```
0000: #AUTO
0001: NO-REVISION-2
0002:     CIRCUM=3.5*3.14159265
0003: NO-STABON-CIRCUM12.566
0004:     CONST1=10
0005:     CONST2=7900
0006: NOB28250
0007: NOB98000
0008: NOB57900
0009:     CORRFACT=8.
0010:     INCH=((CONST2*CONST1)/CIRCUM)*CORRFACT
0011:     ACCEL=170
0012:     DECEL=170
0013:     JOGSP=700
0014:     REPEAT=19
0015:     PASTEYE=3
0016:     SPEED=1500
0017:     SHX
0018:     XQ#MOTION,1
0019: #COMU
0020:     IN,SPEED
0021:     IN,REPEAT
0022:     IN,PASTEYE
0023:     JP#COMU
0024: EN
0025:
0026: EN
0027:
0028: #MOTION
0029:     CN-1,-1,-1
0030: #MAIN
0031:     CB4
0032:     JS#JOG,(@IN[3]=0)
0033:     JS#DMOVE,(@IN[4]=0)
0034:     JS#REGMOVE,(@IN[5]=0)
0035:     ST
0036:     JP#MAIN
0037: EN
0038:
0039: #JOG
0040:     SB4
0041:     ACX=ACCEL*INCH
0042:     DCX=DECEL*INCH
0043:     JG((JOGSP*INCH)/60)
0044:     BGX
0045:     AI+3
0046: EN
0047:
0048: #DMOVE
0049:     SB4
0050:     SHX
0051:     SB3
0052:     PRX=REPEAT*INCH
0053:     ACX=ACCEL*INCH
0054:     DCX=DECEL*INCH
0055:     SPX=(SPEED*INCH)/60
0056:     BGX
0057:     AM
0058: EN
0059:
0060: #REGMOVE
0061:     SB4
0062:     DP0
0063:     SHX
0064:     EREPEAT=(REPEAT*INCH)
0065:     DPI=(PASTEYE*INCH)
0066:     LOOK=(EREPEAT-DPI-(0.5*INCH))
0067:     ACX=ACCEL*INCH
0068:     DCX=DECEL*INCH
0069:     SPX=(SPEED*INCH)/60
0070:     PRX=(REPEAT-0.5)*INCH
0071:     TOOFAR=_PRX-INCH
0072:     BGX
0073:     ADLOOK
0074:     LTX=DPI
0075:     ALX
0076:     SEENBOT=0
0077:     #WAIT
0078:         JP#MISSED,_TPX>TOOFAR
0079:         JP#NSEEBOT,SEENBOT=1
0080:         JP#SEEBOT,(@IN[2]=0)
0081:         #NSEEBOT
0082:     JP#WAIT,_ALX=1
0083:     JP#OUT2,SEENBOT=1
0084: JP#OUT1
0085:
0086: #SEEBOT
0087:     BOTTOM=_TPX
```

start running #AUTO as thread 0

Start running #MOTION as thread 1 (there are two available threads).
#COMU runs as thread 0.

CN configure -1;limit switches active low, -1;home switch configuration, -1; Latch input active low

CB4 clear bit 4. this is digital output 4 terminal 21 of connector CN 5, unitronics 'servo running'. Input 47.

SB4 set bit 4 " servo running"

Thread 1 hangs here (at ADLOOK) until we start to look for the eyespot.
thread 0 continues to run #COMU

LTX latch target. stop motion DPI past the point where the latch was tripped by the eyespot sensor on input 1. CN 5 terminal 18

JP# jump to label; "WAIT" if _ALX is true, fall thru until the latch is tripped by the eyespot sensor

```
0088:     SEENBOT=1
0089: JP#WAIT
0090:
0091: #OUT1
0092: #WAIT2
0093:     JP#SEEBOT1,(@IN[2]=0)
0094:     JP#MISSED1,_TPX>TOOFAR
0095: JP#WAIT2
0096:
0097: #MISSED1
0098:     #SEEBOT1
0099:     BOTTOM=_TPX
0100:     #OUT2
0101:     AM
0102:     TOP=_RLX
0103:     DIF=(TOP-BOTTOM)*5
0104:     DIFF=(DIF/INCH)
0105:     DIFFOUT=DIFF+5
0106:     JP#LOW,DIFFOUT<0
0107:     JP#HIGH,DIFFOUT>9.99
0108: JP#AOUT
0109:
0110: #HIGH
0111:     DIFFOUT=9.99
0112: JP#AOUT
0113:
0114: #LOW
0115:     DIFFOUT=0
0116: JP#AOUT
0117:
0118: #AOUT
0119:     AODIFFOUT
0120: EN
0121:
0122: #MISSED
0123:     AM
0124:     AT0
0125:     AT2000
0126: EN
0127:
0128: EN
0129:
0130: JP#MOTION
0131: EN
```