

## Operation of two autosamplers

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The objective of this note is to describe the operation of two Agilent 1100 autosamplers in a 1100 system. In order to achieve a high sample throughput both autosamplers are used. While one of the autosamplers is injecting, the other one is in the by-pass position and vice versa.

### NOTE

In order to implement and use the macros it is necessary to replace the resident and operational firmware by firmware with revision > A.02.32.

### NOTE

During boot-up of the 1100 modules and/or the Agilent ChemStation the order of ALS#1 and ALS#2 may change. So, it must be verified prior of running an analysis which ALS is #1 or #2.



## Function description of the macros

Two macro's are being used: MALS1.MAC and MALS2.MAC.

When autosampler #1 must inject, MALS1.MAC is called up as pre-run command macro in the run-time-checklist. This macro assures that autosampler #2 does not inject during this injection and that the injection-valve is put in the by-pass position (smaller dead volume). The macro is implemented in the method MALS1.M, see [“Run-time checklist entries”](#) on page 3. So the method determines which autosampler will inject.

To have autosampler #2 inject, the macro MALS2.MAC, see [“Run-time checklist entries”](#) on page 3, is implemented in the pre-run command macro line. For this second injector the method MALS2.M is used.

### Listing of macro MALS1.MAC

```
Name mals1
  print sendmodule$(lals1,"main -2")
  print sendmodule$(lals2,"cosy:new 1;cosy:iseq 1,'vlve 2,0,1';main 1")
endMacro
```

### Listing of macro MALS2.MAC

```
Name mals2
  print sendmodule$(lals2,"main -2;vial "+val$(_ALSBOBTLE1));
  print sendmodule$(lals1,"cosy:new 1;cosy:iseq 1,'vlve 2,0,1';main 1")
endMacro
```

## Automation

In case the sequence table is used one can have both autosamplers inject independently from each other. Which injector does inject is determined by the method which is used.

The example in [Figure 1](#) on page 3 is cycling between ALS 1 (MALS1.m) and ALS 2 (MALS2.m) after 1 injection each.

Sequence Table: Instrument 1

Currently Running  
Line:  Method:  Location:  Inj:

Sample Info for Vial 1:

Line	Location	Sample Name	Method Name	Inj/Location	Sample Type
1	Vial 1		MALS1	1	Sample
2	Vial 1		MALS2	1	Sample
3	Vial 1		MALS1	1	Sample
4	Vial 1		MALS2	1	Sample

Figure 1 Sequence table

### Example for the automation of 200 injections:

vial 1-100 (autosampler 1) uses method **MALS1.M**

vial 1-100 (autosampler 2) uses method **MALS2.M**


At this moment no coupling has been made between vial number and autosampler.

The result file can be made best with prefix "XXXXX000.D".

In this way the results are written on the hard disk as "XXXXX001.D" to "XXXXX200.D"

### Run-time checklist entries

**MALS1.m**



**MALS2.m**

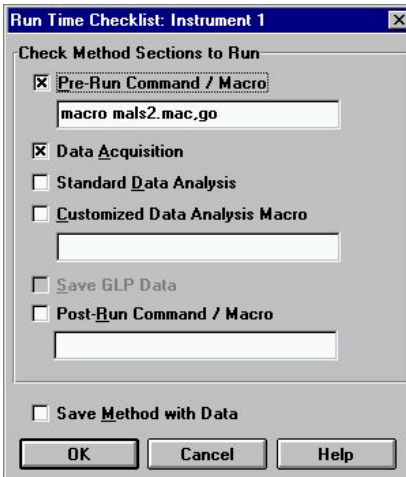


Figure 2 Run-time checklist

Operation of two autosamplers  
Run-time checklist entries

**Table 1** Example for Method information in MALS1,m

Run Time Checklist	
Pre-Run Cmd/Macro	ON
macro mals1.mac, go	

**Table 2** Example for Method information in MALS2,m

Run Time Checklist	
Pre-Run Cmd/Macro	ON
macro mals2.mac, go	