



# Wireless Intuitive Probe System



**Both the work probe and the tool probe must be calibrated before WIPS probing during manufacture.**

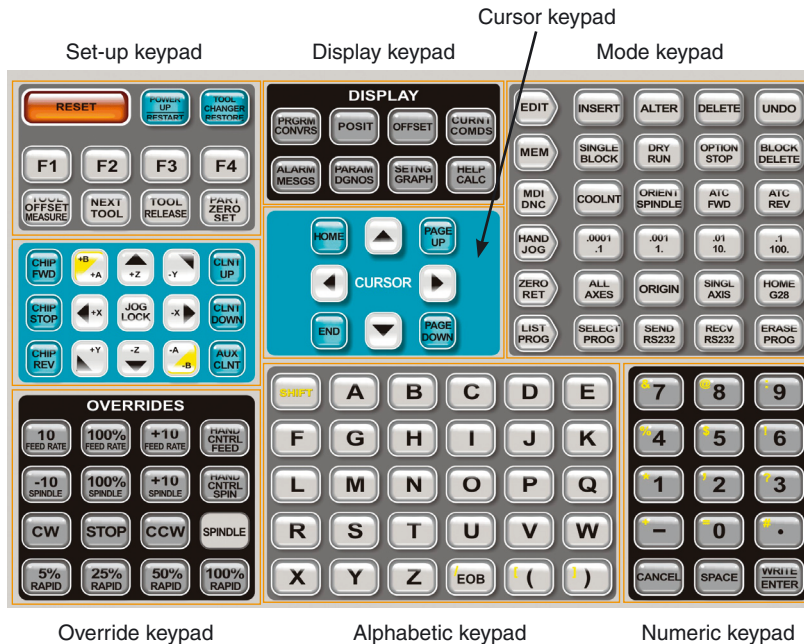
This document assumes that:

- both the OMP40-2 work probe and the OTS tool probe are correctly installed and operational
- the user is familiar with the safe operation of Haas machine tools and the functionality of the control

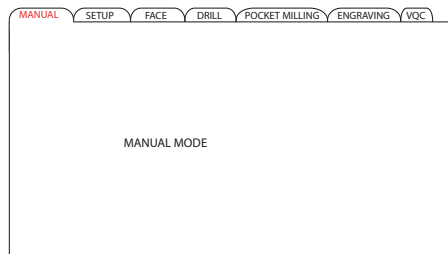
**This document is designed to supplement the information provided by the WIPS software screens: it is not intended to provide stand alone instruction.**

## Control overview

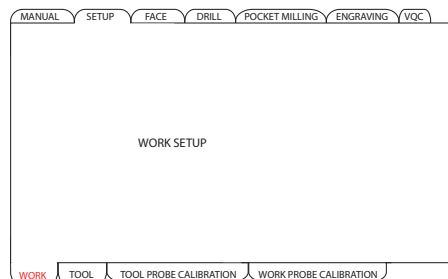
Auger, coolant and jogging keypad



## Enter the Intuitive Programming System (IPS)



**Note:** Red font indicates currently active menu option



= Starting position

## Work probe calibration

From starting position



x 3 = WORK PROBE CALIBRATION



Work probe calibration requires the use of an inner diameter calibration ring, ring gauge or bored hole of known diameter. Securely fix the calibration artefact being used to the machine table.

Load a calibration bar to the machine spindle.

Place a shim of known thickness on the top surface of the calibration artefact.

The screenshot shows the machine control interface with the following parameters:

- A** Z POSITION: 0.000 mm
- B** TOOL LENGTH: 0.000 mm
- C** SHIM: 0.000 mm
- D** PROBE LENGTH: 0.000 mm
- E** BALL DIAMETER: 0.000 mm
- F** CAL MASTER DIA: 0.000 mm
- G** CALIBRATION INCOMPLETE

Diagrams show the probe (ii) touching the calibration artefact (Ø1) with a shim of thickness T. The probe length is L. Diagram (iii) shows the probe touching the calibration artefact directly, with a distance of approximately 5-10 mm between the probe tip and the artefact surface.

**Step 1**

**A** Use the JOG LOCK buttons (+A, +Z, -Y, +X, -X, +Y, -Z, -A, -B) and the HANDLE to move the probe down (-Z) until it touches the calibration artefact. Press **F1**.

**Step 2**

**B** & **i** Enter the calibration bar length (L) on the numeric keypad and press **WRITE ENTER**.

**Step 3**

**C** & **i** Enter the shim thickness (T) on the numeric keypad and press **WRITE ENTER**.

**Step 4**

**D** & **ii** Remove shim and load work probe. Enter the approximate length of the work probe (~L1) on the numeric keypad and press **WRITE ENTER**.

**Step 5**

**E** & **ii** Enter the probe ball diameter (Ø) on the numeric keypad and press **WRITE ENTER**.

**Step 6**

**F** & **ii** Enter the diameter of the calibration artefact (Ø1) on the numeric keypad and press **WRITE ENTER**.

**Step 7**

**iii** Use the JOG LOCK buttons and the HANDLE to position the probe. Press **WRITE ENTER**.

**Step 8**

Press **CYCLE START** to run the calibration cycle.

**Step 9**

**G** The status changes from CALIBRATION INCOMPLETE to CALIBRATION COMPLETED.

### Updating work offsets

From starting position



MANUAL SETUP FACE DRILL POCKET MILLING ENGRAVING VQC

Wrk Zero Ofst 54

X Offset -288.736

Y Offset -359.297

Z Offset -463.519

A Offset 0.

B Offset 0.

Work Material LOW CARBON UNALLOYED STEEL

OUTSIDE CORNER FINDING < or > to change

1 Corner 4

2 Incremental Z 0.000 mm

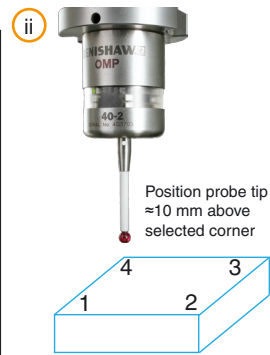
3 Incremental X 0.000 mm

4 Incremental Y 0.000 mm

Position probe near the approx. corner and just above the Z axis surface. Press CYCLE START.

Press F2 to set offsets using probe.

WORK TOOL TOOL PROBE CALIBRATION WORK PROBE CALIBRATION



**Step 1**

A Select offsets to update

**Step 2 (optional)**

B x 2 Work Material LOW CARBON UNALLOYED STEEL

Select work material

**Step 3**

C F2 = i

**Step 4**

C & i

WRITE ENTER

**Note:** Only OUTSIDE CORNER FINDING and INSIDE CORNER FINDING will update offsets in X, Y and Z. All other feature types will require at least one additional cycle to update all offsets.

### Example: Outside corner finding

**Step 4**

C1

OUTSIDE CORNER FINDING < or > to change

Corner 4

Incremental Z 0.000 mm

Incremental X 0.000 mm

Incremental Y 0.000 mm

Corner number

WRITE ENTER

ii

**Step 5**

C2

-Z move to surface

WRITE ENTER

**Step 6**

C3 & C4

Move before contact on side faces



WRITE ENTER

**Step 7**

CYCLE START

To run calibration cycle

# Tool probe calibration

From starting position  x 2 = **TOOL PROBE CALIBRATION** 

Ensure the machine spindle contains a calibration bar.

**Step 1**

**A** & **i**





**Step 2**


**B** & **ii**






**Step 3**

**C**




Tool offset number/  
tool number




**Step 4**

**D** & **i**




L  
(length of calibration bar)




**Step 5**

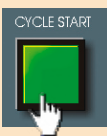
**E** & **i**



Ø  
(diameter of calibration bar)



**Step 6**

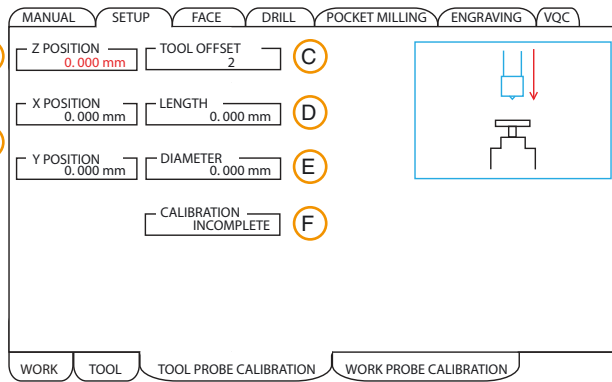


To run calibration cycle

**Step 7**

**F**

CALIBRATION INCOMPLETE → CALIBRATION COMPLETED



MANUAL SETUP FACE DRILL POCKET MILLING ENGRAVING VQC

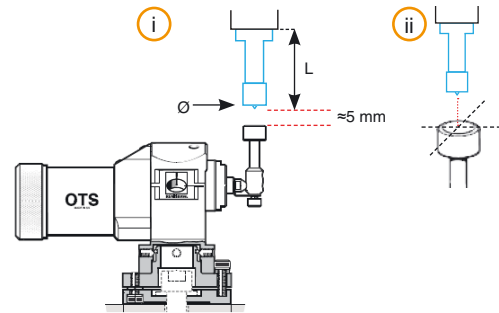
**A** Z POSITION 0.000 mm **C** TOOL OFFSET 2

**B** X POSITION 0.000 mm **D** LENGTH 0.000 mm

Y POSITION 0.000 mm **E** DIAMETER 0.000 mm

**F** CALIBRATION INCOMPLETE

WORK TOOL TOOL PROBE CALIBRATION WORK PROBE CALIBRATION

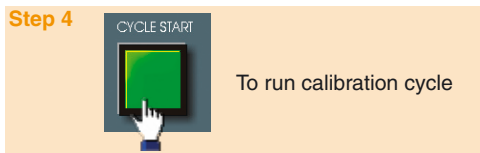
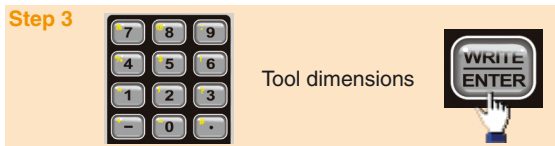
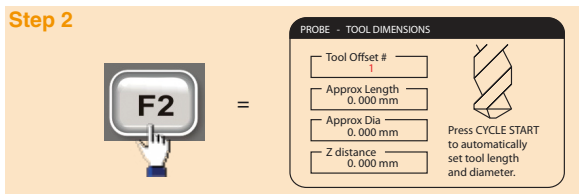
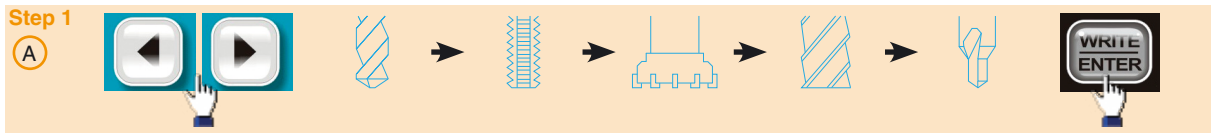


## Tool set-up

From starting position



| MANUAL   | SETUP | FACE                        | DRILL                     | POCKET MILLING         | ENGRAVING | VQC |
|--|-------|-----------------------------|---------------------------|------------------------|-----------|-----|
| Press ATC FWD or ATC REV to change the tool displayed. |       | Tool Displayed<br>2         | Tool Diameter<br>0.000 mm | Pitch<br>N/A           |           |     |
| Press NEXT TOOL to change the tool in spindle.         |       | <b>A</b> Tool Type<br>DRILL | Point<br>N/A              | Z Length<br>0.000 mm   |           |     |
| Press F2 to set tool dimensions using probe.           |       | WRITE TO SET                | Flutes<br>2               | Z Wear<br>0.000 mm     |           |     |
|  |       | Tool Material<br>User       | Spindle RPM<br>0          | Tool Wear<br>0.000 mm  |           |     |
|  |       | Feedrate<br>Calculated      | Coolant Pos<br>0          |                        |           |     |
| WORK   | TOOL  | TOOL PROBE CALIBRATION      |                           | WORK PROBE CALIBRATION |           |     |



**Note:** If no value is entered in the Z distance field (-Z distance from the tool tip), tool diameter will not be measured and the cycle will record tool length only.

For installation and maintenance information on the OMP40-2 work probe see *OMP40-2 optical machine probe Installation guide* (Renishaw part no. H-4071-8504) or *OMP40-2 Quick-start guide* (Renishaw part no. A-4071-8500).

For installation and maintenance information on the OTS tool probe see *OTS optical tool setter Installation guide* (Renishaw part no. H-5514-8504) or *OTS optical tool setter Quick-start guide* (Renishaw part no. A-5514-8500).

These documents are available to download from [www.renishaw.com/mtp](http://www.renishaw.com/mtp)

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- Probe systems for inspection on CMMs (co-ordinate measuring machines).
- Systems for job set-up, tool setting and inspection on machine tools.
- Scanning, digitising and dental systems.
- Laser and automated ballbar systems for performance measurement and calibration of machines.
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