

# ReniKey software

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## Caution – Software safety

The software you have purchased is used to control the movements of a machine tool. It has been designed to cause the machine to operate in a specified manner under operator control, and has been configured for a particular combination of machine tool hardware and controller.

Renishaw has no control over the exact program configuration of the controller with which the software is to be used, nor over the mechanical layout of the machine. Therefore, it is the responsibility of the person putting the software into operation to:

- ensure that all machine safety guards are in position and are correctly working before commencement of operation;
- ensure that any manual overrides are disabled before commencement of operation;
- verify that the program steps invoked by this software are compatible with the controller for which they are intended;
- ensure that any moves which the machine will be instructed to make under program control would not cause the machine to inflict damage upon itself or upon any person in the vicinity;
- be thoroughly familiar with the machine tool and its controller, understand the operation of work co-ordinate systems, tool offsets, program communication (uploading and downloading) and the location of all emergency stop switches.

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**IMPORTANT:** This software makes use of controller variables in its operation. During its execution, adjustment of these variables, including those listed within this manual, or of tool offsets and work offsets, may lead to malfunction.

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## Introduction

ReniKey software has been designed to simplify the partnering process between an RMI-Q interface and a Renishaw radio probe. The application also provides an easy solution for partnering multiple radio probes with a single RMI-Q interface.

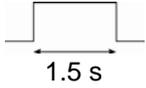
The traditional partnering process involves removing power to the RMI-Q interface, setting the required radio probe to acquisition mode and then reinstating the power. Using ReniKey, power removal to the RMI-Q is not necessary. This eliminates the requirement to power the machine tool off and on. Additionally, a simple edit within the software allows multiple radio probes to be partnered to a single RMI-Q.

ReniKey works by commanding multiple instances of a machine M-code in a defined sequence with different dwell times. This variation allows the acquisition of different probe systems.

The ReniKey software must be loaded into the CNC machine tool control. Program O6000 must be edited and executed for each probe. This programming guide describes the necessary edits.

# Installation

## Installation notes



The M-code(s) selected to partner the probe(s) should be free from any PLC checking that could prevent rapid turn on/off of the M-code. The time taken for the M-code(s) to complete should not exceed 1.5 seconds.

**Where dedicated start is used** – the M-code chosen for probe on/off should be used during the ReniKey partnering process.

**Where common start is used** – typically the M-code chosen for probe start (P1) should be used during the ReniKey partnering process. However, if this is not possible, a select M-code (P2, P3) can be used.

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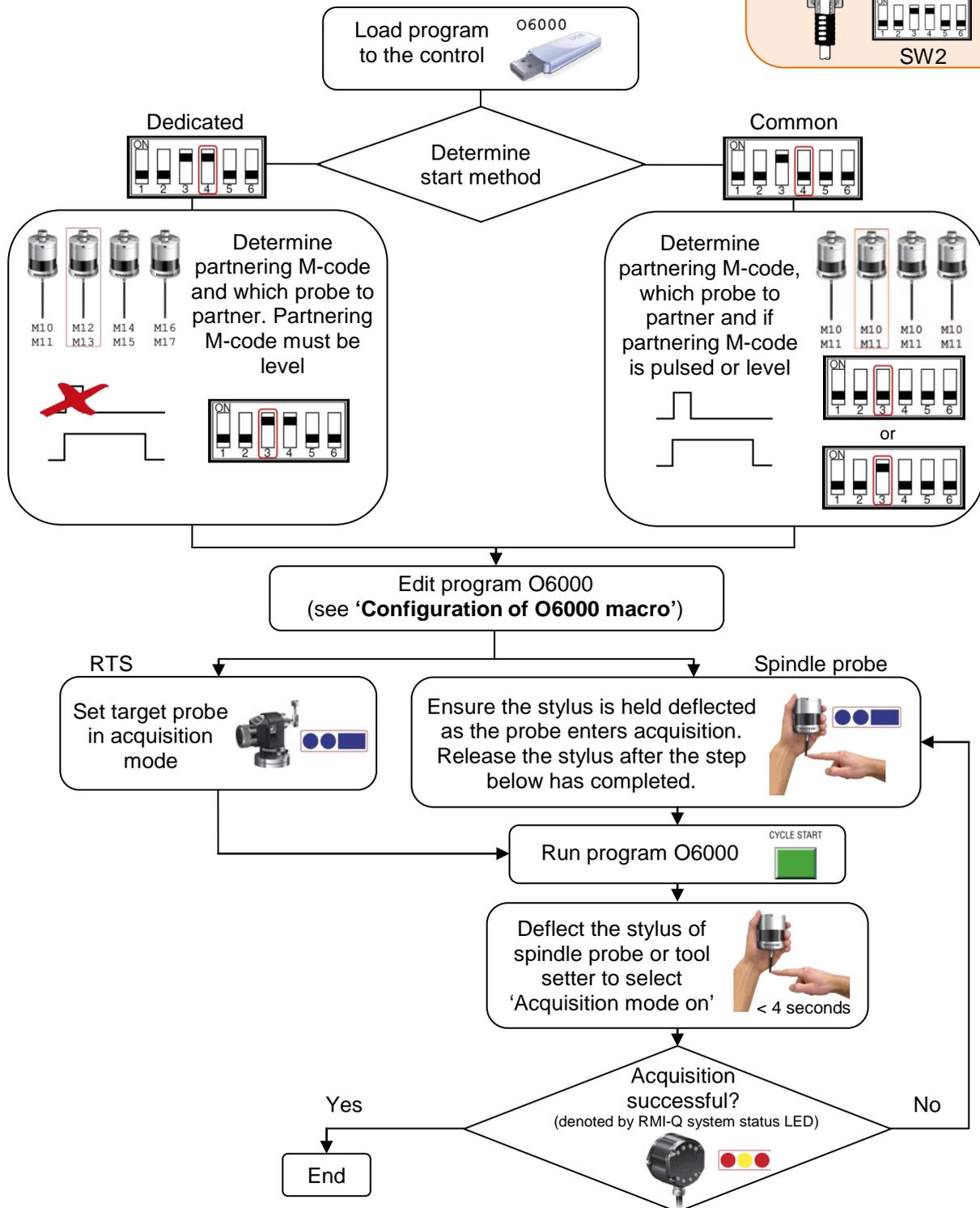
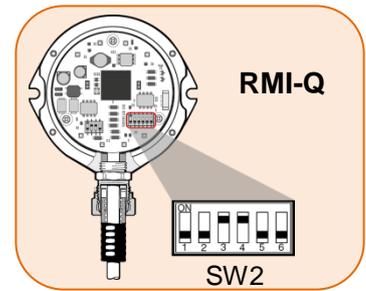
**NOTE:** If using a select M-code for partnering, the start LED will not flash. However, ReniKey will still function correctly.

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If ReniKey fails to acquire the probe for any reason, please refer to the RMI-Q installation guide (H-5687-8504) for detailed partnering instructions.

# Installation process

The following flowchart details the installation process.



## Configuration of O6000 macro

### Description

This cycle is used to configure the software that will subsequently put the RMI-Q into acquisition mode, will clear a designated probe or will clear all probes.

### Example

```
%  
O6000(CONFIGURE*MACRO)  
#20=4(PROBE*NO.)          ***Edit 1  
#22=1(RMI-Q*OPTION)      ***Edit 2  
  
(#20=1*PROBE*1)  
(#20=2*PROBE*2)  
(#20=3*PROBE*3)  
(#20=4*PROBE*4)  
  
(#22=1*ACQUIRE*PROBE)  
(#22=2*CLEAR*PROBE)  
(#22=3*CLEAR*ALL*PROBES)  
  
#18=40(M*CODE*FOR*PROBE*ON)   ***Edit 3  
#19=41(M*CODE*FOR*PROBE*OFF)  ***Edit 4  
#3=2(1=PULSED*2=LEVEL)       ***Edit 5
```

---

## Configuration details

### \*\*\*Edit 1 – #20=4(PROBE\*NO.)

Probe number to be acquired by the RMI-Q – 1, 2, 3 or 4.

### \*\*\*Edit 2 – #22=1(RMI-Q OPTION)

Functionality of the ReniKey:

1. Acquire probe.
2. Clear probe.
3. Clear all probes.

### \*\*\*Edit 3 – #18=40(M\*CODE\*FOR\*PROBE\*ON)

M-code used for probe turn on.

### \*\*\*Edit 4 – #19=41(M\*CODE\*FOR\*PROBE\*OFF)

M-code used for probe turn off (level M-code only).

### \*\*\*Edit 5 – #3=2(1=PULSED\*2=LEVEL)

Select M-code type – 1=pulsed, 2=level.

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