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Probe retrofit questionnaire

Customer information (location of installation)

Important! This document consists of four pages. Please be sure to read all information before returning.

Address of installation:

Company name _____ Contact name _____

Street _____

City _____ State _____ Zip _____

Telephone _____ Fax _____ E-mail _____

Product being purchased _____

Machine information

Machine make _____ Control make _____

Machine model _____ Control model _____

Machine type (i.e. VMC, HMC, lathe, gantry etc.) _____

Tool holder type/size (i.e. CAT50, BT40, HSK A80, VDI, other) _____

Axis/Axis travels: X _____ Y _____ Z _____ B _____ Other _____

Is the machine still in warranty? Yes ☐ No ☐ Serial # _____

Is the machine installed? Yes ☐ No ☐ If no, when will installation be complete? _____

Spindle orientation: Yes ☐ No ☐

Pallet shuttle: Yes ☐ No ☐ If Yes, indexer ☐ or full 4th axis ☐

Is there currently a probe system on the machine (i.e. tool post, part probe, tool eye)? Yes ☐ No ☐

If yes, please explain _____

Is a safety briefing required to work at location of installation? Yes ☐ No ☐

Note: If a non-disclosure form is required to enter the facility, please provide at least two weeks prior to the scheduled visit.

Application information _____

_____

_____

Machine tool probes

Note: The machine must be operational at the time of installation. A pull stud is required for spindle-mounted probes, but is not provided by C-CON, Inc. A calibration device is not supplied.

The following options must be installed and activated (turned on) by your OEM, machine distributor or control manufacturer prior to C-CON, Inc's arrival.

Required control features/options

Indicate which options are installed on your control.

Fanuc/Yasnac/Mitsubishi/Mazak					**Haas**				
G31 skip	Yes	☐	No	☐	Promac	Yes	☐	No	☐
G31 high speed skip	Yes	☐	No	☐					
G31 multi-skip	Yes	☐	No	☐					
Custom macro	Yes	☐	No	☐					

Connector type/pin location of skip signal _____

- 24 V dc required to power probe interface
- M codes may be required – see the following information pages for details

Note: Controls not listed may have similar features/options. Contact C-CON, Inc. regarding support for other controls.

IMPORTANT

This questionnaire is intended for information purposes for installation only and shall in no event constitute a binding contract with C-CON, Inc.

Please note – The issuer of the purchase order is responsible for all information provided to C-CON, Inc. Please make sure that the information is as accurate and current as possible, as this will expedite the installation. If additional time or hardware is required, due to incorrect information, additional costs may be billed to you.

The installation timeframe is 2 to 3 weeks. Please keep in mind that your installation is not considered for scheduling until this form is completed and returned to us. At that time, the form will be reviewed and you will be contacted as to the acceptability of the retrofit and dates available for installation.

I have read and understood the preceding information.

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Signed _____ Date _____

Purchase order issued to C-CON, Inc. by:

Company name _____ Contact name _____

Street _____

City _____ State _____ Zip _____

Telephone _____ Fax _____

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Additional retrofit customer information

Machine tool software requirements

Machining center:	Inspection Plus	46.5 Kb	117 m
	Tool setting	9 Kb	23 m
	NC4 tool setting	15 Kb	38 m
Lathe software:	Inspection	11 Kb	28 m
	Tool setting	6 Kb	15 m

Program number requirements

Renishaw program numbers range from 9002 through 9100, and 9700 through 9900.

Macro variables required #100–#149 (only used while macro is running)
#500–#565 (some variables in this range required and must be dedicated)

Training

Training will be provided after installation on the use and application of Renishaw probing cycles. Training will **not** include the incorporation of probe cycles into the customer's current manufacturing programs. Any special applications or additional software training which requires additional time or visits to the original scheduled installation/training will be charged at C-CON, Inc. standard service rates.

Note: Please indicate any additional training requirements on your purchase order.

Part probe system details

OMP40/OMP60/RMP60 Turn on (via optical or RF) / Turn off (via optical or RF) or time out

Turn on methods
- Auto start (OMP40/OMP60) sends a start signal every second until a probe command is received. This method can only be used if the probe is stored outside the machine enclosure when not in use.
- Machine start (OMP40/OMP60/RMP60) requires that an M code be available for use to issue the start command.
- Spin start (OMP60/RMP60) uses an internal switch. The probe will turn on after being spun at 650 RPM for 1 second.

Turn off methods
- Time out (OMP40/OMP60/RMP60). A timer automatically switches the power off 12, 33 or 134 seconds (selectable) after turn on. Each time the probe is triggered, the timer is reset to the selected value.
- Optical off (OMP40/OMP60) / RF off (RMP60) requires that an M code be available to initiate the turn off sequence.

OMP400 Optical (flash) on/optical off or time out (optical transmission)

Turn on method
- Machine start (optical on) requires that an M code be available for use to issue the start command. Auto start can be used with the strain gage probes.

Turn off methods
- Time out. A timer automatically switches the power off 33 or 134 seconds (selectable) after turn on. Each time the probe is triggered, the timer is reset to 33 or 134 seconds.
- Optical off. Requires the use of an M code as stated for machine start above.

LP2/LTO2T (LP2/LTO3T) (LP2/LTO2S) Optical (flash) on/optical off (optical transmission)

Turn on method
- Machine start (optical on) requires that an M code be available for use to issue the start command. Auto start cannot be used with these probes.

Turn off method
- Optical off. Requires the use of an M code as stated for machine start above.

Machine tool probes

Tool setting probe details

TS27R Hard-wired

The probe is fixed either to a T slot in the machine bed, or can be mounted on a riser if required to allow tools to reach the stylus. A riser is not provided by C-CON, Inc. unless specified on the quotation. The TS27R is wired to the probe interface via a tough cable conduit. The TS27R cannot be mounted on pallets or rotary tables.

NC4 Hard-wired

Fixed system — The probe is fixed either to a T slot in the machine bed, or can be mounted on a riser if required to allow tools to reach the laser beam. A riser is not provided by C-CON, Inc. unless specified on the quotation. The NC4 is wired to the probe interface via a tough cable conduit. **The NC4 cannot be mounted on pallets or rotary tables.**

Separate system — The probe transmitter and receiver are mounted to brackets which attach to the machine. Brackets and their installation are not provided by C-CON, Inc. unless specifically stated in the quotation. Brackets not provided by C-CON, Inc. must be mounted prior to the arrival of a C-CON engineer. The brackets should allow for complete machine motion (pallet shuttles, rotary tables, axis travels etc), laser beam alignment and expected system performance.

Fixed or separate — The NC4 must be mounted in such a way that the tool can access the laser beam and move in all three axes (X, Y, Z) with respect to the beam. For basic functionality (length, diameter, basic broken tool), no M code is required. For additional features (missing/broken insert, profile checking, rapid broken tool check) a level M code pair is required.

HPRA Hard-wired — The HPRA must be mounted to a bracket which attaches to the machine. The brackets and their installation are not provided by C-CON, Inc. unless specifically stated in the quotation. Brackets not provided by C-CON must be mounted prior to the arrival of a C-CON engineer. The brackets should allow for complete machine and expected system performance.

Dual probe installations (part and tool probe on same machine)

Requires either two independent probe inputs (multi-channel skip) or an M code driven relay. The M code driven relay must be installed and available prior to the probe installation.

Example M51 – part probe (selected) M61 – tool setter (selected)

M51 energize relay (coil latches and stays energized) program continues
M61 de-energize relay (coil resets) program continues

M code for flash (optical) on and off

M71 pulse (momentarily energize relay) program continues

Example: Pulse M code M71 (flash on and flash off)