

OSP—P200L Simple Manual

For Standard

Ver. 2.5

【 How to use 】

1. Print this file on the paper of A4.
2. Cut it in the center of 2 dividing equally.
3. Divide it into the one by the item being written at the upper right.
4. Bind the upper left with a stapler in each item.
5. Push operation Screen securely with the right hand with seeing the page of the contents which it wants to operate and restraining a number with the left hand.
6. And write down an amendment and a complement explanation by yourself when it is hard to understand.
7. Do operation with seeing this manual until you can operate it securely without doing which is memorized early.
8. Throw it away without this manual because it is supposed to be able to be operated if it stops seeming to become dirty

SETUP

Power ON

1. Main breaker ON.
(when auto power off function use, main breaker must be Trip position turn left then turn right ON)
2. Operation panel switch **Power** ON
3. Wait until Screen will be NC Screen.
4. **Manual** then front door open.
(If have Upper door also open)
For checking mechanic door switch is working.
5. **Auto** Automatic reselect program file before power off.
And load system sub program for ATC , measurement.

Power OFF

1. Operation panel **Power** OFF.
2. Wait until Windows shutdown and screen will be black.
3. Main breaker OFF.

Notice :

It is finished normally by battery at the time of the blackout such as thunder.

A battery exhausts daily life early when a breaker is cut before a screen turns black.

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)

Schedule Program Select

1. **Reset**
2. **AUTO**
3. **>** (Extend)
4. **F 1** (SDF Ope.)
5. **F 1** (Program Select)
6. Positioning Cursor to target filename.。
7. **F 7** (OK)
8. **F 8** (Close)
9. **Single Block** ON
10. **START**
11. Check the Program Name.
12. If Ok continues START .

補足:

Schedule Program is for Robot / Bar feeder / Warm-up .

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)

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 00 **ENTER**
for more than 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. N000 **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.

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 CW** or **Turret Index CCW**

B. MDI

1. Close door.
2. **MDI**
3. G00 X800 Z800 **ENTER**
4. **START**
5. T000 **ENTER** T100 ~ T1200
6. **START**

Turret Index by pulse handle

1. **Manual** Move to Turret index position.
2. **Parameter**
3. **F 8** (Screen change)
4. MC User Parameter (Turret / Door)
5. **F 8** (Close)
6. Highlight position move to No.3 A Turret or No.4 B Turret.
7. **F 1** (Check mark on)
8. **Turret Index CW** ----- Turret Unclamp.
9. Check the interference by pulse handle turn turret.
10. **F 1** (Check mark off)
11. **Turret index CW** ----- Correct poisoning.

Turret index speed change

1. **Parameter**
2. **F 8** (Screen change)
3. MC User Parameter (Turret / Door)
4. **F 8** (Close)
5. Highlight position move to No.5 A Turret or No.6 B Turret.
6. **F 1** (Set)
7. ○○ **Enter** ----- 0 ~ 100 %

※ Default vale is 0 same as 100%.

※ System variable

VTAOR=A Turret override

VTBOR=B Turret override

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)




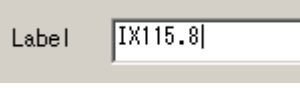

O.D. / I.D. Clump change parameter

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)

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.

Chuck Conformation Switch

1.  Vertical function key
2.  (I/O Monitor)
3.  (Search) under I/O monitor
4.  Input address.
5. **Enter** ----- will be display on the screen
6. **Enter** ----- will be display full screen.
7. Conform the signal.
8.  (Close) ----- I/O monitor is end.

Address:

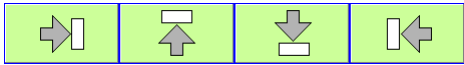
IX115. 8	1st Spindle Chuck Close
IX115. 9	1st Spindle Chuck Open
IX116. 8	2nd Spindle Chuck Close
IX116. 9	2nd Spindle Chuck Open

Touch setter parameter setting

1. **Manual** move turret to X-axis limit.
2. Collect Tool offset tool index.
3. Check the interference between sensor and chuck or work piece




Touchsetter or **Manual**

4. **F 5** (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. **F 1** ~ **F 4** select 
9. Ingress Feed override until 50~80%.
10. Anther axis also setting.
11. **F 6** (Sensor retract)

M-code: M117 Sensor advance
 M118 Sensor retract

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**

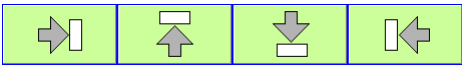
Attn.: Please set Nose-R data.

Tool offset (Touch setter)

1. **Manual** move turret to X-axis limit.
2. Check the interference between sensor and chuck or work piece



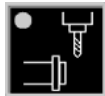
Touchsetter or **Manual**

3. **F 5** (advance) ----- automatic change display to "Tool Data"
4. It brings close to less than 2mm of a sensor.
5. Feed override "0".
6. **F 1** ~ **F 4** select 
7. Ingress Feed override until 50~80%.
8. Another axis also setting.


Attn.: Please set Nose-R data.

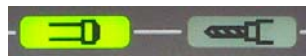
Note: M117 = Sensor Advance
M118 = Sensor Retract

Spindle Clamp

1. Check the interference for turret index.
2. **MDI**
3. M110 **Enter** ----- C-Axis connect
4. **START** ----- Attn.: Spindle rotate
5. **Manual**
6. Adjust feed override.
7. **C-** or **C+** Spindle angle change or by pulse handle
8. 
9. **F 2** (C Axis Clamp)
10. **Same operation**
11. **F 2** (C-Axis Unclamp)
12. **F 8** (Close)
13. **MDI**
14. M109 **Enter** ----- C-Axis Cancel.
15. **START**

Spindle Rotate


1. Check the Chuck close confirmation signal.
2. If used Tailstock, Check the tailstock-positioning signal
3. **MDI**
M41 S spindle speed **ENTER** -----during open door is
 Gear rang under 180rpm.
4. **START**
5. **Manual**
6.  check the spindle or M-spindle
7. **Jog** check by jog switch spindle.
8. **CW** or **CCW** check the Tool type.

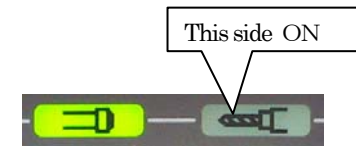


If not spindle rotate. Use MDI then M03 command and START.
 You will be having alarm then you fund out reason.

M-code : M03 Spindle CW
 M04 Spindle CCW
 M05 Spindle Stop

M-spindle rotate

1. **MDI**
2. M110 **Enter** ----- C Axis connect
3. **START** ----- Attn. Spindle start rote
4. SB=M-spindle Speed **ENTER**
daring door open under 200rpm is OK.
5. **START**
6. **Manual**
7.  check the spindle or M-spindle.
8. **Jog** check by jog switch M-spindle.
9. **CW**



M-code:
 M110 : C Axis connect
 M109 : C Axis Cancel
 M13 : M-spindle CW
 M14 : M-spindle CCW
 M12 : M-spindle Stop

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.

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.


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

1. **MDI**
2. G152 W0000 **ENTER**
3. **START**

NC-Tailstock (Axis load learning)


1. **Manual**
2. X Axis until plus limit.
3. Option panel **NCtailstock** 
4. **P ↑** page (2/3)
5. **F 1** Tailstock Learn mode check on.
6. Option panel **NC W-** or foot pedal.
7. Automatic tailstock movement—5mm then return.
8. Automatic Learn mode off.

Notice:

- Tailstock must be away from the Approach point
- The tailstock moves even if the feed over ride is set to zero.
- The tailstock should be in low pressure setting.

NC Tailstock (W Axis Zero Offset Setting)

1. Option panel **NCtailstock** page 1/3
2. Check on the top right end of the Screen This should be #1
3. 下記の Setting を行う。

No.	W pos	-OK	+OK	Approach	Retract	Low	High(Optional)
1	0	2	2	15	100	1.0	2.0
4. **Manual** Tailstock centre moved in to touch the job centre
 - ① Parameter changed to centre work
 - ② X Axis to be moved to + limit
 - ③ **Teach in** mode on
 - ④ Adjust feed rate over ride
 - ⑤ Press foot pedal one step or press **NC W-** and use pulse handle
5. **Zero Offset** move cursor to W axis 
6. **F 3** (CAL) **0** **Enter** Normally right side of job is 0
7. Move tailstock 15mm backwards
8. **Teach in** Off
9. Press foot pedal fully. Tailstock moves into the job
10. Confirm that tail stock forward LED is ON

Notice : It deference tailstock speed during open door and close.

Change Pos. : G195 SP=1 ~10 by MDI

M code : M55 retract, M56 advance, M847 max.retract,
 M98 Low, M99 High, M166 gun or spindle I/L.

Variable : VZOFW=Zero offset W-axis ,

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. > (Extend)
 6. F 8 (Select quit)
- I recommend “Select quit” because after not need program select.

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.

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)

Data Backup (Tool Data/ Parameter / Zero Offset)

1. **Tool Data Setting**
2. **>** (Extend)
3. **F 7** (D-PIP)
4. **F 2** (Output)
5. **→ ↓** Move cursor to File Name.
6. File Name **Enter**
7. Each Data **F 1**(Menu) **F 3**(Select)
8. **F 7** (Output)
9. **F 8** (Close)
10. **F 8** (Close)

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)

End

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)

End

File copy to PC

(M/C MD1: —> PC TC:)

1. **Program Mode**
2. Select source file name.
3. **F 5** (Copy)
4. **F 3** (Copy to TC)

End

File copy from PC to MC

(PC TC: —> M/C MD1:)

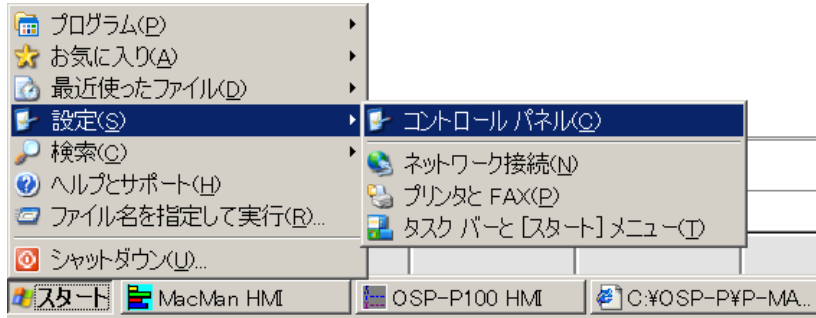
1. **Program Mode**
2. **F 1** (Dir change)
3. **F 5** (MD1+ TC)
4. Select file name from right (TC:).
5. **F 5** (Copy)
6. **F 5** (LEFT Copy)
7. **F 1** (Dir change)
8. **F 1** (MD1)

End

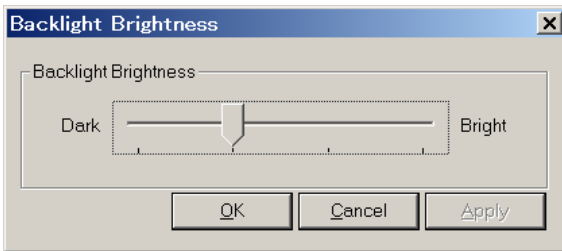
Screen Brightness Adjust (OSP-P200)

1. **Ctrl** + **Cancel** ----- Windows Start.

2. **Setting(S)** ⇒ **Control Panel(C)**



3.  Icon double click.



Adjust bar 2nd position from left.

4.

5. 

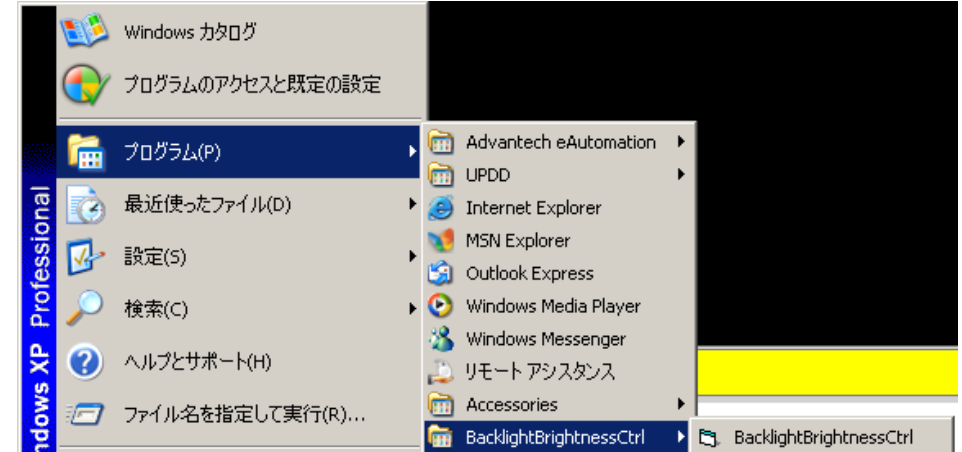
6. Control Panel Close.

End

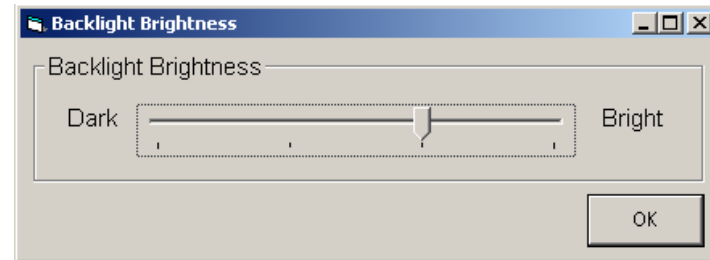
Screen Brightness Adjust (OSP-P20)

1. **Ctrl** + **Cancel** ----- Windows Start.


2. **Program (P)** ⇒ **Backlight Brightness Ctrl** ⇒ **BacklightBrigtnessCtrl**



3.



4.

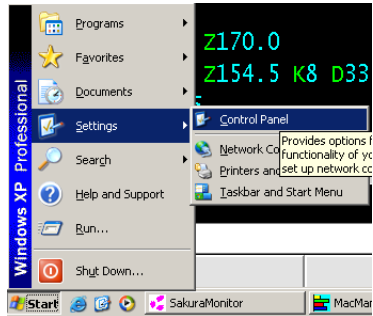
5. 

End

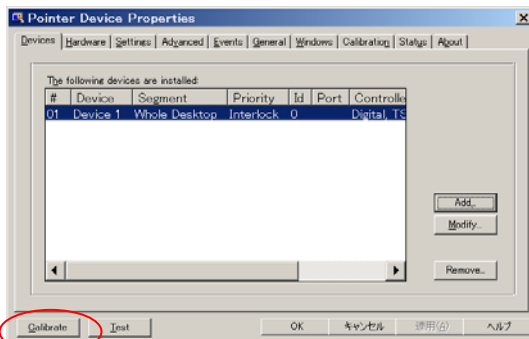
Touch Panel Calibration

1. **Ctrl** + **Cancel** ----- Windows Start.


2. **Setting(S)** ⇒ **Control Panel(C)**

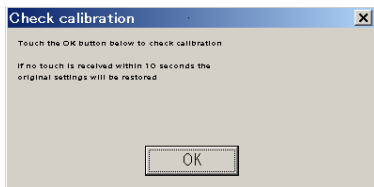


3.  **Pointer Devices**



Left pos. 

4.  From left up point crick 5 pont.



6.  ⇒  End

Panel Lamp Check

1. **Manual**

2. **I/L** + **Reset** ----- Keep press more them 2 sec.


3. Release **Reset** ----- Lamp will be keep blinking.

4. Release **I/L**

5. **Check the Lamp.**




6. **Reset** for all lamp off.

USB Memory

1. Insert USB memory to left side screen (Upper or)
2. Wait until automatic install driver then will be pop up screen.
3.  (Close) close pop up windows.
4.
5. (Dir Display)
6. (another Dir)
7. right ext
8. (US0) upper or (US1) lower
9. (OK) -----MD1: left side , US0: right side
10. Move cursor to source file name
11. (Copy)
12. (left side) or (right side)


By this ~ cannot copy to subfolder
13. Repeat no.10~12 until the selected files copied
14. (Dir display)
15. (MD1)
16. To unplug the USB follow the following steps

USB unplugging procedure

1.  vertical function key
2.  click on the Icon in fig.
3. Safe to remove hardware
4.
5. Click OK, then
6. Check the USB memory access lamp OFF
7.  (Close the Icon shown in the fig.)

End

Windows Keyboard operation

1. How to show Windows **START**
Ctrl + **Cancel**
2. How to show Disk top
 - 1) **Ctrl** + **Cancel**
 - 2) Click the disk top icon  on Task bar.
3. How to change screen when many application running.
Keep press **Alt** then **Tab** for select application.
4. How to move window by key board without touch panel.
Alt + **Space** → **M** → move by cursor key → **Enter**
5. How to screen shot for active windows.
Alt + **Fn** + **PtSc** copy screen to clip board.
Then paste to Paint or Excel.
6. How to value copy for Zero offset or Tool data or Edit mode.
Value select then **Ctrl** + **C** for copy to crimp board.
At edit mode **Paste** and at Zero or Tool data mode **Ctrl** + **V**
7. How to select all files at Explorer.
Ctrl + **A**
8. How to file copy at Explorer.
Ctrl + **C**
9. How to file paste at Explorer.
Ctrl + **V**

Formula for cutting

1. Cutting speed
 $V = \pi DN \div 1000$ $\text{Speed} = 3.14 \times \text{DIA} \times \text{RPM} \div 1000$
Unit : m/min
2. Spindle speed
 $N = 1000V \div \pi \div D$ $\text{RPM} = V(\text{Speed}) \times 1000 \div 3.14 \div \text{DIA}$
Unit : min⁻¹ (old unit : rpm reversion/minute)
3. Nose-R Taper compensation
 $Z = R(1 - \tan(\theta/2))$ $Z \text{ Axis} = \text{Nose-R} \times (1 - \tan(\text{angle} \div 2))$
 $Z1 = R(1 + \tan(\theta/2))$ $Z \text{ Axis down} = \text{Nose-R} \times (1 + \tan(\text{angle} \div 2))$
 $X = Z \tan(\theta)$ $X \text{ Axis} = Z \times \tan(\text{angle})$
4. Roughness
 $Ry = 1000F \times F \div (8R)$ $Ry = 1000 \times \text{Feed} \times \text{Feed} \div 8 \div \text{Nose-R}$
 $F = \sqrt{(Ry \times 8 \times R \div 1000)}$ $\text{Feed} = \sqrt{(Ry \times 8 \times \text{Nose-R} \div 1000)}$
5. Required Power
 $KW = VK \text{ tf} \div 6120 \div \text{efficiency}$ ($HP = VK \text{ tf} \div 4500 \div \text{efficiency}$)
 $KW = V \times \text{tf} \times \text{Cut depth} \times \text{Feed} \div 6120 \div \text{efficiency}$
 $\text{tf} : S45C=200, FC20=120, AL=80$ $\text{efficiency} = 0.8$
6. Height and I.D of Thread
 $\text{Height} = \text{Pitch} \times 0.65$ Notice: H is diameter
 $\text{Thread I.D. or Tap hole} = \text{Thread Size} - \text{Pitch}$
7. Cutting Time
For G97 $\text{Sec} = 60 \times \text{Cutting length} \div \text{Feed} \div \text{RPM}$
For G96
 $\text{Sec} = 60 \times \pi \times (\text{MaxD} + \text{MinD}) \times (\text{MaxD} - \text{MinD}) \div 1000 \div \text{Feed} \div V(\text{Speed})$

NOEX command explanation (No Execute)

【 Function 】

- When single block on, continually read blocks.

【 Purpose 】

- Reduce time for press Start button. When single block on.
- Speed up calculation for many steps.
- Smooth move axis when during axis moving calculation.

Example: NLOOP G01 X=XP Z=ZP F0.1
NOEX XP=XP+0.1
NOEX ZP=ZP+0.2
IF [XP LE 100] NLOOP

【 Parameter 】

- [Optional Parameter] – [Other] – [No.13 NOEX command]
Effective = Read blocks when single block on.
Ineffective = One block read.
Same function IF command and GOTO command.
Without NOEX

【 Notice 】

- Accept insert NOEX is calculation block only.
(Include Load monitor command)
- When insert Sequence name before NOEX.
- Not insert NOEX with IF command and GOTO command.
- Machining center is not unnecessary NOEX. Because already change software for without NOEX same mean.
(No problem input NOEX.)