HAAS C.N.C. MILL
PREPARATORY FUNCTIONS

MODAL
NON-MODAL
DEFAULT *

G00 * RAPID MOTION (X,Y,Z,A,B)
G01 LINEAR INTERPOLATION MOTION (X,Y,Z,A,B,F)
G02 CW CIRCULAR INTERPOLATION MOTION (X,Y,Z,A,I,J,K,R,F)
G03 CCW CIRCULAR INTERPOLATION MOTION (X,Y,Z,A,I,J,K,R,F)
G04 DWELL (P) (P=seconds"."milliseconds)
G09 EXACT STOP
G10 PROGRAMMABLE OFFSET SETTING (X,Y,Z,A,L,P,R)
G12 CW CIRCULAR POCKET MILLING (Z,D,I,K,L,Q,F)
G13 CCW CIRCULAR POCKET MILLING (Z,D,I,K,L,Q,F)
G17 * CIRCULAR MOTION XY PLANE SELECTION
G18 CIRCULAR MOTION ZX PLANE SELECTION
G19 CIRCULAR MOTION YZ PLANE SELECTION
G20 * INCH COORDINATE POSITIONING SELECTION
G21 METRIC COORDINATE POSITIONING SELECTION
G28 RETURN TO MACHINE ZERO THRU REF. POINT (X,Y,Z,B)
G29 MOVE TO LOCATION THRU G29 REFERENCE POINT (X,Y,Z,A)
G31 FEED UNTIL SKIP FUNCTION (X,Y,Z,A,B,F)
G35 AUTOMATIC TOOL DIAMETER MEASUREMENT (D,H,Z,F)
G36 AUTOMATIC WORK OFFSET MEASUREMENT (X,Y,Z,A,B,I,J,K,F)
G37 AUTOMATIC TOOL LENGTH MEASUREMENT (D,H,Z,F)
G40 * CUTTER COMP CANCEL G41/G42/G141 (X,Y)
G41 CUTTER COMPENSATION LEFT (X,Y,D)
G42 CUTTER COMPENSATION RIGHT (X,Y,D)
G43 TOOL LENGTH COMPENSATION+ (H,Z)
G44 TOOL LENGTH COMPENSATION- (H,Z)
G47 TEXT ENGRAVING (X,Y,Z,R,I,J,P,E,F,)
G49 * CANCEL G43/G44/G143
G50 CANCEL G51
G51 SCALING (X,Y,Z,P)
G52 SET WORK COORDINATE SYSTEM G52 (YASNAC)
G52 SET LOCAL COORDINATE SYSTEM (HAAS) (FANUC)
G53 NON-MODAL COORDINATE SELECTION (X,Y,Z,A,B)
G54 * SET WORK COORDINATE SYSTEM 1
G55 SET WORK COORDINATE SYSTEM 2
G56 SET WORK COORDINATE SYSTEM 3
G57 SET WORK COORDINATE SYSTEM 4
G58 SET WORK COORDINATE SYSTEM 5
G59 SET WORK COORDINATE SYSTEM 6
G60 UNIDIRECTIONAL POSITIONING
G61 EXACT STOP MODAL
G64 * CANCEL G61
G65 MACRO SUB ROUTINE CALL
G68 ROTATION (G17,G18,G19,X,Y,Z,R)
G69 * CANCEL G68
G70 BOLT HOLE CIRCLE (I,J,L)
G71 BOLT HOLE ARC (I,J,K,L)
G72 BOLT HOLES ALONG AN ANGLE (I,J,L)
G73 HIGH SPEED PECK DRILL CANNED CYCLE (X,Y,A,B,Z,I,J,K,Q,P,R,F)
G74 REVERSE TAPPING CANNED CYCLE (X,Y,A,B,Z,R,F)
G76 FINE BORING CANNED CYCLE (X,Y,A,B,Z,I,J,P,Q,R,F)
G77 BACK BORE CANNED CYCLE (X,Y,A,B,Z,I,J,Q,R,F)
G80 * CANNED CYCLE CANCEL
G81 DRILL CANNED CYCLE (X,Y,A,B,Z,R,F)
G82 SPOT DRILL / COUNTERBORE CANNED CYCLE (X,Y,A,B,Z,P,R,F)
G83 PECK DRILL CANNED CYCLE (X,Y,A,B,Z,I,J,K,Q,P,R,F)
G84 TAPPING CANNED CYCLE (X,Y,A,B,Z,R,F)
G85 BORE IN, BORE OUT CANNED CYCLE (X,Y,A,B,Z,R,F)
G86 BORE IN, STOP, RAPID OUT CANNED CYCLE (X,Y,A,B,Z,R,F)
G87 BORE IN AND MANUAL RETRACT CANNED CYCLE (X,Y,A,B,Z,R,F)
G88 BORE IN, DWELL, MANUAL RETRACT CANNED CYCLE (X,Y,A,B,Z,P,R,F)
G89 BORE IN, DWELL, BORE OUT (X,Y,A,B,Z,P,R,F)
G90 * ABSOLUTE POSITION COMMAND
G91 INCREMENTAL POSITION COMMAND
G92 SET WORK COORDINATE SHIFT VALUE (HAAS) (FANUC)
G92 SET WORK COORDINATE SHIFT VALUE (YASNAC)
G93 INVERSE TIME FEED MODE ON
G94 INVERSE TIME FEED MODE OFF / FEED PER MINUTE ON
G98 * CANNED CYCLE INITIAL POINT RETURN
G99 CANNED CYCLE "R" PLANE RETURN
G100 CANCEL MIRROR IMAGE (X,Y,Z,A,B)
G101 ENABLE MIRROR IMAGE (X,Y,Z,A,B)
G102 PROGRAMMABLE OUTPUT TO RS-232 (X,Y,Z,A,B)
G103 LIMIT BLOCK BUFFERING (P0-P15 for number control looks ahead)
G107 CYLINDRICAL MAPPING (X,Y,Z,A,Q,R,)
G110-G129 WORK OFFSET COORDINATE SYSTEM #7-26
G143 5 AXES TOOL LENGTH COMPENSATION+ (H,Z)
G136 AUTOMATIC WORK OFFSET CENTER MEASUREMENT
G141 3D+ CUTTER COMPENSATION (X,Y,Z,I,J,K,D,F)
G143 5 AXES TOOL LENGTH COMPENSATION+ (X,Y,Z,A,B,H)
G150 GENERAL PURPOSE POCKET MILLING (X,Y,Z,I,J,K,L,Q,P,D,R,S,F)
G174 VECTOR RIGID TAPPING CCW (X,Y,Z,F)
G184 VECTOR RIGID TAPPING CW (X,Y,Z,F)
G187 ACCURACY CONTROL FOR HIGH SPEED MACHINING (E)

HAAS C.N.C. MILL
MISCELLANEOUS FUNCTIONS

M00 PROGRAM STOP
M01 OPTIONAL PROGRAM STOP
M02 PROGRAM END
M03 SPINDLE ON CLOCKWISE (S)
M04 SPINDLE ON COUNTERCLOCKWISE (S)
M05 SPINDLE STOP
M06 TOOL CHANGE (T)
M08 COOLANT ON
M09 COOLANT OFF
M10 ENGAGE 4th AXIS BRAKE
M11 RELEASE 4th AXIS BRAKE
M12 ENGAGE 5th AXIS BRAKE
M13 RELEASE 5th AXIS BRAKE
M16 TOOL CHANGE (same as M06) (T)
M19 ORIENT SPINDLE
M21-M28 OPTIONAL PULSED USER M FUNCTION WITH FIN
M30 PROGRAM END AND REWIND
M31 CHIP CONVEYOR FORWARD
M32 CHIP CONVEYOR REVERSE
M33 CHIP CONVEYOR STOP
M34 INCREMENT COOLANT SPIGOT POSITION
M35 DECREMENT COOLANT SPIGOT POSITION
M36 PALLET PART READY
M39 ROTATE TOOL TURRET (T)
M41 LOW GEAR OVERRIDE
M42 HIGH GEAR OVERRIDE
M50 EXECUTE PALLET CHANGE
M51-M58 OPTIONAL USER M TURN ON
M61-M68 OPTIONAL USER M TURN OFF
M67 RELEASE FIFTH AXIS BRAKE, PROGRAM CONTINUES
M75 SET G35 OR G136 REFERENCE POINT
M76 DISABLE DISPLAYS
M77 ENABLE DISPLAYS
M78 ALARM IF SKIP SIGNAL FOUND
M79 ALARM IF SKIP SIGNAL NOT FOUND
M82 TOOL UNCLAMP
M86 TOOL CLAMP
M88 THRU SPINDLE COOLANT ON
M89 THRU SPINDLE COOLANT OFF
M95 SLEEP MODE
M96 JUMP IF NO SIGNAL (P,Q)
M97 LOCAL SUB-ROUTINE CALL (P,L)
M98 SUB-PROGRAM CALL (P,L)
M99 SUB-PROGRAM/ROUTINE RETURN OR LOOP

All **M** codes are effective or cause an action at the end of the block and only one **M** code is allowed in each block.

Haas Automation Inc.