

Item Firmware				
Date	17-12-09	Company	Tamson	Bleiswijk
Technician	RvH	Document name	Firmware loader.doc	
Apparatus	TMC70	No of pages	7	
Subject	Change firmware			
Serial Number	Rev 1.0a	Registered to		

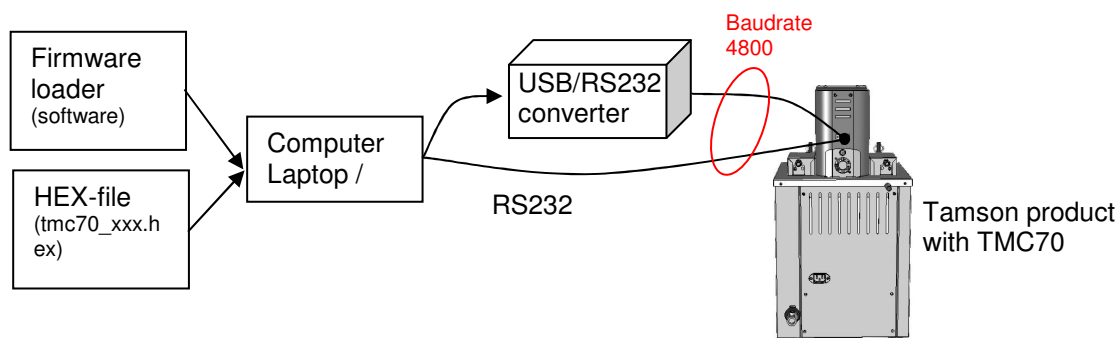
## Contents:

Procedure .....	<b>Fout! Bladwijzer niet gedefinieerd.</b>
The hardware connection .....	3
Installing the software .....	4
Loading the new firmware .....	4
Cabling .....	5
Optional: Installing 24T0038, RS232 to USB converter .....	6
Uninstall RS232 to USB converter .....	7

## General procedure

New Tamson products use the TMC70 system which has a reprogrammable microcontroller. The software program can be updated with new firmware. This can be done via RS232 using a specific small software program "tmc70load.exe".

The firmware comes as software program in a binary coded file, the "tmc70\_113.hex". A special program, the Firmware loader, is used to reprogram the TMC70.



The Tamson product can be connected to the computer via the RS232. In case there is no RS232, a so called USB adapter can be used.

For the Firmware update the Tamson product needs to operate on a baudrate of 4800. (Tamcom software operates on a baudrate of 9600). Select the appropriate baudrate on the menu of the Tamson product. Select option baudrate, choose 4800.

The Tamson product first must be set in "boot loader mode". This is a special reset. The reset can be activated by switching the product on, whilst keeping the "mode" or "encoder-button" pressed during start-up. When the display starts flashing you can release the "mode" or "encoder-button".

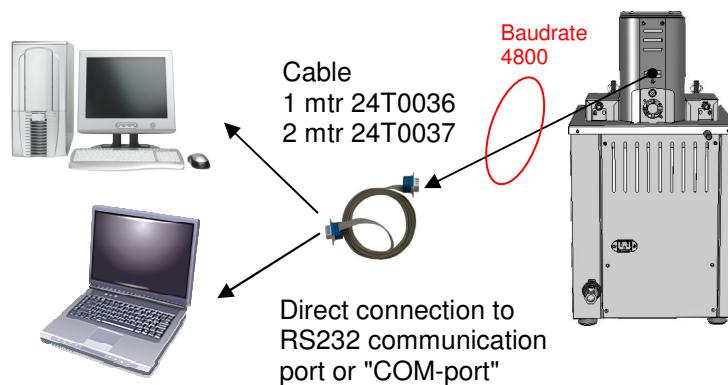
When the display flashes the unit is in "boot-loader" mode and only then the firmware can be programmed into the microcontroller.

As soon as the code is sent over and verified, the Tamson product will restart using the new software. The software will take about a minute to be sent over.

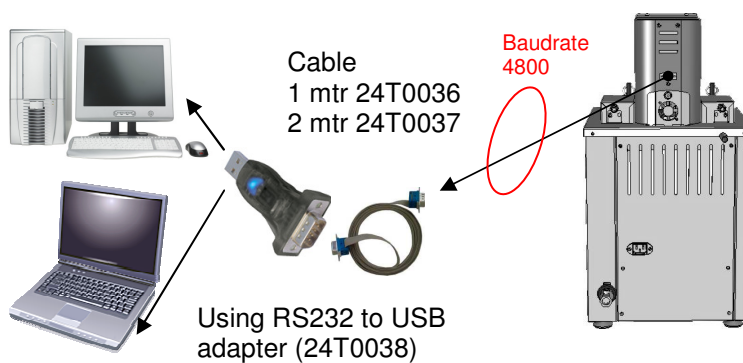
All settings like PID, SP etc will not be affected by the new firmware.

## The hardware connection

Using a com port:



Using a RS232 to USB adapter:

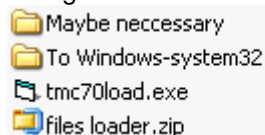


## Installing the software

The firmware is loaded into the Tamson product using the firmware loader. This is a software program which needs to be installed.

Unzip the files from "files loader.zip"

You get two directories:



Copy the files in to the Windows system32 map this is "c:\windows\system32"

Comdlg32.ocx  
MSCOMM32.OCX  
tabctl32.ocx  
VB6STKIT.DLL

The files in the map "Maybe necessary", probably already are in your "c:\windows\system32". They are only supplied in case they're missing in this map. Only copy them if they're missing in "c:\windows\system32".

It concerns following, marked in green, files:

ASYCFILT.DLL  
COMCAT.DLL  
MSCOMCT2.OCX  
mscomctl.ocx  
MSVBVM60.DLL  
OLEAUT32.DLL  
OLEPRO32.DLL

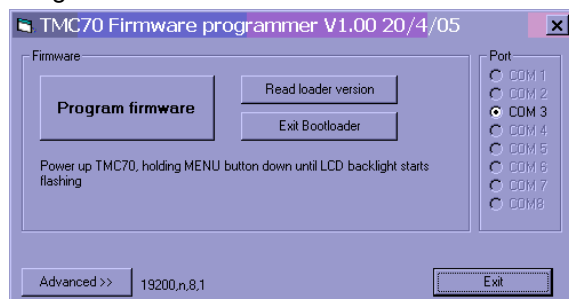
## Loading the new firmware

Start program

tmc70load.exe

When the message appears "error file COMDLG32.OCX" just confirm. Second time the program will start without error.

Program starts



Select the COM port, in this case port 3 is available. When the laptop has only USB, a so called USB to RS232 converter can be used. Select the com port (or converter port), in this case it is COM3.

Now switch the Tamson product on while keeping the encoder switch or left - button pressed until display starts blinking.

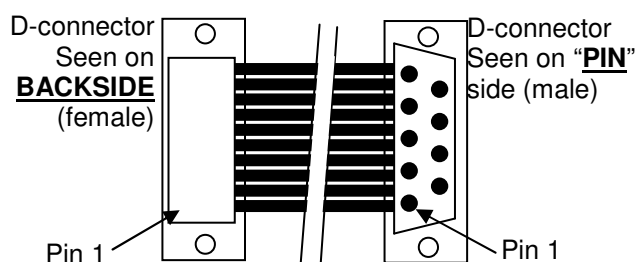
In the "TMC70 Firmware Programmer" select the button "Program firmware" and select the appropriate hex file named "TMC70.Hex".

The new firmware now is send to the microcontroller.

When the firmware is written succesfully the bath restarts itself, ready for use.

## Cabling

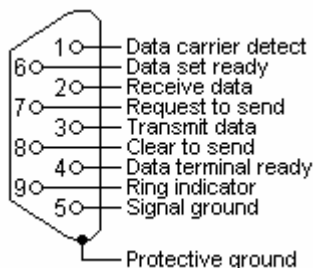
Use RS232 flatcable as indicated below to program. This is a flatcable with D-Connectors and a 1 to 1 wired cable.



It also is possible to only use three wires. Only transmit, receive and ground are used:

Connect pin 2 to pin2 (male - female sub-D connectors, receive)  
 Connect pin 3 to pin 3 (male - female sub-D connectors, transmit)  
 Connect pin 5 to pin 5 (male - female sub-D connectors, ground)

General connections for the 9 pole:



## Optional: Installing 24T0038, RS232 to USB converter

Unpack the adapter and plug the converter into an USB slot. In some cases the software is installed for this specific USB slot. The RS232 to USB converter will not work on another USB slot. When inserted to that slot it will again ask for installation. If installed both slots will work.

Windows will detect new hardware.  
Select to install this once.

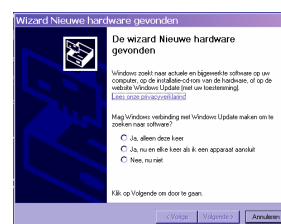
Select to install the driver yourself.

Installation is in progress

Confirm that the software isn't digitally signed

Confirm installation

Sometimes it is necessary to perform the installation twice, as there might be one or more USB hub controllers. If windows asks to install for a second time this 2nd installation must be performed. It will not harm your system.



Necessary driver files for the USB to RS232 converter

COMPORT.PDF	6 KB	10-4-2003 15:00
FTCOMMS.VXD	24 KB	20-10-2003 11:36
FTDIBUS.CAT	9 KB	10-4-2003 15:00
FTDIBUS.INF	4 KB	11-11-2003 10:37
ftdibus.sys	24 KB	11-11-2003 14:09
FTDIPORT.CAT	8 KB	10-4-2003 15:00
FTDIPORT.INF	5 KB	11-11-2003 10:37
FTDIUN2K.INI	1 KB	10-4-2003 15:00
FTDIUNIN.EXE	405 KB	10-4-2003 15:00
FTDIUNIN.INI	1 KB	10-4-2003 15:00
FTSENUM.SYS	25 KB	20-10-2003 11:36
FTSENUM.VXD	8 KB	20-10-2003 11:36
ftser2k.sys	57 KB	11-11-2003 14:09
FTSERIAL.SYS	69 KB	20-10-2003 11:36
FTSERMOU.INF	2 KB	30-10-2003 17:12
FTSERMOU.VXD	10 KB	10-4-2003 15:00
ftserui2.dll	48 KB	11-6-2003 12:48
FTSERUI.DLL	23 KB	20-5-2003 14:04
USB 2.0 TO RS232 Cable for Windows u...	183 KB	2-3-2004 14:57

## Uninstall RS232 to USB converter

Use Start, configuration screen, software.

A list will be displayed.

Select the driver, FTDIUSB Serial Converter Drivers and perform an uninstall.

