## Program Select

1. RESET
2. AUTO
3. F 1 (Main Prg_Oper)
4. F 1 (Program Select)
5. Positioning Cursor to target filename.
6. F 7 ( OK )
7. F 8 ( Close )





## Zero shifts for Air cut

1. ZERO SET
2. Move the cursor to Zero shift X-Axis or Z-Axis.
3. F 2 (ADD)
4. ○○○ ENTER

   Shift value

Attn.: Only 1time valid. After Reset automatic 0.

# Tool Data Adjust

1. TOOL DATA
2. F 7 (ITEM) press until ＊Tool OFFSET＊ screen.
3. Conform Spindle mode. (1spindle mode or 2spindle mode)
4. Change the Cutting position Base or Vertical.
5. Change the Tool No. By Page key or Cursor key.
6. Positioning Cursor to X-axis or Z-axis.
7. F 2 (ADD) If no Function key then press ＞ (Extend)
8. ○○○ ENTER

   Adjust value

Example1. －0.01 ENTER---------- make 0.01 small

Attn.:

・ More them 1mm is limited by parameter. (Changeable)





# Soft Limit Setting

1. Manual Move Turret to target position.
2. Parameter
3. F 8 (Change Screen)
4. F 2 (User Para)
5. Move the Cursor to target axis.
6. F 3 (CAL)
7. ENTER

Attn.:

- Please do not mistake plus and minus.
- For make width, press F 2 (ADD) then write adjusts value.
- For make maximum limit, at system parameter stroke end limit ADD "0" write then automatic setting to soft limit same as stroke limit. Do not change system stroke limit.

# Turret Index

## A. Manual

1. Manual move turret to X-axis soft limit position.
2. Check the interference between turret and spindle tailstock.
3. Turret Index

## B. MDI

1. Close door.
2. MDI
3. G21HP=4 ENTER
4. START
5. T○○○M66 ENTER ----- Sub-spindle M/C don't need M66

   100or300 (offset200spec is 1000or3000)
6. START





# Tool Registration

1. TOOL DATA
2. F7 (ITEM) press until ＊ATC Tool Information＊ screen.
3. Move cursor to turret No.
4. F1 (SET)
5. Tool number ENTER
6. F1 (MENU)
7. F3 (L-Tool) or F4 (M-Tool)
8. If not standard size selects the size.
9. F7 (O K)

Attn.:

- Standard size is run dram pot.
- Big size is fix pot.

# Manual Tool Exchange

1. Manual Index turret. (Refer to attached sheet.)
2. Move Turret to the place which work tends to perform.
3. Manual Tool Exchange ON
4. Put Turret operation box on near place with a magnet.
5. **Hold Tool by hand.**
6. Unclamp
7. Exchange Tool.
8. Clamp
9. Return Turret operation box.
10. Manual Tool Exchange OFF
11. Input Tool data information. (Refer to attached sheet.)





# ATC

1. Manual close door.
2. If return cycle is on then press Return Cycle
3. MDI
4. MT＝○○○△△ ENTER ○○○ is Tool Number 0～210
   △△ is turret No. (MacT250 = 01 only)

Example1. MT＝1 ENTER------ Return Tool and on Turret empty.

Example2. MT=101 ENTER---- Tool No.1 prepay.

5. START
6. M441 ENTER ------- (Okuma standard is M421)
7. Single block off and Feed override 30%.
8. START
9. Wait until Run lamp off.

EDIT mode

## Create New File

1. EDIT mode

2. F 3 (New)--- If have a One touch IGF then press F 1 (NC)

3. New file name ENTER --------Head character must be English and max.16 characters.

Example1. ABC ENTER ----------Create “ABC.MIN” file.

Example2. ABC. SSB ENTER -------- Create “ABC.SSB” file.

4. Do edit operation.

5. F 8 (Stop／Quit) or > (Extend) F 8 (Select quit)

➢ I recommend “Select quit” because after not need program select.



EDIT mode

## File Editing

1. EDIT mode

2. Move cursor to target filename.

3. F 2 (EDIT) or just ENTER

4. Do edit operation.

5. F 8 (Stop／Quit) or > (Extend) F 8 (Select quit)

➢ I recommend Select quit because after not need program select.

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EDIT mode

## File copy then create new file

1. EDIT mode
2. Move cursor to source file name.
3. F 5 (Copy)
4. Input new file name. -------Head character must be English and max.16 characters.
5. F 1 (MD1 Copy)



Setup

## Chuck work / Center work Change parameter

1. Parameter
2. F 8 (Change Screen)
3. F 4 (Tailstock)
4. ↑ Cursor to upper position.
5. F 1 (MENU)
6. F 2 (Chuck work) or F 3 (Center work)

Attn.:

- For cutting jaw. Change to chuck work.

Setup

## O.D. / I.D. Clump change parameter

1. Parameter
2. F 8 (Change Screen)
3. F 3 (Chuck 1spindle) or F 4 (Chuck 2spindle)
4. ↑ move cursor to upper position.
5. F 1 (MENU)
6. F 2 (OD) or F 3 (ID)



Setup

## Z-axis Zero Set

1. Put master tool on turret.
2. Manual spindle rotate.
3. Cutting work piece face.
4. Move turret to X-axis direction then stop the spindle.-------- Don't move Z-axis ! !
5. Measurement.
6. ZERO SET
7. Confirm the cursor position should be Z-axis position.
8. F 3 (CAL)
9. Measure value ENTER ------If cutting face is 0 . Input 0.
10. Check the actual position. Should be same as measurement value.

**If offset data is from gage line. Have to shift zero data.**

11. ZERO SET
12. F 2 (ADD)
13. Z-axis offset ENTER

Attn.:Main spindle is minus, sub spindle is plus.

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Setup

## Z-axis Zero Set by macro program

1. Put on which right offset has tool on the turret.
2. Manual turn spindle.
3. Cutting face of work piece.
4. Move turret to X-axis direction then stop the spindle.-------- Don't move Z-axis！！
5. Measurement.
6. MDI
7. G205 ZP=Measurement value （If data is 0, only G205 enough）
8. ENTER
9. START
10. Check the actual position. Should be same as measurement value.



Setup

## Z-axis Zero Set by Sensor

1. Put sensor tool on the turret.
2. Manual it brings close to less than 3mm of a work.
3. Check the sensor, touch the sensor by hand then lamp is on.
4. Turn pulse handle until sensor lamp is on.
5. G205 ZP=Measurement value （If data is 0, only G205 enough）
6. ENTER
7. START
8. Check the actual position. Should be measurement value + Tool offset value.

Attn.：

- Should be setting parameter Sensor power automatic on.

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## Z-axis Zero Set (sensor automatic move)

1. Put sensor on the turret.
2. Manual It brings close to less than 10mm of a work.
3. MDI
4. G206 ZP=touch point (If value "0" then only G206)
5. ENTER
6. START
7. Sensor moves to minus direction to touch the work piece, then return and change zero data automatically.
8. Check the Z-axis actual position. Must be "Touch point +Tool offset value".

Attn.:

- Should be setting parameter Sensor power automatic on.





## Spindle Rotate

1. Check the Chuck close confirmation signal.
2. If used Tailstock, Check the tailstock-positioning signal.
3. MDI
4. M41 S spindle speed ENTER ------during open door is Gear rang under 200rpm.
5. START
6. Manual
7. Milling Spindle OFF
8. STOP

CCW CW

JOG

If not spindle rotate. Use MDI then M03 command and START.
You will be having alarm then you fund out reason.

Setup

## Touch setter Parameter setting

1. Put collect offset tool on turret.
2. Manual move turret to X-axis limit.
3. Check the interference between sensor and chuck or work piece.
4. Sensor advance ----- automatic change display to “Tool Data”
5. Parameter ------- automatic change display to “Sensor position”.
6. It brings close to less than 2mm of a sensor.
7. Feed override ”0”.

   ↓
8. → ← press Sensor SW

   ↑
9. Ingress Feed override until 50～100%.
10. Anther axis also setting.
11. Sensor retract

Note: M117 = Sensor Advance
M118 = Sensor Retract



Setup

## Tool offset (Manual)

1. Put tool on turret.
2. Manual cutting work piece.
3. Remove axis.
4. Spindle stop. And measure.
5. Tool Data
6. F 7 (ITEM) press until “Tool OFFSET” screen.
7. Actual Tool Number changes by page-key and cursor-key.
8. Select spindle mode. ( 1spindle or 2spindle)
9. Select cutting position Base or Vertical.
10. Select X-axis or Z-axis.
11. > (Extend)
12. F 2 (CAL)
13. Measurement value ENTER

Attn.：Please set Nose-R data.

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Setup

## Tool offset (Touch setter)

1. Put tool on turret.
2. Manual move turret to X-axis limit.
3. Check the interference between sensor and chuck or work piece.
4. Sensor advance ----- automatic change display to “Tool Data”
5. It brings close to less than 2mm of a sensor.
6. Feed override ”0”.

   ↓

7. → ← press Sensor SW

   ↑

8. Ingress Feed override until 50～100%.
9. Anther axis also setting.
10. Sensor Retract

Attn.: Please set Nose-R data.

Note: M117 = Sensor Advance
M118 = Sensor Retract



Setup

## W-axis Zero Set

1. Sub spindle chuck open.
2. Manual
3. Main spindle
4. ← Move W-axis to near main spindle.
5. Set transfer angle. (Refer to attached sheet.)
6. RESET
7. Inching spindle by hand, and move the W-axis until work piece faces touch the sub spindle Chuck face.
8. ZERO SET
9. Move cursor to W-axis position.
10. F 3 (CAL)
11. Value ------ Normally “0”
12. ENTER

Attn.:
At time. Clamp work piece by sub chuck then check the confirmation signal. Signal is on sub spindle mode actual position screen. Same page.

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## Change the Transfer angle

1. Sub chuck open.
2. Manual move W-axis to near the main spindle.
3. MDI
4. M151 ENTER ----- spindle synchronous command.
5. START ---------- Attn. Spindle is rotate.
6. Parameter
7. F 8 (Change Screen)
8. Select 「Optional parameter 1spindle - 2spindle」
9. F 7 (Close)
10. Select 「No. 2 2spindle Zero offset」
11. F 1 (SET) or F 2 (ADD) adjust value will be change angle.

Note: M151 = Spindle synchronous command
M150 = Spindle synchronous command Cancel





## M-spindle rotate

1. MDI
2. M110 ENTER------- C-axis connect command.
3. START---------- Attn. Spindle start rote.
4. SB=M-spindle Speed ENTER

   *daring door open under 200rpm is OK.*
5. START
6. Manual
7. Milling Spindle ON
8. STOP

   CCW CW

   JOG

Note: M110 = C-axis connect
M109 = Cancel of C-axis connect
M13 = M-spindle CW
M14 = M-spindle CCW
M12 = M-spindle STOP
M146 = C-axis Unclamp
M147 = C-axis Clamp

# Tailstock move (Manual)

1. Change parameter to center work.
2. Unclamp tailstocks bolt4 piece.
3. Take out bed cove.
4. Return Y-axis to origin position and X-axis to limit position.
5. Move Z-axis to connection position.
6. Insert connection pin by hand.
7. Move Z-axis to target position by pulse handle.
8. Back Z-axis 0.5mm for remove connection pin.
9. Remove connection pin by hand.
10. Clamp tailstocks bolt 4 pieces. From top to down.
11. Put covers.

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## Tailstock move (Auto)

1. Change parameter to center work.
2. Return Y-axis to origin position and Y-axis Off.
3. Move X-axis to limit position.
4. Retract tailstock sleeve.
5. Feed override 30%
6. Return connection
7. Ingress Feed override.
8. Move until connection position.
9. Unclamp
10. Check the connection lamp.
11. Move Z-axis to target position by manual.
12. Back Z-axis 0.5mm for remove connection pin.
13. Clamp
14. Check the connection off lamp ON.

## By MDI

6. MDI
7. G152 W○○○ ENTER
8. START





## Restart

1. Put on restart tool.
2. Door close.
3. X-axis move to until limit
4. Select the screen actual position and program.
5. RESET
6. AUTO mode
7. Single block ON
8. Feed override set "0".
9. F 1 (Main Prg_Oper)
10. F 2 (Restart)
11. NT ○○ ENTER

    for more then 2nd time number ENTER
12. F 7 ( OK )
13. F 8 (Close)
14. Wait until Reading pointer stop.
15. Sequence Restart----------Attn. Start move.
16. Continue by START

## Number search

1. Door close。
2. X-axis move until limit.
3. Select the screen actual position and program.
4. RESET
5. AUTO mode
6. Single block ON
7. Feed override 0.
8. F 1 (Main Prg_Oper)
9. F 4 (Number search)
10. N○○○ ENTER Example: NTRN to transfer point.
11. F 7 (O K) Example: NOP2 to OP.2
12. F 8 (Close)
13. Interlock + START
14. After just normal START then continue.





## Tool graphic Registration

1. TOOL DATA
2. F 7 (ITEM) press until ＊Tool shape＊ screen.
3. Move Cursor to turret No. position.
4. F 1 (SET)
5. Tool Number ENTER ----- or change tool number by page key.
6. Select cutting position Base or Vertical.
7. for change > (Extend) then F 3 (cutting pos.)
8. F 4 (Tool Item)
9. F 1 (MENU)
10. Item code Number ENTER
11. Form code Number ENTER
12. After all data set by F 1 (SET) command.

EDIT mode

## Data backup (Tool/Parameter/Zero)

2. TOOL DATA
3. ＞ (Extend)
4. F 7 (D-PIP)
5. F 2 (Output)
6. → ↓ poisoning cursor to file name.
7. File name ENTER
8. Each data set F 1 (MENU) F 3 (Select)
9. F 7 (Out)
10. F 8 (Close)
11. F 8 (Close)



EDIT mode

## File copy to floppy disk

### ( Machine MD1: －＞ Floppy FD0: )

1. Insert Floppy disk to floppy driver (Check unprotect)
2. EDIT mode
3. Move Cursor to source file name.
4. F 5 (Copy)
5. F 2 (FD0 Copy)

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EDIT mode

# File copy from Floppy

## （ Floppy FD0: －＞ Machine MD1: ）

1. Insert Floppy disk to floppy driver.
2. EDIT mode
3. F 1 (change display)
4. F 4 (MD1&FD0)
5. Select source file name in right side.
6. F 5 (Copy)
7. F 1 (MD1 Copy)
8. Wait until copy finish.
9. F 1 (change display)
10. F 1 (MD1)