



User's Guide

English

SYLVAC-SCAN F60

WITH ROBOT OPTION

Optical Measuring
System



CONTENTS

1	Introduction	3
1.1	General	3
1.2	Safety rules and precautions	3
1.2.1	Strict adherence to the User's Guide	3
1.2.2	User's liabilities	3
1.2.3	Personnel liabilities	3
1.2.4	Physical and material risks	3
1.2.5	Intended use of the machine	4
1.2.6	Guarantee and liability	4
1.2.7	Individual protection	4
1.2.8	Safety guards and covers	4
1.2.9	Informal safety precautions	4
1.2.10	Personnel training	4
1.2.11	Operating the machine	5
1.2.12	Safety practices in normal use	5
1.2.13	Risks of electrical shock	5
1.2.14	Maintenance, repair work and troubleshooting	5
1.2.15	Changes to the machine construction	5
1.2.16	Cleaning and recycling of the machine	5
1.3	Description of the machine	6
1.3.1	The 3 types of robot options	6
1.3.2	With option 902.6608	7
1.3.2	With option 902.6010	7
1.4	Specifications of the Sylvac SCAN F60	8
2	Installation	8
2.1	Equipment	8
2.2	Establishing cable SCAN connections	9
2.3	Cable schematics	10
2.3.1	Machine I/O connectors Option 902.6608	11
2.3.2	Machine I/O connectors Option 902.6010	12
2.3.3	Security connector	13
2.3.3.1	Usage of the robotization interface	13
2.3.3.2	Connecting emergency stop button	14
2.3.3.3	Sharing emergency stop with other machines	14
2.3.4	Reflex SCAN configuration I/O	15
2.3.5	Reflex SCAN diagnostic I/O	16
3	Assembly	16
3.1	General	16
3.2	Headstock	16
3.3	Workholding	16
4	Quick operation guide	17
4.1	Measuring system	17
4.2	Getting started	17
4.3	Calibrating the machine	17
4.4	Measuring	18
4.5	Starting the automatic measurement cycle	19
4.6	Shutting down	20
5	Scan demo with OPC UA protocol	21
5.1	The protocole	21
5.2	Introduction	21
5.3	Requirements	21
5.4	Sylvac Reflex SCAN+	21
5.4.1	Installation	21
5.4.2	Setup	22
5.4.3	Diagnostic	23
5.4.4	Application mode	23
5.5	OPC UA demo client	24
5.5.1	Setup of the client	24
5.5.2	Monitoring of variables (nodes)	24
5.5.3	Execution of methods	25
5.6	Final note	26
6	Maintenance	26
6.1	Maintenance schedule	26
6.2	Cleaning	26
7	Troubleshooting	27
7.1	In case of failure	27
7.2	Problems at start up	27
8	Guarantee	27
8.1	Limited Warranty Policy	27
9	Declaration of conformity	28
10	Notes	29

1. INTRODUCTION

1.1 General

Right of modification

The content of this manual together with all product related specifications may be subject to changes without prior notice. All other rights are reserved.

The full range of optical measuring systems from SYLVAC SA for non-contact measurement is based on a well-tested technology used in a wide variety of common and sophisticated systems.

The SYLVAC-SCAN F60 optical system is controlled through the SYLVAC-REFLEX+ Scan software running under Windows 10 Professional. This User's Guide provides the needed information on the system along with all specifications.

Copyright

This User's manual may not be copied, reproduced or translated into another language, whether in whole or in part whatever the process used, without the written consent of SYLVAC SA.

Warning

To make sure the machine will operate securely and get accurate measurement results, carefully read this User's Guide, but also the copy of the DVD delivered with the SYLVAC-REFLEX+ Scan software before operation.

1.2 Safety rules and precautions

The SYLVAC-SCAN F60 has been designed with safety in mind. However, incorrect handling during installation or operation may be a source of damages for the machine. All safety rules and precautions stated herein must be observed to ensure effective use of the machine.

1.2.1 Strict adherence to the User's Guide

All those working on the machine should adhere to this User's Guide, especially to the safety precautions.

Rules and other procedures in force on the installation site to prevent injury to personnel must be strictly observed.

1.2.2 User's liabilities

The user ensures that only the personnel and operators stated hereafter has the ability to operate the machine :

- All those who are familiar with the safety rules and precautions, but also the safety devices and operation of the machine.
- All those who have read the section dealing with the safety instructions and warnings contained in this manual.

1.2.3 Personnel liabilities

All those entrusted with the task to operate the machine shall commit themselves to strictly adhere to the following beforehand:

- Take all safety precautions to prevent any injury.
- Read the section dealing with the safety instructions and warnings contained in this manual.

1.2.4 Physical and material risks

The SYLVAC-SCAN F60 has been produced based on the current knowledge as regards engineering, also in compliance with the safety rules in force. However, its operation may prove to be dangerous to the personnel and/or cause damages to the machine or its components. Therefore, the machine must only be used as intended whilst being perfectly protected. Any failure susceptible to adversely affect the security must be immediately eliminated.



1.2.5

Intended use of the machine

The machine is to be used for non-contact measurement solely. Any other use will be regarded as improper use and SYLVAC shall not be responsible for any incurred damages. Furthermore, the use as intended involves that:

- All operating instructions contained in this manual are strictly observed;
- All checking and maintenance operations are executed as set forth in this manual.

1.2.6

Guarantee and liability

Our General Terms of Delivery are applicable to the whole range of our products. These terms will be provided to the Customer upon signature of an agreement at the latest. In no event shall we be liable for personnel injury and/or damages due to either of the following causes:

- Improper use of the machine.
- Inappropriate assembly, installation, operation or preventive maintenance of the machine.
- Machine operation through defective safety guards due to incorrect or inefficient assembly.
- Failure to follow all shipping, storage, assembly, preparation, start-up and maintenance instructions
- Modifications to the machine without our written consent and approval.
- Lack of inspection for the machine parts subjected to wear.
- Incorrect execution of repair works.
- Cases where damages are due to interacting particles or force majeure

1.2.7

Individual protection

- The customer is liable to provide the equipment required to ensure individual protection of the personnel.
- All existing safety guards and devices must be regularly inspected.

1.2.8

Safety guards and covers

- All safety guards and covers must be correctly mounted for safe operation prior to booting up the machine.
- Never operate the machine with removed safety guards and covers unless the machine has been switched off and adequately secured against inadvertent start.
- In the event that only a part of the components have been delivered, the customer is responsible for mounting and fastening all safety guards securely as instructed.

1.2.9

Informal safety precautions

- The User's manual must be permanently within reach at the machine's location.
- All informal and local safety rules along with the requirements dealing with environmental protection must be made available and fully respected.
- Keep all safety and warning labels on the machine visible all the times.

1.2.10

Personnel training

- Only trained and instructed personnel, aware of the safe operating procedures, is allowed to work on the machine.
- Personnel abilities for the machine assembly, installation, preparation, operation and maintenance must be clearly defined.
- The personnel in the course of training is not allowed to execute any work on the machine unless a skilled operator is present.

**1.2.11
Operating
the machine**

- Never attempt to make any software-oriented changes on the machine!
- Electrical power of the machine is isolated by the ON/OFF switch located on the side of the machine.
- The operating command can only be enabled by personnel with the necessary experience.

**1.2.12
Safety practices
in normal use**

- Never use the machine unless all safety devices can ensure a safe operating.
- Make sure nobody is expose to a shock hazard before powering up the machine.
- Check all safety devices for effectiveness and possible damages at least once per teamwork period.
- Never connect/disconnect the cables used to link the machine to the electronic controls with the PC/controller powered up.
- Do not touch the mobile parts of the machine as long as the measurement process having be started up isn't completed.
- Do not switch the machine back again.

**1.2.13
Risks of electrical
shock**

- Any alteration to the power supply can only be done by a qualified personnel.
- Electrical equipment of the machine needs to be checked regularly. Loosened or damaged cables must be removed.
- if works on components connected to the mains are necessary, call someone else to activate the main switch.

**1.2.14
Maintenance,
repair work and
troubleshooting**

- Always execute any recommended work for setting, maintaining and inspecting the machine without delay.
- Have the transmission mechanism be maintained solely by a qualified personnel, formally accredited by SYLVAC SA.
- Ensure the parts in front and at the rear of the machine against untimely start.
- Turn off the machine and make sure the main switch remains in the off position before undertaking any maintenance, repair or inspection work.
- When replacing heavy components or large parts of the machine, use a lifting equipment to ensure a correct handling.
- Check that all unscrewed elements are set aside securely.
- Inspect the safety devices for good and proper operation as soon as the preventive maintenance could be performed.

**1.2.15
Changes to the
machine construction**

- No modification, add-on or transformation can be made to the machine without previous approval of SYLVAC SA.
- Any intention to make drastic changes to the machine requires the written consent of SYLVAC SA.
- Worn building parts of the machine must be replaced at once.
- Use only spare-parts or wearing parts of origin.
- No guarantee can be given for secondhand spareparts that they are designed and manufactured to meet the requirements and the convenient security level.

**1.2.16
Cleaning and
recycling**

- Used hazardous materials and chemicals should be processed and recycled according to the local regulations as regards waste management, especially:
- During maintenance work on lubricating systems and devices.
 - During cleaning work requiring the use of solvents.

1.3
Description of the machine

The SYLVAC-SCAN F60 designed by SYLVAC is aimed at providing Users with the best solution for fast and easy measurement of turned parts.

The machine is made to inspect any measurable feature statically (length, diameters, angles, radii and the like) or dynamically (e.g. runout, coaxiality, accross flats) for the model equipped with a rotating headstock (optional).

Running the SYLVAC-REFLEX+ Scan software, a single press on the REFLEX-Click button allows automatic measurement of main part features such as lengths and diameters.

In addition, the SYLVAC-REFLEX+ Click mode will detect whether a programme matching the part geometry already exists, thus rendering all inspection operations much easier.

The mounting carriage of the machine includes the headstock along with the tailstock, which enables varying part lengths to be conveniently adjusted.

As the measurement is being taken, the part is maintained on the carriage while the area around the data point is illuminated with a green parallel light.



Example of mounting an universal robot on the SCAN F60.

A part image is then projected on the high-resolution CCD linear sensors, acting as light detectors. All emitted signals are then analysed and computed as measured values.

The motorised carriage is controlled over the PC. The system uses an incremental glass scale to check its displacement.

The machine is managed by the robot, allowing to load and unload the parts automatically.

1.3.1
The 3 types of robot options

902.7017
Reflex SCAN+ and Option OPC-UA.

- No pneumatic
- No I/O
- No security
- OPC-UA can start scan. Safety light curtain function as in manual mode.

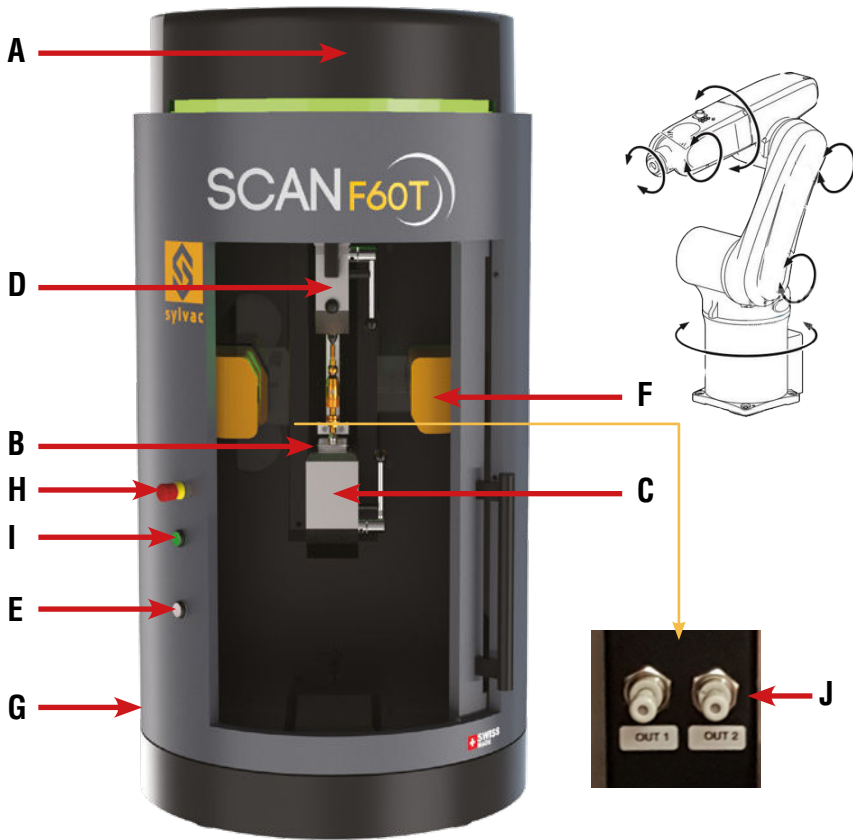
902.6608
Automation preparation (902.7017 is included).

- Direct connection pneumatic tubing from rear to front connectors
- I/O and safety connectors on rear panel

902.6010
Pneumatic tailstock. 902.6608 is required.

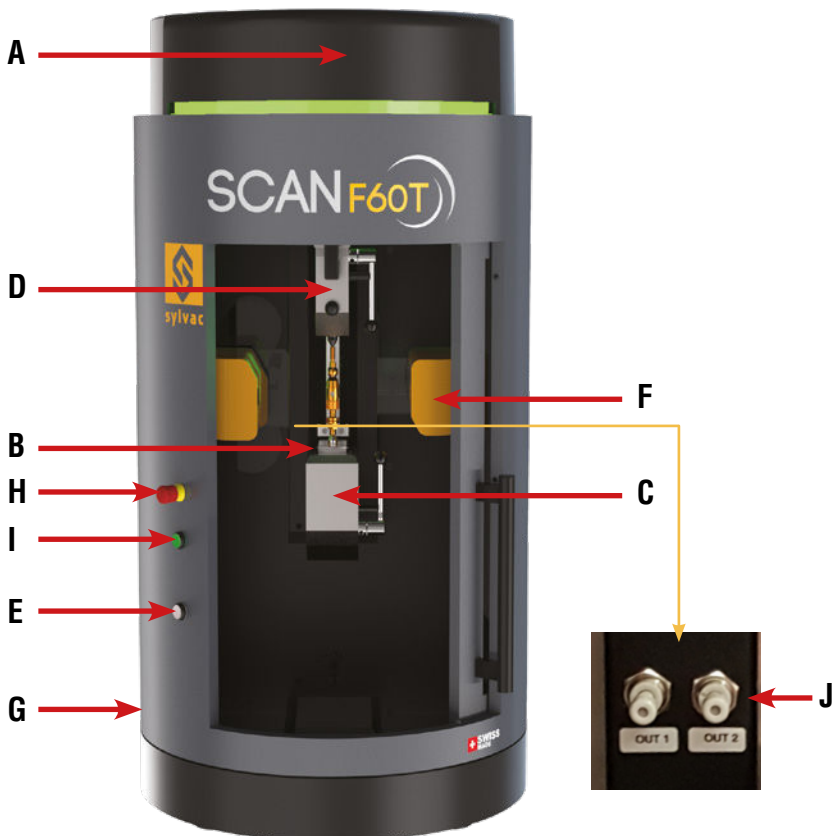
- Rear panel with two connectors for footswitch (Foot 1 to open the tailstock / Foot 2 to open the pneumatic chuck)
- One input for pneumatic Ø6mm
- Two pneumatic coil (one to drive the tailstock and one to drive the chuck). The pneumatic coils can be driven by footswitch, external I/O.

1.3.2
With option
902.6608



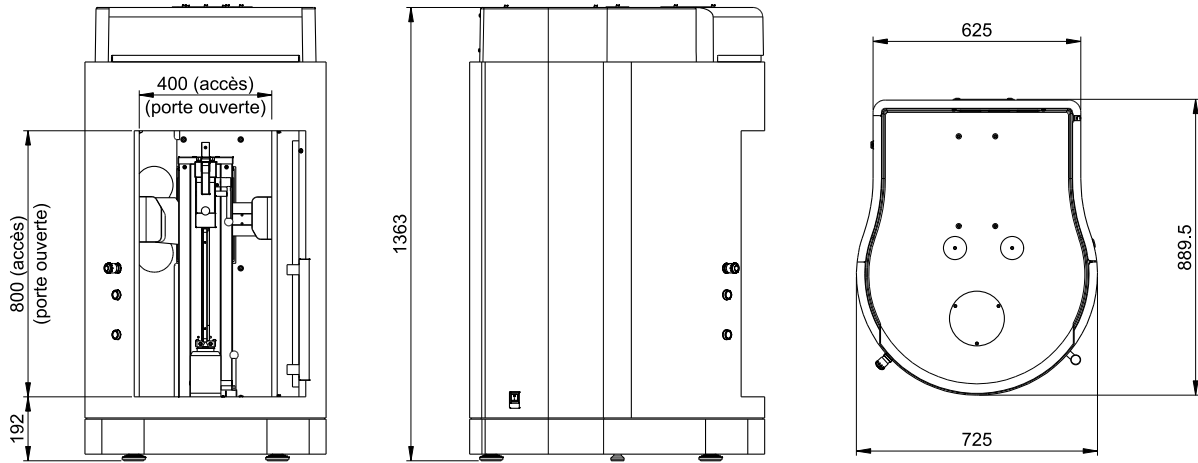
- A Top cover with LED status
- B Automatical setting master
- C Headstock
- D Tailstock
- E REFLEX-Click button
- F Optics cover
- G Main ON/OFF switch (side)
- H Emergency stop button
- I Reset security button
- J 2 air outputs

1.3.3
With option
902.6010

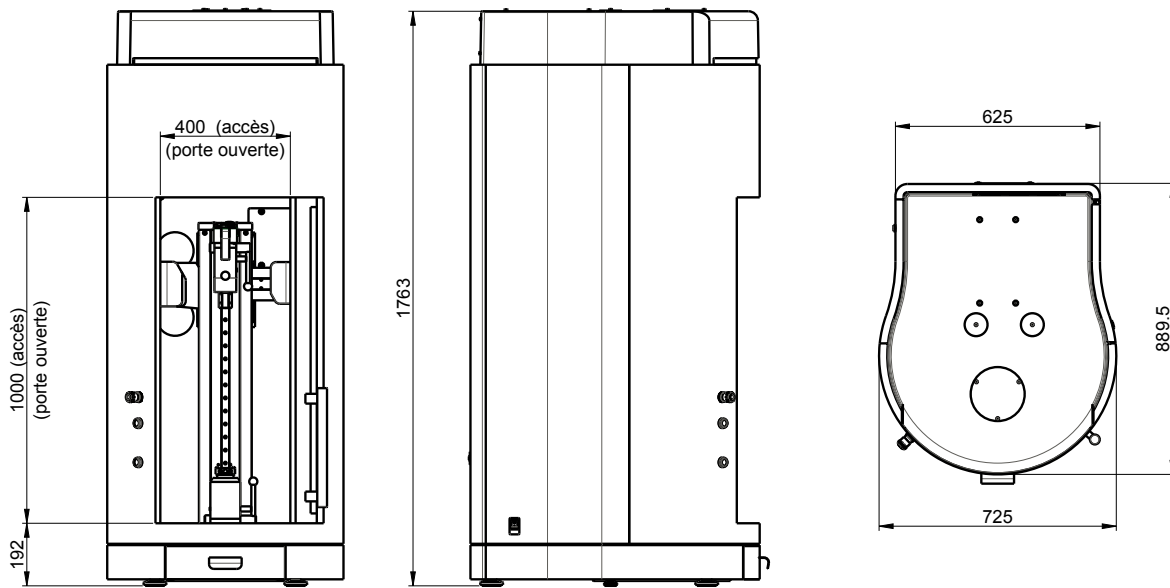


- A Top cover with LED status
- B Automatical setting master
- C Headstock
- D Tailstock
- E REFLEX-Click button
- F Optics cover
- G Main ON/OFF switch (side)
- H Emergency stop button
- I Reset security button
- J 2 front air outputs for chuck

1.4 Specifications of the Sylvac SCAN F60 Refer to the manual of the standard machine (without the robot option).



F60/F60T



F60L/F60LT

2. INSTALLATION

2.1 Equipment Components included with option robot 902.6608 and 902.6010 :

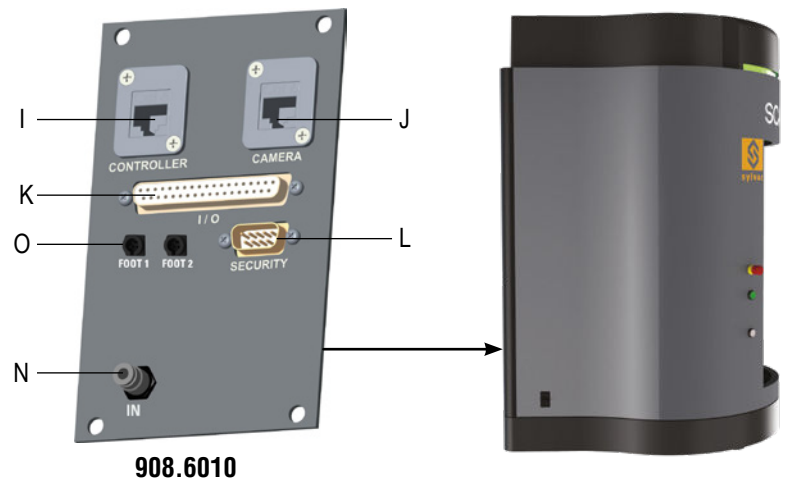
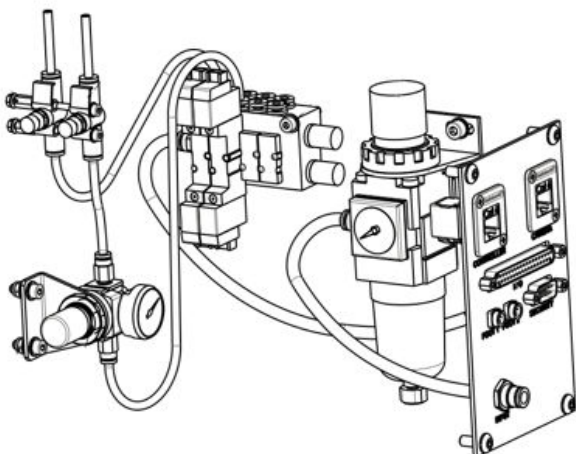
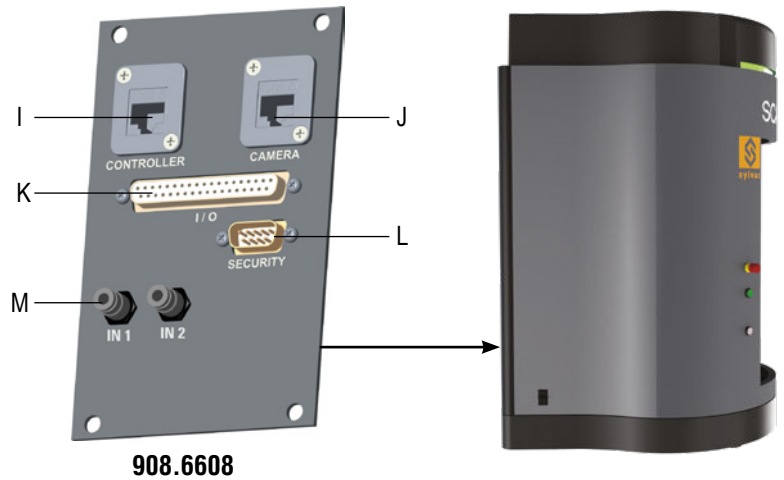
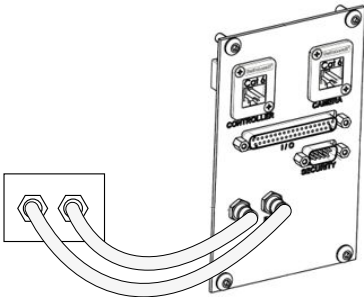
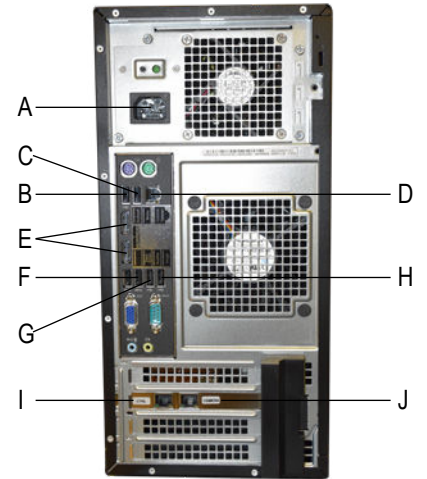
Mechanical components and cables	Référence
Machine F60 standard with standard accessories	902.406x
Reflex-SCAN+ & Option OPC-UA Robot	902.7017

The cables between the robot and the scan are not provided.

2.2
Establishing
cable SCAN
connections

The cables must be connected when the the devices are off.
The wiring plan showing a typical environment may vary according to the PC used.
The physical position of each connection to the PC depends on the properties of the PC type.

- A Mains power
- B Keyboard connection
- C Mouse connection
- D Ethernet connection
- E Display port connection
- F Touch screen connection
- G Machine connection
- H Dongle connection
- I Controller connection
- J Camera connection
- K I/O connection
- L Security connection
- M Pneumatic input connection (diameter 4mm)
- N Pneumatic input connection (diameter 6mm)
- O Inputs for footswitches for tail-tock and pneumatic chuck



**2.3
Cable
schematics**

Number	Description	Utility
1	2x Ethernet RJ45 cables	Link between computer and SCAN F60



Optional cable Ethernet RJ45 for communication by OPC-UA

2x Ethernet cables for communication Computer – SCAN F60

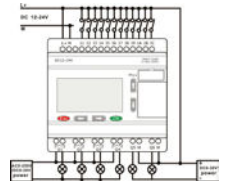


Cable not supplied (wiring reference next page)



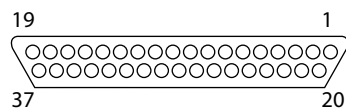
SCAN F60 can be driven by I/O or by OPC-UA protocol.

For OPC-UA configuration, see chapter 5. It is necessary to enable the OPC-UA option on the software (article 902.7017)



Robot or PLC
(not supplied)

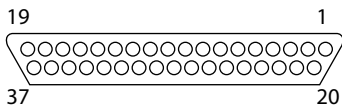
2.3.1 machine I/O connectors
Option 902.6608



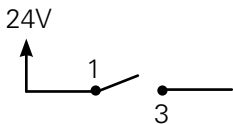
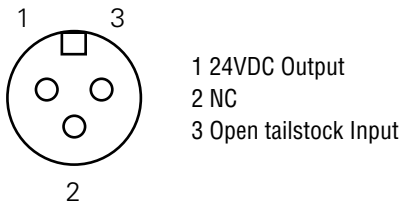
PIN connector	Function	I/O	I/O type
1	24VDC +/- 10% >= 1A	Input	Persistent
2	Park axis	Input	Rising Edge
3	Start Program	Input	Rising Edge
4	Start Calibration	Input	Rising Edge
5	Remote Lock	Input	Persistent
6	Free Input 1	Input	
7	0VDC		
8	Free Input 2	Input	
9	Remote mode	Output	Persistent
10	Machine Ready	Output	Persistent
11	Is Calibrated	Output	Persistent
12	Is Parked (software position)	Output	Persistent
13	Free Output 5	Output	
14	Free Output 6	Output	
15	Free Output 7	Output	
16	Free Output 8	Output	
17	Free Output 9	Output	
18	Result Ready	Output	Persistent
19	No Result (error)	Output	Persistent
20	Pass	Output	Persistent
21	Failed	Output	Persistent
22	Warning	Output	Persistent
23	Free Output 15	Output	
24	NC		
25	NC		
26	NC		
27	NC		
28	NC		
29	NC		
30	NC		
31	NC		
32	NC		
33	NC		
34	NC		
35	NC		
36	NC		
37	NC		

Note : Free input and output can be programmed with script editor of Reflex Scan + Software.

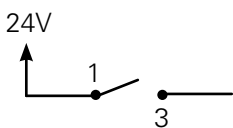
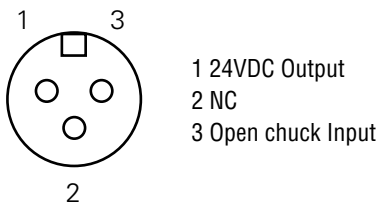
2.3.2 machine I/O connectors Option 902.6010



Foot 1 tailstock



Foot 2 chuck



* Set to 24V to activate the footswitches when the remote mode = 0 (pin 9 connector 37p). If the remote mode is activated (--> =24V), set the «Enable footswitches» (pin 37) to 0.

PIN connector	Function	I/O	I/O type
1	24VDC +/- 10% >= 1A	Input	Persistent
2	Park axis	Input	Rising Edge
3	Start Program	Input	Rising Edge
4	Start Calibration	Input	Rising Edge
5	Remote Lock	Input	Persistent
6	Free Input 1	Input	
7	0VDC		
8	Free Input 2	Input	
9	Remote mode	Output	Persistent
10	Machine Ready	Output	Persistent
11	Is Calibrated	Output	Persistent
12	Is Parked (software position)	Output	Persistent
13	Free Output 5	Output	
14	Free Output 6	Output	
15	Free Output 7	Output	
16	Free Output 8	Output	
17	Free Output 9	Output	
18	Result Ready	Output	Persistent
19	No Result (error)	Output	Persistent
20	Pass	Output	Persistent
21	Failed	Output	Persistent
22	Warning	Output	Persistent
23	Free Output 15	Output	
24	Is parked, hardware position	Output	Persistent
25	End position, tailstock opened		Persistent
26	End position, tailstock closed		Persistent
27	NC		
28	NC		
29	Open pneumatic	Input	Rising Edge
30	Close pneumatic	Input	Rising Edge
31	Open tailstock	Input	Rising Edge
32	Close tailstock	Input	Rising Edge
33	NC		
34	NC		
35	NC		
36	NC		
37	Enable footswitches*	Input	Persistent

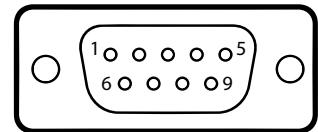
2.3.3 Security connector

Safety I/O are pairwise (redundant) and should be kept as two separate branches. A single fault shall not cause loss of the safety function.

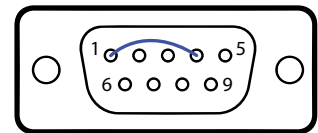
Security connector	
PIN connector	Function
1	+24V linked with Pin 1 connector I/O
2	Security output Scan Ready 1 (impulse)
3	Security output Scan Ready 2 (impulse)
4	Security input Scan enable 1
5	Security input Scan enable 2
6	SCAN emergency stop state
7	Not used
8	GND (0V)
9	Shield



DE-9



(front view male connector)



If you don't want to connect all the security, you can connect the Pin as above.

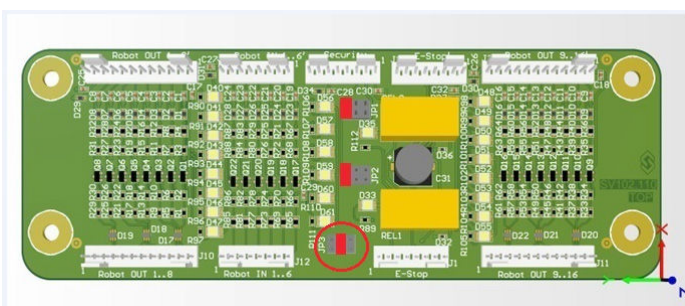
2.3.3.1 Usage of the robotization interface

The default configuration of SCAN F60 with option I/O is defined for a standard usage without i/o. JP3 jumper on electronic card SV102.110 inside the SCAN is placed according to the picture below.

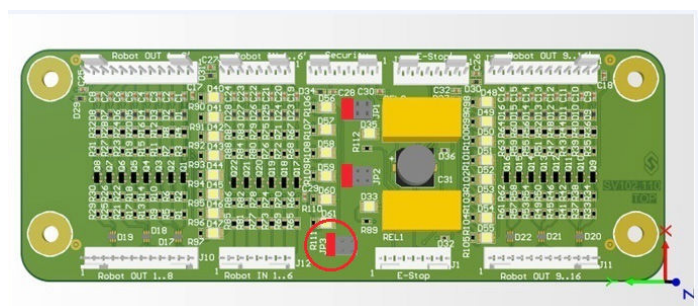
In that case:

- Inputs signals on DSUB 37p connector have no effect
- No outputs signals are available on DSUB 37p connector
- The Security interface on DSUB 9p connector is disabled

To activate the I/O interface of the SCAN F60, JP3 jumper have to be moved in the left position:



Jumper JP3 in "Without Robot" Position



Jumper JP3 in "With Robot" Position

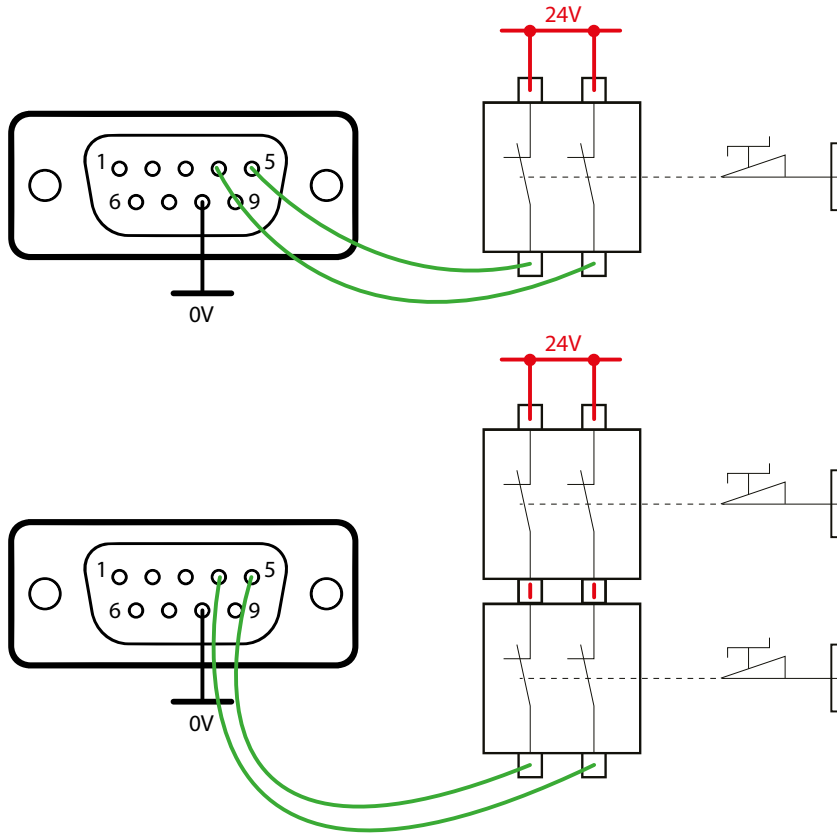
In that case:

- Inputs signals on DSUB 37p connector are active
- Outputs signals on DSUB 37p connector are active
- Security interface on DSUB 9p connector is active
- An external 24V power supply must feed DSUB 37p or DSUB 9p connectors (look at security and I/O connectors pinning) and security input enable 1 (pin 4 of security connector) must be active. Otherwise power on motor of SCAN F60 is disable.

To access the jumper JP3, first power off the SCAN. Then open the lateral door of the SCAN. The electronic card SV102.110 is attached as a mezzanine of the main mother board.

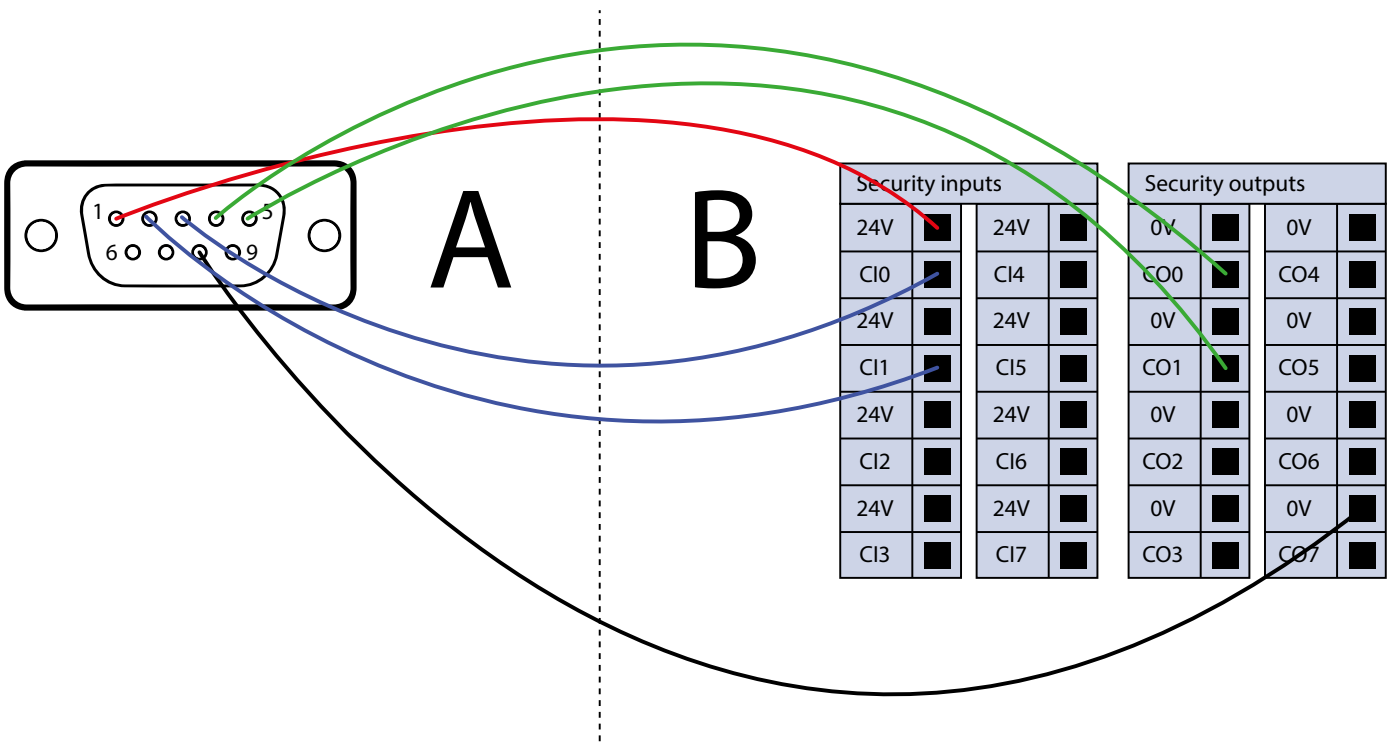
2.3.3.2 Connecting emergency stop button

In most applications it is required to use one or more extra emergency stop buttons. The illustration below show how one or more emergency stop buttons.



2.3.3.3 Sharing emergency stop with other machines

It is often desired to set up a common emergency stop circuit when the scan is used together with other machines. By doing so, the operator does not need to think about which emergency stop buttons to use. Connect safety signals to a PLC which is a safety PLC with the correct safety level. Safety PLC can control the emergency stop signals and if a reset outside the safety perimeter is required, it has to be connected on the safety PLC.

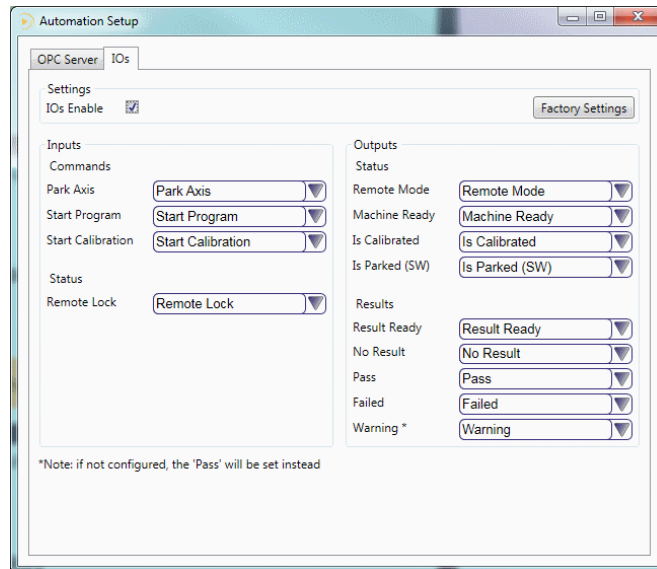


**2.3.4
Reflex Scan
configuration I/O**

Before the first use, it is necessary to enable the management of the IOs. This activation requires a license dongle with the 'Service' credentials.

Open the setup of the 'Automation' plugin via the menu 'Service->Plugin-Automation->Setup' and enable the management of the IO.

When an IO is not used, it must set to 'not used'.



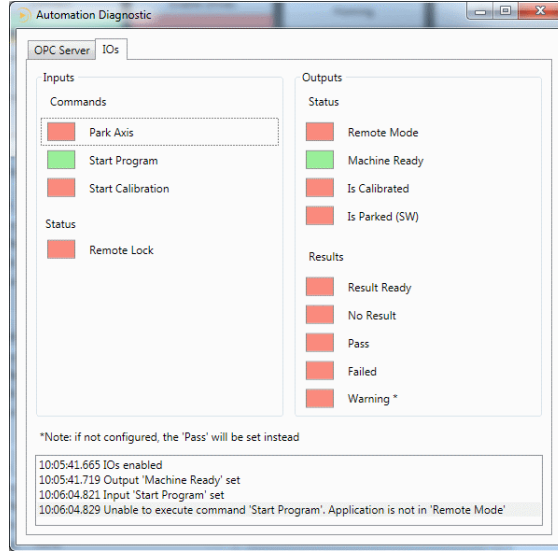
902.7017

Description of inputs	
Input	Description
Park Axis	Command to move the axis to the loading position
Start Program	Command to start the execution of a program
Start Calibration	Command to start the daily calibration
Remote Lock	Robot interlock used to prohibit the application to leave the 'Remote' mode. Usually it should be the 'Busy' signal of the robot.

Description of outputs	
Outputs	Description
Remote Mode	Flag set to 'True' when the application in 'Remote' mode
Machine Ready	Flag set to 'True' when the machine is ready to accept a new command
Is Calibrated	Flag set to 'True' when the machine is calibrated
Is Parked (SW)	Flag set to 'True' when the axis are at the loading position
Result Ready	Flag set to 'True' when the execution of the program is over and the results are ready
NoResult	Flag set to 'True' when the program did not returned any results
Pass	Transition flag set to 'True' when all the measured features are within the tolerance
Failed	Flag set to 'True' when one or several measured features are not within the tolerances
Warning	Flag set to 'True' when one or several measured features need to be reworked

**2.3.5
Reflex SCAN
diagnostic I/O**

The status of the IOs can be monitored from the menu 'Service->Plugin-Automation->Diagnostic'. The log at the bottom of the panel can be used to check the status of the remote commands.



3. ASSEMBLY

**3.1
General**

The part to be measured is held in a workholding located into both headstock and tailstock mounted on the carriage. The whole assembly is pictured below.

**3.2
Headstock**

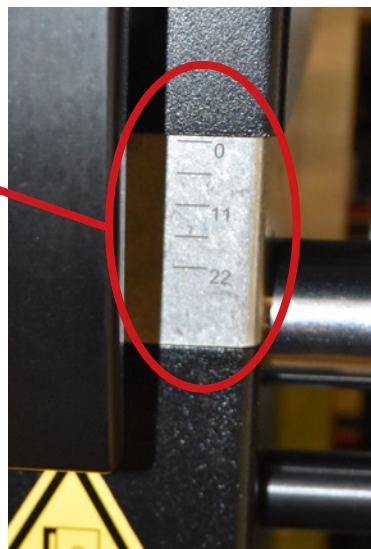
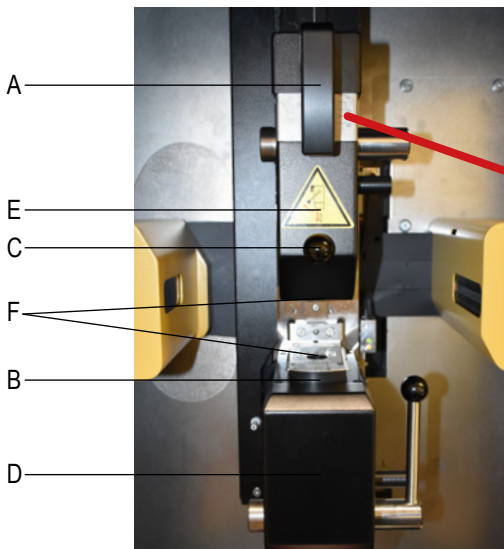
The static or rotating headstock is fixed into position on the left-hand side of the bench, before being exactly centred in order to ensure the highest measuring accuracy.

**3.3
Workholding**

The workholding is an industry standard Morse 2 used for centring the headstock and tailstock. To insert tooling properly, use only a gentle movement until the taper locks.

If locking failed, check the part, the headstock and tailstock for cleanliness. Make sure the tooling release screws are retracted, and use them to release the centres.

Do not use excessive force or shock loads as this might result in damages to the sliding mechanism.



- A Clamp handle
- B Daily setting master
- C Tooling release screw
- D Headstock
- E Tailstock
- F Locations for morses
- G Graduation

Image of machine with force control (only for option 902.6608)

4. QUICK OPERATION GUIDE

4.1

Measuring system

The measuring system consists of light sensitive cells (CCD arrays) used for image analysis of the workpiece being measured.

The workpiece is first illuminated, and then scanned using a parallel (collimated) green light from the optics, which is moved by means of a DC servomotor coupled with a belt drive. The movements of the carriage are controlled through the incremental glass scale.

Long term accuracy is assured by the use of a setting master provided with the system for its calibration at start up. This feature is stored into the machine, near the headstock.

4.2

Getting started

- Ensure that all electrical connections are made, and that there's no CD in the CD-ROM drive.
- Turn the power ON by means of the switch located on the front face of the machine.
- Shut the PC and the monitor up.

The system runs a series of self-tests, and then starts loading the Windows 10 Professional operating system. Once Windows has initialised, the SYLVAC-REFLEX+ Scan icon appears on the desktop. Double click this icon to let the application be loaded and get the tool bars ready for use once entirely loaded.

Note

Should you get an error message, write it down, switch off (doing so, pay a special attention to the options of the shutting down windows, if any), wait at least 15 seconds before switching on again. If the problem persists, contact the Help service of the supplier for assistance.

4.3

Calibrating the machine

Before starting measuring, the machine needs to be calibrated for SYLVAC-REFLEX+ Scan and the peripheral devices to be booted up. To have this done, press the REFLEX-Click button on the front face of the machine. A message prompts you to start the calibration process. Validate this on-screen prompt.

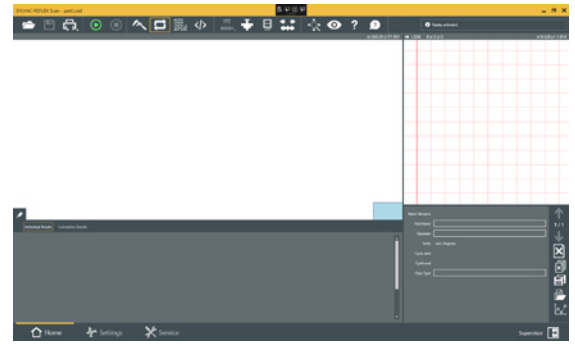
Once the system has boot up, the programme establishes the references on the incremental glass scale. Next, the functions of the CCD arrays are checked and the machine calibrated.

As soon as all operations are completed, display shows Successful Calibration below the menubased icons.

In the event the calibration failed, re-start the whole process. Successive failures tell the operator that there are fatal errors causing the measuring system or the peripheral device to abort.

4.4 Measuring

1 The user's interface as shown opposite will not appear unless SYLVAC-REFLEX+ Scan has been booted up and the calibration process completed.



REFLEX-Click is the default mode.

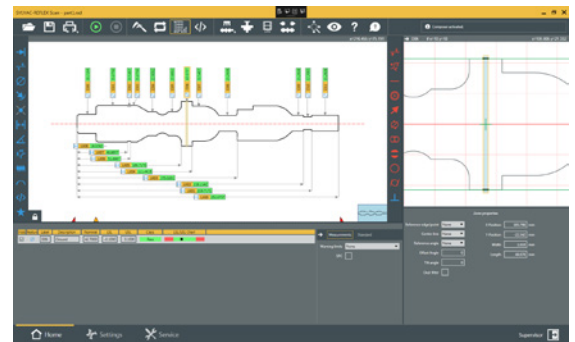


2 Load a workpiece in the workholding and press again the REFLEX-Click button on the machine's front face. Wait a few seconds for the first measurement results to be automatically displayed.



3 To edit a programme sequence allowing for nominal values to be input for comparison with the measured values, press the Edit button.

4 After all changes have been entered, save the programme and press the REFLEX-Click button to let it be started up.

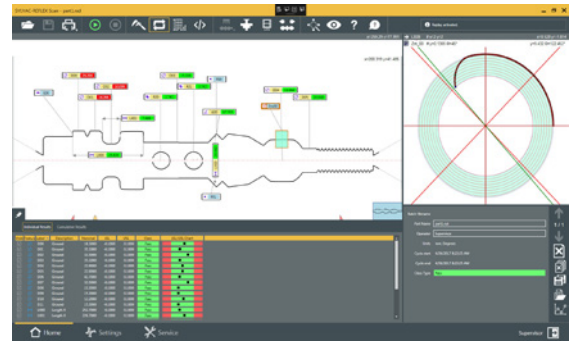


Note

For more information on the way to run SYLVACREFLEX Scan, report to its User's manual.

4.5 Starting the automatic measurement cycle

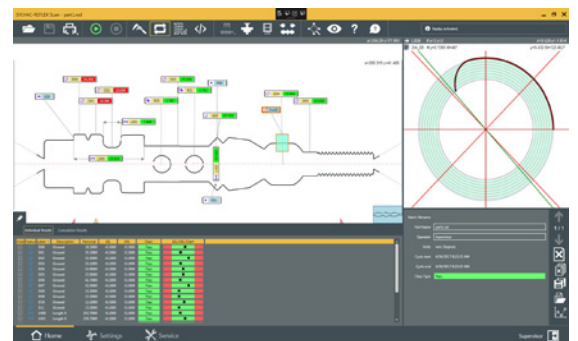
1. After restarting the software SYLVAC-REFLEX+ SCAN and after calibrating, this graphic interface is activated



2. Press the adjacent graphic icon to proceed the calibration of the machine.



3. Open the software allowing to measure the origin parts by clicking on the adjacent icon.



4. Launch the automatic measurement cycle by pressing the adjacent icon.



5. it's possible to stop temporarily the measurement cycle by pressing the Stop button.



6. This button allows you to pilot the software (load program, execute program, etc.) with external commands (I/O or OPC UA)



4.6 Shutting down

When shutting down the system, closing all applications and Windows properly is important. Once closed, select Shut down from the Start menu on the Windows Task bar. As soon as the Shutdown Windows box appears, choose Shut down the computer? and click Yes. Finally, switch off the machine.

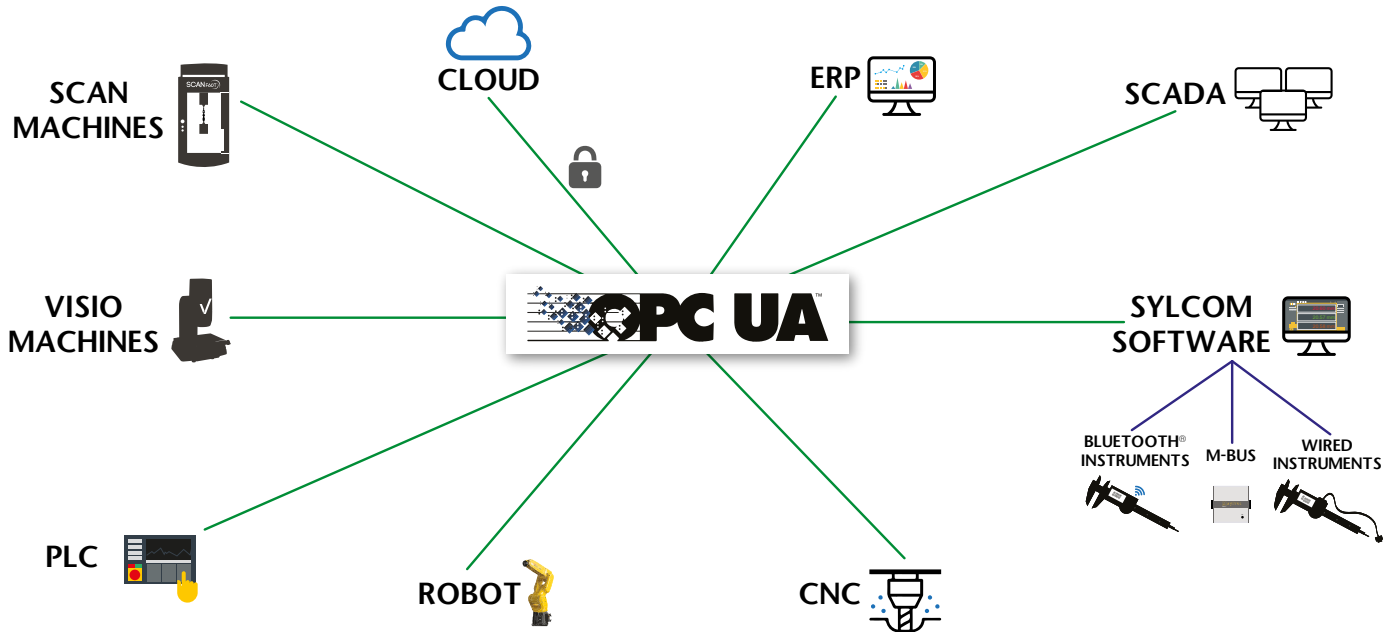


It is important for all applications and Windows itself to be closed following this procedure. Failure to do so may result in hard disk corruption and, consequently, bring about that of the whole system.

5. SCAN DEMO WITH OPC UA PROTOCOLE

5.1 The protocole

OPC Unified Architecture (OPC UA) is a communication protocol for industrial automation applications, perfectly adapted to Industry 4.0. It is based on the client-server principle and bridges the gap between the IP-based world of IT and the production floor.



5.2 Introduction

The measurements with a Scan60 can be automatized with a Robot. This document provides a notice how to setup the ReflexScan software with an OPC UA client.

5.3 Requirements

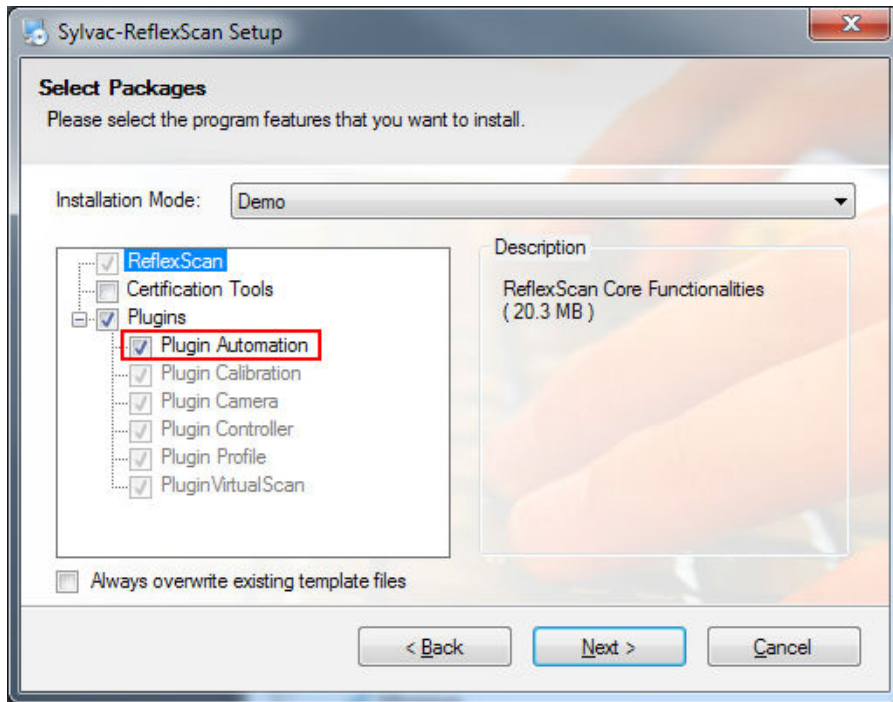
- The following material is required :
- A licence dongle with option OPC-UA 902.7017
 - ReflexScan v4.2 (build 11680 or newer)

5.4 Sylvac Reflex SCAN+

The Sylvac-Reflex Scan is the application in charge of the Scan60. Before its use, it must be properly installed and configured. By default, the OPC UA support is not installed.

5.4.1 Installation

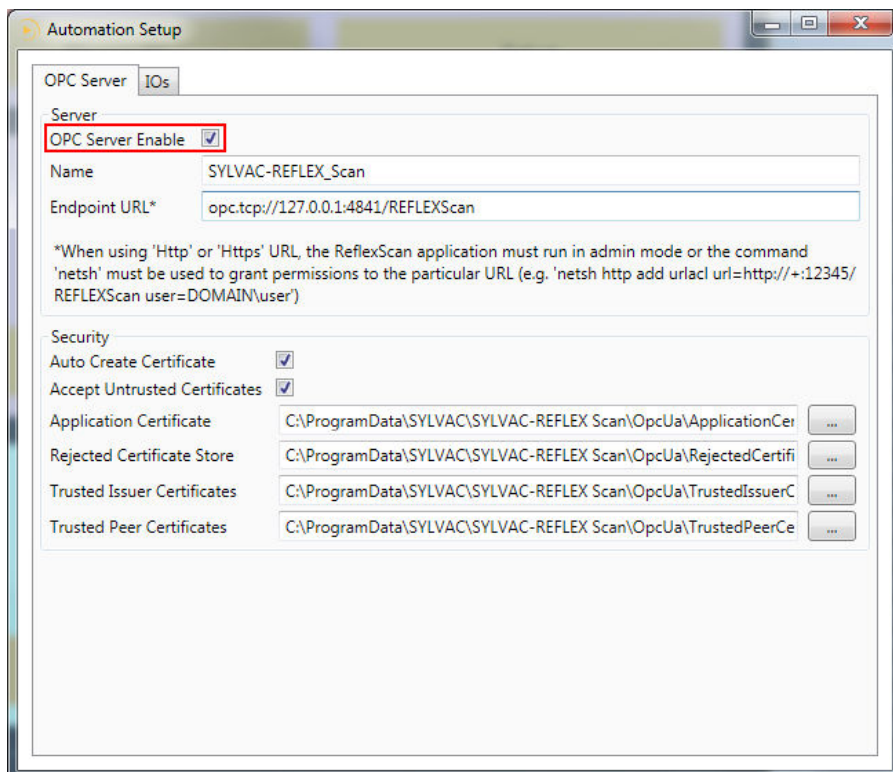
During the installation of the software, the 'Automation' plugin must be selected. This plugin takes care of the OPC UA protocol.



5.4.2 Setup

Before the first use, it is necessary to configure the application to activate the OPC UA server.

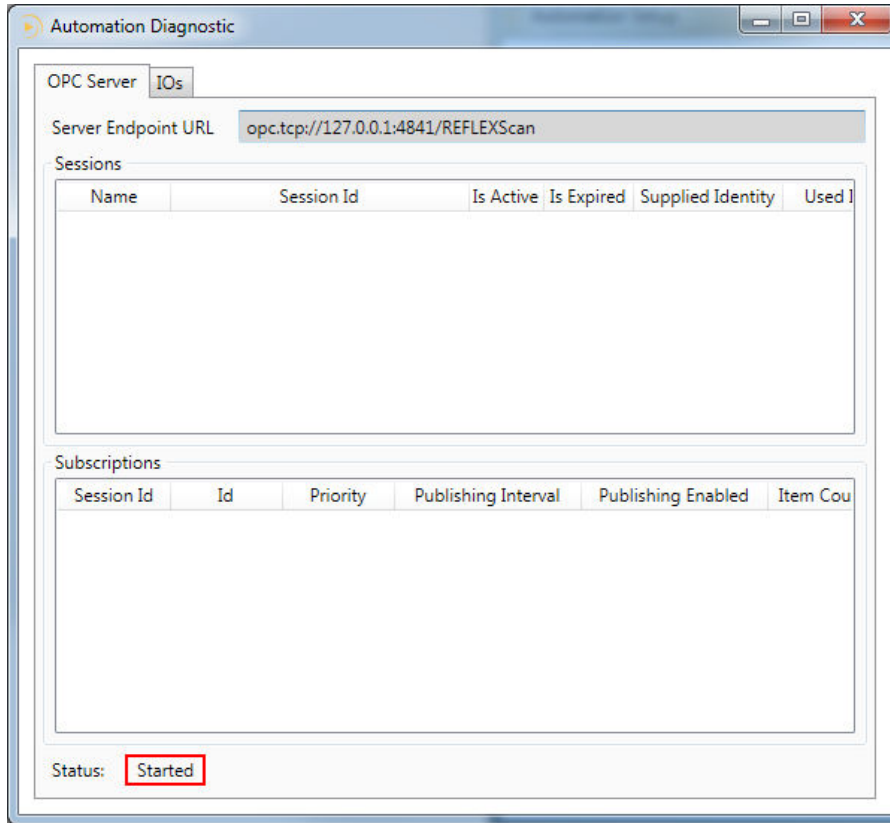
1. Start the ReflexScan application with the Windows' administrator rights
2. Access the setup of the 'Automation' plugin via the menu 'Service->Plugins->Automation-Setup'
3. Edit the endpoint URL (optional)
4. Activate the OPC Server



Note: a dongle with the 'Service' credentials is required to access to the plugins' configuration panels.

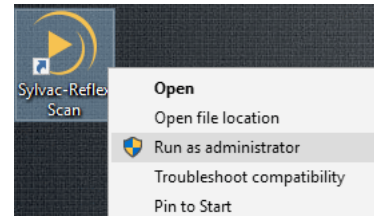
5.4.3 Diagnostic

At this stage, the OPC UA server should be running. Its status can be checked from the diagnostic panel of the 'Automation' plugin.



If the server's status is not started, then check the followings points:

- Make sure to run the ReflexScan as administrator using the right-click on the program shortcut
- Selected another port number in the URL, e.g. '*opc.tcp://127.0.0.1:4842/REFLEXScan*' with the Setup panel.



Note: when the URL is changed, the server must be restarted to use the new URL.

5.4.4 Application mode

The ReflexScan+ has four application modes which can be selected from the main tool bar. Only one mode can be active at a given time.

Mode	Icon	Description
Reflex-Click		Measure the main features of a part statically. No programming is needed.
Replay		Measure the features of a part according to program.
Composer		Create/Edit a program to measure the feature of a part.
Remote		Transfer the control of the ReflexScan to a remote client (e.g. PLC, etc...)

When the 'Remote' mode is selected, the reflex scan application will accept requests (e.g. load program, execute program) from a remote client (e.g. PLC, etc...). The whole interface will be locked while this mode is active.

5.5 OPC UA demo client

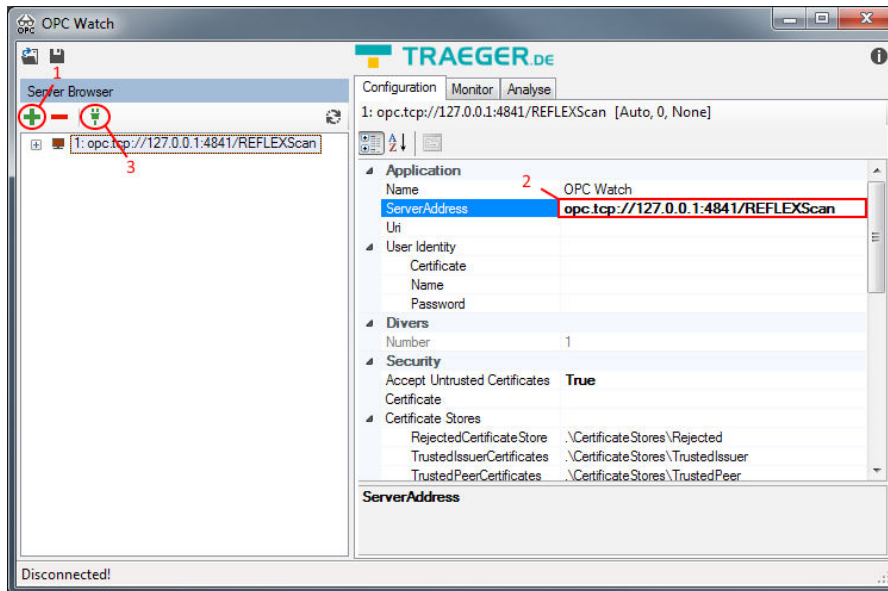
For a test of the OPC UA communication, a client is required. During the installation, the 'OPC Watch' freeware has been copied into the application folder (see 'C:\Program Files\SYLVAC\Sylvac-ReflexScan\Program\OpcWatch.exe').

Note: this client can be launch from an USB dongle. For a test, it is possible to run it from another computer. In that case, the URL used by the 'Automation' plugin should either be the IP of the computer or its domain name if the IPs are managed by a DHCP server (e.g. 'opc.tcp://127.0.0.1:4841/REFLEXScan').

5.5.1 Setup of the client

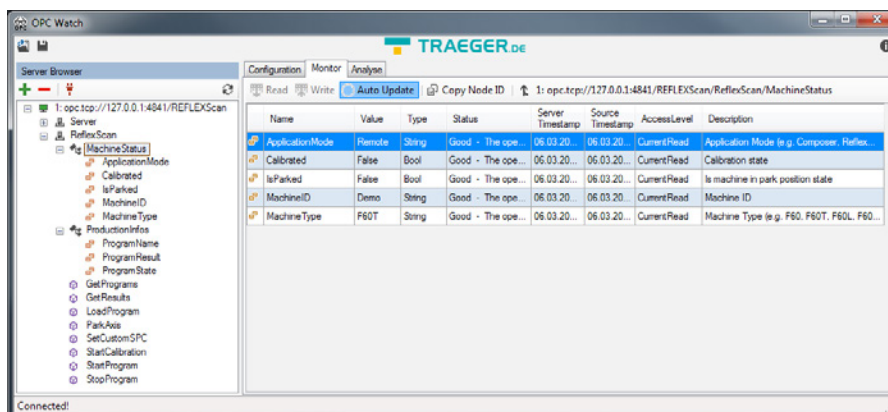
In order to use the OPC client, the communication must be setup

1. Add a new connection
2. Copy over the server endpoint URL of the ReflexScan software (e.g. 'opc.tcp://127.0.0.1:4841/REFLEXScan')
3. Press connection



5.5.2 Monitoring of variables (nodes)

Once the communication is established, it is possible to monitor the different variables the Scan without any further configuration. The 'Auto Update' check button allows an auto-refresh of the variables.





5.5.3 Execution of methods

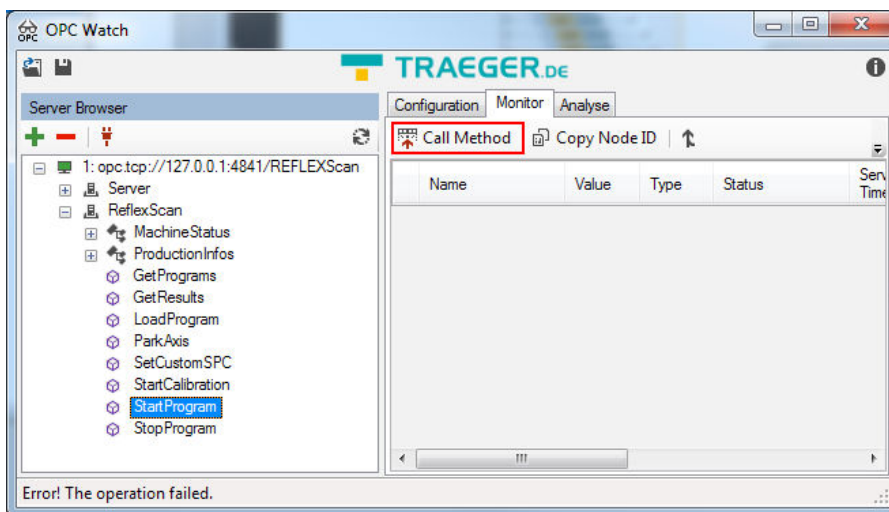
For a remote execution of program, follows the following steps:

From ReflexScan

1. Load a part with the simulator
2. Load a program matching the part
3. Select the application mode 'Remote'

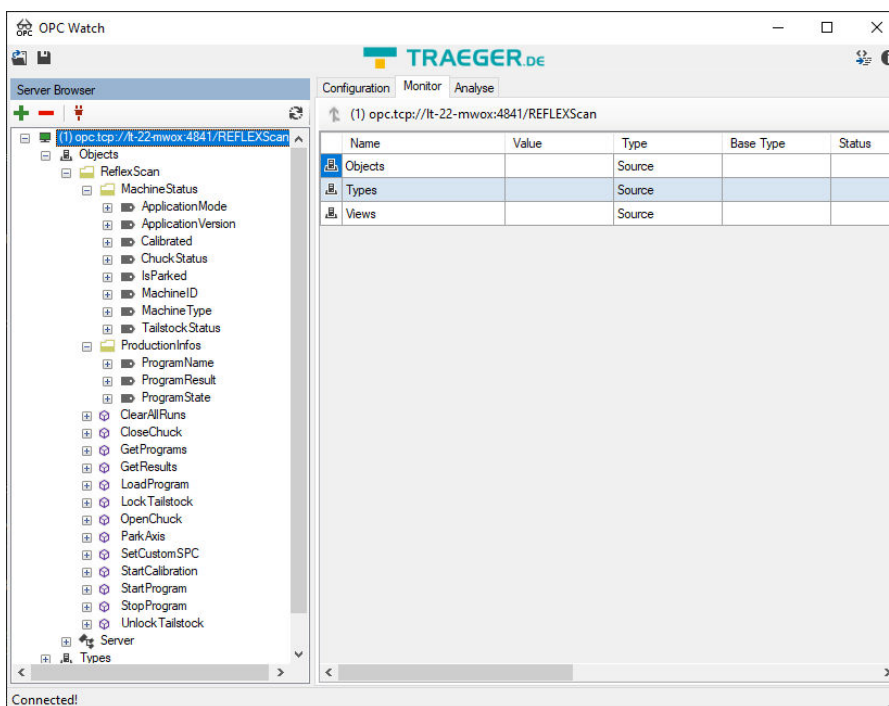
From the client

4. Select 'StartProgram'
5. Press 'Call Method'



At this stage, the measurement of the program should be started.

5.5.4 List of available variables in OPC-UA



5.6 Final note

The OPC foundation provided several powerful clients that can be used to test the interoperability of the system. They are a little more complex to be used, but are better to explore the properties (inputs and outputs parameters) of the callable methods.

These clients can be downloaded at the following address (required a free registration):

<https://opcfoundation.org/developer-tools/developer-kits-unified-architecture/sample-applications>



6. MAINTENANCE

6.1 Maintenance schedule

Monthly

- Clean all external machine's parts with a soft cloth. Do not use abrasive solvents containing methylene chloride or cellulose.
- Clean all windows with a soft cloth. Avoid abrasive solvents that may scratch the glass.
- Clean the Led status light.
- Clean the optical glasses.

Once the optics is correctly positioned, raise the protective cover in front of the optical window and follow on-screen instructions for cleaning.

Servicing intervals

- As a general rule, a visit for servicing once a year or every 4000 operating hours are advisable.

Yearly

Only a trained personnel accredited by SYLVAC SA is allowed to execute all maintenance operations on a yearly basis.

- The machine must be recalibrated using a full set of length and diameter standards.
- We recommend recalibrating each machine used on the shop floor every six months, or annually for those installed in a temperature-controlled operating environment like that of any inspection laboratory.
- Change the filter.

6.2 Cleaning

The machine's covers must be regularly cleaned with a soft dry cloth. Common solvents can be used to remove the grease, except methylene chloride or cellulose.

Do not remove any cover as this may impair the purity of the optics with a surge of dust particles among other impurities.

7. TROUBLESHOOTING

7.1 In case of failure

All SYLVAC-SCAN have been designed for ease of use and trouble-free operation.

This section described problems that might occur when starting up the system, whilst also listing some error messages appearing when running the software.

7.2 Problems at start up

1 The system shows no signs of life :

- Check the power supply and connections, including those to the PC and monitor.
- Check that the PC and monitor are turned on.

2 The PC starts but the LED does not light up.

- Check all cable connections.
- Contact your local SYLVAC's agent.

8. GUARANTEE

8.1 Limited Warranty Policy

All the Sylvac optical measuring machines are covered against defects in design, materials and workmanship for a period of 2 years, from the date of delivery from our factory.

During the warranty period, Sylvac SA will repair or replace the defective product free of charge.

This manufacturer's warranty does not cover:

- Aging or normal wear and tear
- Any damage resulting from incorrect or abnormal use of the product, and non-observance of the user manual provided by Sylvac SA
- Indirect or consequential damages of any kind resulting from the use, the non-functioning, the defects or the inaccuracy of the product
- Any repairs not done by an authorized qualified service partner, e.g. the disassembly of the product done by a person non-authorized by Sylvac SA
- The periodic check-ups, the adjustments or the maintenance

Sylvac SA owns all parts removed from repaired products. If Sylvac SA repairs or replaces a part of a product, its warranty term is not extended. In case of replacement the new component has a warranty of 1 year, without effect on the initial warranty period.

Any further claim against Sylvac SA, e.g. for damages additional to the above described warranty is expressed excluded.

9. DECLARATION OF CONFORMITY

Name of the manufacturer

SYLVAC SA

Address of the manufacturer

Chemin du Closalet 16
CH-1023 Crissier
Suisse

who declares herein, that the product

Product

SYLVAC-SCAN F60
Optical Measuring System for turned parts

Order number	Description	Tilt	Software
902.4060	SYLVAC-SCAN F60	No	Sylvac-Reflex-Scan+
902.4065	SYLVAC-SCAN F60T	Yes	Sylvac-Reflex-Scan+
902.4062	SYLVAC-SCAN F60L	No	Sylvac-Reflex-Scan+
902.4067	SYLVAC-SCAN F60LT	Yes	Sylvac-Reflex-Scan+

Serial number

see on the machine

is in compliance with the following provisions

- European Guidelines 2006/42/CE, 2004/108/CE, 2006/95/CE
- European Standards EN 12100-2, EN 60204-1, EN 61326-1
- as well as with all technical data contained in our sales literature.

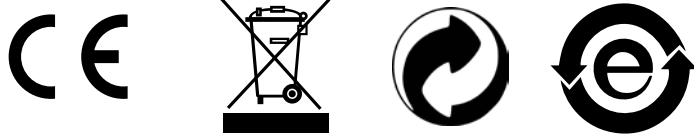
SYLVAC SA
CH-1023 Crissier
Suisse

10. NOTES



SCAN F60





Changes without prior notice
Sous réserve de toute modification
Änderungen vorbehalten

Edition :

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