash head to coordinate zzzz

PROBE X/Z CONTROL

!PRXH	Move probe X-axis to home
!PRZH	Move probe Z-axis to home
!PRXMxxxx	Move probe X to coordinate xxxx
!PRZMzzzz	Move probe Z to coordinate zzzz
!PRBMxxxxzzzz	Move probe X & Z to coordinates.
!XTIM	Move probe X, time the probe moving in the X axis for N number of times.
!ZTIM	Move probe Z, time the probe moving in the Z axis for N number of times.
!PFFR	Find fluid level on rack (sense liquid level)
!PARK	Move probe to waste area of wash cup.

RACK CONTROL

!RK1H	Move rack 1 (left) to home
!RK2H	Move rack 2 (right) to home
!RK1Myyyy	Move rack 1 to coordinate yyyy
!RK2Myyyy	Move rack 2 to coordinate yyyy
!RKSMxxxxyyyy	Move both racks at the same time. xxxx = coord.for R1, yyyy = coord. for R2
!R1TM	Move rack 1, time rack 1 moving in the Y axis for N number of times.
!R2TM	Move rack 2, time rack 2 moving in the Y axis for N number or times.

PRESSURE/VACUUM AND VALVE CONTROL

!PRON	Pressure system on
!VAON	Vacuum system on
!VOFF	Vacuum system off
!STBY	Standby. Turns off both pressure and vacuum.
!VALT	Check washer mechanism valves, this command will activate them one by one several times

DILUTER CONTROL

!VAL0 or **!VAL1**	Turn/switch valve to position 0 or 1, use this to determine if the valve is working, a click should be heard.
!VALR	Set valve type to solenoid, use this only if valve has lost configuration.
!VALS	Set valve type to rotary, use this only if valve has lost configuration.
!WPRBvvvv	Wash probe tip. vvvv = volume in uL, 2000 = 2.0mL, if vvvv is not specified the default is used.
!DINI	Initialize the syringe pumps
!DPRIn	Prime the syringe pumps. n = number of times to prime.
!DASPvvvvSx	Aspirate into syringe. vvvv = volume in uL (large or small chosen automatically). x = syringe speed.
!DDSPvvvvSx	Dispense from the syringe. vvvv = volume in uL, x = syringe speed.

PARAMETERS

!PARM	Display the current parameters
!PARMnapppp	Edit a parameter. n = par.#, a = par. label (xyz,ect.), pppp = new par. Value
!MSPDssss	Set mix speed duty cycle, ssss = duty (0030 is the default). A larger number results in a slower mix speed.
!MAXZxxxx	Max probe depth, xxxx = maximum depth over rack 1
!MXZ2xxxx	Max probe depth, xxxx = maximum depth over rack 2

PHOTOMETER

!FLTS	Display the available wavelengths.
!LPON	Turn the lamps on.
!LOFF	Turn the lamps off.
!RFLT	Display the filter voltages of the 4 channels at all 8 wavelengths.
!RWELxnnpdnB	Read the specified well. x = strip(A-H), nn = strip(1-12), pd = filters, n = # of readings.
!VWELxnn	Display the filter volts at well position. x = strip(A-H), nn = strip(1-12)
!RAIR	Take and store an air reading.
!BLNKxnn	Read and store blank values, x = strip(A-H), nn = strip(1-12), entered for channel #2 ((right rear) (all 4 channels, all 8 wavelengths- refer to error 523.))

WASHER FUNCTIONS

!WPRI	Prime the wash system one time.
!RPRI	Prime the rinse system one time.
!ASPSsseed	Aspirate on the plate. ss = start strip(1-12),ee = end strip(1-12),d = “D” for double
!DSPSsseevvv	Dispense on the plate. ss = start strip(1-12),ee = end strip(1-12),vvv = vol. in uL.
!ASDSsseevvv	Do an aspirate/dispense on plate. ss = start strip(1-12),ee = end strip(1-12), vvv = vol. in uL.
!RWSHnnvvvx	Wash row nn, vvv vol in uL, x = number of cycles.
!CASP	Check wash head aspiration (must change 0.5" open versus closed system)

PROBE MACROS

!GOWLxnn	Go to the specified well. x = strip(A-H),nn = strip(1-12).
!GOWDxnnvvvvSs	Go to the specified well and dispense, x=strip(A-H), nn =strip(1-12), vvvv = vol.in uL, s = speed(0-5)
!GOR1nn	Go to the specified position in Rack 1, nn = position number.
!GOR2nn	Go to the specified position in Rack 2, nn = position number.
!GR1AnnvvvvSs	Go to the position in Rack 1 and aspirate, nn = position, vvvv = vol. in uL, s = speed (0-5)
!GR1DnnvvvvSs	Go to the position in Rack 1 and dispense, nn = position, vvvv = vol. in uL, s = speed (0-5)
!GR2AnnvvvvSs	Go to the position in Rack 2 and aspirate, nn = position, vvvv = vol. in uL, s = speed (0-5)
!GR2DnnvvvvSs	Go to the position in Rack 2 and dispense, nn = position, vvvv = vol. in uL, s = speed (0-5)