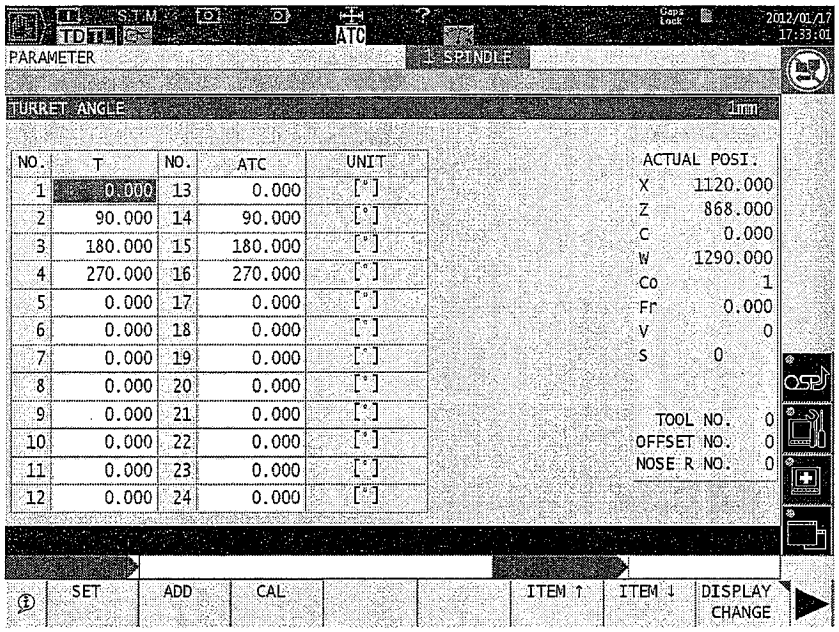
3-7-2. Setting the Offset Data for NC Turret Position Encoder

If the NC turret rotating brushless motor or its position encoder is removed or changed, it is necessary to change the offset data of the position encoder. The procedure for setting the new offset data is indicated below.

Procedure :

1 Set the turret in the clamped state at any station.

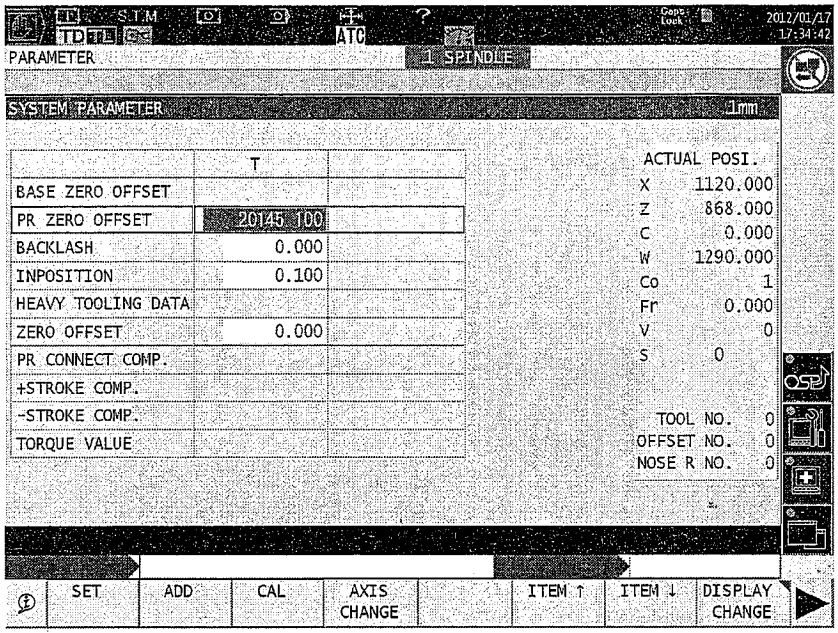
2 Press the (PARAMETER) key. Change the display to select TURRET ANGLE screen.



LE34040R0200500330001

3 Find and record the angle value of the station presently indexed.

4 Change the display to select SYSTEM PARAMETER screen. Press the function key [F4] (AXIS CHANGE) to display the T-axis page.



LE34040R0200500330002

5 Move the cursor to "T PR ZERO OFFSET".

6 Press the function key [F3] (CAL). Input the angle value recorded in steps (3), and press the (WRITE) key.

7 Turn the control power OFF and turn it back ON.

The steps indicated above complete the setting of the new offset data of the position encoder. Rotate the turret to check that the turret is indexed correctly.

[Supplement]

The angle data of the individual stations displayed on the TURRET ANGLE screen is automatically offset when the turret is clamped at an indexed position.

288.152

324.038

53,571

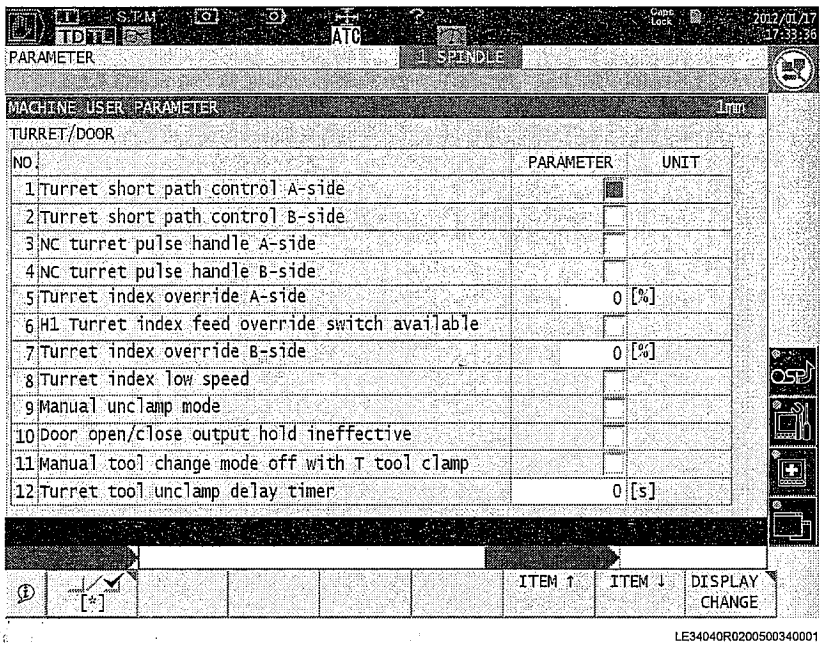
3-7-3. Turret Rotation by Pulse Handle

It is possible to rotate the turret using the pulse handle for adjusting the turret.

Procedure :

1 Press the (PARAMETER) key. Change the display to select MACHINE USER PARAMETER (TURRET/DOOR) screen.

2 Move the cursor to the turret you have selected, "3 NC turret pulse handle A-side" or "4 NC turret pulse handle B-side". Press the function key [F1] .



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3 Press the function key [F2] to put a check mark.

4 Select the manual mode and press the TOOL INDEX key.
The turret is automatically unclamped and the turret can be rotated using the pulse handle.

[Supplement]

> In this state, axis feed and turret rotation commands are invalid. Pressing the TOOL INDEX switch in this state causes the turret to be clamped automatically.

After the rotation of the turret using the pulse handle, the turret cannot be clamped since the curvic gears fail to mesh. To clamp the turret after operating it manually using the pulse handle, follow the steps indicated below.

5 Move the cursor to the turret you have selected, "3 NC turret pulse handle A-side" or "4 NC turret pulse handle B-side". Press the function key [F1].

6 Press the function key [F3] to clear the check mark.

7 Select the manual mode and press the TOOL INDEX switch to index the turret.

8 The turret is indexed and clamped at the indexed station.

3-8. Hydraulically Operated Turret

With a hydraulically operated turret, the turret index position is detected by proximity switches incorporated in the turret. Malfunctioning of a proximity switch will cause serious troubles such that a wrong station is indexed.
The CNC unit has the function to monitor the signal input status of these proximity switches and the operation is stopped (alarm stop) if the input is not as specified.
Whether or not the proximity switches are operating correctly can be checked by the self diagnostic function of the CNC. The procedure is given below.

Procedure :

1 Index the turret to No. 1 station (tool No. 1).
In this state, [SQ1] and [SQ2] signals should be input to the CNC. Follow the steps below to check if these signals are correctly input.

2 Find CH (channel), MAC_ID, address and bit of proximity switches [SQ1] to [SQ7] referring to the I/O Table in the Electric Diagrams, supplied separately. The procedure used to find the necessary information is described in the "How to Read the I/O Table" in the Electric Diagrams. Change the display screen to the one that displays the corresponding physical address.

3 Labels [iTL1] to [iTL7] express the input state of the turret index position confirmation proximity switches.
The relationships between the input signals of these proximity switches and the tool numbers (turret index positions) are shown below.
Since "SQ1" and "SQ2" should be ON when tool No. 1 is selected, the circles at "St" of these labels should be painted in green. Check the circles and if they are painted, the status is correct since the input signals of the corresponding proximity switches are ON.

4 Perform the same check for all station numbers to check the turret index proximity switches.

	iTL1	**iTL2**	**iTL3**	**iTL4**	**iTL5**	**iTL6**	**iTL7**
	SQ1	**SQ2**	**SQ3**	**SQ4**	**SQ5**	**SQ6**	**SQ7**
T1	ON	ON	OFF	OFF	OFF	OFF	OFF
T2	ON	OFF	OFF	ON	OFF	OFF	OFF
T3	ON	OFF	ON	OFF	OFF	OFF	OFF
T4	ON	OFF	OFF	OFF	ON	OFF	OFF
T5	ON	ON	ON	OFF	ON	OFF	OFF
T6	ON	OFF	ON	ON	ON	OFF	OFF
T7	ON	ON	ON	ON	OFF	OFF	OFF
T8	ON	ON	OFF	ON	ON	OFF	OFF
T9	ON	ON	OFF	OFF	ON	OFF	ON
T10	ON	OFF	ON	ON	OFF	OFF	ON
T11	ON	OFF	ON	ON	OFF	ON	OFF
T12	ON	ON	OFF	OFF	ON	ON	OFF