

SCP600 stylus change port

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Renishaw part no: H-1000-5097-03-A

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Patents

EP 0243766	JP 2,545,082	US 4813151	US 5,505,005
EP 0388993	JP 2,539,824	US 4817362	US 5,918,378
EP 242747 B	JP 3,018,015	US 5,088,337	US 6012230
EP 0392660	JP 3,101,322	US 5,345,689	
EP 0544854	JP 3,294,269	US 5,404,649	WO 97/35164
EP 548328 B	JP 3,279,317	US 5,339,535	
EP 0501710	JP 2,510,804	US 5,323,540	

Introduction

The stylus change port (SCP600) is a modular system, designed to allow automatic stylus changing on a CMMs, for the SP600 analogue probe.

The primary purpose of the SCP600 is to improve flexibility with the ability to use and store longer styli and large star styli configurations.

The SCP600 ports are designed to be fitted onto the Renishaw modular rack system (MRS).



1. MRS manual change rack
2. SCP600 stylus change port

Figure 1 - The MRS modular rack system

Fitting the SCP600 to the MRS rail

It is recommended that the SCP600 ports are attached to the MRS rail using the following procedure where it is assumed that the MRS system is correctly installed. For full details, please refer to the MRS modular rack system installation and user's guide (H-1000-5088):

1. Insert one of the fixing screws [1] through the SCP600 port [2] as shown in figure 2.
2. Offer up the SCP600 port [2] to the MRS rail [3], positioning the fixing screw [1] to the respective 'T' bolt within the rail. Finger-tighten the screw.
3. Insert the other fixing screw [1] through the SCP600 port [2] as shown in figure 2.
4. Position the SCP600 port so that the second screw locates into the respective 'T' bolt in the rail. Finger-tighten the screw.
5. Using the hexagonal key supplied, hand-tighten the two fixing screws [1] into the 'T' bolts.

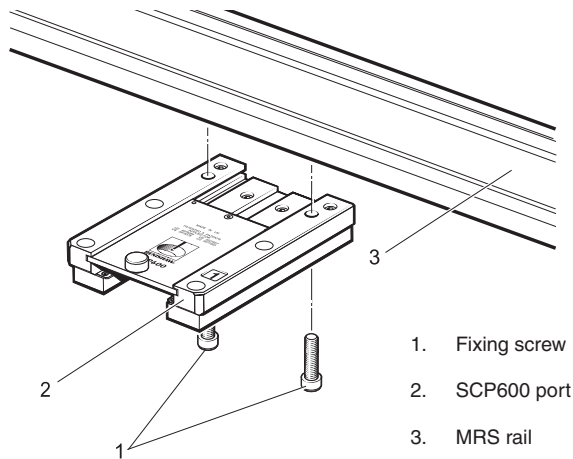


Figure 2 - Fitting a SCP600 port to the MRS rail

Datuming the SCP600

NOTE: As the SCP600 port is of modular design, it is suggested that the following routine is completed under manual control for each port installed.

The following section describes the recommended procedure for datuming the SCP600 once it is fitted to the MRS rail and on the CMM table. In addition, the following method assumes that the SCP600 port is aligned to the CMMs axis with a maximum run out of 2.5 mm across points A and B (see figure 3). If required, please refer to 'Fitting the SCP600 to the MRS rail' earlier in this document. The recommended procedure to locate the port is as given below (please refer to figure 3):

1. Push the lid [2] of the SCP600 port [1] to the extreme of travel (this assumes that the SCP600 is connected to the MRS system at the time).
2. Place the stylus tool [3] into the retaining hole at the rear of the SCP600 port [1].
3. Release the SCP600 lid [2] so that the stylus tool [3] holds the lid.
4. Take 4 points on the top face of the docking plate [4] (plane 1).
5. Take 4 points in the circle at the rear of the SCP600 port docking plate [4] (circle 1).

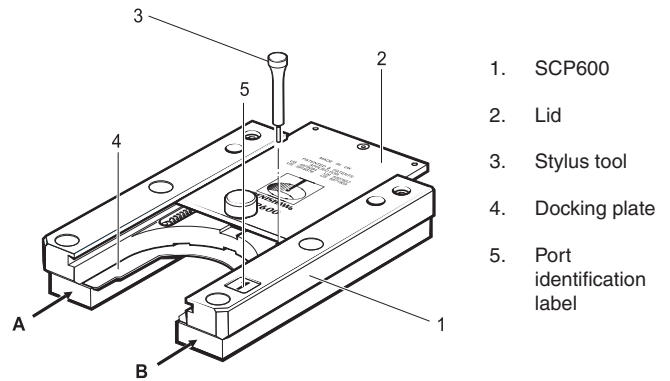


Figure 3 - Datuming the SCP600 port

Put down and pick up routines

NOTE: The following section assumes that the datum created in 'Datuming the SCP600' earlier in this document is the axis system in which the machine is working.

Put down routine

The following table lists the recommended procedure for putting down a stylus module on the SCP600. All dimensions are absolute and given in mm.

Operation	Axis position		
	X axis	Y axis	Z axis
Inhibit the probe			
Move to stand-off position	0	50	0
Move into port	0	0	0
Detach stylus module	0	0	8
Move to stand-off position	0	50	8

Pick up routine

The following table lists the recommended procedure for picking up a stylus module from the SCP600. All dimensions are absolute and given in mm.

Operation	Axis position		
	X axis	Y axis	Z axis
Move to stand-off position	0	50	8
Move into port	0	0	8
Attach stylus module	0	0	0
Move to stand-off position	0	50	0
Activate probe			

Troubleshooting

Fault	Possible cause	Solution
Lid failing to close	Guideway obstructed.	Examining the guideway and remove any obstruction.
	Spring failure.	Examine the springs and ensure that they are connected to the respective holding pins within the assembly. If a spring has failed, or is missing, spring replacement kits are available from your local Renishaw company or supplier. Alternatively, return the unit to your local Renishaw service centre to have new springs fitted.
Failure to complete a stylus change	Incorrect alignment.	Re-align the MRS rail (refer to the MRS modular rack system installation and user's guide, Renishaw part number H-1000-5088). Redatum the SCP600 port.

Accessories / spare parts

SCP600 port (includes tooling)	A-2098-0933
T nut	P-NU18-0005
Stylus spanner	M-5000-3707