arrowmatcher 3.0

COLLABORATORS

	TITLE : arrowmatcher 3.0	

ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY	Herbert Roider	February 19, 2011	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

Install

1.1 Requirements

The current Version need the qt Toolkit from http://qt.nokia.com/ ,the requiered Version is 4.3 or higher.

optional:

> Gnuplot (http://www.gnuplot.info/), if Gnuplot is not in PATH, you can set the path to Gnuplot: "Edit" -> "Preferences"

1.2 Windows: Executable

Download the zip-Archivefrom the Windows folder.

Extract it in a folder.

Doubleclick the Executable file (.exe) in Filemanager or somewhat.

1.3 Windows: build from Source

if you have troubles to install the Qt toolkit, please read: "installation of Qt for Windows".

Download the newest arrowmatcher Package: http://sourceforge.net/projects/arrowmatcher/files/. Unpack it in a Directory.

Please read "Windows".

1.4 Linux: precompiled binary

I have build some precompiled Packages, which are easy to install:

Linux Packages

To run arrowmacher from a terminal:

```
arrowmatcher2
```

1.5 Linux: build from Source

"unpack":

```
tar -xzf arrowmatcher2-<version>.tar.gz
```

change in the new directory:

```
cd arrowmatcher2-<version>
```

set the path (if necessary):

```
export QTDIR=/usr/local/Trolltech/Qt-4.x
export PATH=$QTDIR/bin:$PATH
```

build arrowmatcher:

```
qmake -makefile arrowmatcher2.pro
make
```

Start:

```
./src/release/arrowmatcher2
```

1.6 Mac OS

XCode is requiered. It is not installed by default, so you can install it from the install DVD, or download from web.

start the Terminal:

```
cd Downloads/arrowmatcher2
```

compile the ballistic library:

```
qmake -spec macx-g++ arrowmatcher2.pro
make
```

change to the directory where the new executable lives:

```
cd src/debug
```

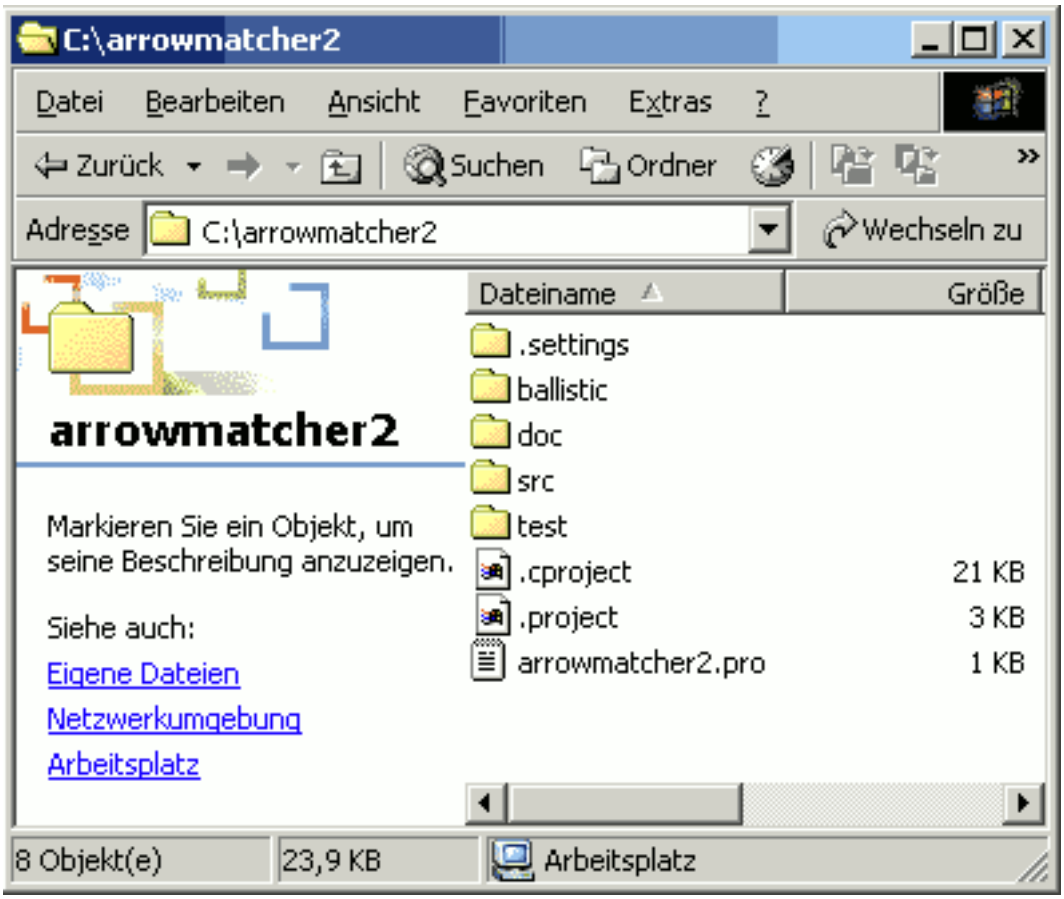
Start:

```
arrowmatcher2.app/Contents/MacOS/arrowmatcher2
```

1.7 Windows

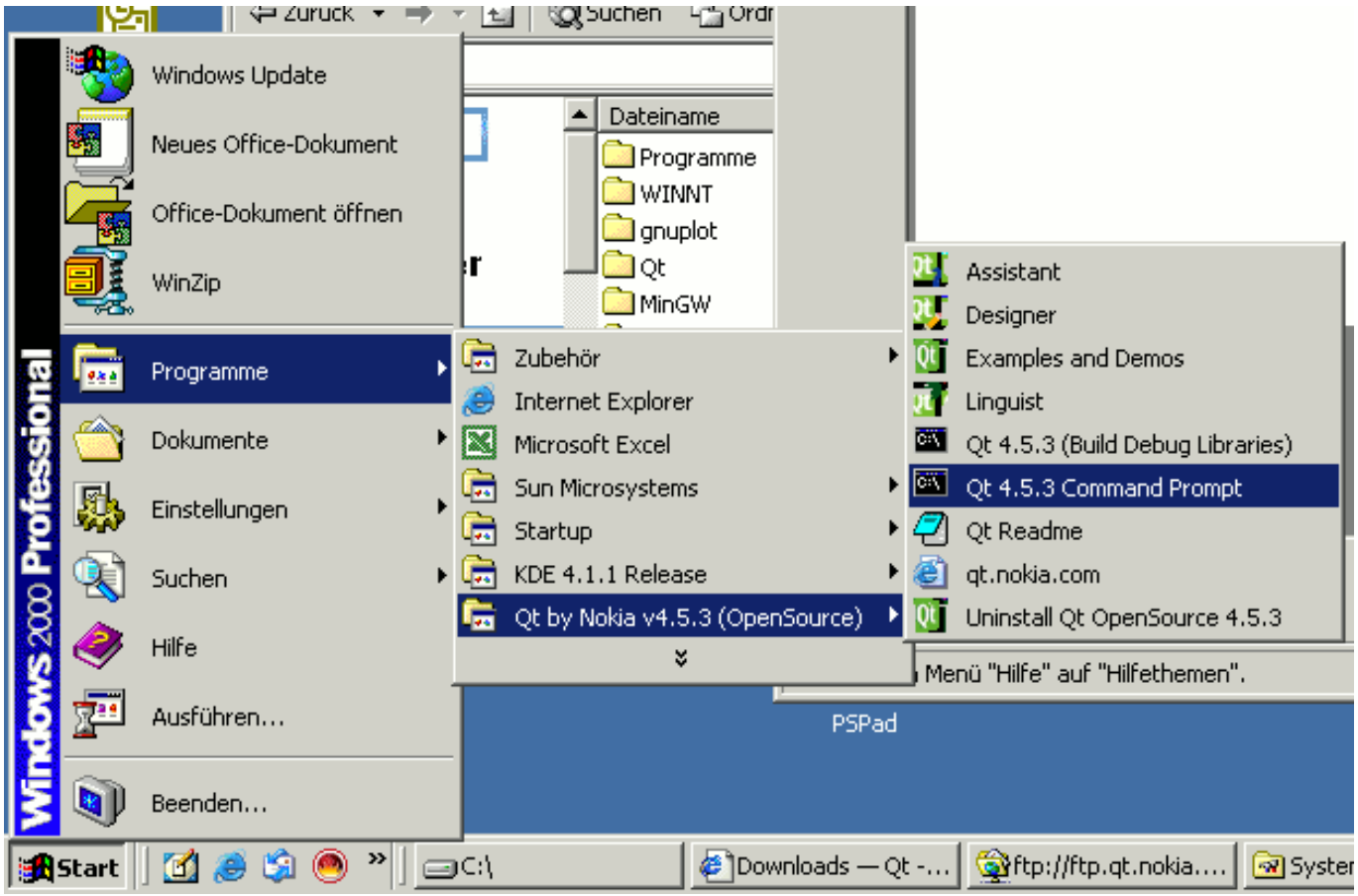
1.7.1 Foldertree

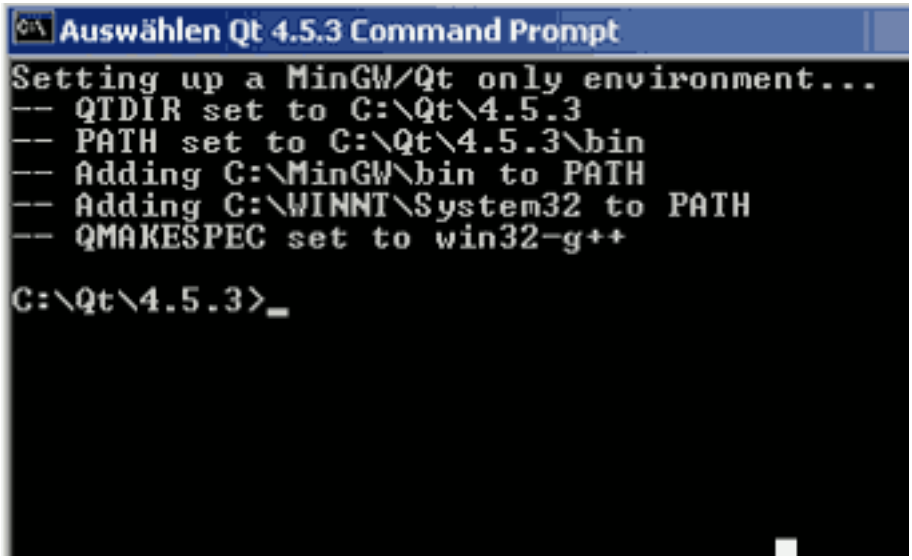
After extract the archive, you should have a folder structure as shown in the picture.



1.7.2 Qt Command Prompt

Start the Qt Command Prompt: Start -> Programme -> Qt by Trolltech v4.x (Open Source) -> Qt 4.x Command Prompt

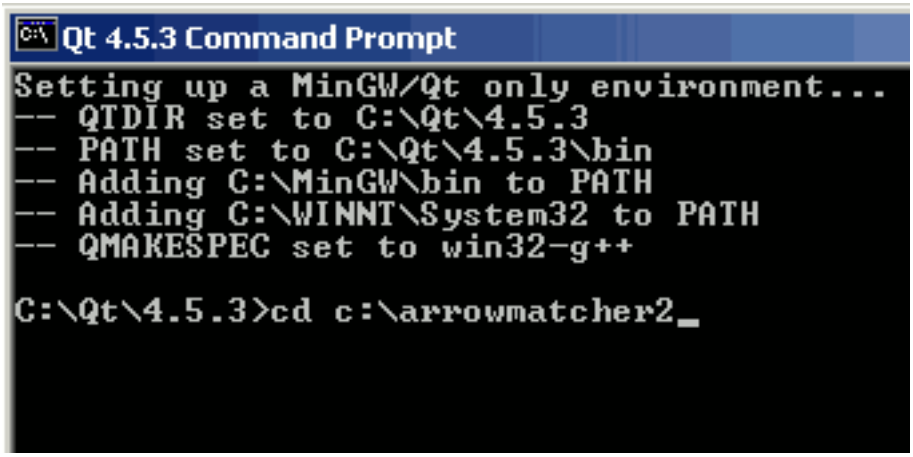


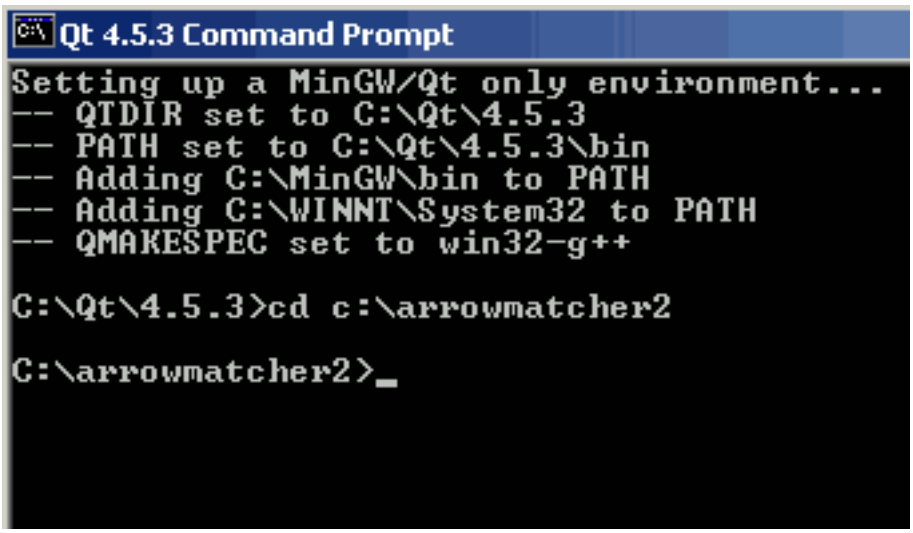


1.7.3 jump the the root folder of arrowmatcher

Type the following command to the command prompt to change to the root directory of the extracted archive:

```
cd c:\arrowmatcher2
```

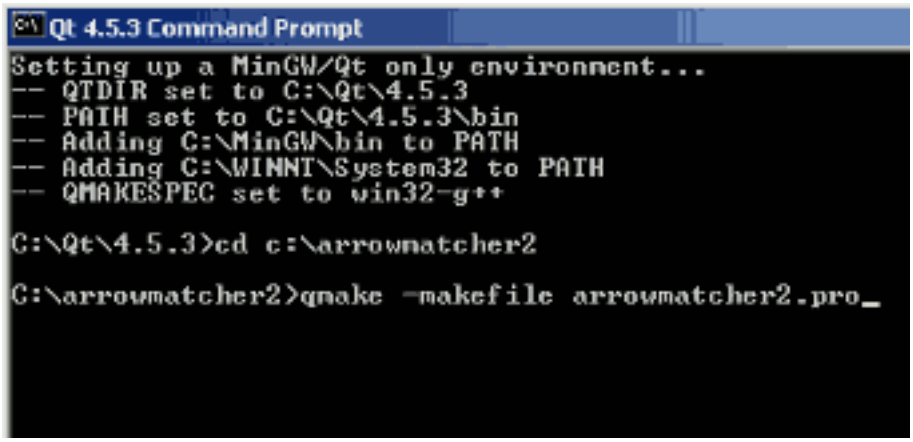


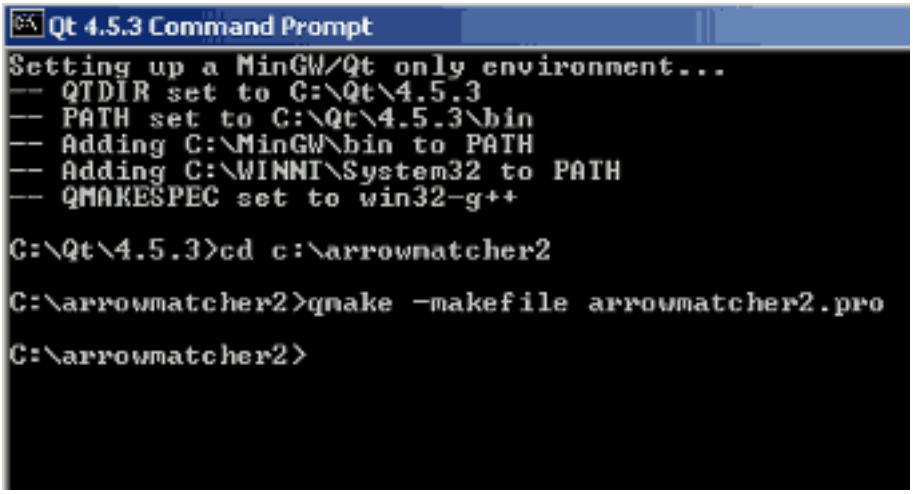


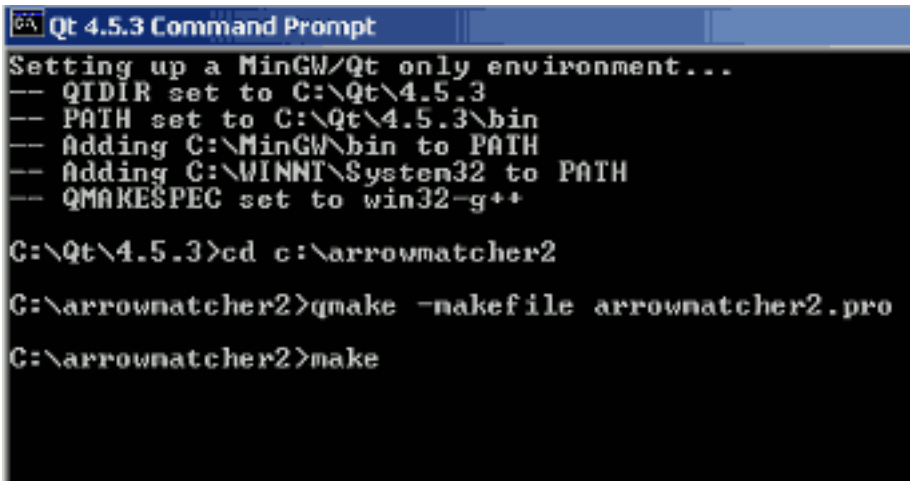
1.7.4 build arrowmatcher

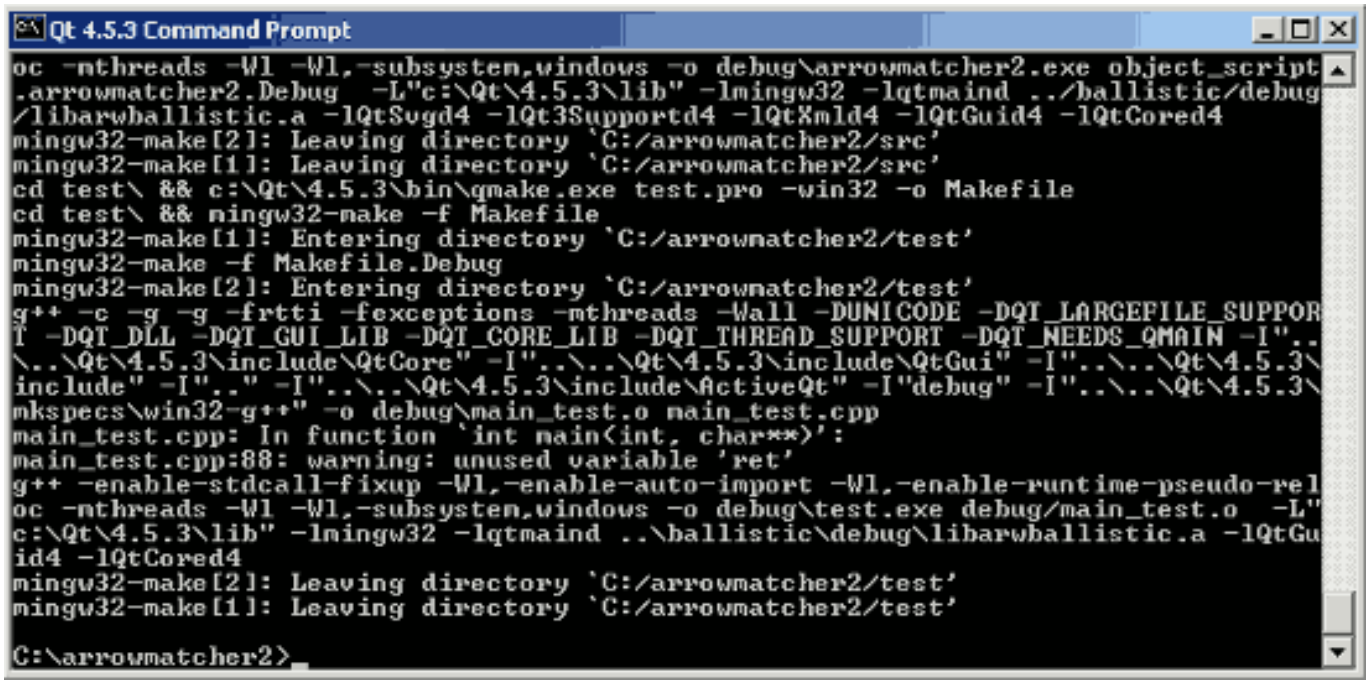
to build the application type the following 2 commands to the command prompt:

```
qmake -makefile arrowmatcher2.pro
make
```




Qt 4.5.3 Command Prompt
Setting up a MinGW/Qt only environment...
-- QTDIR set to C:\Qt\4.5.3
-- PATH set to C:\Qt\4.5.3\bin
-- Adding C:\MinGW\bin to PATH
-- Adding C:\WINNT\System32 to PATH
-- QMAKESPEC set to win32-g++
C:\Qt\4.5.3>cd c:\arrowmatcher2
C:\arrowmatcher2>qmake -makefile arrowmatcher2.pro
C:\arrowmatcher2>

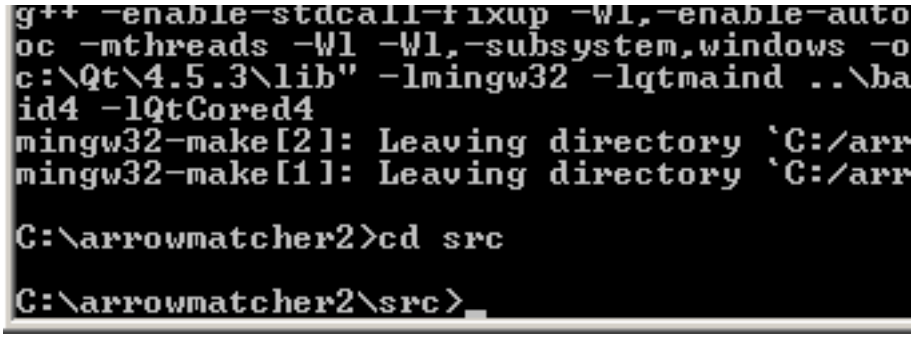

Qt 4.5.3 Command Prompt
Setting up a MinGW/Qt only environment...
-- QTDIR set to C:\Qt\4.5.3
-- PATH set to C:\Qt\4.5.3\bin
-- Adding C:\MinGW\bin to PATH
-- Adding C:\WINNT\System32 to PATH
-- QMAKESPEC set to win32-g++
C:\Qt\4.5.3>cd c:\arrowmatcher2
C:\arrowmatcher2>qmake -makefile arrowmatcher2.pro
C:\arrowmatcher2>make

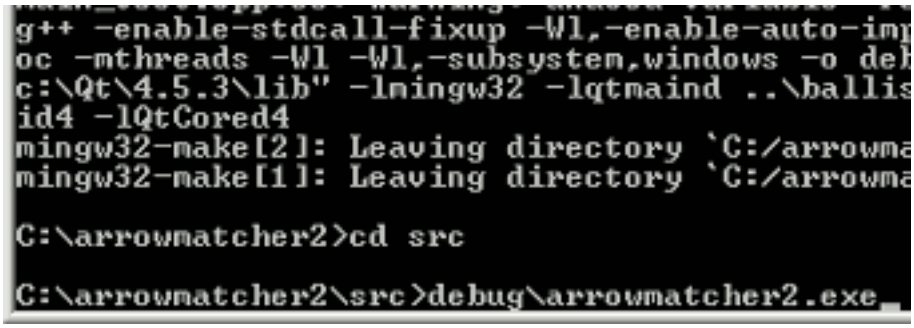

Qt 4.5.3 Command Prompt
oc -nthreads -Wl -Wl,-subsystem,windows -o debug\arrowmatcher2.exe object_script
.arrowmatcher2.Debug -L"c:\Qt\4.5.3\lib" -lmingw32 -lqtmaind ../ballistic/debug
/libarwballistic.a -lQtSvgd4 -lQt3Supportd4 -lQtXmld4 -lQtGuid4 -lQtCored4
mingw32-make[2]: Leaving directory `C:/arrowmatcher2/src'
mingw32-make[1]: Leaving directory `C:/arrowmatcher2/src'
cd test\ && c:\Qt\4.5.3\bin\qmake.exe test.pro -win32 -o Makefile
cd test\ && mingw32-make -f Makefile
mingw32-make[1]: Entering directory `C:/arrowmatcher2/test'
mingw32-make -f Makefile.Debug
mingw32-make[2]: Entering directory `C:/arrowmatcher2/test'
g++ -c -g -g -frtti -fexceptions -mthreads -Wall -DUNICODE -DQT_LARGEFILE_SUPPOR
T -DQT_DLL -DQT_GUI_LIB -DQT_CORE_LIB -DQT_THREAD_SUPPORT -DQT_NEEDS_QMAIN -I"..
\..\Qt\4.5.3\include\QtCore" -I"..\..\Qt\4.5.3\include\QtGui" -I"..\..\Qt\4.5.3\
include" -I".." -I"..\..\Qt\4.5.3\include\ActiveQt" -I"debug" -I"..\..\Qt\4.5.3\
mkspecs\win32-g++" -o debug\main_test.o main_test.cpp
main_test.cpp: In function `int main(int, char**)':
main_test.cpp:88: warning: unused variable 'ret'
g++ -enable-stdcall-fixup -Wl,-enable-auto-import -Wl,-enable-runtime-pseudo-rel
oc -nthreads -Wl -Wl,-subsystem,windows -o debug\test.exe debug/main_test.o -L"
c:\Qt\4.5.3\lib" -lmingw32 -lqtmaind ..\ballistic\debug\libarwballistic.a -lQtGu
id4 -lQtCored4
mingw32-make[2]: Leaving directory `C:/arrowmatcher2/test'
mingw32-make[1]: Leaving directory `C:/arrowmatcher2/test'
C:\arrowmatcher2>

1.7.5 run arrowmatcher

Start the appliction. It is necessary to start the aplication from this folder "src", because to find the translation file for the german language:

```
cd src
debug\arrowmatcher2.exe
```





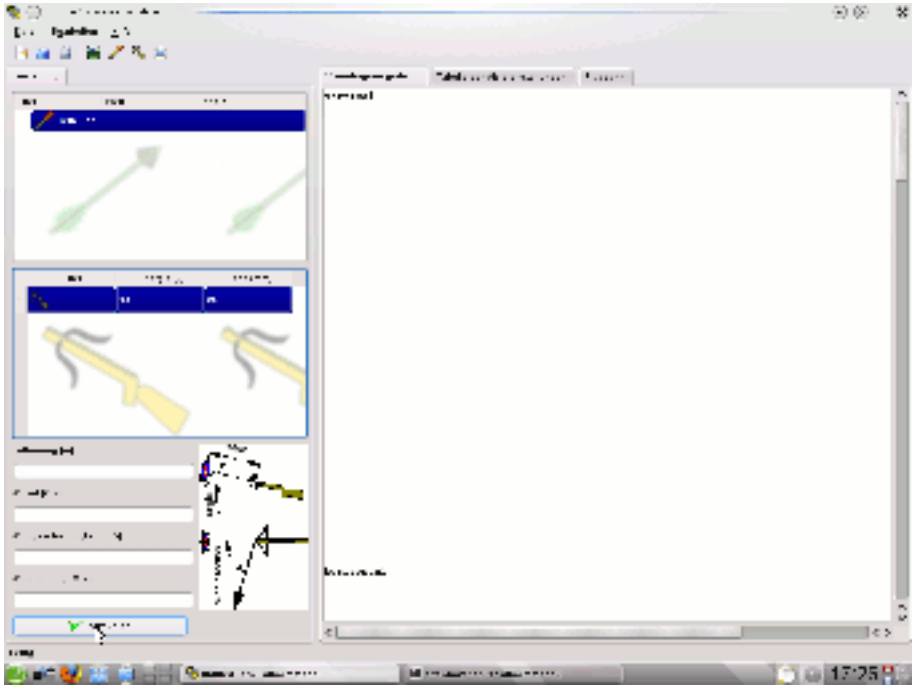
Chapter 2

getting started

2.1 The main window

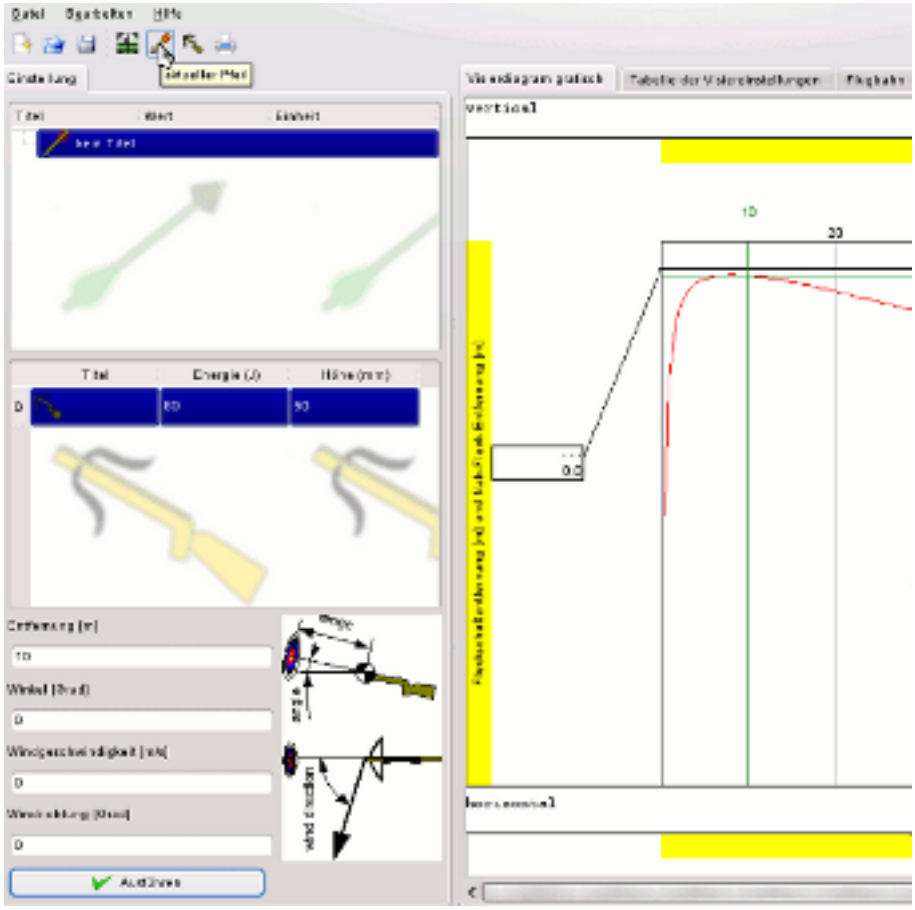
After start of this application the window appears like in the picture.

Select an arrow and a crossbow in the lists and click on "execute".



2.2 edit an arrow

Click on the arrow in the toolbar to open the dialog.



2.3 arrow dialog

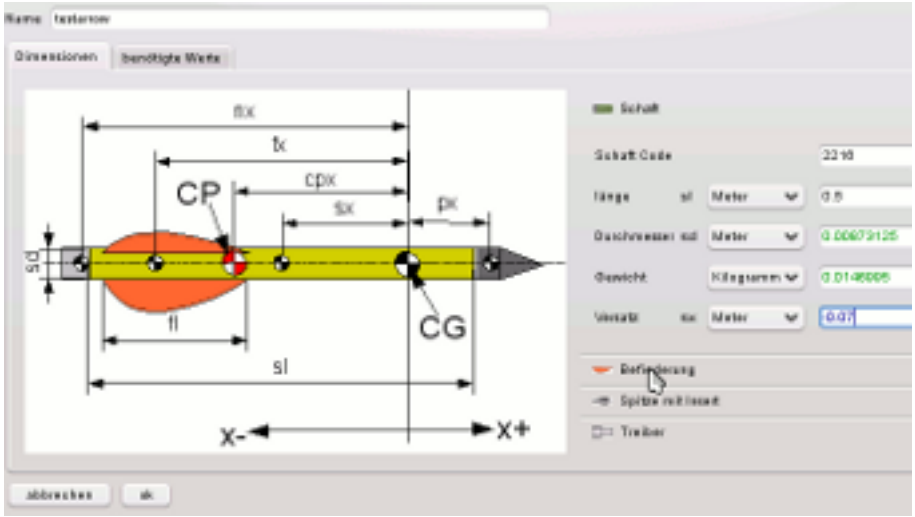
The arrow dialog contains 2 tabs:

"required values" and "dimensions"

The "dimensions" tab helps you to calculate the required values. So you don’t need to input the required values.

Blue values are the default values. Green values are calculated and black values are user input. Black values are untouched by the application, but green and blue values are recalculated when it is possible.

The "shaft code" is the number with 4 digits on the shaft. If you know this number you should input it, because to calculate the diameter and the thickness.




Schaft
Befiederung
länge
fl
Zentimeter
7
Fläche von einer Feder:
Quadratmeter
0.00124002
Gewicht von einer Feder
Kilogramm
0.00382938
Versatz
fx
Meter
-0.265
Spitze mit Insert
Treiber


Schaft
Befiederung
Spitze mit Insert
Treiber
Gewicht
Gramm
1
Versatz
nx
Meter
-0.32

2.4 Edit the crossbow

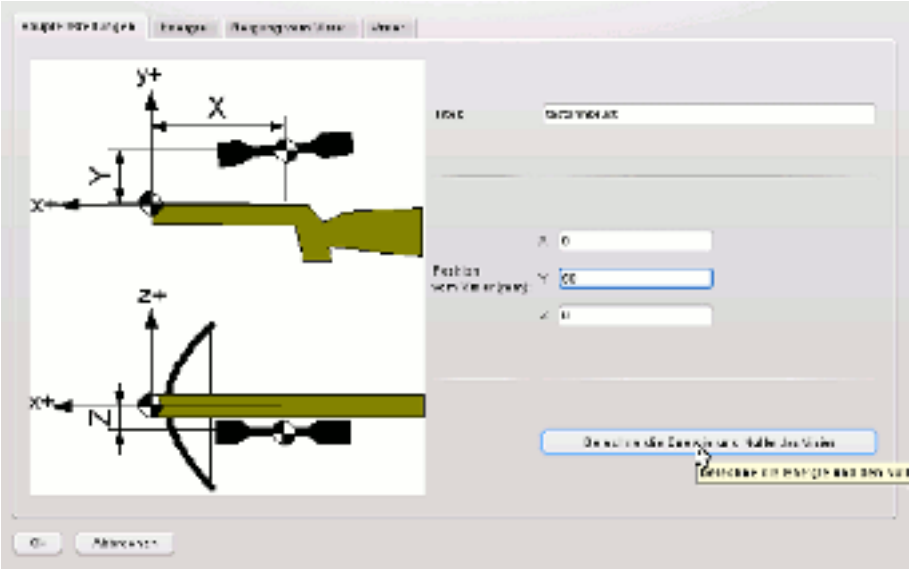
Click on the crossbow tool button in the toolbar.

Important is the position of the sight. The picture describe the 3 values x,y and z. For first steps only the first tab is necessary, the other tabs are described later.

The crossbow origin is normally the end of the track, where the arrow leaves the crossbow.

The origin of the sight is the middle point of the sight.

Click the button "Calculate the energy ..." to open a new dialog.



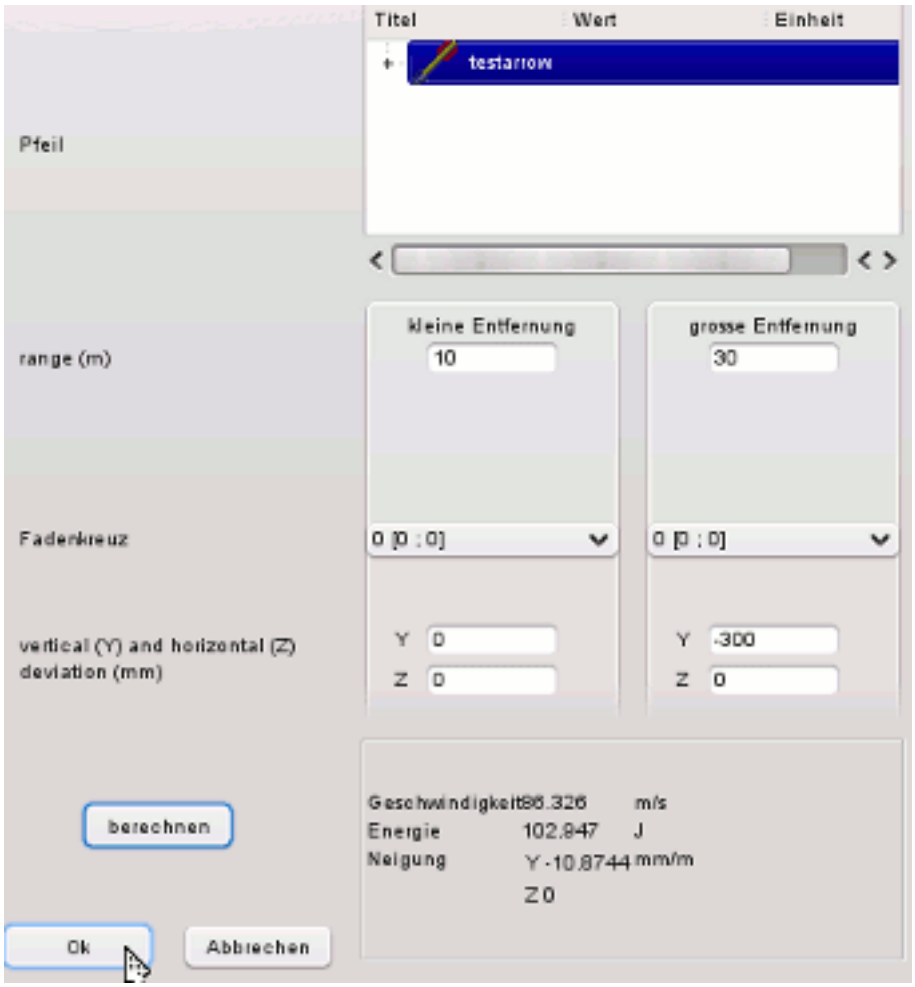
2.5 Setup

This is the main setup dialog for arrowmatcher. It is necessary to shoot at 2 different ranges with the same arrow and without change the setting of the sight. Select an arrow. Input the coordinates y and z of the 2 target points as shown in the image. Click on "calculate". Arrowmatcher try to determine the muzzle velocity of the arrow and the energy. Try these values:

	small range	**wide range**
range [Metre]	10	30
crosshair	do not change	do not change
vertical hit (y) [Millimetre]	0	-300

Table 2.1: Examplevalues for speedcalculation

This means the zerorange is 10 metre. At 30 metre the targetpoint is 300mm below. Now the setup is complete!

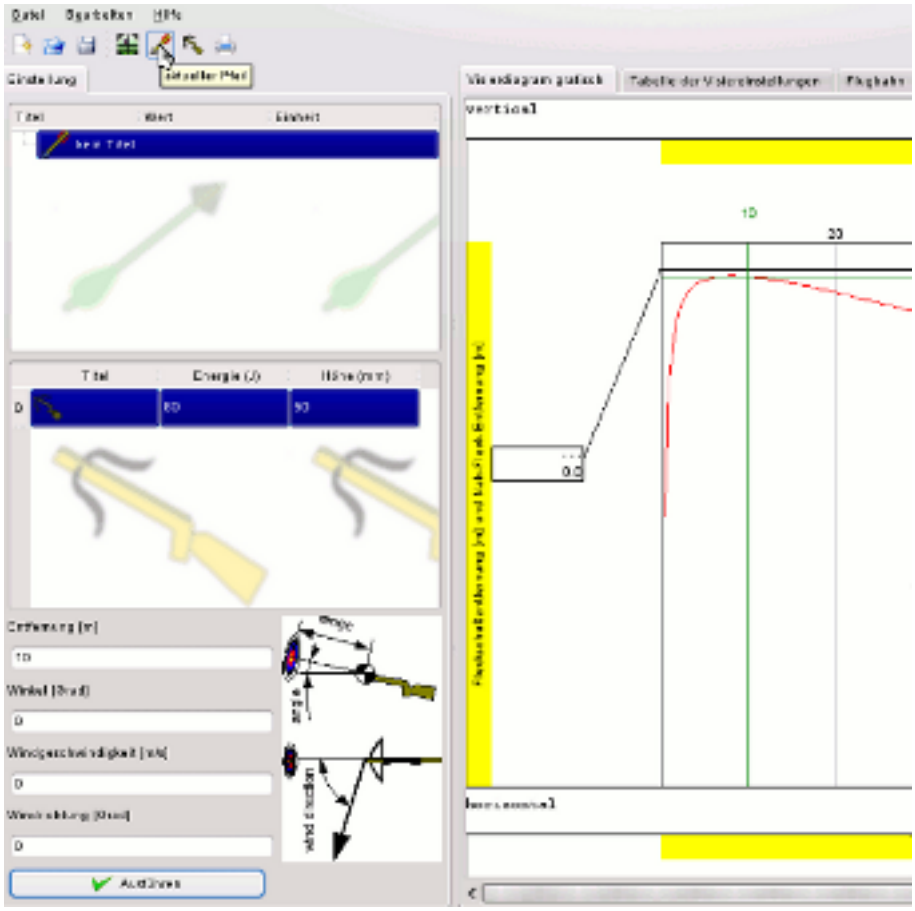


Chapter 3

arrow

3.1 edit an arrow

Click on the arrow in the toolbar to open the dialog.



3.2 Arrow Model

There are 2 models for arrows:

"Simplified Arrow"

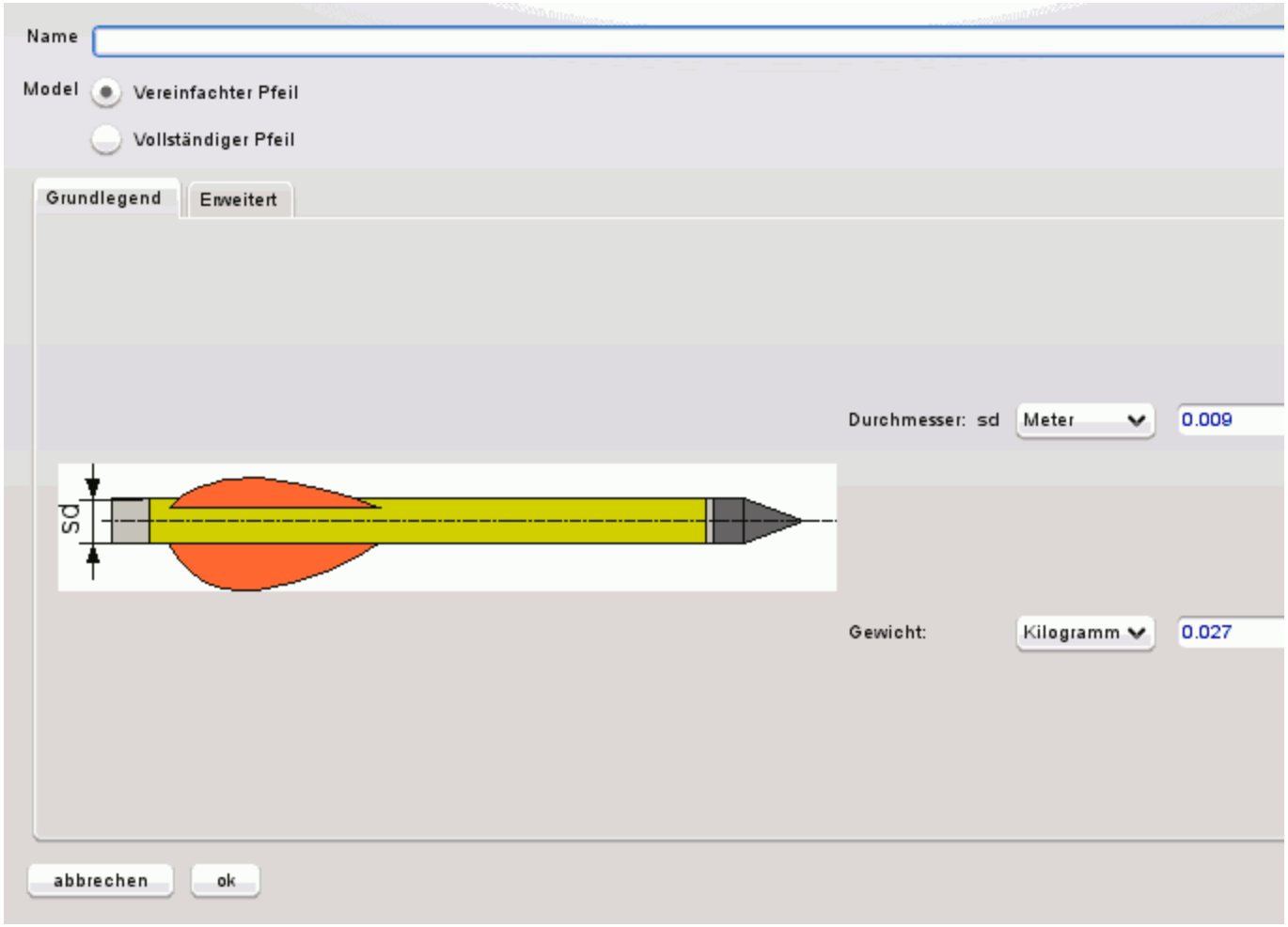
and

"Full Arrow"

The Simplified Arrow is also for bullets.

3.3 Basic settings for the simplified arrow

The simplified arrow model take only 2 values: weight and diameter. You can used the simplified arrow model also for bullets.



3.4 Basic settings for full arrow

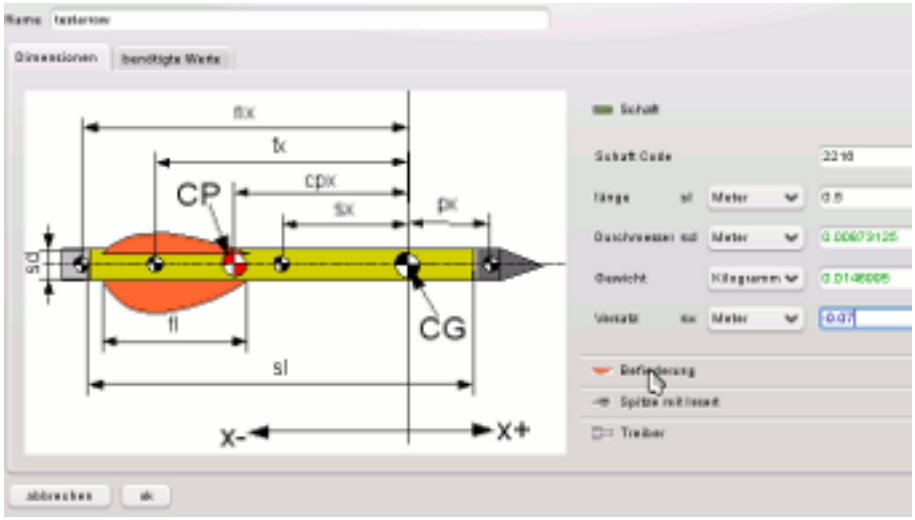
The arrow dialog contains 2 tabs:

"Basic" and "Advanced"

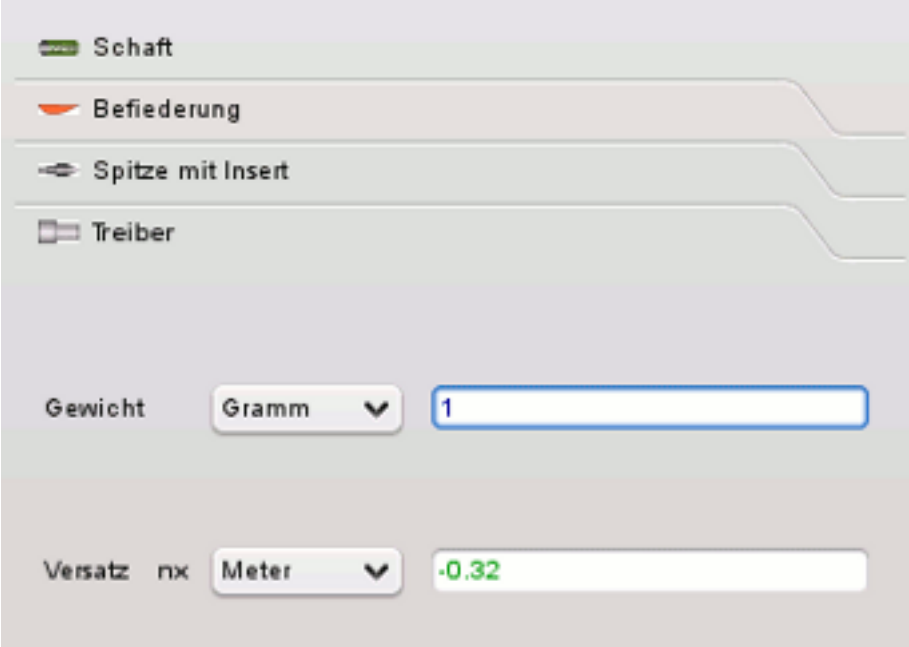
Insert only all values in the "Basic".

Blue values are the default values. Green values are calculated and black values are user input. Black values are untouched by the application, but green and blue values are recalculated when it is possible.

The "shaft code" is the number with 4 digits on the shaft. If you know this number you should input it, because to calculate the diameter and the thickness.


fix
fx
CP
cpx
sx
px
sd
fl
CG
sl
X-
X+
Schaft
Befiederung
Spitze mit Insert
Treiber


Schaft
Befiederung
länge
fl
Zentimeter
7
Fläche von einer Feder:
Quadratmeter
0.00124002
Gewicht von einer Feder
Kilogramm
0.00382938
Versatz
fx
Meter
-0.265
Spitze mit Insert
Treiber



3.5 Advanced settings

The values in the "Advanced Settings" Tab are automatic calculated or default values. This is for advanced Users who want to play around with custom values.

Chapter 4

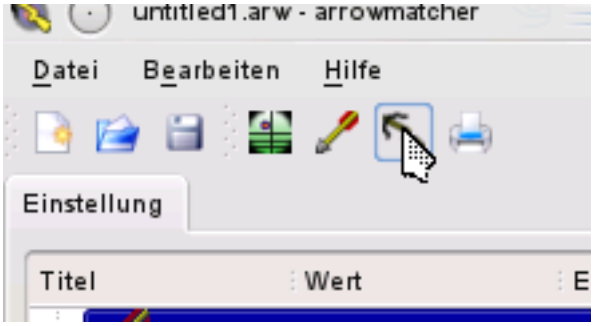
sight

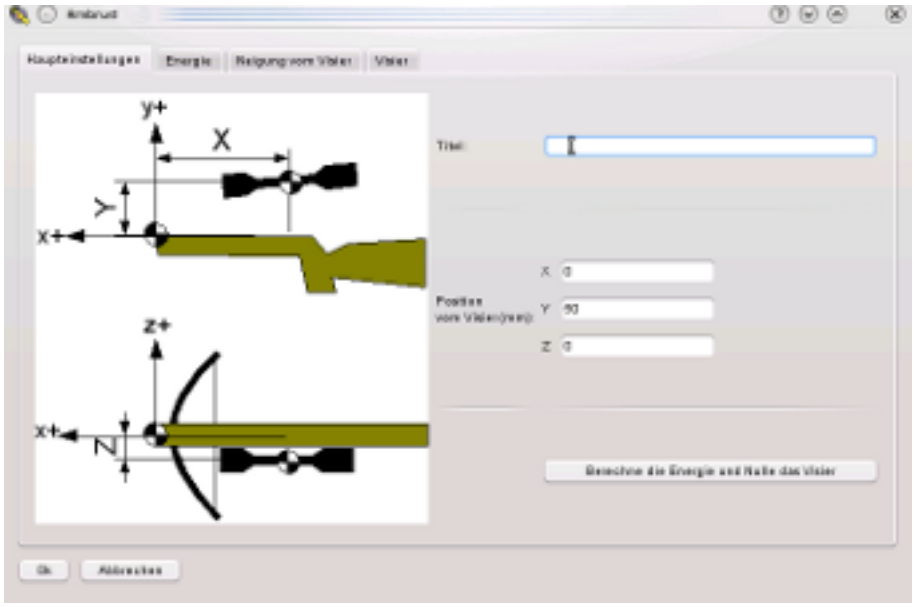
4.1 Position of the sight

To edit the sight click the toolbar button with the crossbow.

The crossbow dialog appears. Insert the position of the sight. In most cases only the height (Y - Value) is important and the values for Z and X can be zero.

Click the tab "sight".





4.2 edit crosshairs

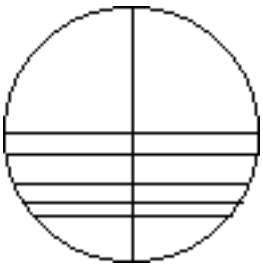
There are 2 options: "crosshair" or "micro adjust".

The default is "crosshair". This is for multible crosshairs. You can add a lot of crosshairs.

Click "new" to add a crosshair.

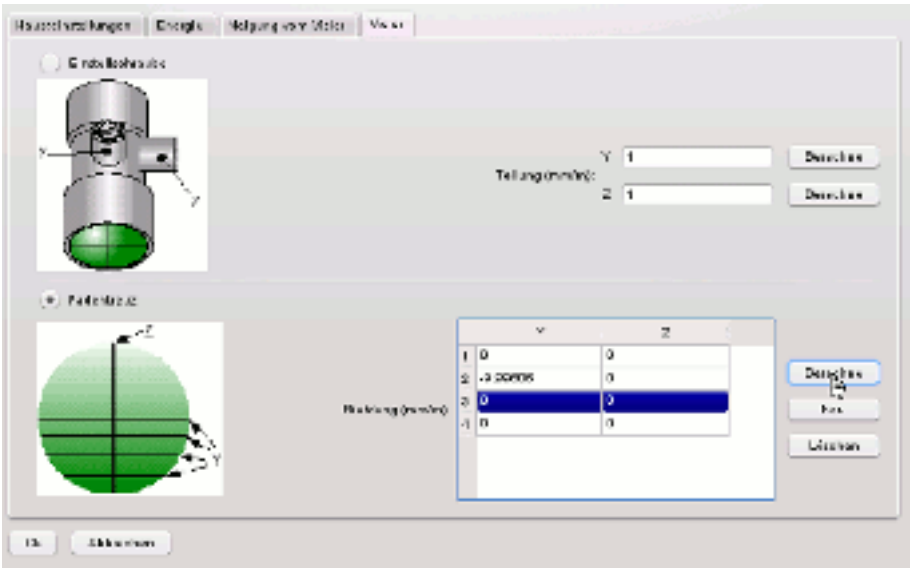
Mark a row by clicking it and click "edit". A setup dialog appears. Don’t edit the first row. Let the values for y and z to 0.

The Reticle of my scope has the following crosshairs:



Y [mm/m]	Z [mm/m]
0	0
-6.179	0
-15.935	0
-22.114	0
-26.667	0

Table 4.1: Examplevalues for a Reticle



4.3 setup crosshair

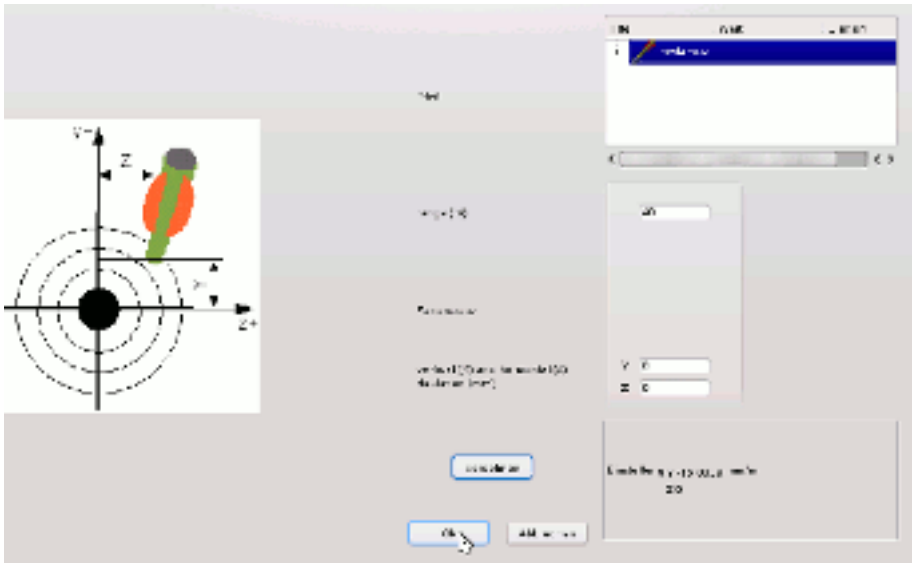
Select an arrow.

Input the range.

Input the targetpoint as shown in the picture.

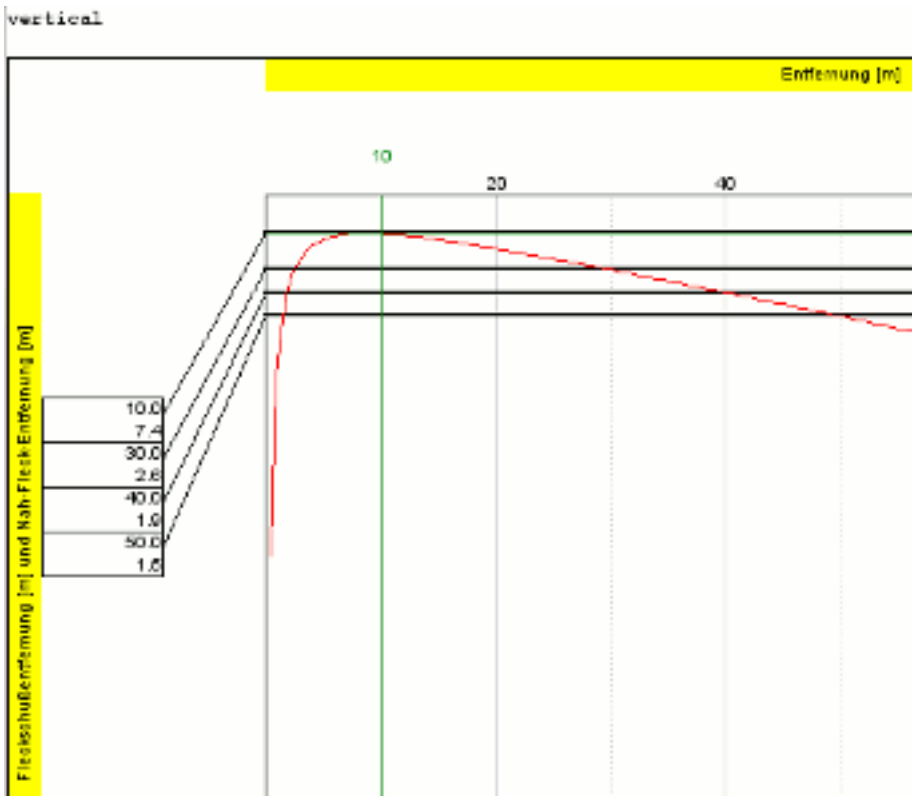
Click on "execute".

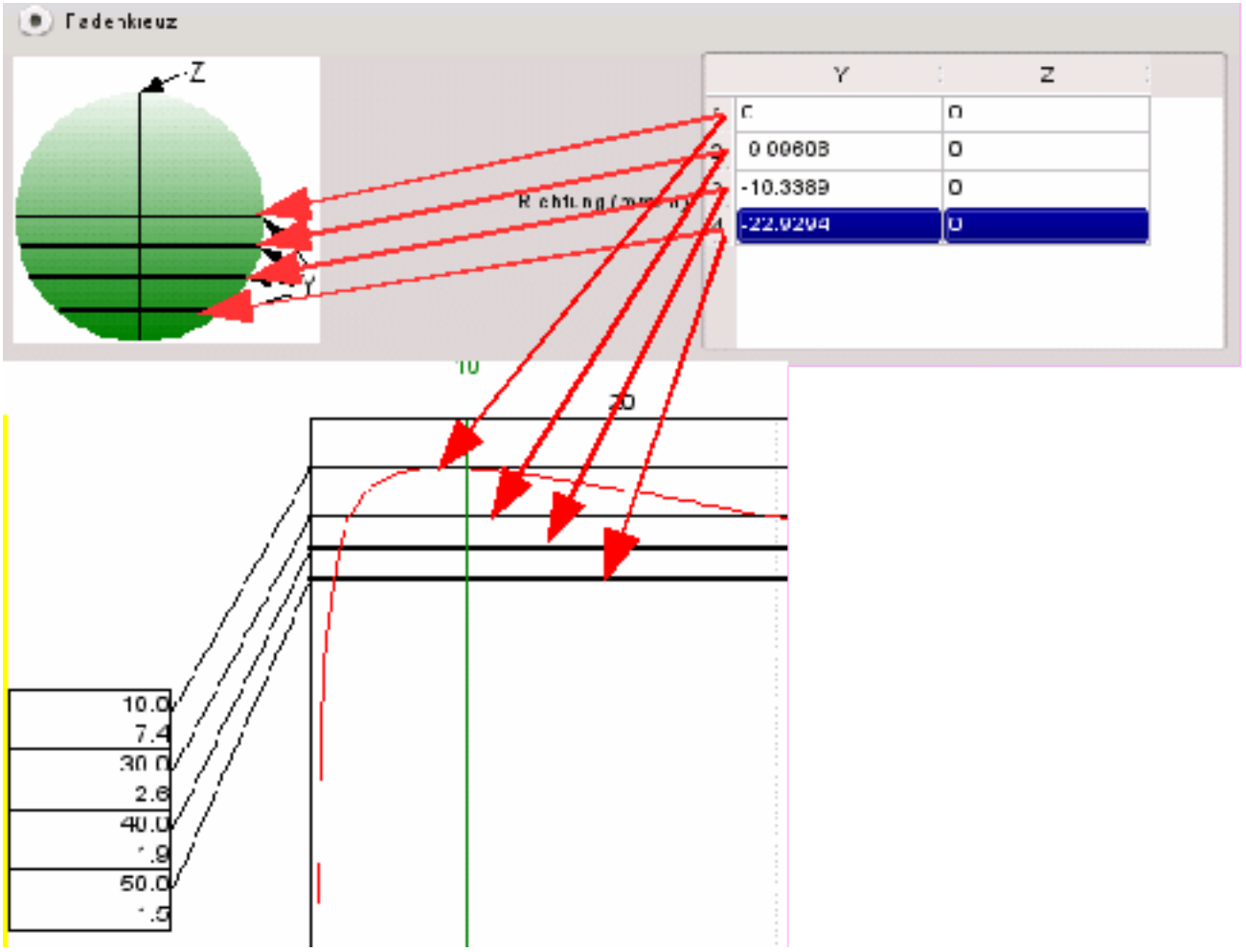
That’s it. Click on "ok" to close the dialog.



4.4 Visier

Now you can see all the new crosshairs.




Federkreuz
Z
Y
Y
Z
0
0 00603
0
-10.3389
0
-22.9294
0
10
20
10.0
7.4
30.0
2.6
40.0
.9
50.0
.5

Chapter 5

installation of Qt for Windows

5.1 introduction

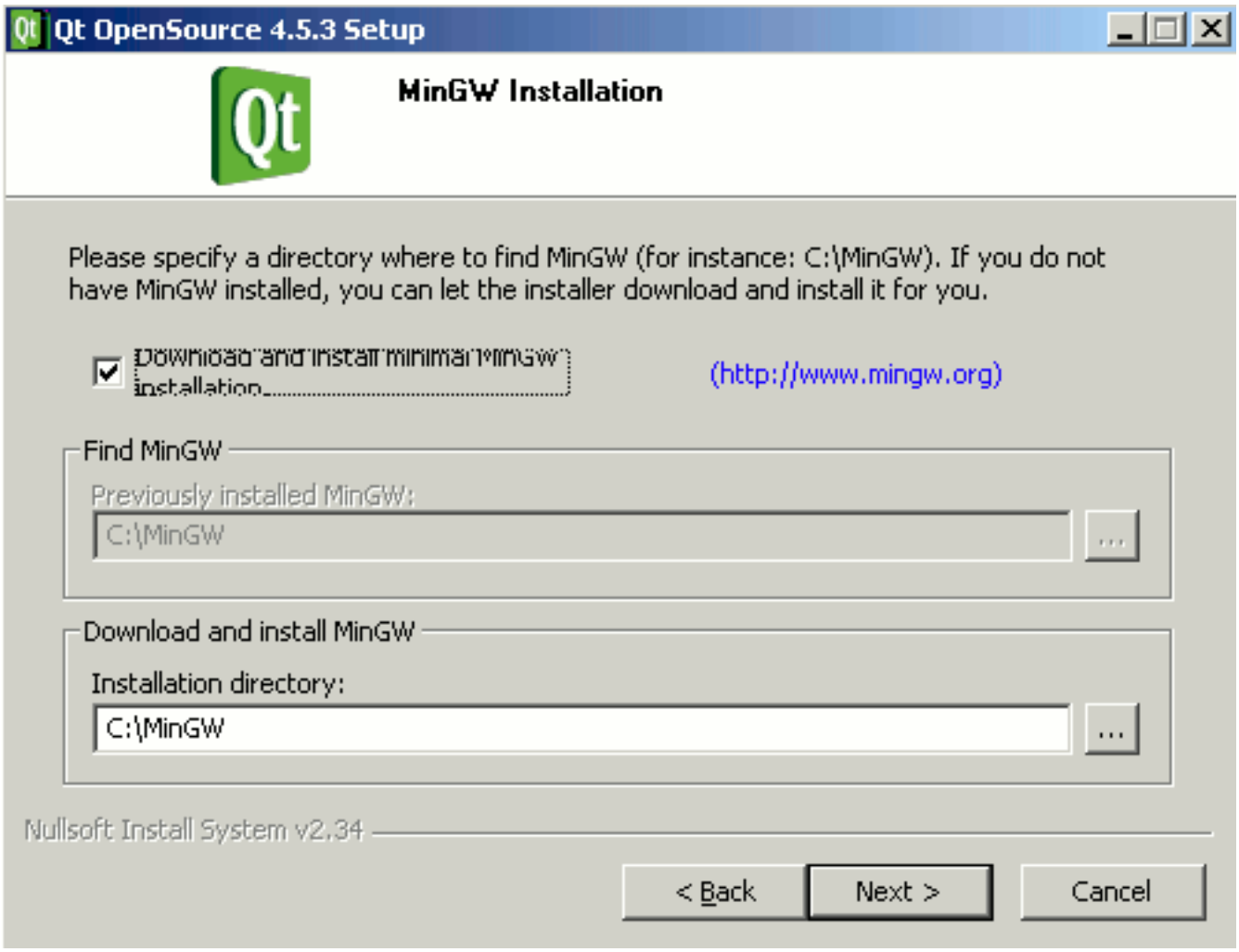
Please read this if you have troubles to install Qt on Windows.

5.2 download

Download an older Version 4.5.3 of Qt from the ftp archiv: ftp://ftp.qt.nokia.com/qt/source/qt-win-opensource-4.5.3-mingw.exe
Doubleclick this file to start the setup program.

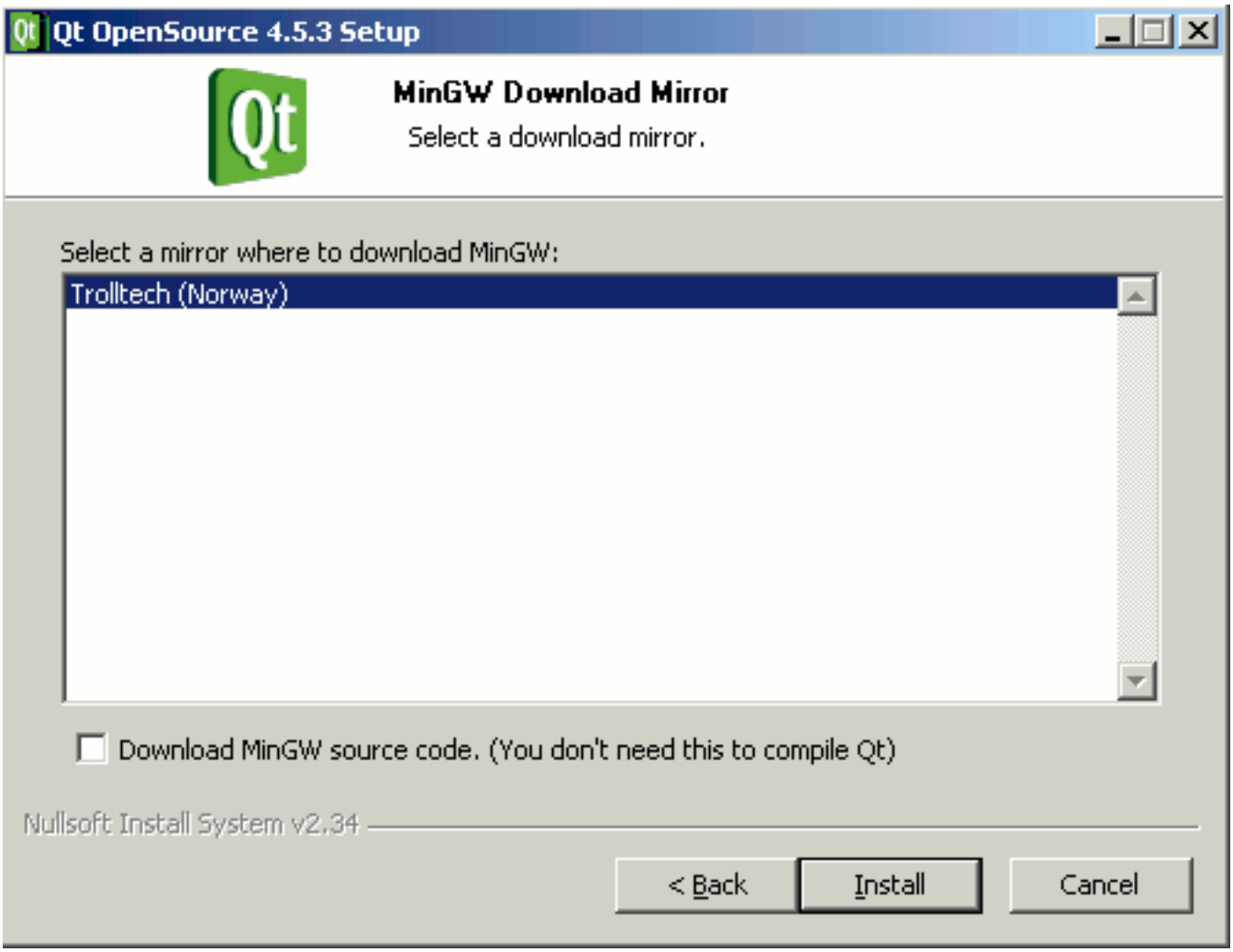
5.3 MinGW

Select MinGW. The souces are not necessary.



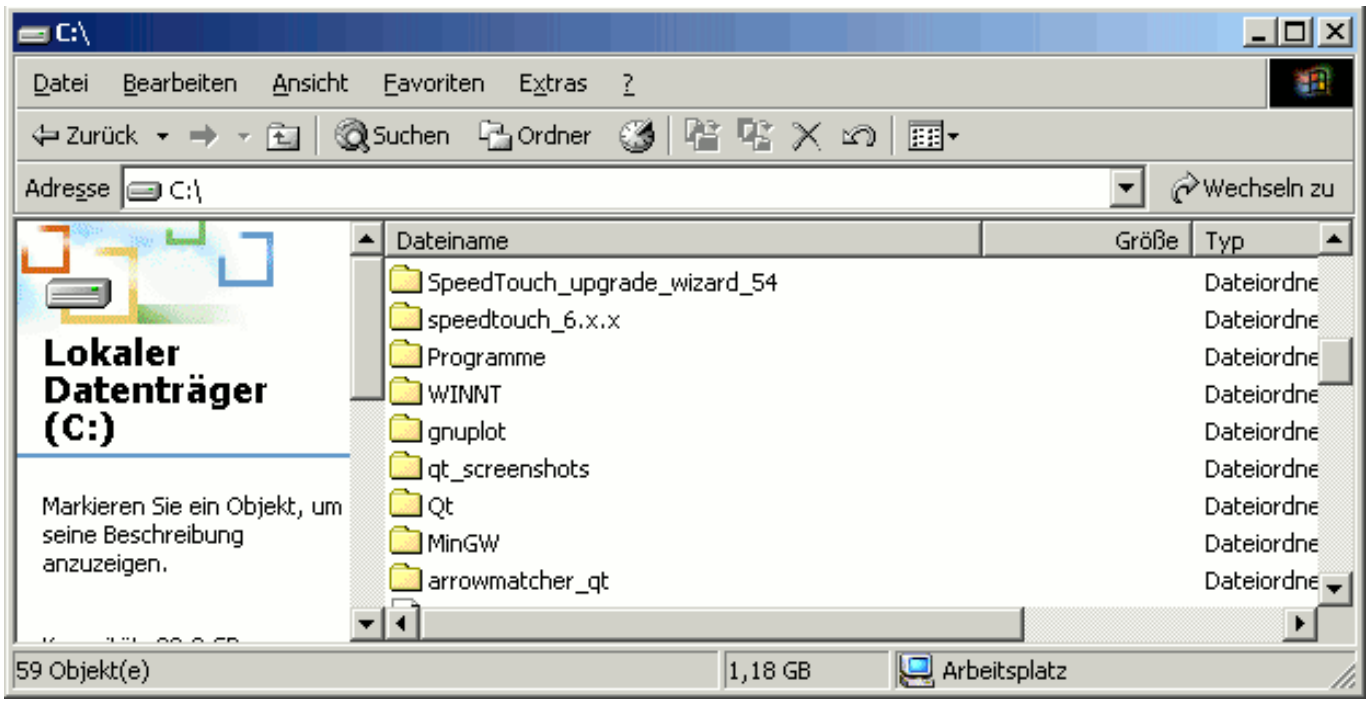
5.4 download MinGW

Select "Trolltech" to download MinGW, there is only one option.



5.5 finished

After a successful installation of Qt your rootfolder contains "MinGW" and "Qt".


C:\
Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Suchen Ordner
Adresse C:\
Wechseln zu
Lokaler Datenträger (C:)
Markieren Sie ein Objekt, um seine Beschreibung anzuzeigen.
Dateiname
Größe
Typ
SpeedTouch_upgrade_wizard_54
speedtouch_6.x.x
Programme
WINNT
gnuplot
qt_screenshots
Qt
MinGW
arrowmatcher_qt
Dateiordne
59 Objekt(e)
1,18 GB
Arbeitsplatz