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1 INTRODUCTION

1.1 Purpose, scope and application

This operating manual describes the *P6 SCADA* PC program for the P6 cleaning machine and is intended for Ecoclean GmbH Electronics AG service technicians and technicians trained by Ecoclean GmbH Electronics AG as well as for users of the P6. It provides information on the operation of the PC program.

Questions about installation, use and operation can be sent to the e-mail address info.monschau@ecoclean-group.net Ecoclean GmbH.

We reserve the right to make changes to this document. Copies already issued are not automatically subject to the amendment service.

1.2 Version overview

The *P6 SCADA* PC program may not be compatible with all program versions of the P6 cleaning machine. The following table provides an overview of the compatible versions.

Version PC program *P6 SCADA*	Remark	Compatible with P6 cleaning machine, version
P6 SCADA 1.0.0		P6 ctrl 1.5.1

1.3 Definitions

1.3.1 Terms

Cleaning cycle

Program for cleaning small mechanical parts.

Phase

Sub-units of a cleaning cycles consist of different phases such as: Ultrasonic cleaning, rinsing or drying.

Job

A job is an execution of the cleaning program. Each job generates a SCADA recording (SCADA data) if SCADA is activated on the CU (machine).

1.3.2 Abbreviations

CU: Control computer CU4000 (machine control)

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1.3.3 Referenced documents

Operating instructions Cleaning machine P6:   BA-6028-001

Quick guide Software update P6:   BA-6028-002

Operating instructions P6 Suite: BA-6028-003

2 GENERAL INFORMATION

2.1 Intended use

The PC program *P6 SCADA* is used with the cleaning machine P6 Cleaning machine

2.2 Manufacturer

Ginova Electronics AG
Systems, Software and Electronics
Spärsstrasse 7
CH-2562 Port
SWITZERLAND
Website: www.ginova-electronics.com
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3 INSTALLATION

3.1 System requirements and installation

P6 SCADA is installed automatically together with the *P6 Suite* PC program. See 1.3.3 Referenced documents, P6 Suite operating instructions.

4 FUNCTION

4.1 Basic functions

4.1.1 Download jobs

P6 SCADA reads jobs (SCADA records) from the CU (machine) and saves the data on the PC. Jobs can be inspected during or after the cleaning process, and a report (job summary) can be generated (PDF).

Each job (i.e. each SCADA recording) is saved in a separate file (path or folder see 4.8 Machine configuration). The file name is <jobnumber>.rsc, e.g. 27.rsc for job number 27. If a file with this name already exists, the file name is given a counter so that the existing file is not overwritten: <jobnumber>-<counter>.rsc, e.g. 27-1.rsc.

4.1.2 Automatic download of jobs

P6 SCADA (client) can be configured so that jobs are downloaded automatically or not, see 4.8 Machine configuration. The CU (machine) remembers which jobs have already been automatically transferred to the PC. This allows a *P6 SCADA* (PC) to be connected to the machine and the SCADA records to be read out automatically.

As soon as the memory on the CU (machine) runs out, jobs that have already been automatically read from the CU are deleted[1].

If several *P6 SCADA* (PC programs) are connected to the machine, and several are configured to download the jobs automatically, an error will appear in the machine status on the main page:
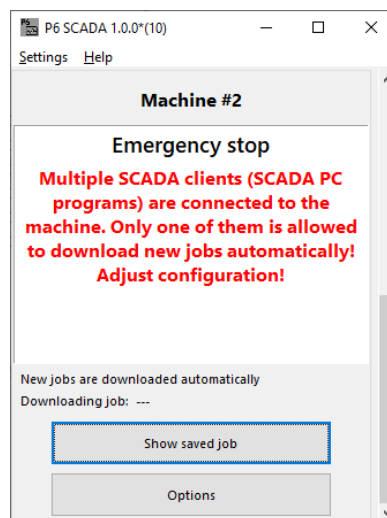

Fig. 4.1-1 Download multiple SCADA clients (P6 SCADA - PC) with jobs "automatically"

4.2 Starting the P6 Suite PC program

P6 SCADA is started via the *P6 Suite*, see 1.3.3 Referenced documents, operating instructions P6 Suite.

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[1] As long as a job has not yet been deleted, it can be read out again at any time via *Download Jobs* (4.4Download Jobs) or *Job recovery* (4.6.1Job recovery).

4.3 Main page

4.3.1 Generally

The main page displays the machine status in a field. *SCADA* can be connected to several machines (see also 4.8 Machine configuration).
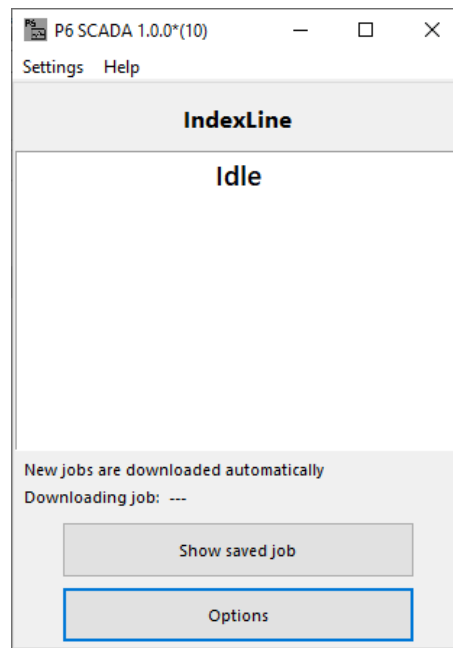

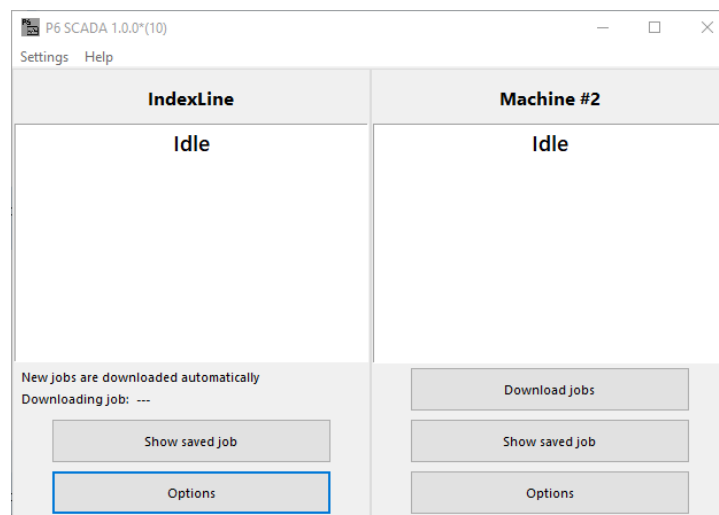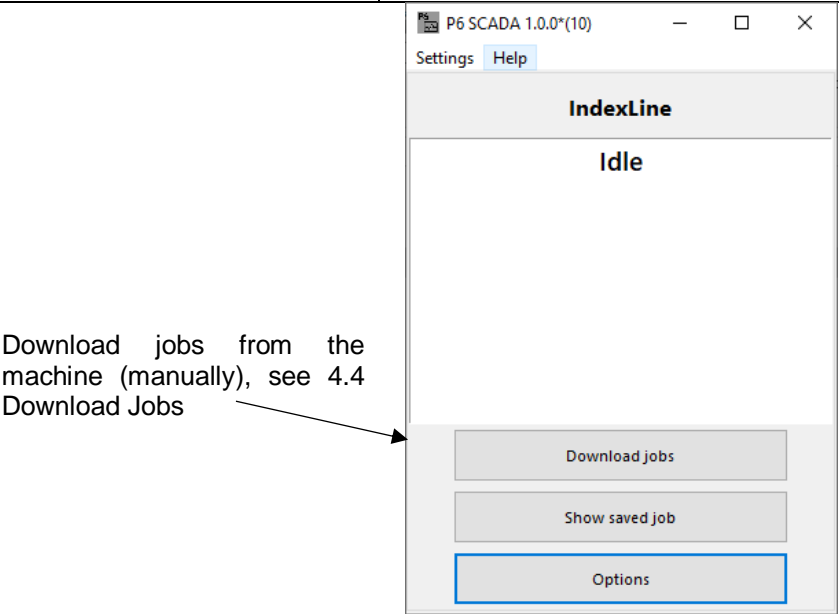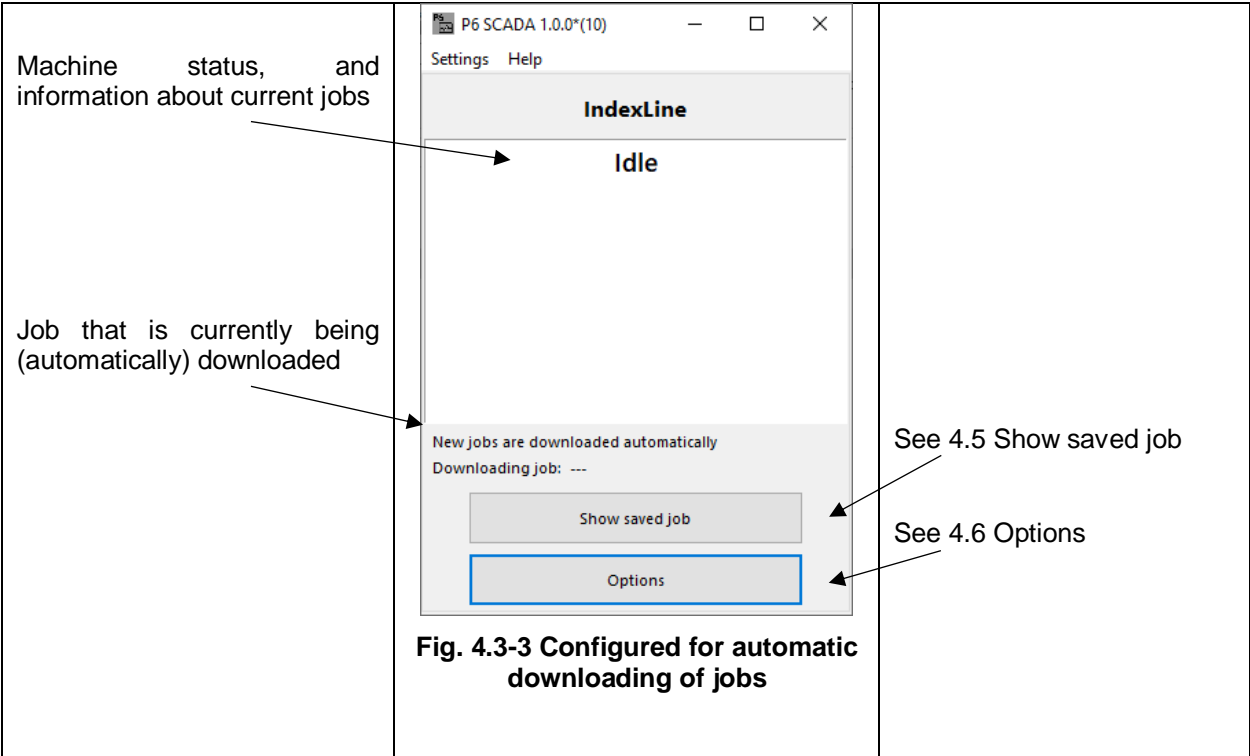**Fig. 4.3-1 Main page with a configured machine**

Fig. 4.3-2 Main page with several configured machines

SCADA can be configured so that jobs are downloaded automatically[2] or not (see 4.1.2 Automatic download of jobs).

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[2] The CU automatically deletes downloaded jobs as soon as the storage space is required

Machine status, and information about current jobs

Job that is currently being (automatically) downloaded

P6 SCADA 1.0.0*(10)

Settings Help

IndexLine

Idle

New jobs are downloaded automatically
Downloading job: ---

Show saved job

Options

See 4.5 Show saved job

See 4.6 Options

Fig. 4.3-3 Configured for automatic downloading of jobs

P6 SCADA 1.0.0*(10)

Settings Help

IndexLine

Idle

Download jobs

Show saved job

Options

Download jobs from the machine (manually), see 4.4 Download Jobs

Fig. 4.3 -4 Configured for manual downloading of jobs

4.3.2 Display during a cleaning process

Basic information is displayed during a cleaning process. Detailed information can be accessed via "Show", see 4.7 Job Details
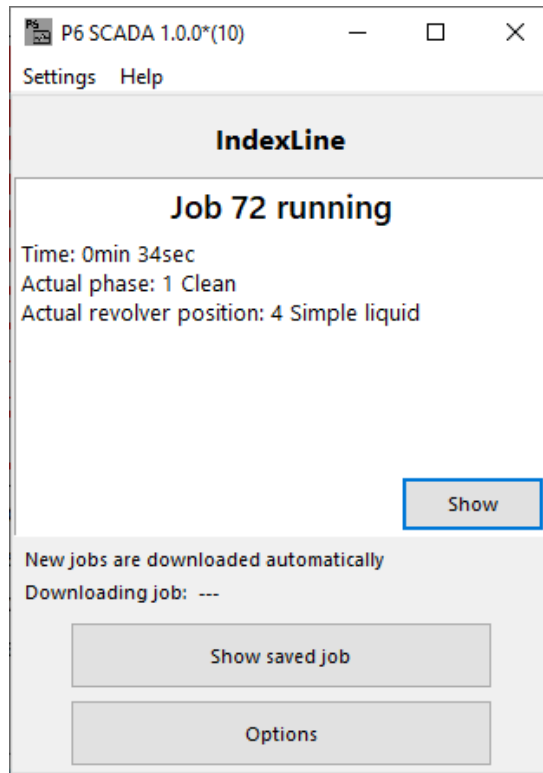
Fig. 4.3-5 Display during a cleaning process

4.4 Download Jobs

This function is only available if P6 SCADA is configured so that the jobs are <u>not</u> downloaded automatically (see 4.1.2 Automatic download of jobs).

This function lists all jobs saved on the CU (latest job at the top) and can be downloaded.

4.5 Show saved job

Downloaded jobs (*.rsc files) can be displayed in detail. See 4.7 Job Details.

4.6 Options

4.6.1 Job recovery

This function is only available for selection if P6 SCADA is configured so that the jobs are downloaded <u>automatically</u> (see 4.1.2 Automatic download of jobs).

Jobs that have already been downloaded can be downloaded again here. Only the jobs saved on the CU that have already been <u>automatically</u> downloaded are listed (oldest job at the top). Jobs that <u>have not</u> yet been downloaded automatically are not listed.

4.6.2 Create Report

A report (summary of the job) is generated. This report can also be generated automatically for each downloaded job, see 4.8 Machine configuration.

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4.7 Job Details

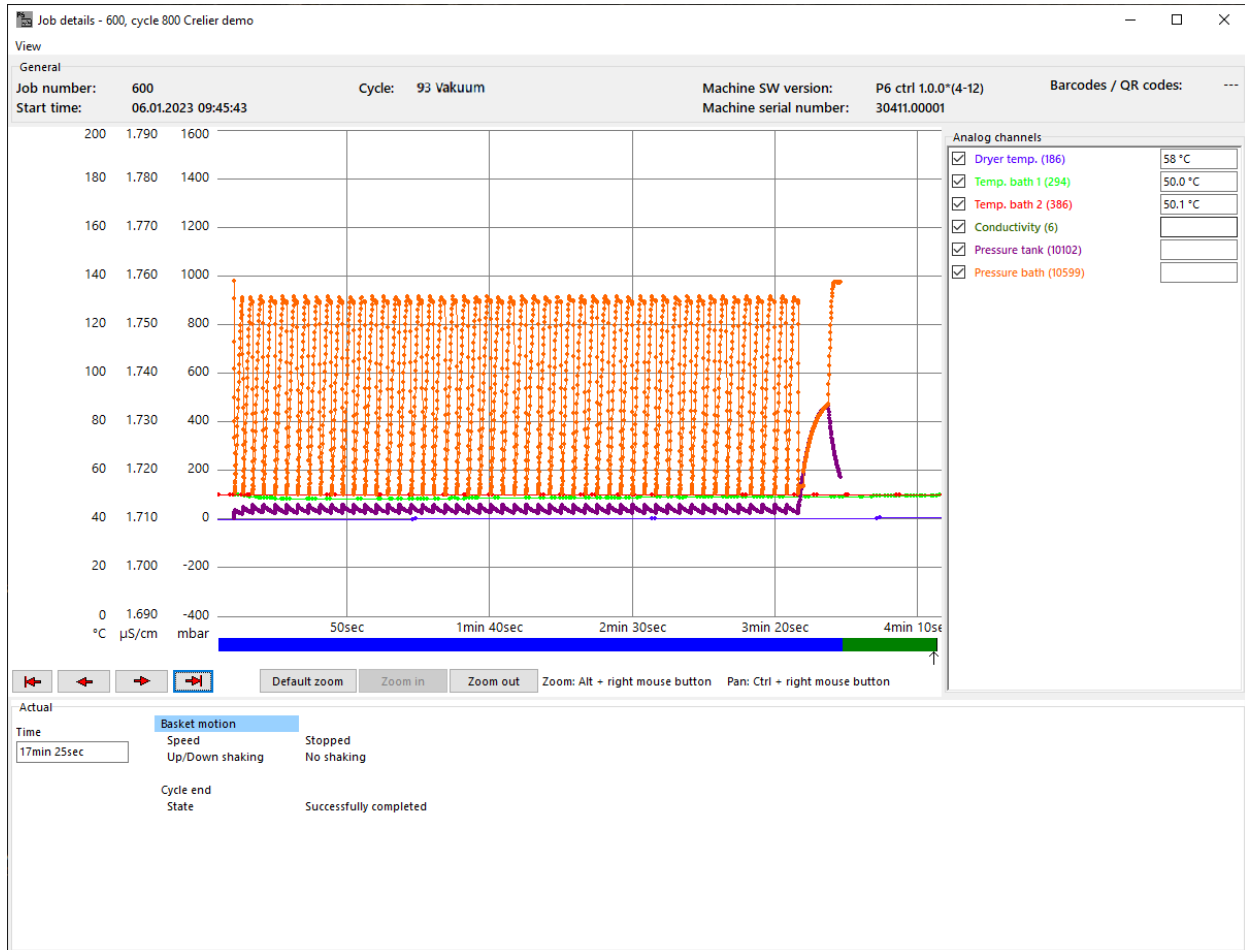Job Details is a detailed display of the job (SCADA data).

Fig. 4.7-1 Job details

Graphic

Analog channels (temperatures, vacuum) are displayed opposite the time axis. Channels can be shown or hidden on the right-hand side using the checkbox. The color can be changed with the right mouse button on the analog channel.

To zoom, press and hold Alt + right mouse button in the graphic and select an area. See also the instructions directly below the graphic.

Time and status information

A vertical bar can be set or moved in the graphic by clicking the left mouse button. This indicates the time from the start of cleaning. This time can also be entered in the "Time" field on the left below the graphic.

At the selected time, basic status information is displayed at the bottom of the screen.

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Subphases

Subphases are represented in the graph by colored bars:

Blue: Diving
Green: Skidding

Events

A small arrow (↑) below the bar indicates "Events": Phase start / phase end, machine error, program stop, program abort, etc.
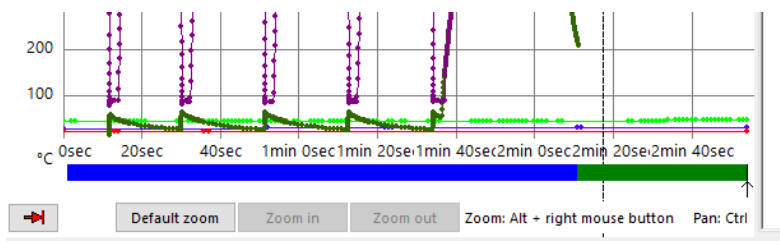
Scroll buttons

The scroll [◄|] [|►] buttons move the selected time directly to the next event.

The scroll [◄] [►] buttons move the selected time (vertical bar) by one second or less, depending on the zoom view

View menu

Menu *View→ Set default colors* sets the default colors of the graphics (analog channels). The colors can be changed by right-clicking on the corresponding analog channel

Menu *View→ Show curve datapoints* allows you to show and hide the data points in the graph

4.8 Machine configuration

Basic settings for the machine(s) must be set via the machine configuration. To do this, open the configuration via *Settings→ Machine configuration*.

Select machine configuration or add new configuration (another machine)

Fig. 4.8-1 Machine configuration

Parameters	Description
Machine name	Any name for the machine. This name is displayed on the main page for the machine and also appears in the report, etc.
IP address / hostname	IP address or host name of the machine. See 1.3.3 Referenced documents, operating instructions for cleaning machine P6 to set the IP address and host name of the CU.
Automatically download new jobs from machine	Download jobs automatically, see 4.1.2 Automatic download of jobs
File save path raw file	A folder to save the SCADA recordings.

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Parameters	Description
File save path report (PDF)	A folder to save the report. A report can be generated automatically or manually. This folder is suggested when the report is saved manually.
Auto create report (PDF)	If set, a report (PDF) is automatically generated for each downloaded job.