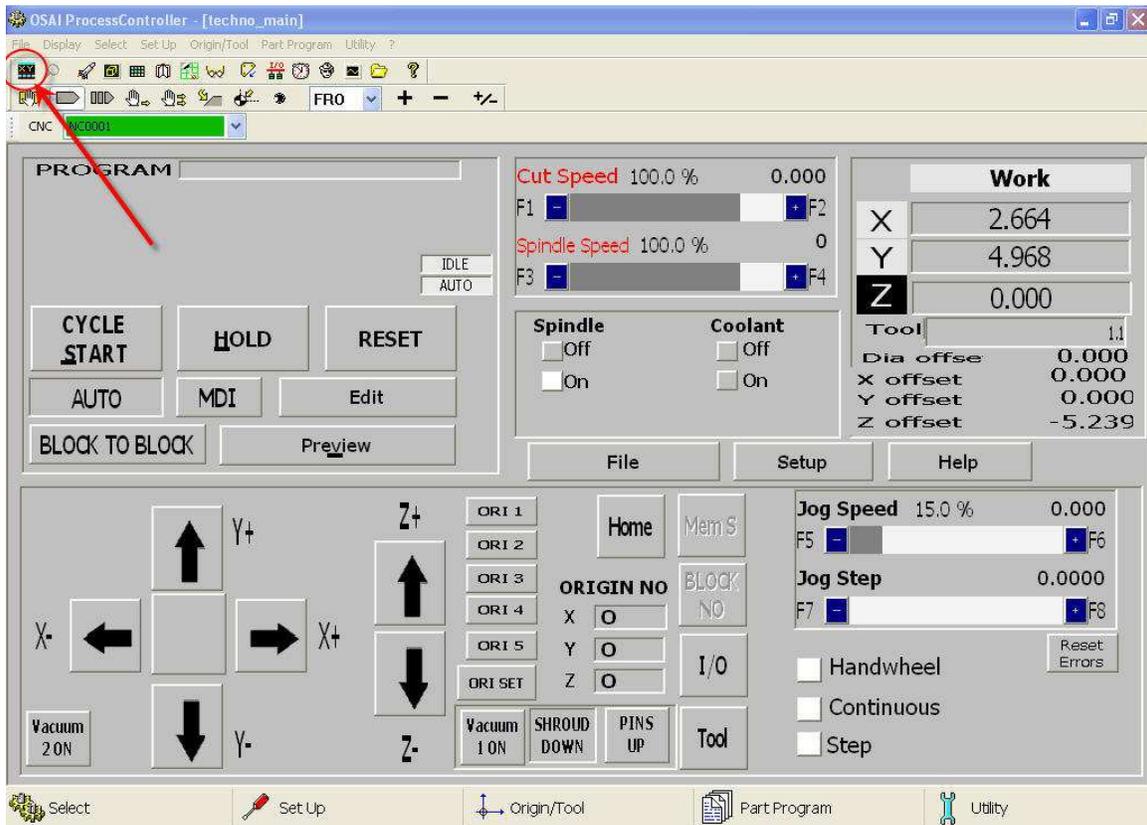


How To Define Axis Settings on HDS Machines

This is a quick, step-by-step tutorial for how to change the axis parameters. This should NOT be done without the guidance of a Techno technician.

Note: The values that are pictured are directly from a machine here at Techno. They will apply for the X and Y axis settings only. The Z axis will vary slightly.



Click on the 'CNC Vision' icon to bring up the controller screen.

Note: To navigate through the menus in the controller screens: use F10 to scroll the highlight bar and then the corresponding function key to select what's highlighted.

```

PROCESS CONTROLLED:1  CAPS ON                SCREEN 1  OF 2  TIME: 16:36:30
PROC:1  IDLE          AUTO                   OPT-STOP  BLK-DELETE  FEED-BYPASS  RETRACE
        AXIS          WORK                   [inch]    PROGRAMMED
        X              2 . 6 6 4             0 . 0 0 0
        Y              4 . 9 6 8             0 . 0 0 0
        Z              0 . 0 0 0             0 . 0 0 0

S:      0.000          F:      0.00000      RAP:    0.00000      ACT:  T1.1
100.0% 0.000         100.0% 0.00000      100.0% 0.00000
G: 00 80 99 40 29 90 70 17 94 97      NXT:
M:                                  48      d: 0.000000
                                JOG: 0.00000      Z: -5.238721
                                Y: 0.000000

PROGRAMS:

POS DISPLAY  NEXT DISPLAY  SELECT ADDRESS  ENLARGE  HELP
  AUTO      MANUAL      PART PROGRAM    VARIABLES  OPEN SOFTWARE
MACHINE SET-UP  TABLES  DIAGNOSTICS
(F5)        (F6)        (F7)        (F8)        (F9)

```

Hit F4 to go to the top menu. Use F10 to move the highlight bar until it is on the bottom line, and then hit F9 to go to the 'Utility' menu.

```

PROCESS CONTROLLED:1  CAPS ON                SCREEN 1  OF 2  TIME: 16:37:09
PROC:1  IDLE          AUTO                   OPT-STOP  BLK-DELETE  FEED-BYPASS  RETRACE
        AXIS          WORK                   [inch]    PROGRAMMED
        X              2 . 6 6 4             0 . 0 0 0
        Y              4 . 9 6 8             0 . 0 0 0
        Z              0 . 0 0 0             0 . 0 0 0

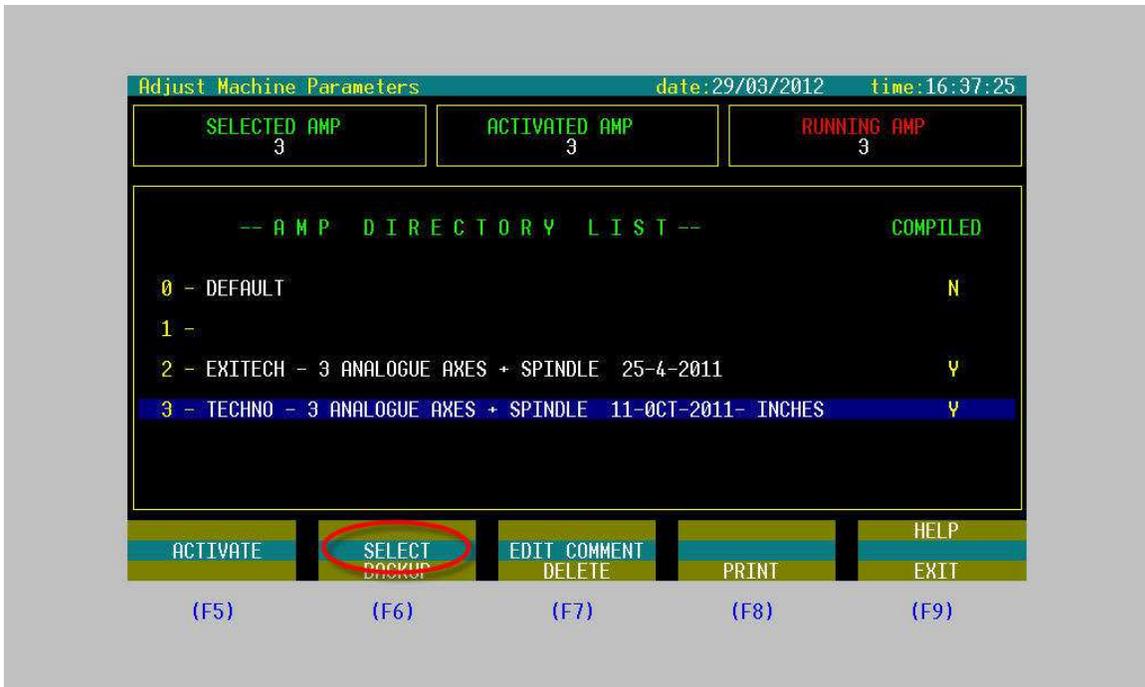
S:      0.000          F:      0.00000      RAP:    0.00000      ACT:  T1.1
100.0% 0.000         100.0% 0.00000      100.0% 0.00000
G: 00 80 99 40 29 90 70 17 94 97      NXT:
M:                                  48      d: 0.000000
                                JOG: 0.00000      Z: -5.238721
                                Y: 0.000000

PROGRAMS:

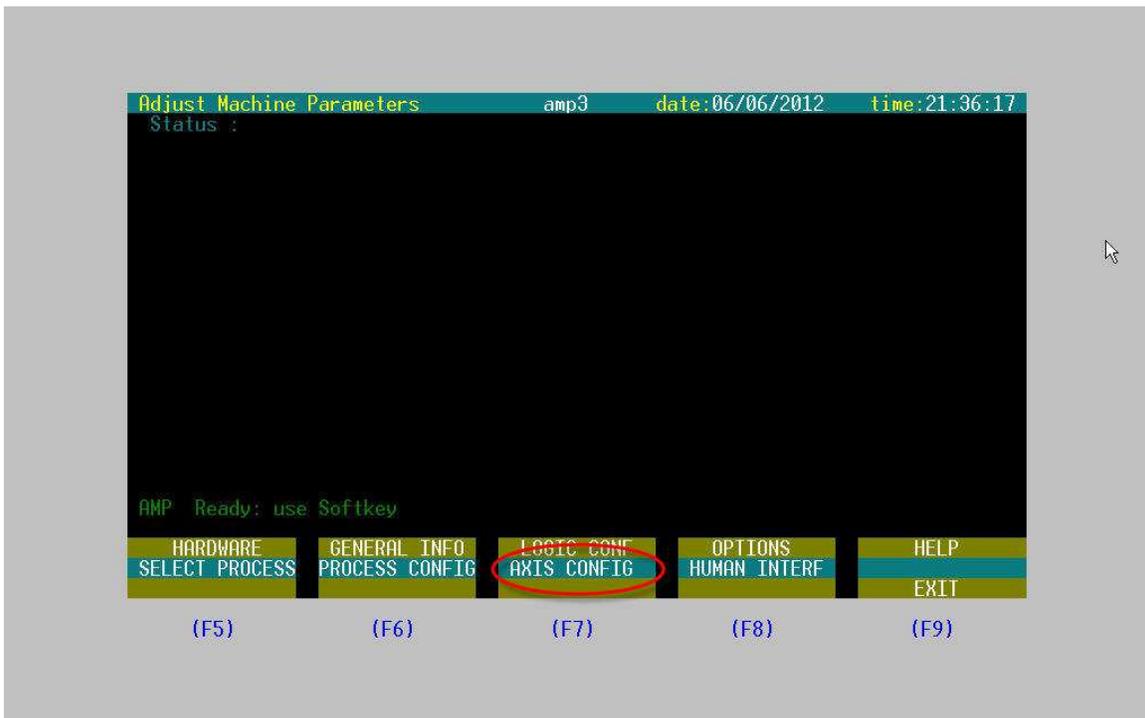
AMP      PLUS      DOS SHELL  PERIPHERALS  HELP
(F5)    (F6)    (F7)    (F8)    (F9)

```

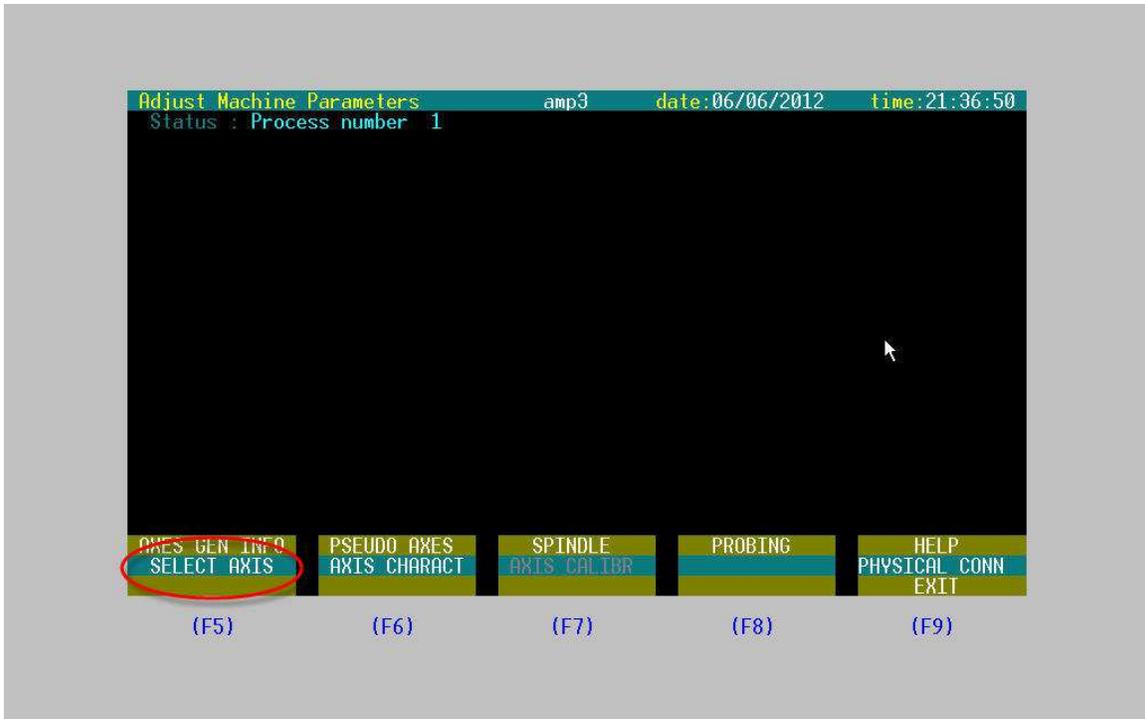
Go to the 'AMP' menu.



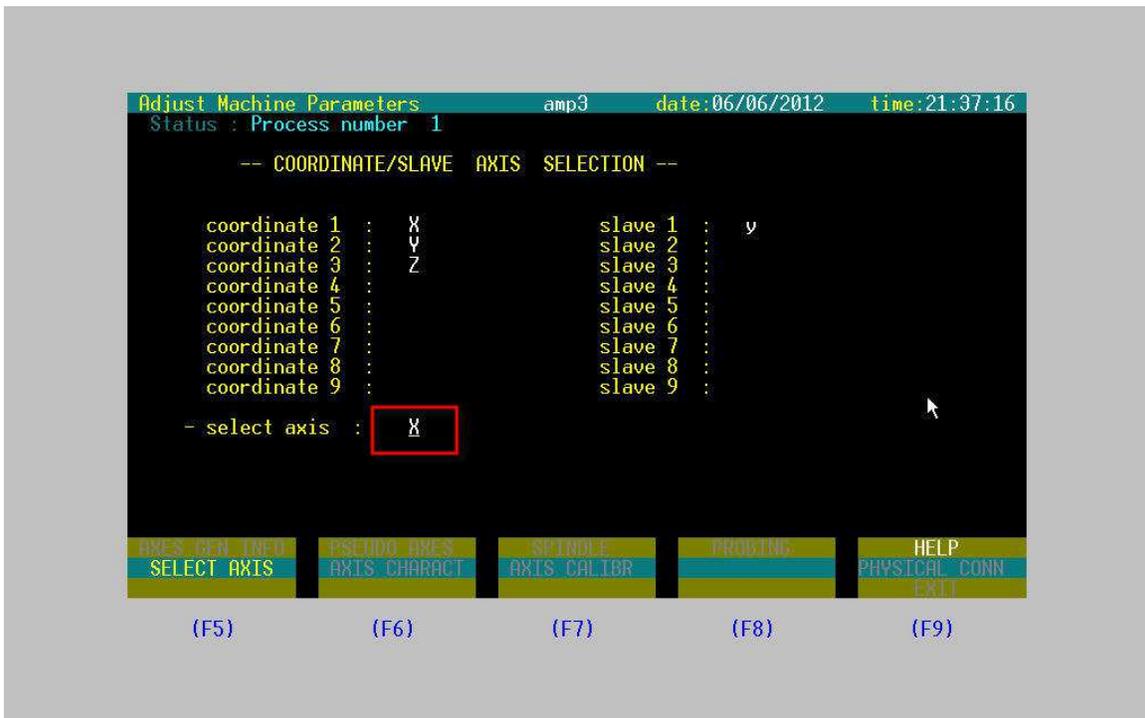
Hit 'Select' to activate the current configuration.



Select 'Axis Config'.



'Select Axis' to choose which axis' configuration we will look at.



Type (in CAPS) the letter of the axis you wish to activate the settings for and then hit 'Enter' on the keyboard's number pad.

```

Adjust Machine Parameters      amp3      date:06/06/2012      time:21:36:50
Status : Process number 1

AXES GEN INFO  PSEUDO AXES  SPINDLE  PROBING  HELP
SELECT AXIS   AXIS CHARACT  AXIS CALIBR  PHYSICAL CONN
(F5)          (F6)          (F7)        (F8)      (F9)
EXIT

```

Now select 'Axis Charact' to see the settings for the selected axis.

```

Adjust Machine Parameters      amp3      date:06/06/2012      time:21:37:36
Status : Process number 1
Axis name X
-- COORDINATE  AXIS  CHARACTERIZATION  --
- axis display format      : 5.3
- axis type                 : LINEAR
- diametral                 : N
- rollover                  : N
- digital axis              : N
- linear optical encoder    : N
- channel A polarity inversion : N
- channel B polarity inversion : N
- channel Z polarity inversion : N
- direction count          : NEGATIVE
- marker detection          : LEVEL
page 1 of 4
AXES GEN INFO  PSEUDO AXES  SPINDLE  PROBING  HELP
SELECT AXIS   AXIS CHARACT  AXIS CALIBR  PHYSICAL CONN
(F5)          (F6)          (F7)        (F8)      (F9)
EXIT

```

Make sure your settings match these...

Note: Hit 'page down' on the keyboard to move on to the next pages.

```

Adjust Machine Parameters      amp3      date:06/06/2012      time:21:39:09
Status : Process number 1
        Axis name X      (*) measuring unit = inches
        -- COORDINATE  AXIS  CHARACTERIZATION --

- rapid traverse feed      (* /min): 1500.00000
- rapid acceleration      (* /s x s): 59.00000
- manual feed              (* /min): 800.00000
- manual acceleration      (* /s x s): 38.30000
- electrical pitch (pulses/rev): 40000
- mechanical pitch        (*): 2.47369
- rollover pitch          (*): 14.17323
- rapid traverse voltage (Volt): 8.500
- maximum feed            (* /min): 1500.00000
- home position feed      (* /min): 10.0000
- null offset value       (*): 0.00000
- home position value     (*): 0.00000
- homing direction        : NEGATIVE
- percent of VFF          (%): 85
- upper software overtravel (*): 49.60630
- lower software overtravel (*): -1.25740

```

page 2 of 4

(F5)	(F6)	(F7)	(F8)	(F9)
------	------	------	------	------

Page 2...

```

Adjust Machine Parameters      amp3      date:06/06/2012      time:21:39:49
Status : Process number 1
        Axis name X      (*) measuring unit = inches
        -- COORDINATE  AXIS  CHARACTERIZATION --

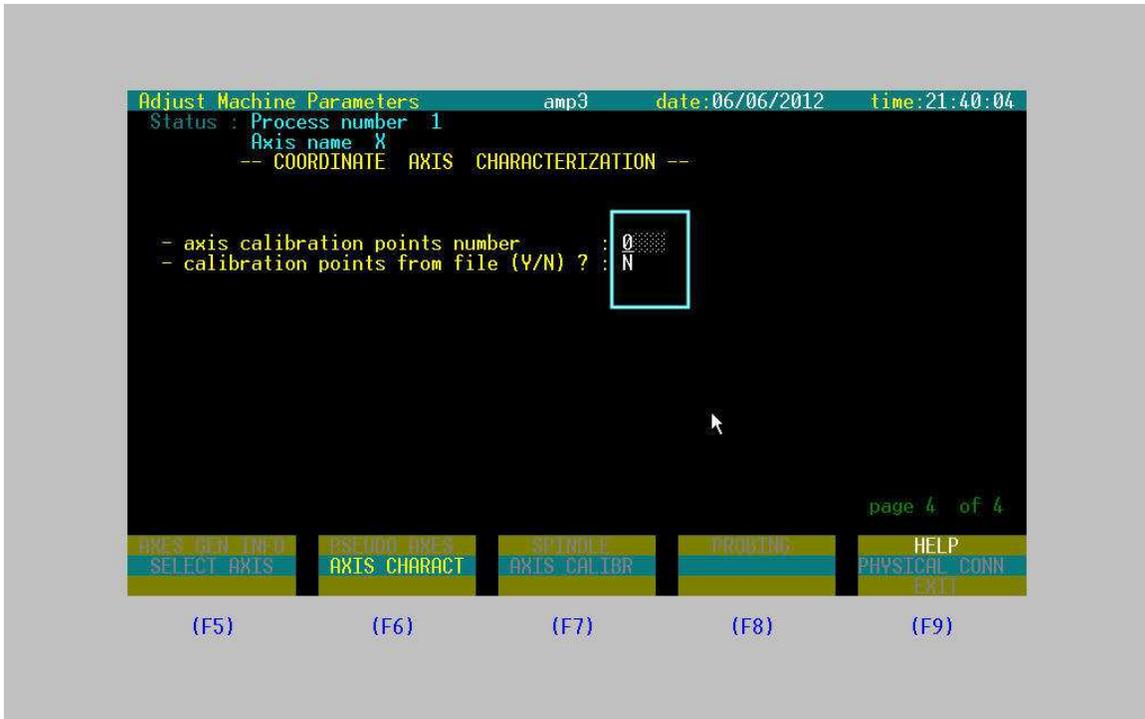
- servo loop gain          : 1.00
- stand still servo loop gain : 1.00
- position error at stand still (*): 0.09843
- position error with VFF    (*): 1.00000
- position error without VFF (*): 1.77000
- in position band          (*): 0.01000
- in position wait (time out) (s): 1.500
- in position window        (s): 0.050
- rapid jerk                (* /s^3): 984.25000
- working jerk              (* /s^3): 393.70000
- rapid minimum ramp time   (msec): 0.00000
- working minimum ramp time (msec): 0.00000
- axis backlash             (*): 0.00000
- dead zone                 (*): 0.00000

```

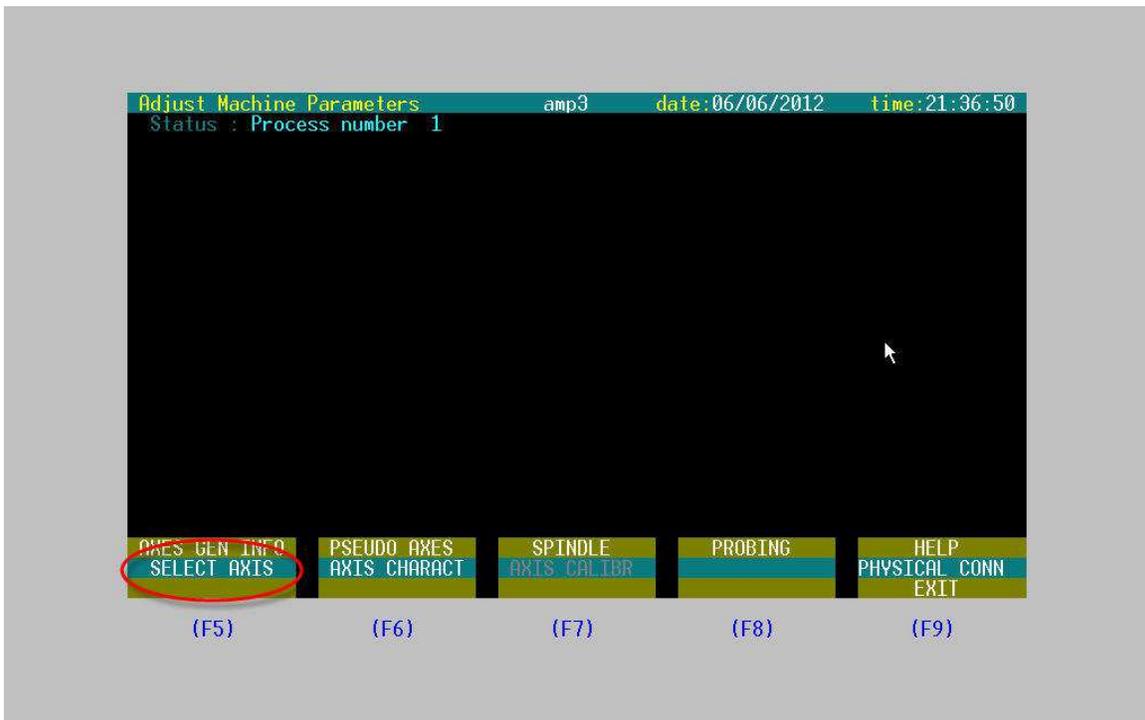
page 3 of 4

(F5)	(F6)	(F7)	(F8)	(F9)
------	------	------	------	------

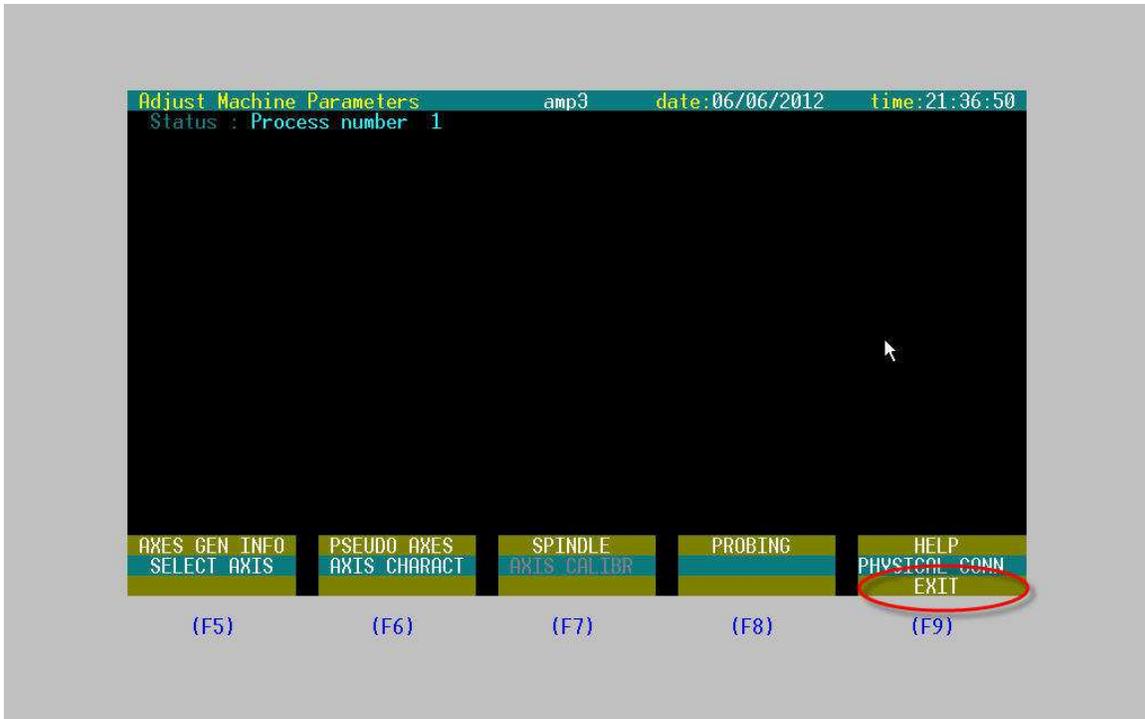
Page 3...



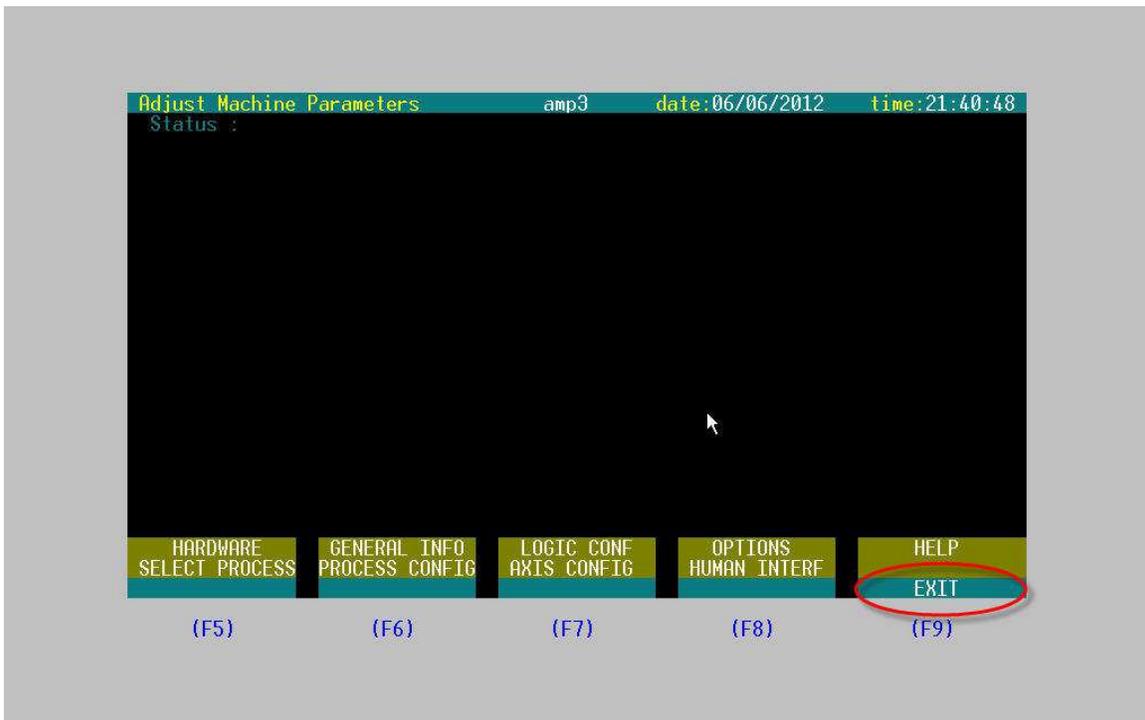
When all 4 pages are checked, hit 'Enter' on the number pad.



Now go back into 'Select Axis', choose a different axis, and repeat the above steps for checking the settings.



When all of the settings are checked, 'Exit'.



'Exit' again...

```
Adjust Machine Parameters      amp3      date:29/03/2012      time:16:40:42
Status :
      -- Exit --
Translate new parameters ? (Y/N) Y

HARDWARE      GENERAL INFO      LOGIC CONF      OPTIONS      HELP
SELECT PROCESS  PROCESS CONFID  AXIS CONFID    HUMAN INTERE
(F5)          (F6)          (F7)          (F8)          (F9)
EXIT
```

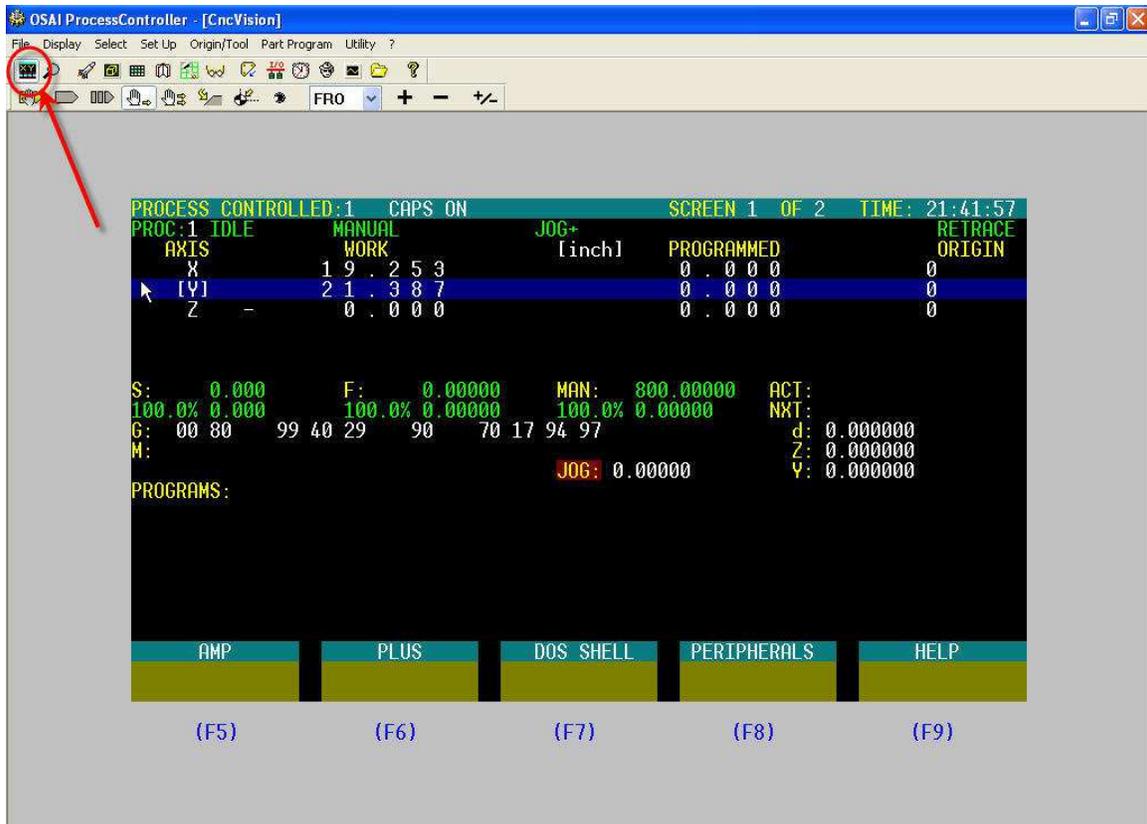
When prompted to 'Translate New Parameters' type 'Y' and hit 'Enter'.

```
Adjust Machine Parameters      date:06/06/2012      time:21:41:30
SELECTED AMP      ACTIVATED AMP      RUNNING AMP
      3              3              3

-- AMP DIRECTORY LIST --      COMPILED
0 - DEFAULT              N
1 -
2 - EXITECH - 3 ANALOGUE AXES + SPINDLE 25-4-2011      N
3 - TECHNO - 3 ANALOGUE AXES + SPINDLE 11-OCT-2011- INCHES      Y

ACTIVATE      SELECT      EDIT COMMENT      PRINT      HELP
(F5)          BACKUP      DELETE            (F8)          EXIT
(F6)          (F7)          (F9)
```

'Exit' again...



Click the 'CNC Vision' button to return to the main interface screen.

Reminder: You will have to re-start the controller for these changes to take effect.

IMPORTANT!! DO NOT exit out of the AMP settings without determining if you want to 'Translate New Parameters'. This could result in the controller settings not being compiled – which would mean that the machine WILL NOT run. Even if you say 'N', that's fine. However, the changes you made will not be saved.