CMM Templates

Nikon Metrology

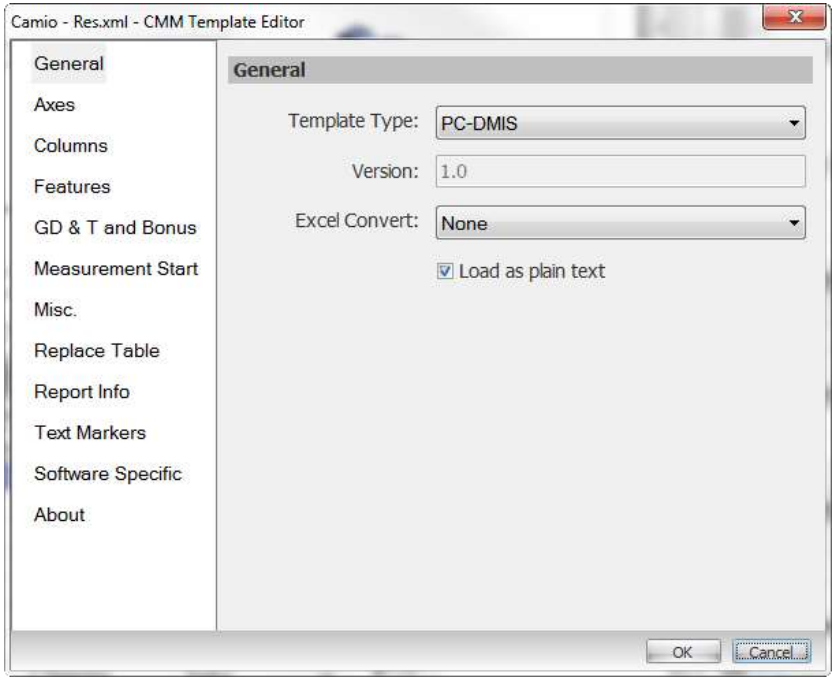
- Customer send more files, one of them looks similar to PC-DMIS type result files!
- Result file is very well structured!

```
1371075191.res - Notepad
File  Edit  Format  View  Help
30-Apr-2015 10:14                 Start Template                    Seite  1
(mm)              Ist      Soll      U_TOL      O_TOL  ABWEICH.   GRAF.      FEHLER
Temperaturkompensation:  AUS

    Isselguss GmbH Qualitätssicherung - Mechanischer Betrieb - Massprotokoll

ERSTSTÜCKFREIGABE          ( )  |  TEIL - BEZEICHNUNG  : LLK-Gehäuse
STICHPROBENKONTROLLE       ( )  |
                                |  ZEICHNUNGS - NR.    : 1371075191
Stempel für Erststückfreigabe   |  TEIL - NR.          : 1
                                |  KOSTENSTELLE        : xxxxxx
                                |  PRUEFER             : Hackfort

(mm)         ISTWERT  SOLLWERT     U_TOL      O_TOLABWEICHUNG   GRAF.      FEHLER
Ebenheit an den 2 Nocken ( DIN - 2768 )
Ebene:PL1
Ebenheit       0.000     0.200                                  *---
1.Aufnahmebohrung M12 - VORNE
Kreis:CR2
X-Achse      378.500   378.500    -0.150     +0.150     0.000 ---*---
Z-Achse      -29.920   -29.920    -0.150     +0.150     0.000 ---*---
Durchm.       10.200    10.200    -0.200     +0.200     0.000 ---*---
1.Aufnahmebohrung M12 - HINTEN
Kreis:CR3
X-Achse     -378.500  -378.500    -0.150     +0.150     0.000 ---*---
Z-Achse      -29.920   -29.920    -0.150     +0.150     0.000 ---*---
Durchm.       10.200    10.200    -0.200     +0.200     0.000 ---*---
4 Spanngewinde M16 - zunaechst Nocken HINTEN
Kreis:CR4
X-Achse     -378.500  -378.500    -0.150     +0.150     0.000 ---*---
Z-Achse       80.000    80.000    -0.150     +0.150     0.000 ---*---
Durchm.       14.000    14.000    -0.200     +0.200     0.000 ---*---
Kreis:CR5
X-Achse     -378.500  -378.500    -0.150     +0.150     0.000 ---*---
Z-Achse     -156.920  -156.920    -0.150     +0.150     0.000 ---*---
Durchm.       14.000    14.000    -0.200     +0.200     0.000 ---*---
Jetzt Nocken VORNE
Kreis:CR6
X-Achse      378.500   378.500    -0.150     +0.150     0.000 ---*---
Z-Achse     -156.920  -156.920    -0.150     +0.150     0.000 ---*---
Durchm.       14.000    14.000    -0.200     +0.200     0.000 ---*---
Kreis:CR7
X-Achse      378.500   378.500    -0.150     +0.150     0.000 ---*---

30-Apr-2015 10:14                 Start Template                    Seite  2
(mm)              Ist      Soll      U_TOL      O_TOL  ABWEICH.   GRAF.      FEHLER
Z-Achse       80.000    80.000    -0.150     +0.150     0.000 ---*---
Durchm.       14.000    14.000    -0.200     +0.200     0.000 ---*---
```

CMM Templates

Nikon Metrology

- We start by modifying the PC-DMIS template
- Don’t forget to check **Load as plain text** since there are some German characters…

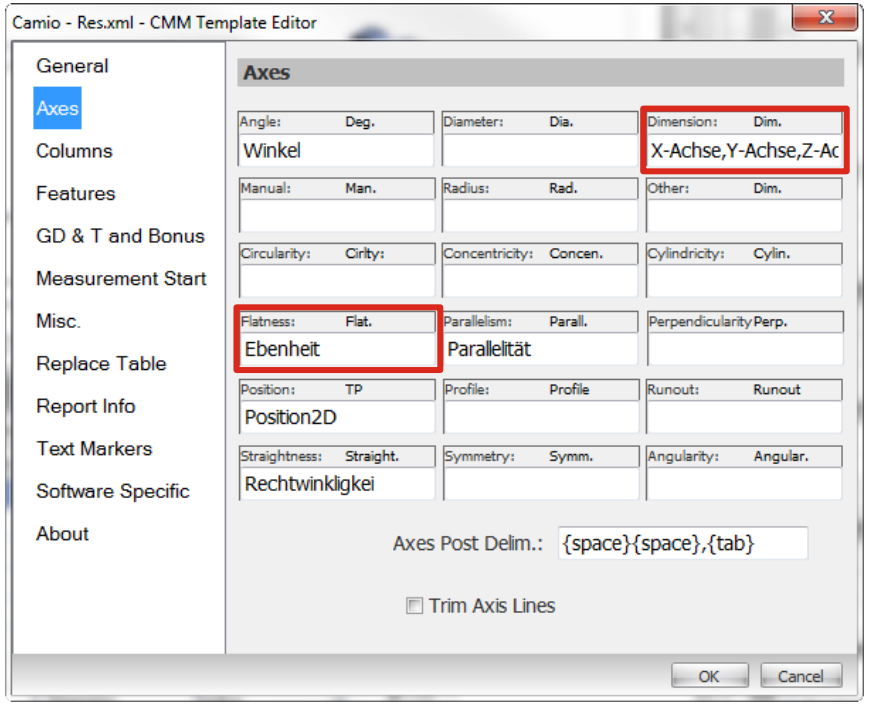


CMM Templates

Nikon Metrology

- Then we modify the Axes to match what we have in the result file…

```
-------------------------------------------------------------------------------
(mm)          ISTWERT   SOLLWERT     U_TOL     O_TOLABWEICHUNG    GRAF.      FEHLER
-------------------------------------------------------------------------------
Ebenheit an den 2 Nocken ( DIN - 2768 )
Ebene:PL1
Ebenheit        0.000      0.200                                  *---
-------------------------------------------------------------------------------
1.Aufnahmebohrung M12 - VORNE
Kreis:CR2
X-Achse       378.500    378.500    -0.150    +0.150      0.000 ---*---
Z-Achse       -29.920    -29.920    -0.150    +0.150      0.000 ---*---
Durchm.        10.200     10.200    -0.200    +0.200      0.000 ---*---
```

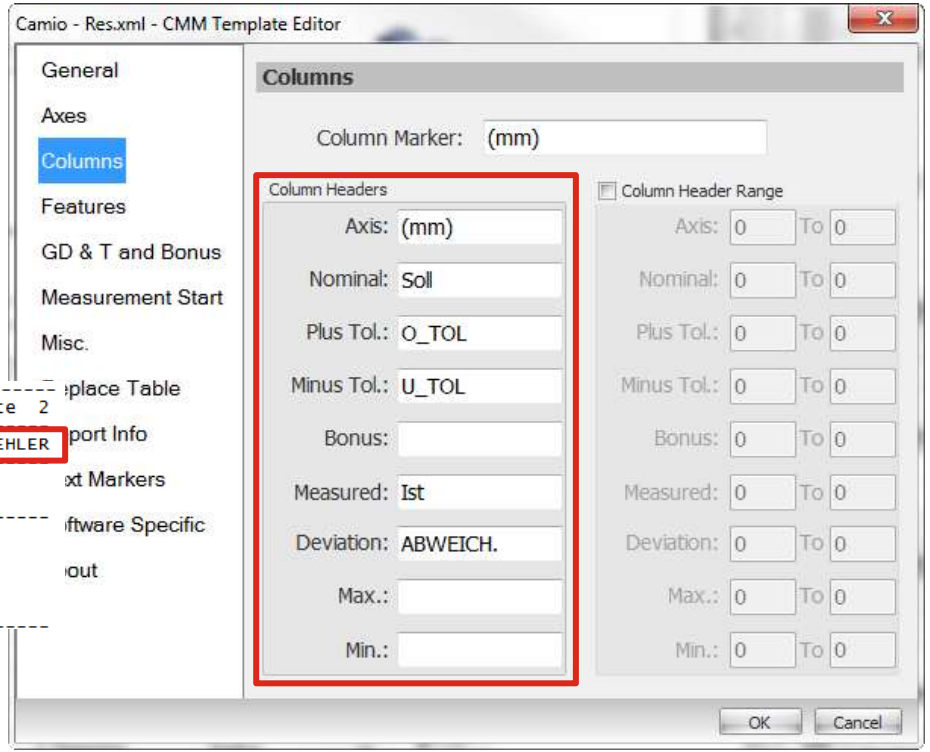


CMM Templates

Nikon Metrology

- We indicate the column headers…

```
$----------------------------------------------------------------------------
30-Apr-2015 10:14                Start Template                        Seite  2

(mm)              Ist       Soll      U_TOL     O_TOL   ABWEICH.    GRAF.      FEHLER

Z-Achse        80.000    80.000    -0.150    +0.150      0.000 ---*---
Durchm.        14.000    14.000    -0.200    +0.200      0.000 ---*---
----------------------------------------------------------------------------
4 Gewinde M12 - zunaechst am Nocken VORNE
Kreis:CR8
X-Achse       378.500   378.500    -0.150    +0.150      0.000 ---*---
Z-Achse        48.080    48.080    -0.150    +0.150      0.000 ---*---
Durchm.        10.200    10.200    -0.200    +0.200      0.000 ---*---
----------------------------------------------------------------------------
```



CMM Templates

Nikon Metrology

- Careful! There are two different syntaxes used for the column headers! We choose one, and use **Replace Table** to replace the others….

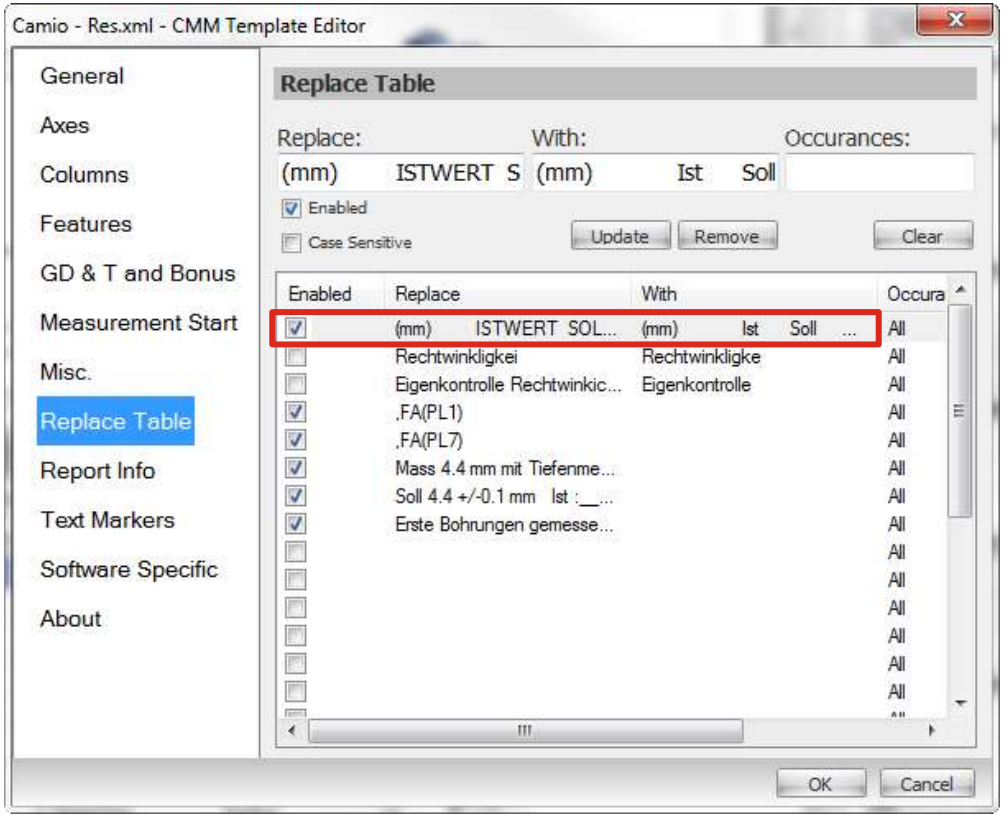
```
-------------------------------------------------------------------------------------
30-Apr-2015 10:14                  Start Template                          Seite  2
(mm)                  Ist       Soll      U_TOL      O_TOL  ABWEICH.   GRAF.     FEHLER
-------------------------------------------------------------------------------------
Z-Achse           80.000    80.000    -0.150    +0.150     0.000 ---*---
Durchm.           14.000    14.000    -0.200    +0.200     0.000 ---*---
-------------------------------------------------------------------------------------
4 Gewinde M12 - zunaechst am Nocken VORNE
Kreis:CR8
X-Achse          378.500   378.500    -0.150    +0.150     0.000 ---*---
Z-Achse           48.080    48.080    -0.150    +0.150     0.000 ---*---
Durchm.           10.200    10.200    -0.200    +0.200     0.000 ---*---
-------------------------------------------------------------------------------------
```

```
(mm)             ISTWERT  SOLLWERT      U_TOL      O_TOLABWEICHUNG    GRAF.      FEHLER
-------------------------------------------------------------------------------------
Ebenheit an den 2 Nocken ( DIN - 2768 )
Ebene:PL1
Ebenheit          0.000      0.200                                   *---
-------------------------------------------------------------------------------------
1.Aufnahmebohrung M12 - VORNE
Kreis:CR2
X-Achse          378.500   378.500    -0.150    +0.150     0.000 ---*---
Z-Achse          -29.920   -29.920    -0.150    +0.150     0.000 ---*---
Durchm.           10.200    10.200    -0.200    +0.200     0.000 ---*---
-------------------------------------------------------------------------------------
```

CMM Templates

Nikon Metrology

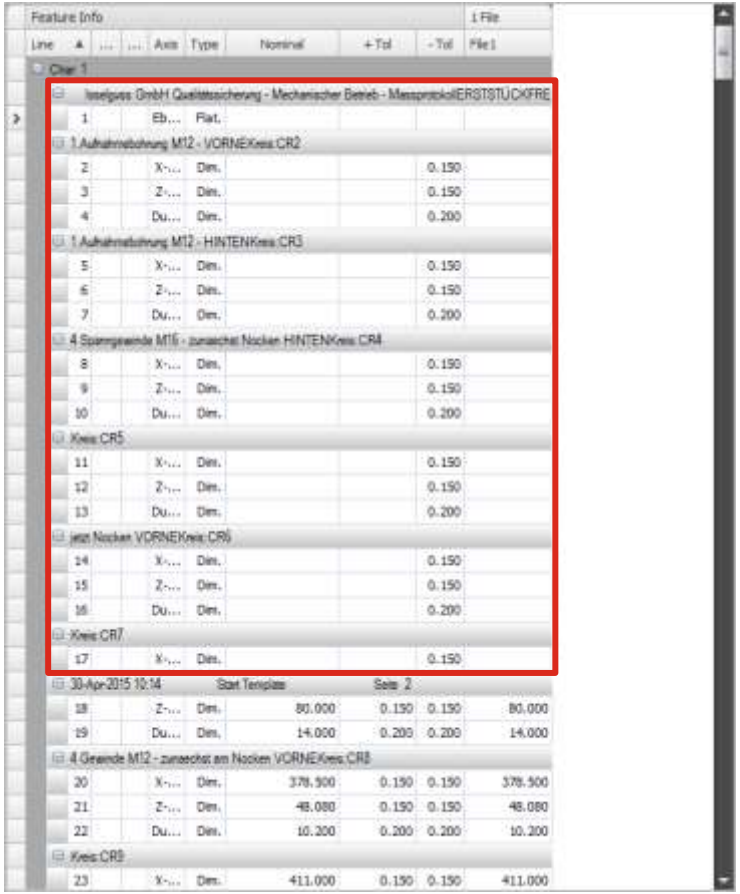
- Careful! There are two different syntaxes used for the column headers! We choose one, and use **Replace Table** to replace the others….



CMM Templates

Nikon Metrology

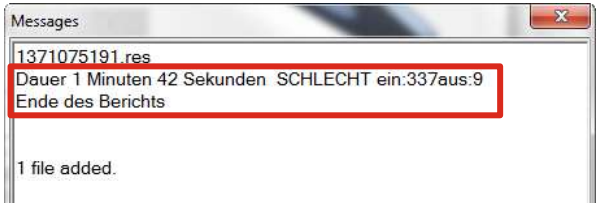
- If we weren't using the **Replace Table**, some results wouldn't be imported!

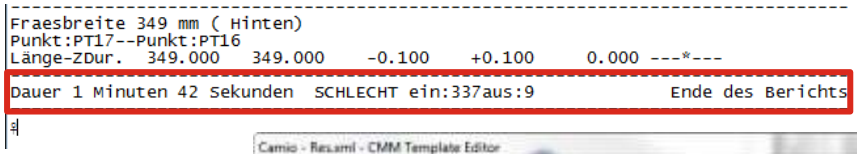


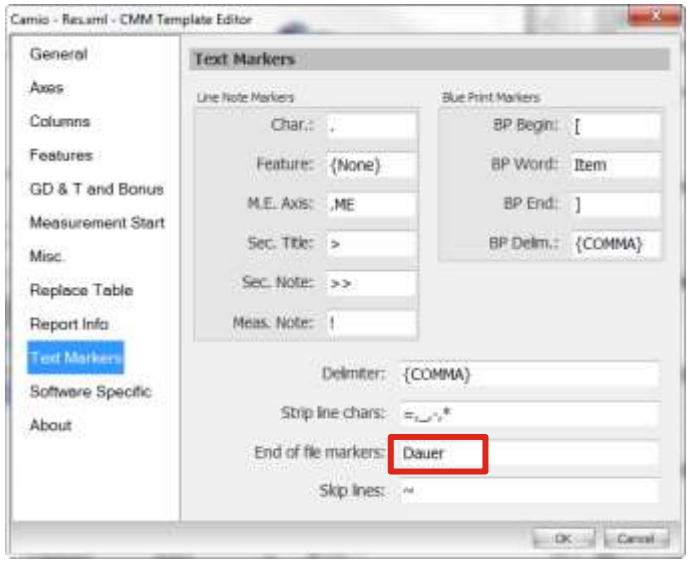
CMM Templates

Nikon Metrology

- To get rid of the warning we still have when importing the result file, we indicate the **End of file markers**



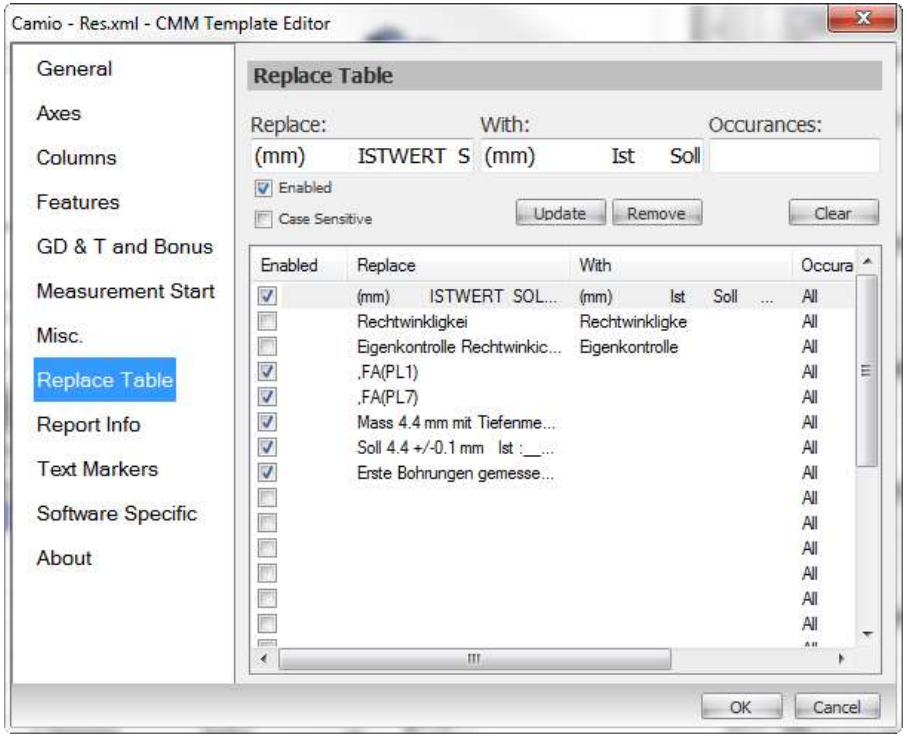




CMM Templates

Nikon Metrology

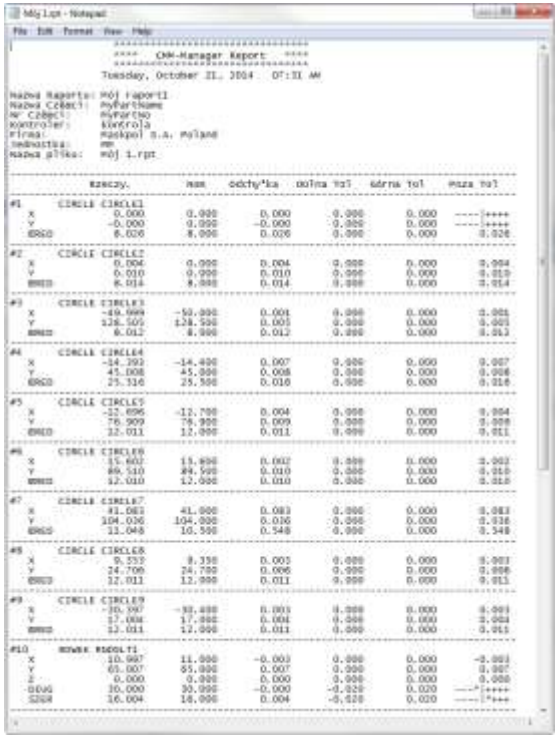
- We can use the **Replace Table** to clean up anything that can cause an issue…



CMM Templates

CMM Manager

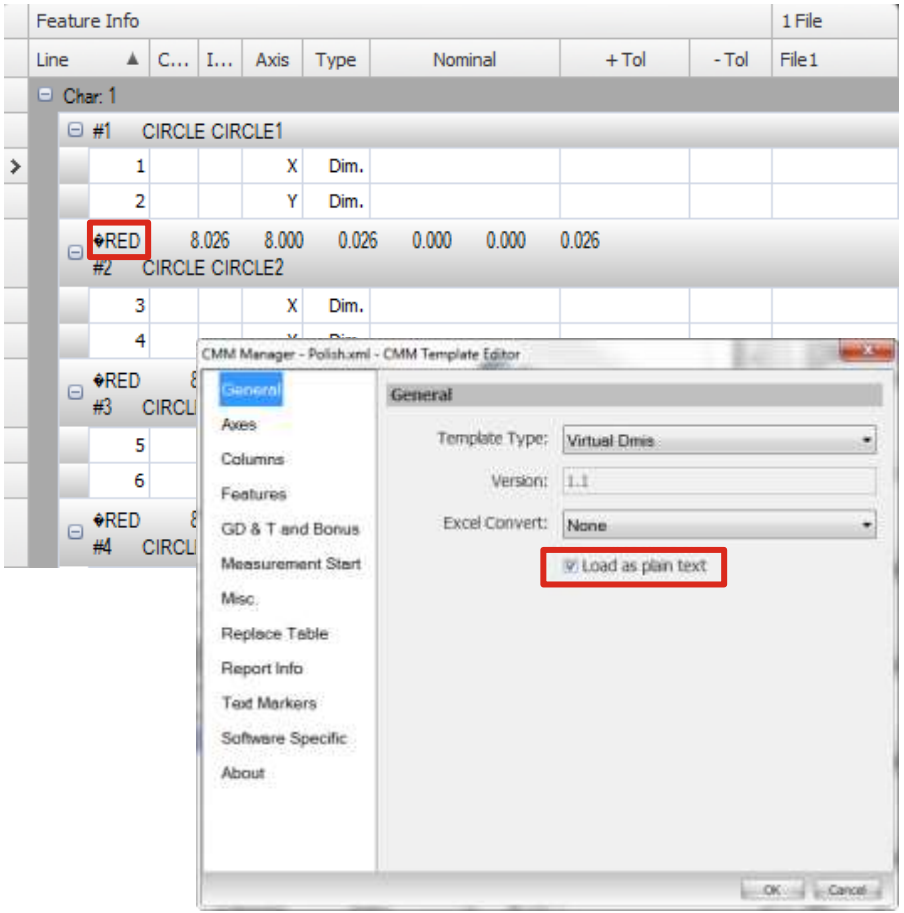
- Result file looks properly structured but opens with a warning and most results are missing



CMM Templates

CMM Manager

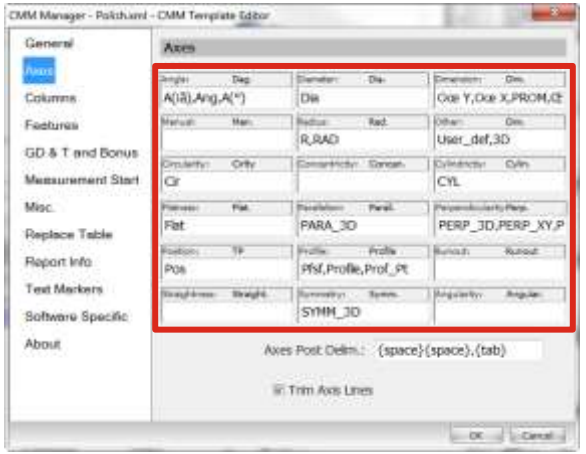
- There are some encoding issues (since the file is from a Polish computer) so the **Load as plain text** need to be turned on

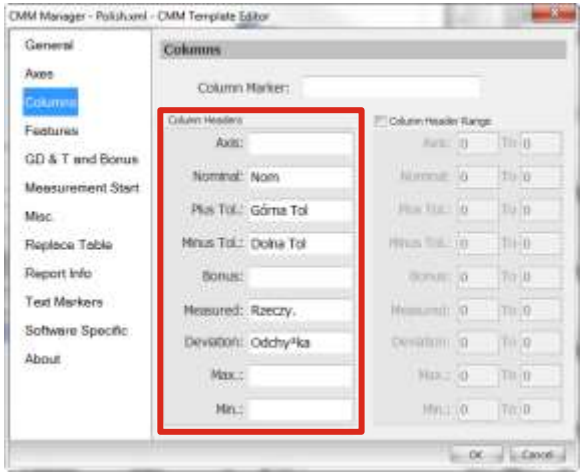


CMM Templates

CMM Manager

- Then, the Axes and Column Headers have to be updated!

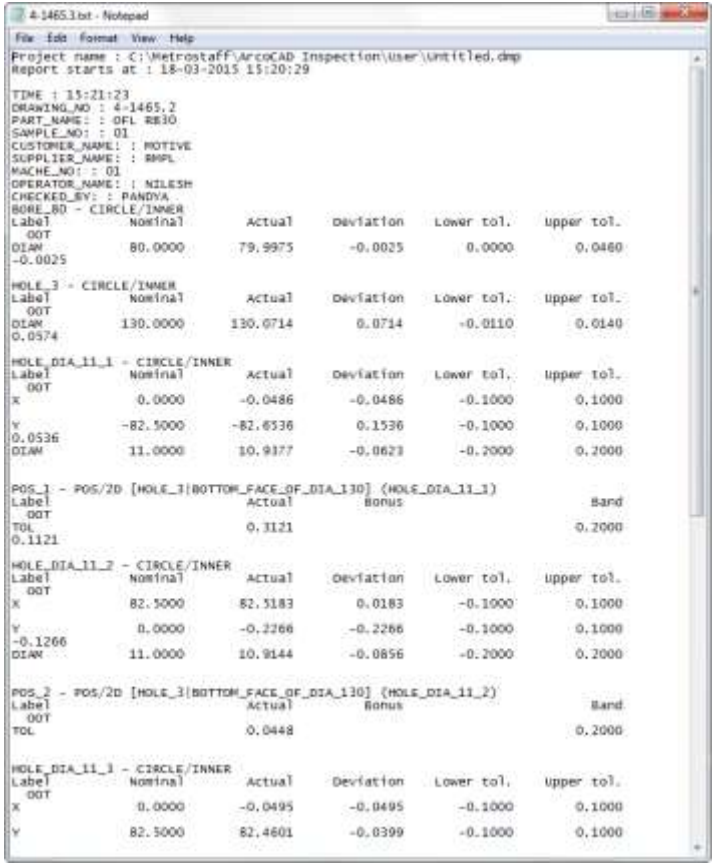




CMM Templates

Metrostaff

- The result file looks similar to PC-DMIS



4-1465.3.txt - Notepad

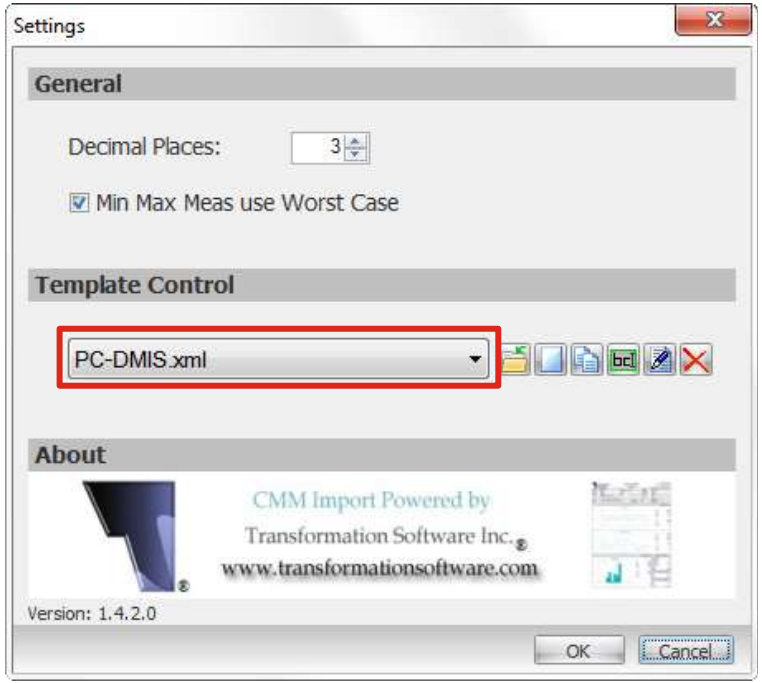
File Edit Format View Help

```
Project name : C:\Metrostaff\ArcoCAD Inspection\User\Untitled.dmp
Report starts at : 18-03-2015 15:20:29

TIME : 15:21:23
DRAWING_NO : 4-1465.2
PART_NAME: : OFL RB30
SAMPLE_NO: : 01
CUSTOMER_NAME: : MOTIVE
SUPPLIER_NAME: : RMPL
MACHE_NO: : 01
OPERATOR_NAME: : NILESH
CHECKED_BY: : PANDYA
BORE_BD - CIRCLE/INNER
Label          Nominal        Actual     Deviation    Lower tol.    Upper tol.
  OOT
DIAM           80.0000       79.9975       -0.0025        0.0000        0.0460
-0.0025

HOLE_3 - CIRCLE/INNER
Label          Nominal        Actual     Deviation    Lower tol.    Upper tol.
  OOT
DIAM          130.0000      130.0714        0.0714       -0.0110        0.0140
0.0574

HOLE_DIA_11_1 - CIRCLE/INNER
Label          Nominal        Actual     Deviation    Lower tol.    Upper tol.
  OOT
X               0.0000       -0.0486       -0.0486       -0.1000        0.1000

Y             -82.5000      -82.6536        0.1536       -0.1000        0.1000
0.0536
DIAM           11.0000       10.9377       -0.0623       -0.2000        0.2000

POS_1 - POS/2D [HOLE_3(BOTTOM_FACE_OF_DIA_130] (HOLE_DIA_11_1)
Label                          Actual          Bonus                       Band
  OOT
TOL                            0.3121                                      0.2000
0.1121

HOLE_DIA_11_2 - CIRCLE/INNER
Label          Nominal        Actual     Deviation    Lower tol.    Upper tol.
  OOT
X              82.5000       82.5183        0.0183       -0.1000        0.1000

Y               0.0000       -0.2266       -0.2266       -0.1000        0.1000
-0.1266
DIAM           11.0000       10.9144       -0.0856       -0.2000        0.2000

POS_2 - POS/2D [HOLE_3(BOTTOM_FACE_OF_DIA_130] (HOLE_DIA_11_2)
Label                          Actual          Bonus                       Band
  OOT
TOL                            0.0448                                      0.2000

HOLE_DIA_11_3 - CIRCLE/INNER
Label          Nominal        Actual     Deviation    Lower tol.    Upper tol.
  OOT
X               0.0000       -0.0495       -0.0495       -0.1000        0.1000

Y              82.5000       82.4601       -0.0399       -0.1000        0.1000
```

CMM Templates

Metrostaff

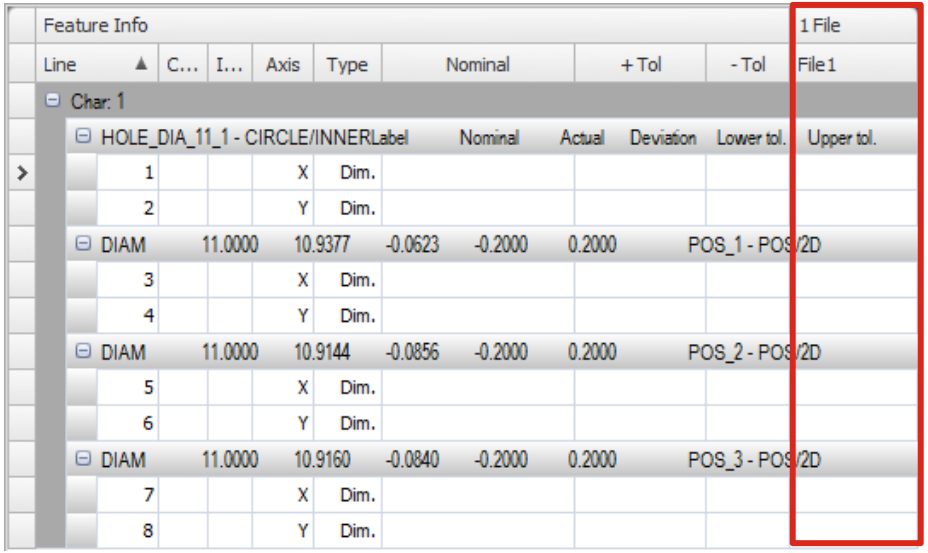
- We start by selecting the PC-DMIS template to try to import the results



CMM Templates

Metrostaff

- Good news! The file is imported but we have a warning and the values are not extracted

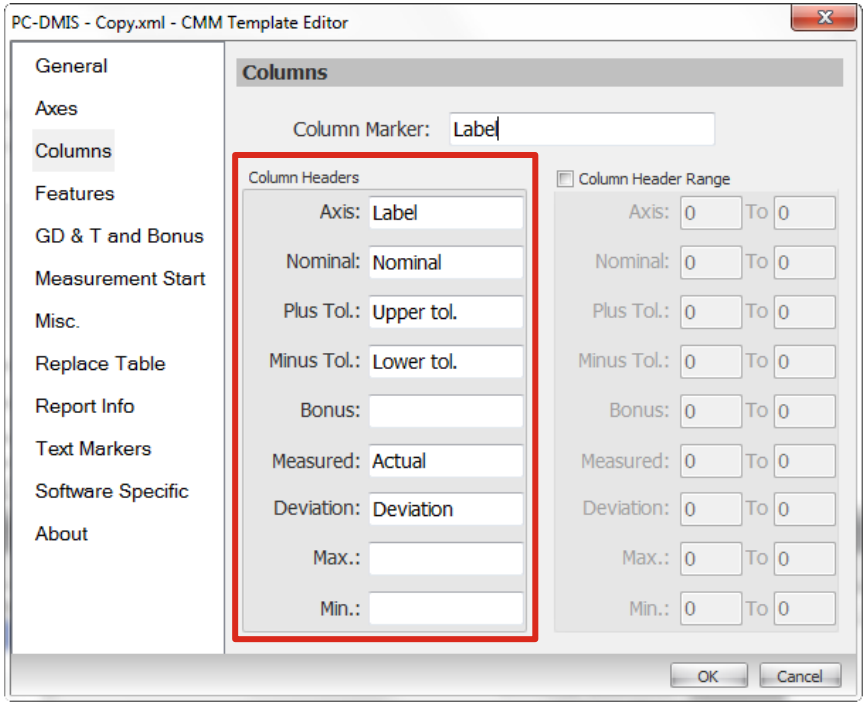


Feature Info									1 File
Line	C...	I...	Axis	Type	Nominal	+ Tol	- Tol		File 1
Char: 1									
HOLE_DIA_11_1 - CIRCLE/INNER	Label				Nominal	Actual	Deviation	Lower tol.	Upper tol.
1			X	Dim.					
2			Y	Dim.					
DIAM			11.0000		10.9377	-0.0623	-0.2000	0.2000	POS_1 - POS/2D
3			X	Dim.					
4			Y	Dim.					
DIAM			11.0000		10.9144	-0.0856	-0.2000	0.2000	POS_2 - POS/2D
5			X	Dim.					
6			Y	Dim.					
DIAM			11.0000		10.9160	-0.0840	-0.2000	0.2000	POS_3 - POS/2D
7			X	Dim.					
8			Y	Dim.					

CMM Templates

Metrostaff

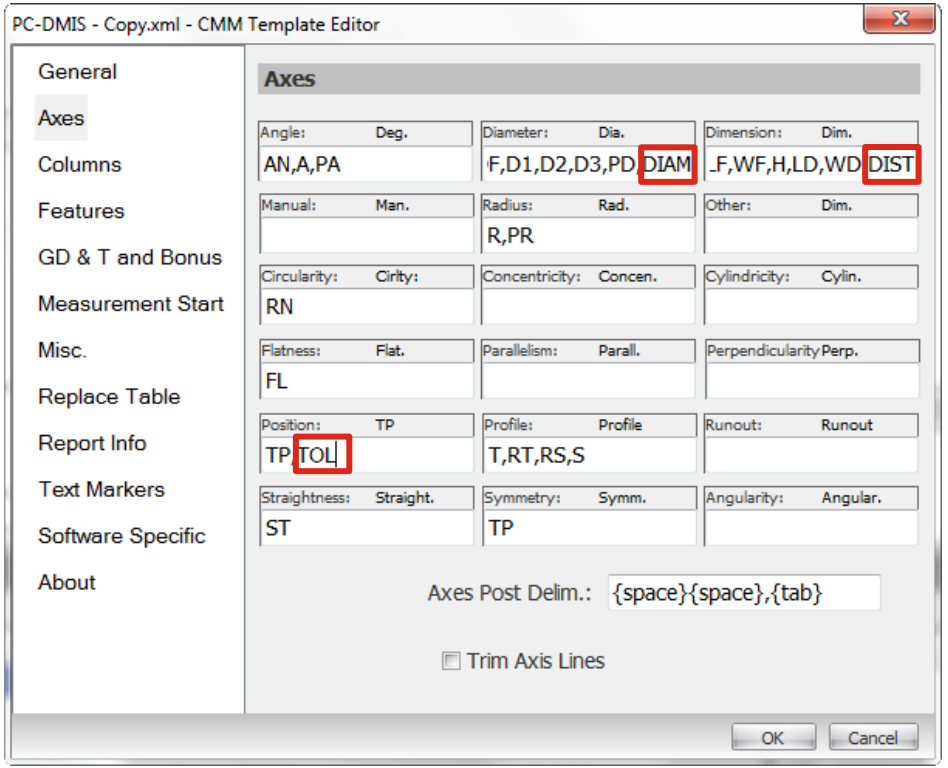
- We start by modifying the **Column Headers** to match the CMM result file



CMM Templates

Metrostaff

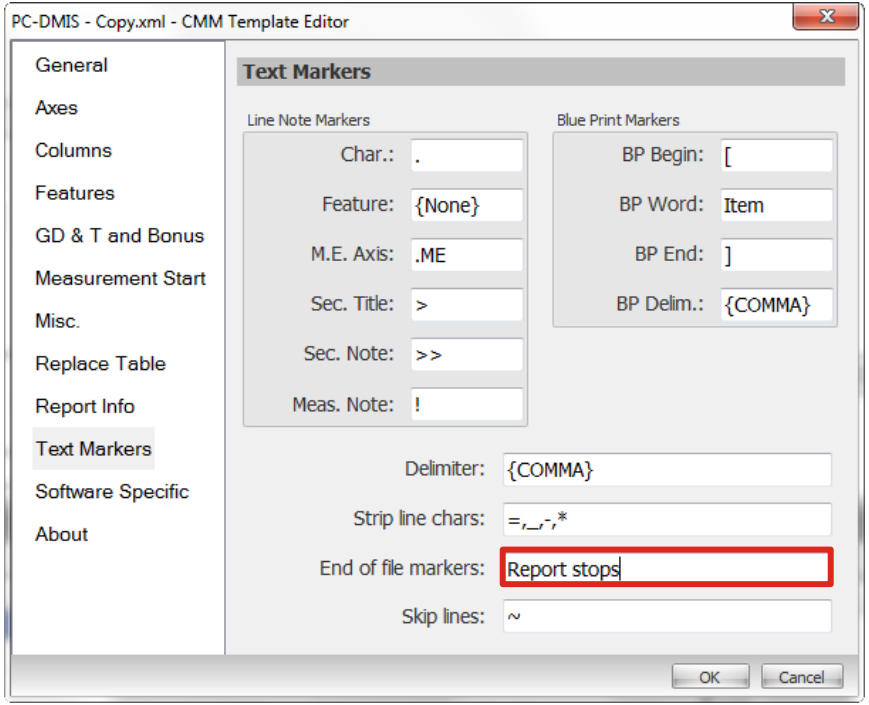
- Then, we add the missing **Axes**



CMM Templates

Metrostaff

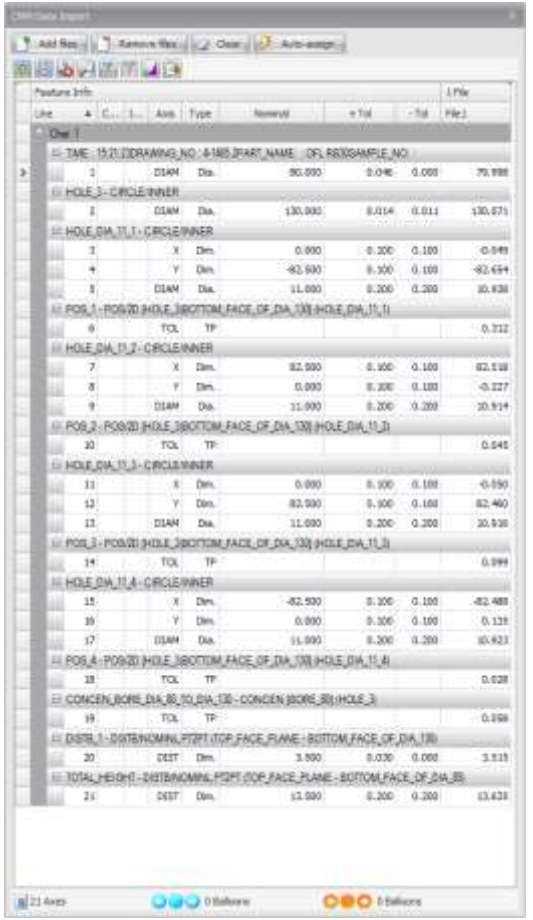
- Finally, we update the **End of file markers** to get rid of the warning when import CMM files



CMM Templates

Metrostaff

- Now, everything is imported and extracted properly



CMM Templates

ViciVision

CMM Templates

ViciVision

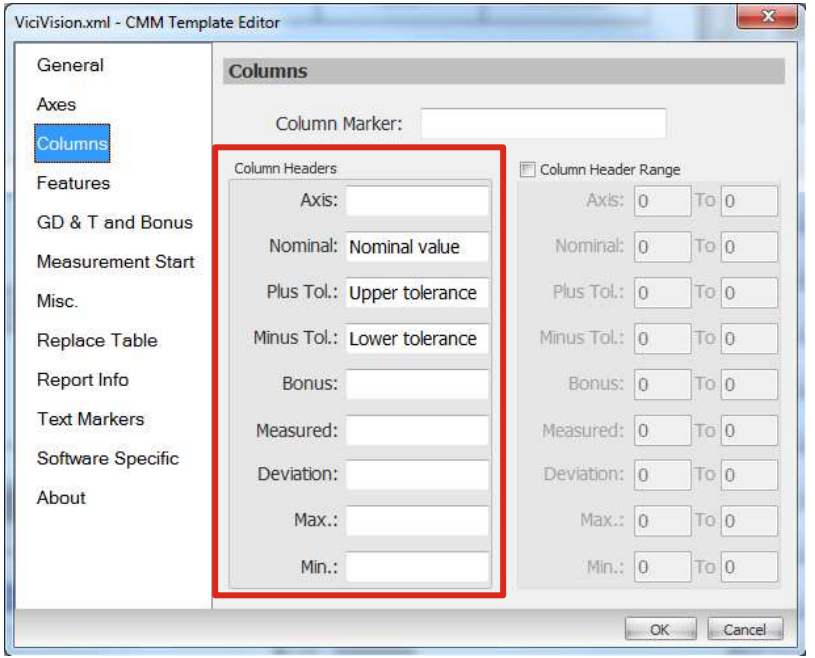
- Complex *.csv file
- Characteristics listed in columns not rows!
- Multiple results per files
- No axes!
- Not supported prior to **2015 SP4.0!**

	Ø10.12 +0	3	Ø12.10 +0	3	Ø12.10 +0	03 d	Ø12.10 +0	03 d d	Ø 14.25+0.
Nominal v	10.12	12.1	12.1	12.1	14.25	14.9	20.01	17.05	17.05
Lower tol	0	0	0	0	0	0	0	0	0
Upper tol	0.03	0.03	0.03	0.03	0.1	0.05	0.03	0.03	0.03
	10.1281	12.1192	12.1065	12.109	14.2974	14.9281	20.0142	17.078	17.0777
	10.1463	12.1371	12.1375	12.1073	14.3128	14.9397	20.0198	17.0552	17.0397
	Ø10.12 +0	3	Ø12.10 +0	3	Ø12.10 +0	03 d	Ø12.10 +0	03 d d	Ø 14.25+0.
Nominal v	10.12	12.1	12.1	12.1	14.25	14.9	20.01	17.05	17.05
Lower tol	0	0	0	0	0	0	0	0	0
Upper tol	0.03	0.03	0.03	0.03	0.1	0.05	0.03	0.03	0.03
	Ø10.12 +0	3	Ø12.10 +0	3	Ø12.10 +0	03 d	Ø12.10 +0	03 d d	Ø 14.25+0.
Nominal v	10.12	12.1	12.1	12.1	14.25	14.9	20.01	17.05	17.05
Lower tol	0	0	0	0	0	0	0	0	0
Upper tol	0.03	0.03	0.03	0.03	0.1	0.05	0.03	0.03	0.03

CMM Templates

ViciVision

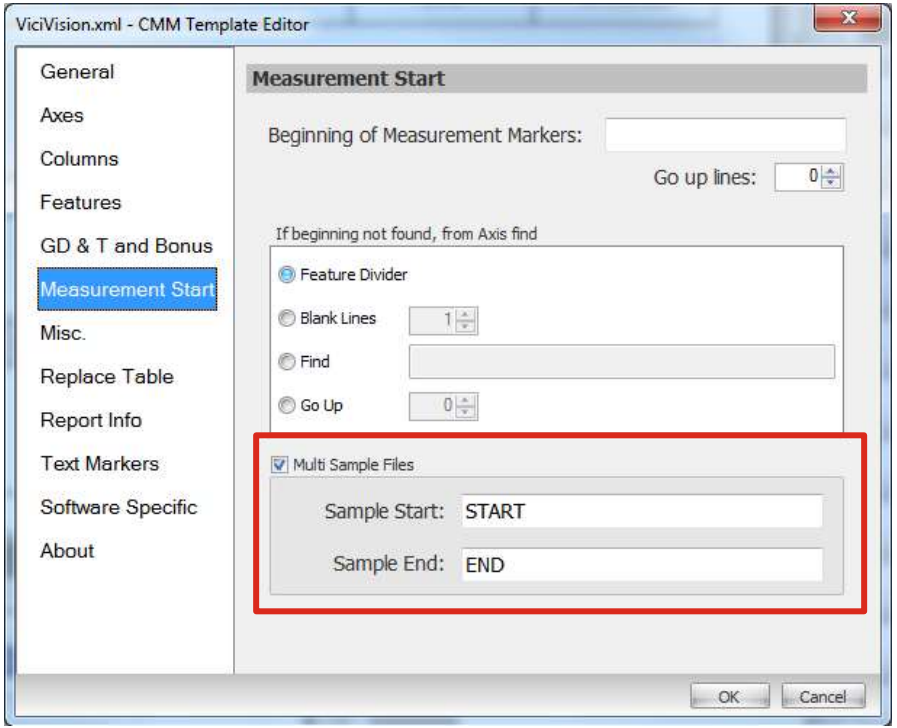
- Similar to Keyence IM template
- Update Headers



CMM Templates

ViciVision

- Since there are multiple measurements per file, we need to define a Start and End keyword



CMM Templates

ViciVision

- And update the *.csv file to add those keywords…

START	Ø10.12 +0	3	Ø12.10 +0	3	Ø12.10 +0	03 d	Ø12.10 +0	03 d d	Ø 14.25+0.	14.90 +0
Nominal v	10.12	12.1	12.1	12.1	14.25	14.9	20.01	17.05	17.05	16.4
Lower tole	0	0	0	0	0	0	0	0	0	-0.1
Upper tole	0.03	0.03	0.03	0.03	0.1	0.05	0.03	0.03	0.03	0.1
	10.1582	12.401	12.1441	12.1389	14.3257	14.9513	20.0418	17.0873	17.0888	16.3952
	10.146	12.1356	12.1324	12.1128	14.3088	14.9312	20.02	17.0904	17.0917	16.4004
END										
START	Ø10.12 +0	3	Ø12.10 +0	3	Ø12.10 +0	03 d	Ø12.10 +0	03 d d	Ø 14.25+0.	14.90 +0
Nominal v	10.12	12.1	12.1	12.1	14.25	14.9	20.01	17.05	17.05	16.4
Lower tole	0	0	0	0	0	0	0	0	0	-0.1
Upper tole	0.03	0.03	0.03	0.03	0.1	0.05	0.03	0.03	0.03	0.1
	10.1576	12.1149	12.1025	12.1287	14.2968	14.9267	20.022	17.0856	17.0834	16.3917
	10.1286	12.1153	12.107	12.1079	14.2993	14.9285	20.015	17.0819	17.0805	16.3982
END										
START	Ø10.12 +0	3	Ø12.10 +0	3	Ø12.10 +0	03 d	Ø12.10 +0	03 d d	Ø 14.25+0.	14.90 +0
Nominal v	10.12	12.1	12.1	12.1	14.25	14.9	20.01	17.05	17.05	16.4
Lower tole	0	0	0	0	0	0	0	0	0	-0.1
Upper tole	0.03	0.03	0.03	0.03	0.1	0.05	0.03	0.03	0.03	0.1
END										

CMM Templates

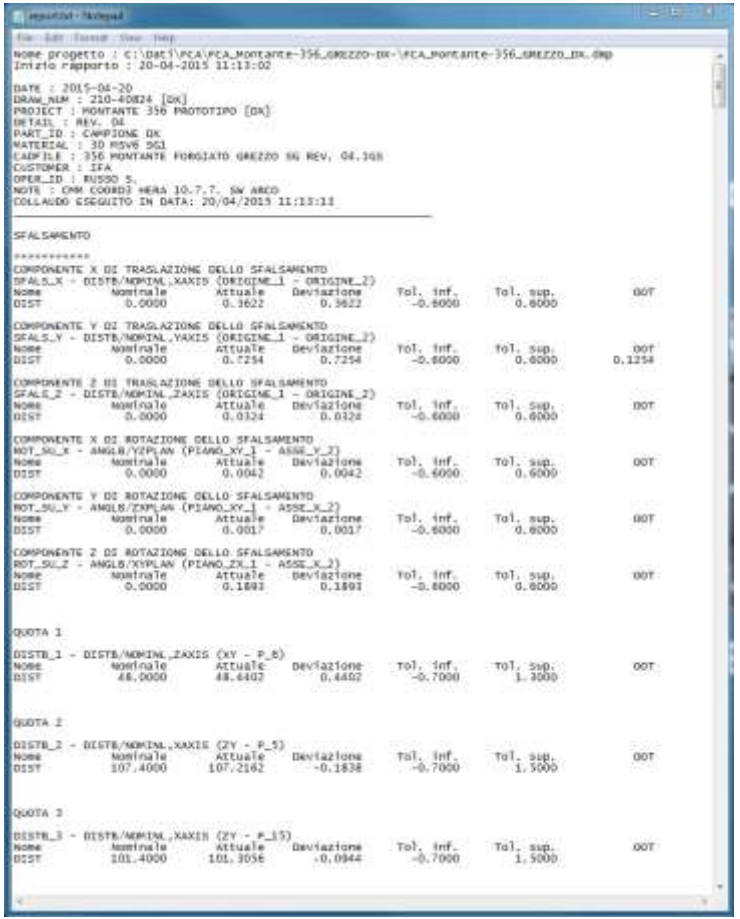
Coord3

- Similar to Metrostaff

CMM Templates

Coord3

- The result file looks similar to PC-DMIS



Nome progetto : C:\Dati\PCA\PCA_Montante-356_GREZZO-DX-\PCA_Montante-356_GREZZO_DX.dmp
Inizio rapporto : 20-04-2015 11:13:02

DATE : 2015-04-20
DRAW_NUM : 210-40824 [DX]
PROJECT : MONTANTE 356 PROTOTIPO [DX]
DETAIL : REV. 04
PART_ID : CAMPIONE DX
MATERIAL : 30 MSV6 SG1
CADFILE : 356 MONTANTE FORGIATO GREZZO SG REV. 04.IGS
CUSTOMER : IFA
OPER_ID : RUSSO S.
NOTE : CMM COORD3 HERA 10.7.7. SW ARCO
COLLAUDO ESEGUITO IN DATA: 20/04/2015 11:13:13

SFALSAMENTO

COMPONENTE X DI TRASLAZIONE DELLO SFALSAMENTO
SFALS_X - DISTB/NOMINL,XAXIS (ORIGINE_1 - ORIGINE_2)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	0.0000	0.3622	0.3622	-0.6000	0.6000	

COMPONENTE Y DI TRASLAZIONE DELLO SFALSAMENTO
SFALS_Y - DISTB/NOMINL,YAXIS (ORIGINE_1 - ORIGINE_2)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	0.0000	0.7254	0.7254	-0.6000	0.6000	0.1254

COMPONENTE Z DI TRASLAZIONE DELLO SFALSAMENTO
SFALS_Z - DISTB/NOMINL,ZAXIS (ORIGINE_1 - ORIGINE_2)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	0.0000	0.0324	0.0324	-0.6000	0.6000	

COMPONENTE X DI ROTAZIONE DELLO SFALSAMENTO
ROT_SU_X - ANGLB/YZPLAN (PIANO_XY_1 - ASSE_Y_2)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	0.0000	0.0042	0.0042	-0.6000	0.6000	

COMPONENTE Y DI ROTAZIONE DELLO SFALSAMENTO
ROT_SU_Y - ANGLB/ZXPLAN (PIANO_XY_1 - ASSE_X_2)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	0.0000	0.0017	0.0017	-0.6000	0.6000	

COMPONENTE Z DI ROTAZIONE DELLO SFALSAMENTO
ROT_SU_Z - ANGLB/XYPLAN (PIANO_ZX_1 - ASSE_X_2)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	0.0000	0.1893	0.1893	-0.6000	0.6000	

QUOTA 1

DISTB_1 - DISTB/NOMINL,ZAXIS (XY - P_8)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	48.0000	48.4402	0.4402	-0.7000	1.3000	

QUOTA 2

DISTB_2 - DISTB/NOMINL,XAXIS (ZY - P_5)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	107.4000	107.2162	-0.1838	-0.7000	1.5000	

QUOTA 3

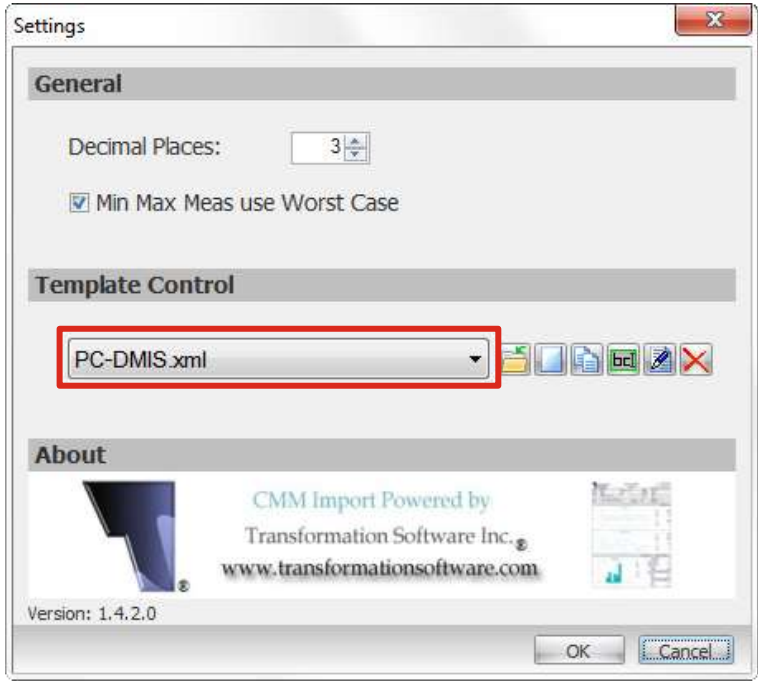
DISTB_3 - DISTB/NOMINL,XAXIS (ZY - P_15)

Nome	Nominale	Attuale	Deviazione	Tol. inf.	Tol. sup.	OOT
DIST	101.4000	101.3056	-0.0944	-0.7000	1.5000	

CMM Templates

Coord3

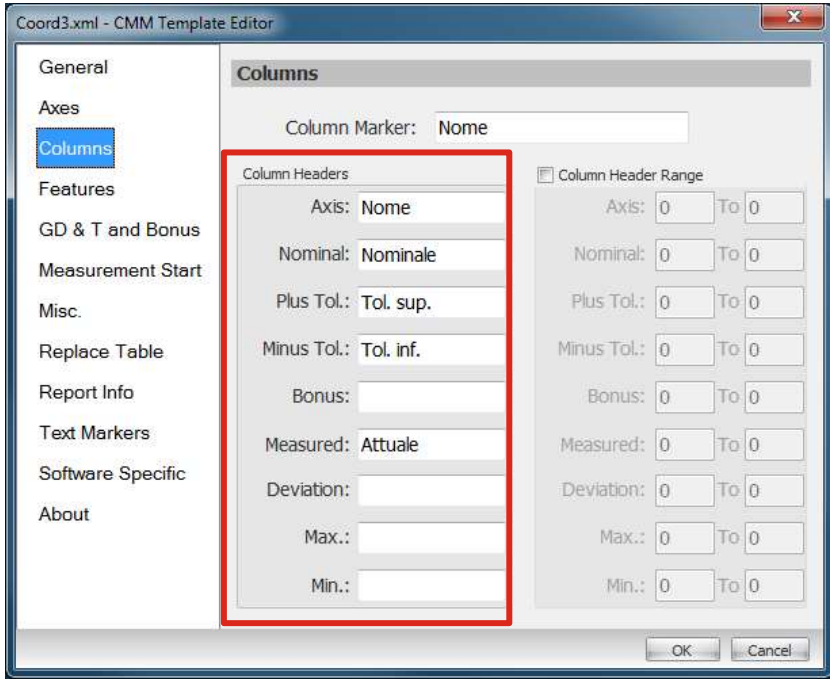
- We start by selecting the PC-DMIS template to try to import the results



CMM Templates

Coord3

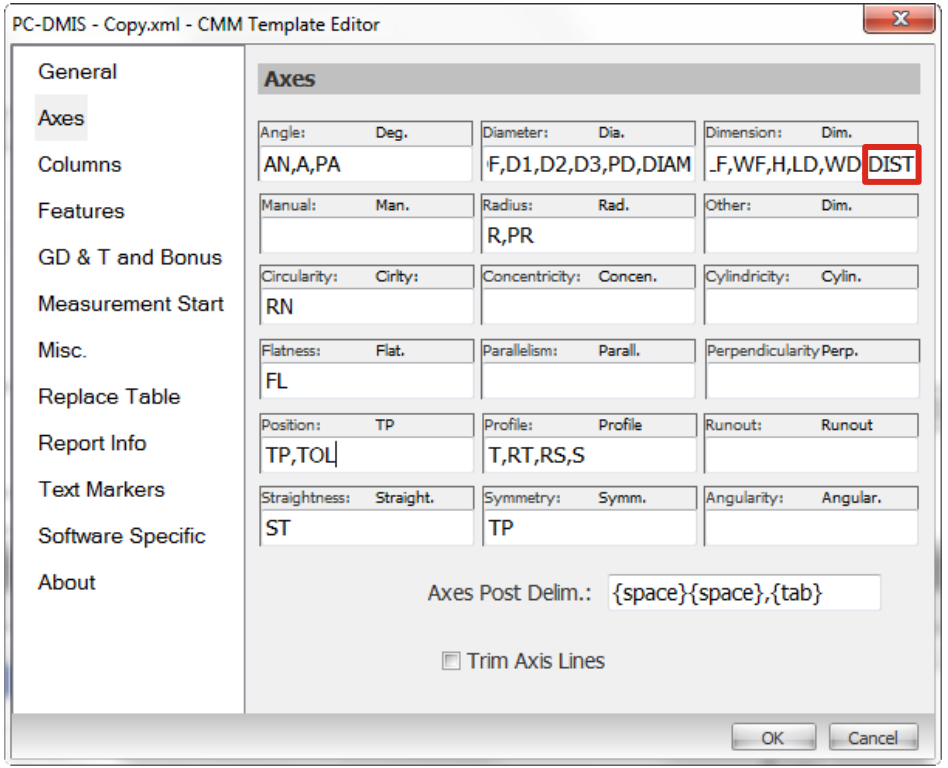
- We start by modifying the **Column Headers** to match the CMM result file



CMM Templates

Coord3

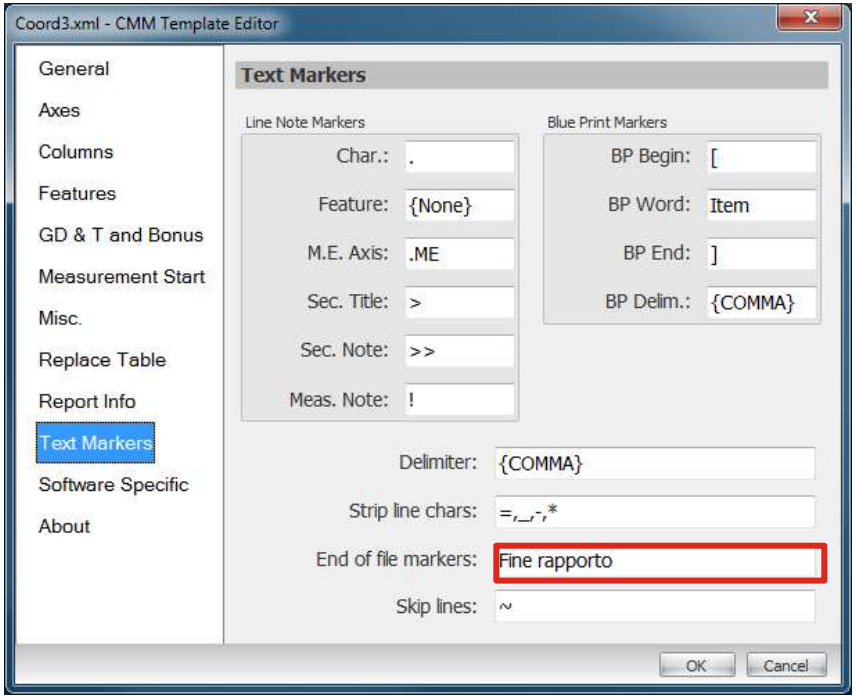
- Then, we add the missing **Axes**



CMM Templates

Coord3

- Finally, we update the **End of file markers** to get rid of the warning when import CMM files



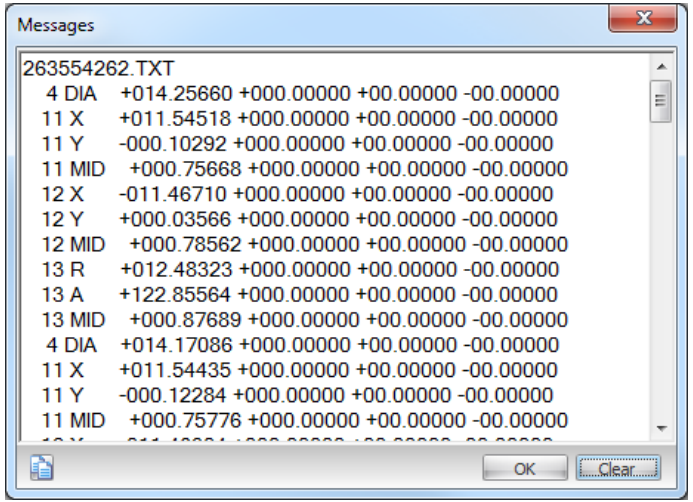
CMM Templates

OGP MeasureMind

CMM Templates

OGP MeasureMind

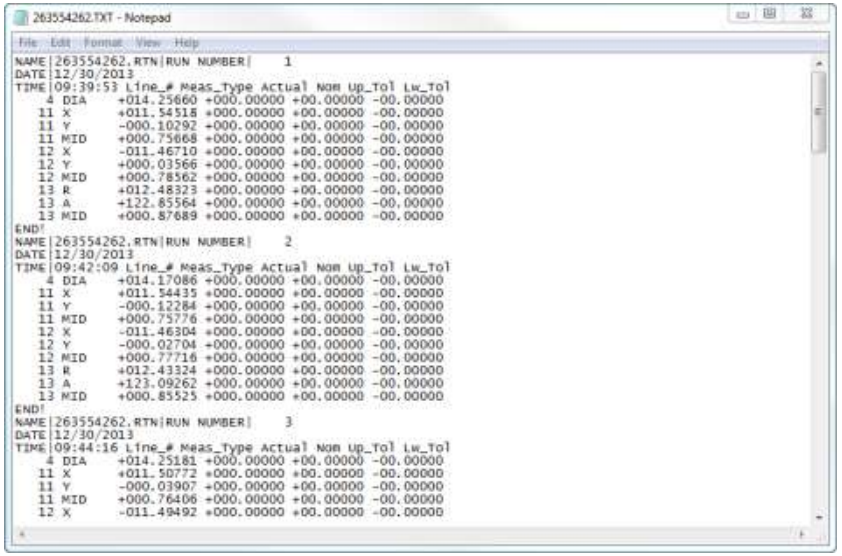
- Error when importing result file using standard OGP CMM templates



CMM Templates

OGP MeasureMind

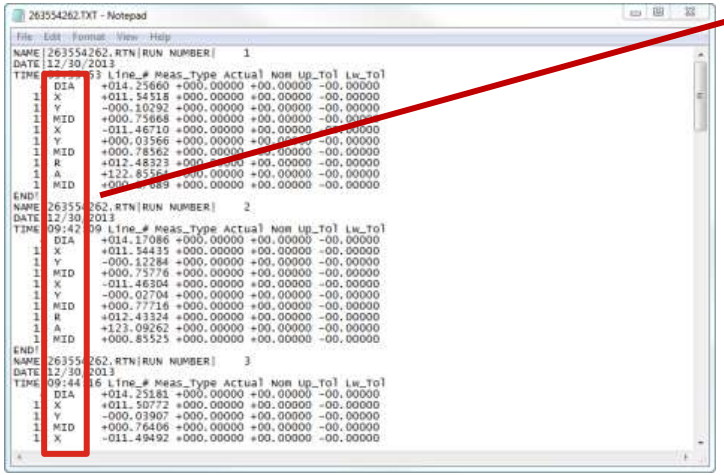
- When looking at the result files, it looks similar to **Open DMIS**
- All the results are clearly listed in columns
- Everything is spaced properly

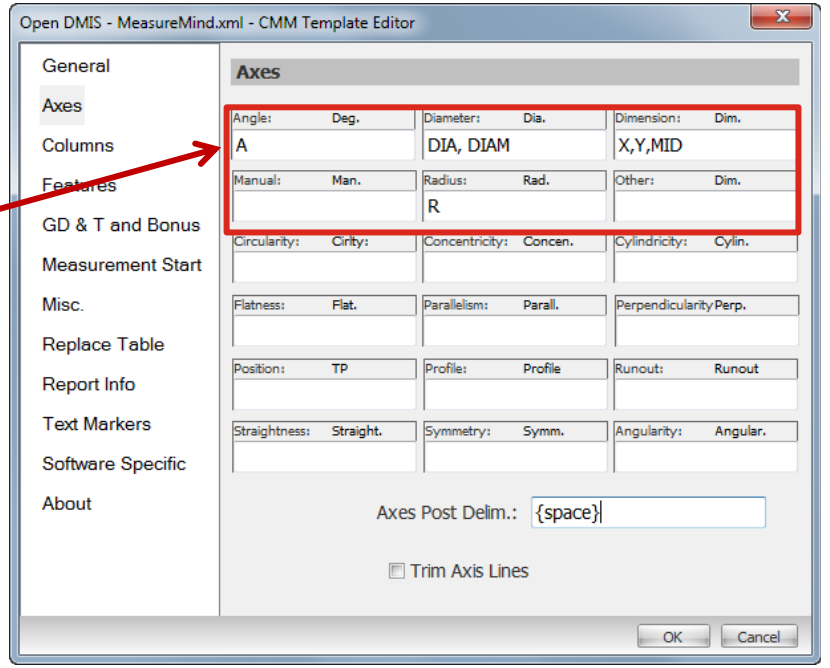


CMM Templates

OGP MeasureMind

- We start by updating the **Axes** to match the CMM result file

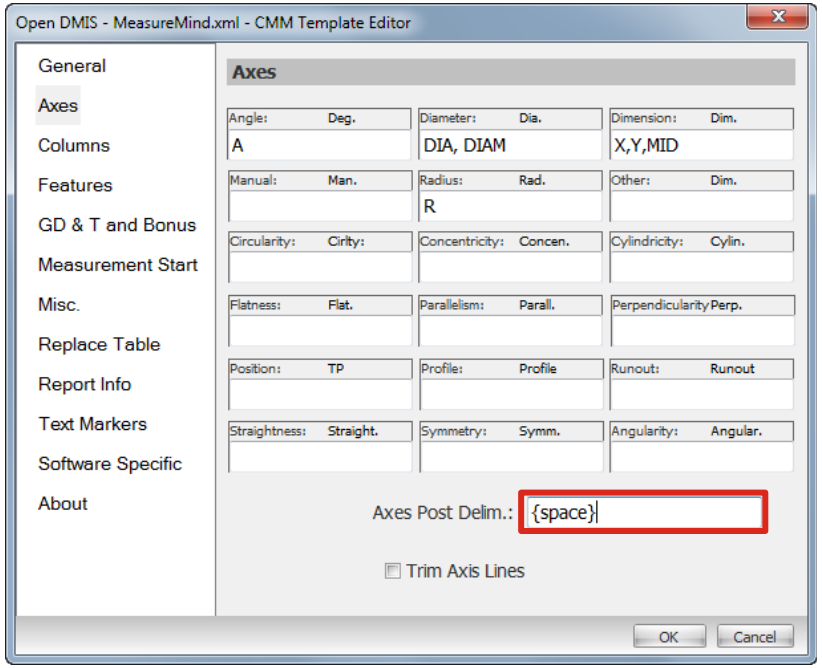




CMM Templates

OGP MeasureMind

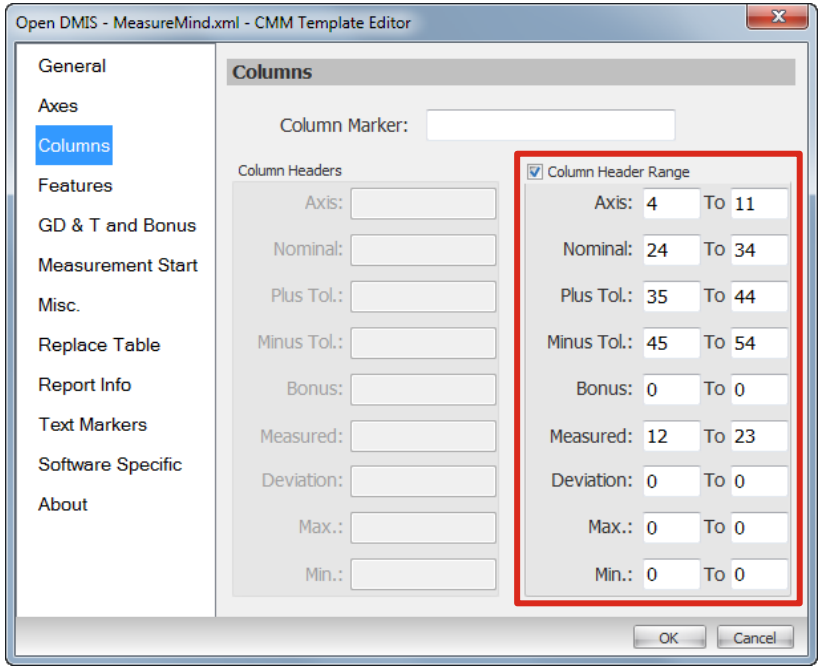
- Don’t forget to change the delimiter. Axes / Results are separated by **{space}** not {comma}



CMM Templates

OGP MeasureMind

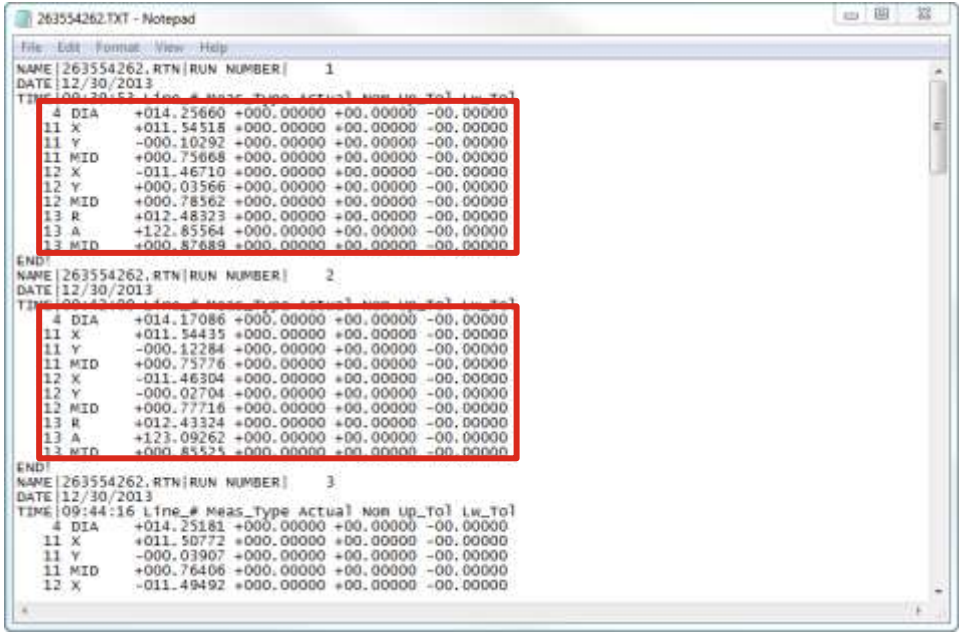
- Define the range of the columns



CMM Templates

OGP MeasureMind

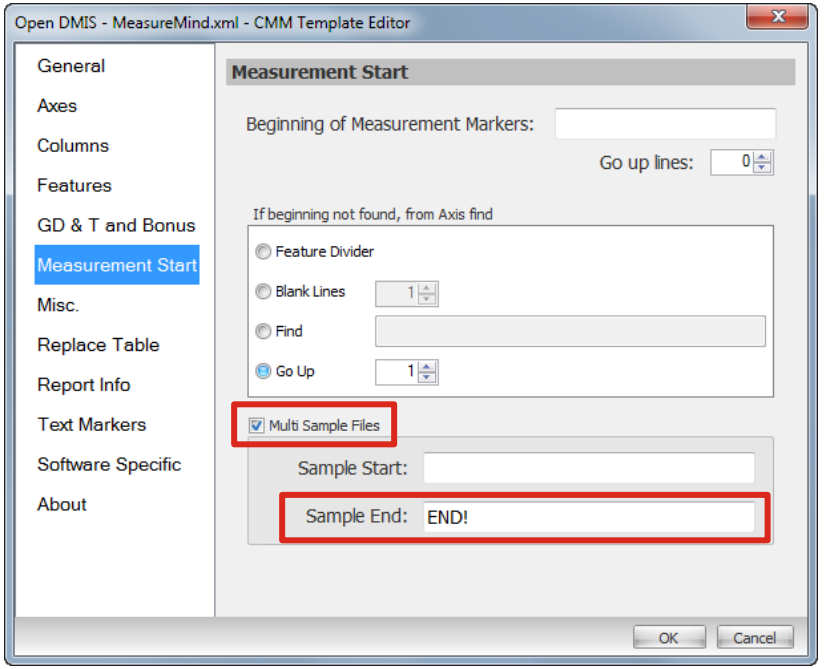
- There are multiple measurements sets delimited by the keyword **END!**



CMM Templates

OGP MeasureMind

- That's why you need in **Measurement Start** to check **Multi Sample Files** and indicate the sample end: **END!**



CMM Templates

OGP MeasureMind

- For some reasons, the Diameter DIA shows up as an ANGLE in Degrees.

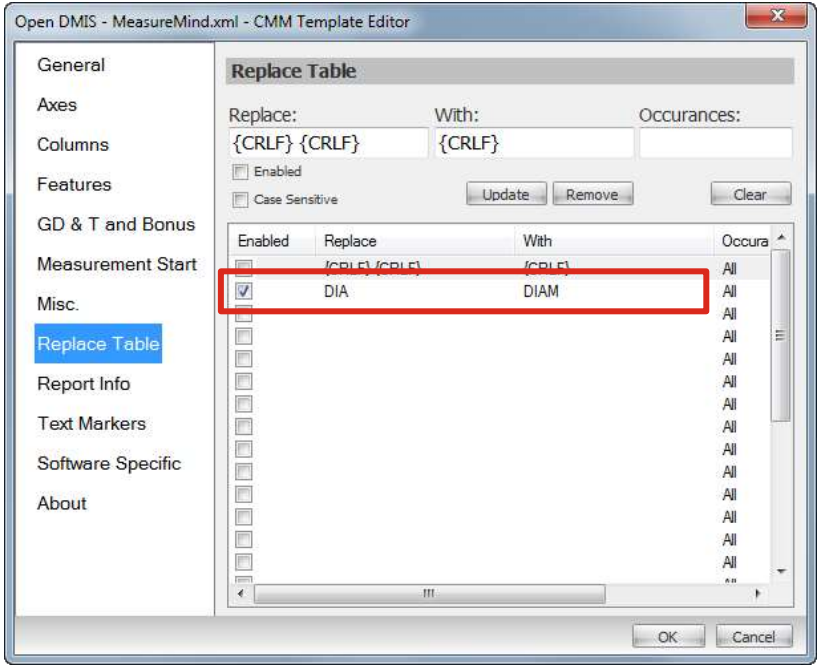
```
TIME|09:39:53 Line_# Meas_Type Actual Nom Up_Tol Lw_Tol
     4 DIA      +014.25660 +000.00000 +00.00000 -00.00000
    11 X        +011.54518 +000.00000 +00.00000 -00.00000
    11 Y        -000.10292 +000.00000 +00.00000 -00.00000
    11 MID      +000.75668 +000.00000 +00.00000 -00.00000
```

Line	Char #	Item #	Axis	Type	Nominal	+Tol	-Tol	File1	File2
Char: 1									
1			A	Deg.	0.000	0.000	0.000	14.257	14.171
2			X	Dim.	0.000	0.000	0.000	11.545	11.544

CMM Templates

OGP MeasureMind

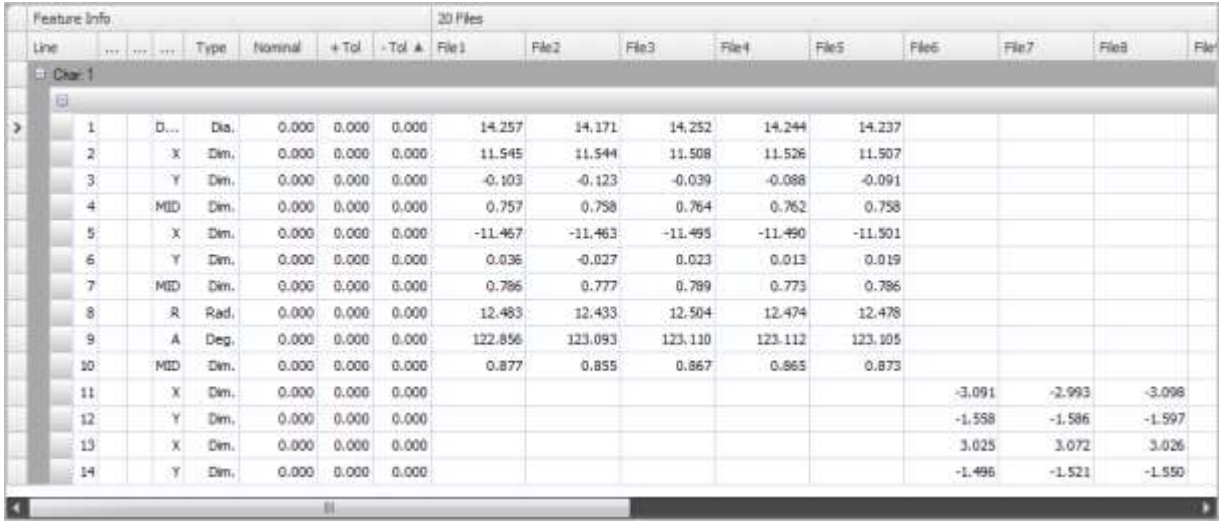
- To fix this we use a little subterfuge and with the **Replace Table** we automatically replace **DIA** in the CMM file by **DIAM**.



CMM Templates

OGP MeasureMind

- The CMM results are now properly imported!



Feature Info							20 Files								
Line	...	...	...	Type	Nominal	+ Tol	- Tol ▲	File1	File2	File3	File4	File5	File6	File7	File8	File
Char 1																
1		D...		Dia.	0.000	0.000	0.000	14.257	14.171	14.252	14.244	14.237				
2		X		Dim.	0.000	0.000	0.000	11.545	11.544	11.508	11.526	11.507				
3		Y		Dim.	0.000	0.000	0.000	-0.103	-0.123	-0.039	-0.088	-0.091				
4		MID		Dim.	0.000	0.000	0.000	0.757	0.758	0.764	0.762	0.758				
5		X		Dim.	0.000	0.000	0.000	-11.467	-11.463	-11.495	-11.490	-11.501				
6		Y		Dim.	0.000	0.000	0.000	0.036	-0.027	0.023	0.013	0.019				
7		MID		Dim.	0.000	0.000	0.000	0.786	0.777	0.789	0.773	0.786				
8		R		Rad.	0.000	0.000	0.000	12.483	12.433	12.504	12.474	12.478				
9		A		Deg.	0.000	0.000	0.000	122.856	123.093	123.110	123.112	123.105				
10		MID		Dim.	0.000	0.000	0.000	0.877	0.855	0.867	0.865	0.873				
11		X		Dim.	0.000	0.000	0.000						-3.091	-2.993	-3.098	
12		Y		Dim.	0.000	0.000	0.000						-1.558	-1.586	-1.597	
13		X		Dim.	0.000	0.000	0.000						3.025	3.072	3.026	
14		Y		Dim.	0.000	0.000	0.000						-1.496	-1.521	-1.550	

CMM Templates

MCosmos – Type 2

CMM Templates

MCosmos – Type 2

- The result file is imported and parsed. However, some values are incorrectly grouped…

Line	Char #	Item #	Axis	Type	Nominal	+Tol	-Tol	File1
02 flatness of -A-								
CPS315Z5901-503-504-FINISH REV NEW Plane								
1			FLATNESS	Flat.		0.02000		0.003520.00352
02 flatness of -B-								
Plane								
2			FLATNESS	Flat.		0.02000		0.001280.00128
Distance to inside of clevis, opp -A- side Point								
3			Position Y	Dim.	0.25500	0.01000	0.01000	0.25452-0.00048
Point								
4			Position Y	Dim.	0.25500	0.01000	0.01000	0.25438-0.00062
5			Position Y	Dim.	0.25500	0.01000	0.01000	0.25348-0.00152
6			Position Y	Dim.	0.25500	0.01000	0.01000	0.25418-0.00082
7			Position Y	Dim.	0.25500	0.01000	0.01000	0.25499-0.00001
8			Position Y	Dim.	0.25500	0.01000	0.01000	0.25461-0.00039
Distance to inside of clevis, -A- side Point								
9			Position Y	Dim.	-0.255000.01000		0.01000	-0.25506-0.00006
Point								
10			Position Y	Dim.	-0.255000.01000		0.01000	-0.25737-0.00237
11			Position Y	Dim.	-0.255000.01000		0.01000	-0.254110.00089
12			Position Y	Dim.	-0.255000.01000		0.01000	-0.25504-0.00004
13			Position Y	Dim.	-0.255000.01000		0.01000	-0.254720.00028

CMM Templates

MCosmos – Type 2

- This is due to the result file itself where in some cases the nominal value and the upper tolerance or the measured value and the deviation are not **spaced** properly – probably due to the precision used
- You have things like -0.255000.01000 that the software doesn't know how to parse

```
162 23    Point                  0.25500 0.01000   0.25452-0.00048
          Position Y                     -0.01000
166 24    Point                  0.25500 0.01000   0.25438-0.00062
          Position Y                     -0.01000

170 25    Point                  0.25500 0.01000   0.25348-0.00152
          Position Y                     -0.01000
205 32    Point                  0.25500 0.01000   0.25418-0.00082
          Position Y                     -0.01000
209 33    Point                  0.25500 0.01000   0.25499-0.00001

          Position Y                     -0.01000
213 34    Point                  0.25500 0.01000   0.25461-0.00039
          Position Y                     -0.01000
Distance to inside of clevis, -A- side

216 31    Point                 -0.255000.01000  -0.25506-0.00006
          Position Y                     -0.01000
217 30    Point                 -0.255000.01000  -0.25737-0.00237
          Position Y                     -0.01000

218 29    Point                 -0.255000.01000  -0.254110.00089
          Position Y                     -0.01000
219 28    Point                 -0.255000.01000  -0.25504-0.00004
          Position Y                     -0.01000

220 27    Point                 -0.255000.01000  -0.254720.00028
          Position Y                     -0.01000
221 26    Point                 -0.255000.01000  -0.25641-0.00141
          Position Y                     -0.01000
```

CMM Templates

MCosmos – Type 2

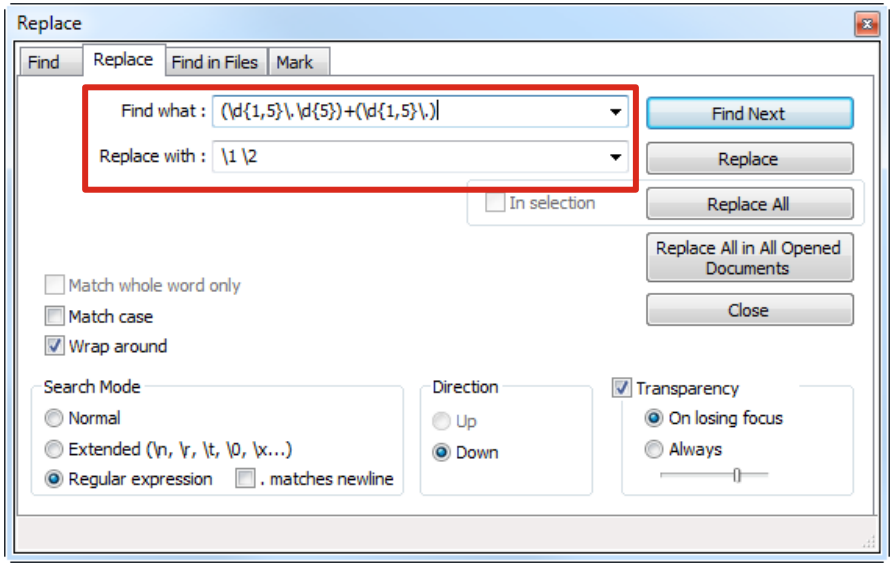
- The easiest way to fix this is to ask the CMM Programmer to update the files. The CMM Programmer might also reduce the precision from 5 digits to 4 digits.

```
162 23    Point                  0.25500 0.01000   0.25452-0.00048
          Position Y                     -0.01000
166 24    Point                  0.25500 0.01000   0.25438-0.00062
          Position Y                     -0.01000

170 25    Point                  0.25500 0.01000   0.25348-0.00152
          Position Y                     -0.01000
205 32    Point                  0.25500 0.01000   0.25418-0.00082
          Position Y                     -0.01000
209 33    Point                  0.25500 0.01000   0.25499-0.00001

          Position Y                     -0.01000
213 34    Point                  0.25500 0.01000   0.25461-0.00039
          Position Y                     -0.01000
Distance to inside of clevis, -A- side

216 31    Point                 -0.255000.01000  -0.25506-0.00006
          Position Y                     -0.01000
217 30    Point                 -0.255000.01000  -0.25737-0.00237
          Position Y                     -0.01000

218 29    Point                 -0.255000.01000  -0.254110.00089
          Position Y                     -0.01000
219 28    Point                 -0.255000.01000  -0.25504-0.00004
          Position Y                     -0.01000

220 27    Point                 -0.255000.01000  -0.254720.00028
          Position Y                     -0.01000
221 26    Point                 -0.255000.01000  -0.25641-0.00141
          Position Y                     -0.01000
```

CMM Templates

MCosmos – Type 2

- Otherwise, this can be solved using **Regular Expression** (RegEx) with **NotePad++** for example.
- Things like **-0.255000.01000** will be replaced automatically by **-0.25500 0.01000**



CMM Templates

MCosmos – Type 2

- We find:

  (\d{1,5}\.\d{1,5}) + (\d{1,5}\.)

  Group 1: 1 to 5 digits (\d{1,5}), followed by a “period” (\.), followed by 1 to 5 digits (\d{1,5})

  Group 2: 1 to 5 digits (\d{1,5}), followed by a “period” (\.)

- And replace it with:

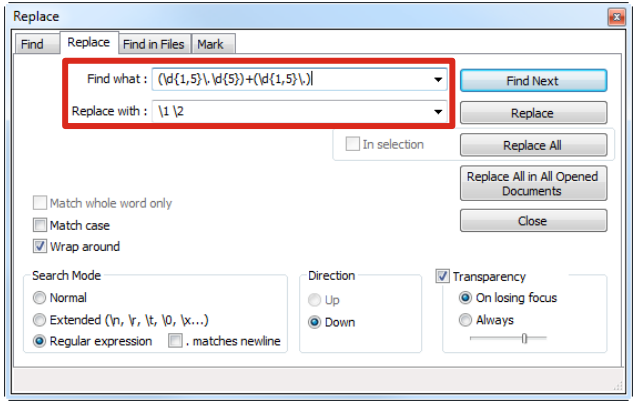
  \1 \2

  \1 = Group 1

  “ “ = a “space”

  \2 = Group 2

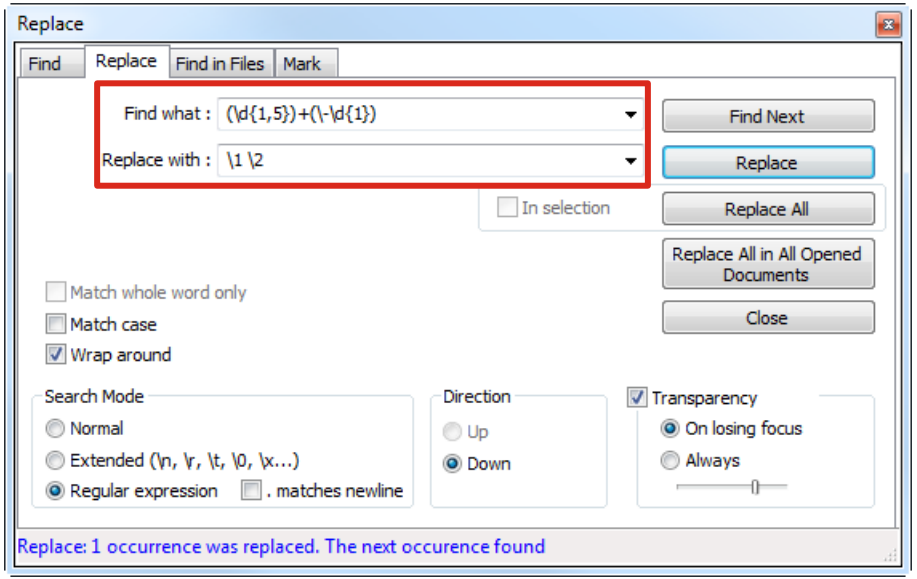
-0.255000.01000 will be replaced automatically by **-0.25500 0.01000**



CMM Templates

MCosmos – Type 2

- We use the same technique to replace **0.25452-0.00048** with **0.25452 -0.00048**



CMM Templates

MCosmos – Type 2

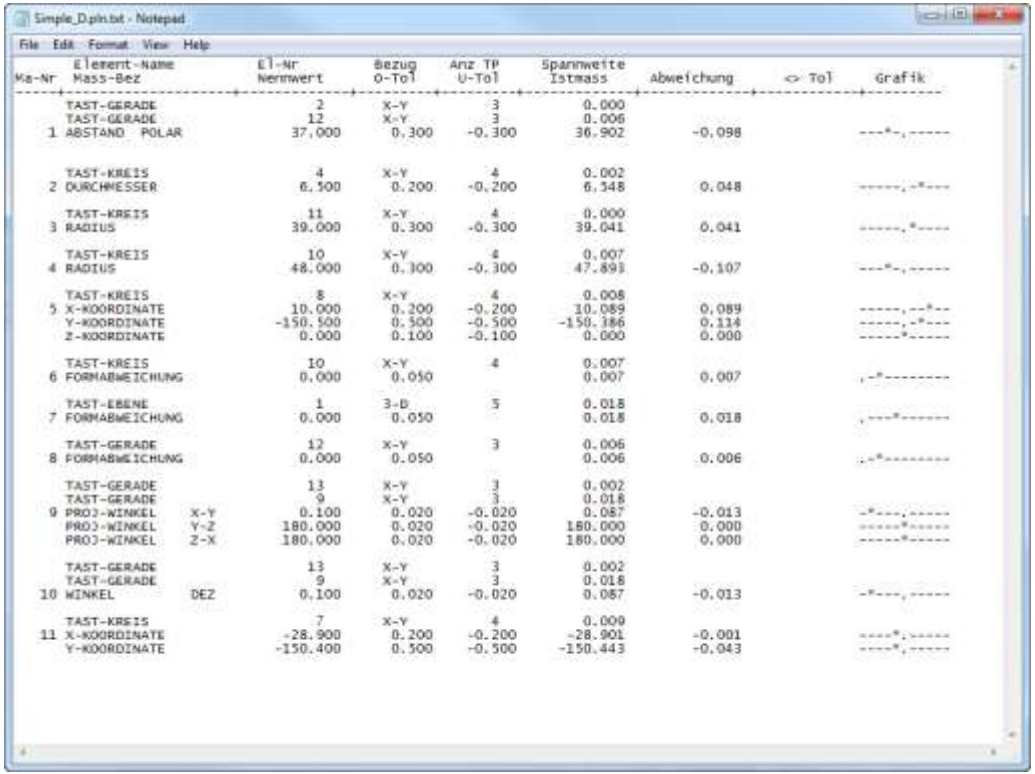
- After all this, we can save the file and re-import it inside SOLIDWORKS Inspection

Feature Info								1 File
Line ▲	Char #	Item #	Axis	Type	Nominal	+ Tol	- Tol	File1
02 flatness of -A-								
CPS315Z5901 -503 -504-FINISH REV NEW Plane								
1			FLATNESS	Flat.		0.02000		0.00352
02 flatness of -B-								
Plane								
2			FLATNESS	Flat.		0.02000		0.00128
Distance to inside of clevis, opp -A- side Point								
3			Position Y	Dim.	0.25500	0.01000	0.01000	0.25452
Point								
4			Position Y	Dim.	0.25500	0.01000	0.01000	0.25438
5			Position Y	Dim.	0.25500	0.01000	0.01000	0.25348
6			Position Y	Dim.	0.25500	0.01000	0.01000	0.25418
7			Position Y	Dim.	0.25500	0.01000	0.01000	0.25499
8			Position Y	Dim.	0.25500	0.01000	0.01000	0.25461
Distance to inside of clevis, -A- side Point								
9			Position Y	Dim.	-0.25500	0.01000	0.01000	-0.25506
Point								
10			Position Y	Dim.	-0.25500	0.01000	0.01000	-0.25737
11			Position Y	Dim.	-0.25500	0.01000	0.01000	-0.25411
12			Position Y	Dim.	-0.25500	0.01000	0.01000	-0.25504
13			Position Y	Dim.	-0.25500	0.01000	0.01000	-0.25472

CMM Templates

Metrologic

- CMM results file can't be imported inside SOLIDWORKS Inspection using default CMM templates



Simple_D.pln.txt - Notepad

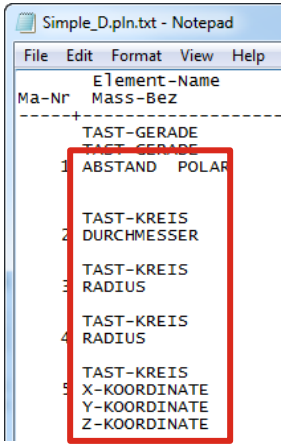
File Edit Format View Help

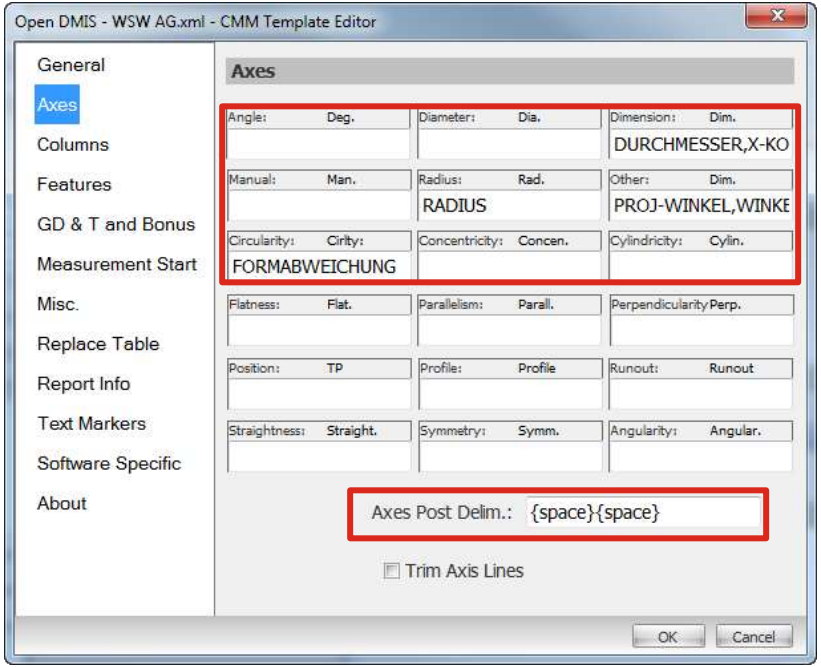
Ma-Nr	Element-Name / Mass-Bez		El-Nr / Nennwert	Bezug / O-Tol	Anz TP / U-Tol	Spannweite / Istmass	Abweichung	<> Tol	Grafik
	TAST-GERADE		2	X-Y	3	0.000			
	TAST-GERADE		12	X-Y	3	0.006			
1	ABSTAND POLAR		37.000	0.300	-0.300	36.902	-0.098		---*-,-----
	TAST-KREIS		4	X-Y	4	0.002			
2	DURCHMESSER		6.500	0.200	-0.200	6.548	0.048		-----,*---
	TAST-KREIS		11	X-Y	4	0.000			
3	RADIUS		39.000	0.300	-0.300	39.041	0.041		-----,*----
	TAST-KREIS		10	X-Y	4	0.007			
4	RADIUS		48.000	0.300	-0.300	47.893	-0.107		---*-,-----
	TAST-KREIS		8	X-Y	4	0.008			
5	X-KOORDINATE		10.000	0.200	-0.200	10.089	0.089		-----,--*--
	Y-KOORDINATE		-150.500	0.500	-0.500	-150.386	0.114		-----,-*---
	Z-KOORDINATE		0.000	0.100	-0.100	0.000	0.000		-----*-----
	TAST-KREIS		10	X-Y	4	0.007			
6	FORMABWEICHUNG		0.000	0.050		0.007	0.007		,-*--------
	TAST-EBENE		1	3-D	5	0.018			
7	FORMABWEICHUNG		0.000	0.050		0.018	0.018		,---*------
	TAST-GERADE		12	X-Y	3	0.006			
8	FORMABWEICHUNG		0.000	0.050		0.006	0.006		,-*--------
	TAST-GERADE		13	X-Y	3	0.002			
	TAST-GERADE		9	X-Y	3	0.018			
9	PROJ-WINKEL	X-Y	0.100	0.020	-0.020	0.087	-0.013		-*---,-----
	PROJ-WINKEL	Y-Z	180.000	0.020	-0.020	180.000	0.000		-----*-----
	PROJ-WINKEL	Z-X	180.000	0.020	-0.020	180.000	0.000		-----*-----
	TAST-GERADE		13	X-Y	3	0.002			
	TAST-GERADE		9	X-Y	3	0.018			
10	WINKEL	DEZ	0.100	0.020	-0.020	0.087	-0.013		-*---,-----
	TAST-KREIS		7	X-Y	4	0.009			
11	X-KOORDINATE		-28.900	0.200	-0.200	-28.901	-0.001		----*,-----
	Y-KOORDINATE		-150.400	0.500	-0.500	-150.443	-0.043		----*,-----

CMM Templates

Metrologic

- We start by modifying the **Axes**

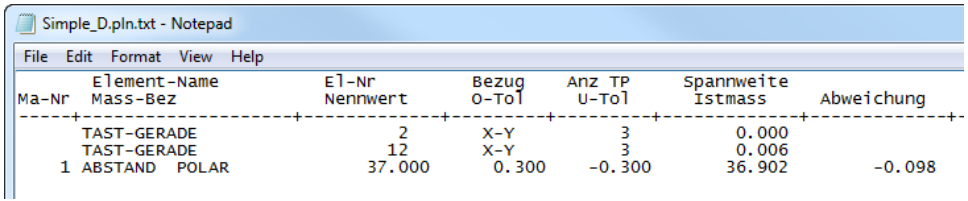


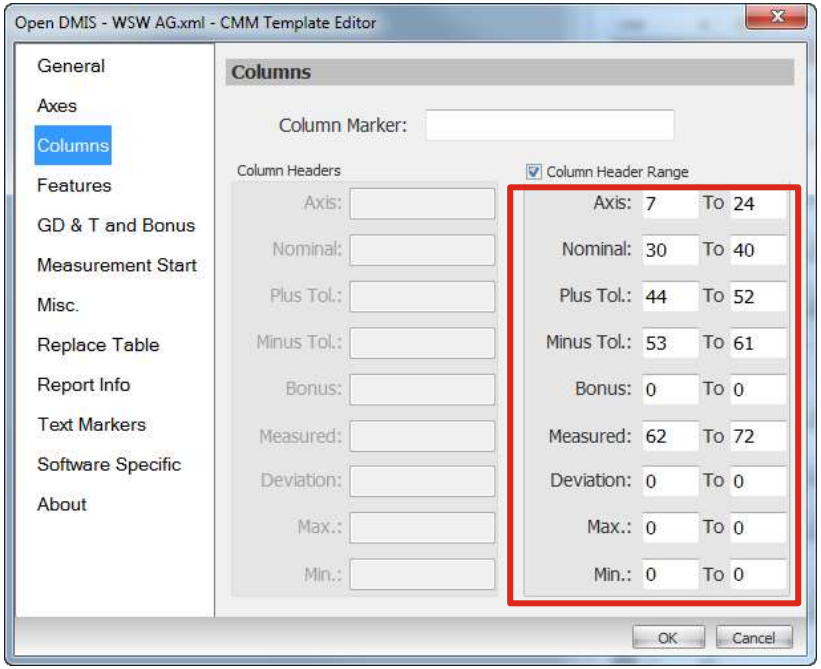


CMM Templates

Metrologic

- Then we define the **Column Header Range** to match what we have in the document





CMM Templates

Metrologic

- That's it!

Feature Info								1 File
Line ▲	Char #	Item #	Axis	Type	Nominal	+ Tol	- Tol	File1
Char: 1								
TAST-GERADE		12	X-Y	3	0.006			
1			ABSTAND P...	Dim.	37.00000	0.30000	0.30000	36.90200
TAST-KREIS		4	X-Y	4	0.002			
2			DURCHMESSER	Dim.	6.50000	0.20000	0.20000	6.54800
TAST-KREIS		11	X-Y	4	0.000			
3			RADIUS	Rad.	39.00000	0.30000	0.30000	39.04100
TAST-KREIS		10	X-Y	4	0.007			
4			RADIUS	Rad.	48.00000	0.30000	0.30000	47.89300
TAST-KREIS		8	X-Y	4	0.008			
5			X-KOORDINATE	Dim.	10.00000	0.20000	0.20000	10.08900
6			Y-KOORDINATE	Dim.	-150.50000	0.50000	0.50000	-150.38600
7			Z-KOORDINATE	Dim.	0.00000	0.10000	0.10000	0.00000
TAST-KREIS		10	X-Y	4	0.007			
8			FORMABWEI...	Cirlty.	0.00000	0.05000		0.00700
TAST-EBENE		1	3-D	5	0.018			
9			FORMABWEI...	Cirlty.	0.00000	0.05000		0.01800
TAST-GERADE		12	X-Y	3	0.006			
10			FORMABWEI...	Cirlty.	0.00000	0.05000		0.00600

CMM Templates

Nikon VM

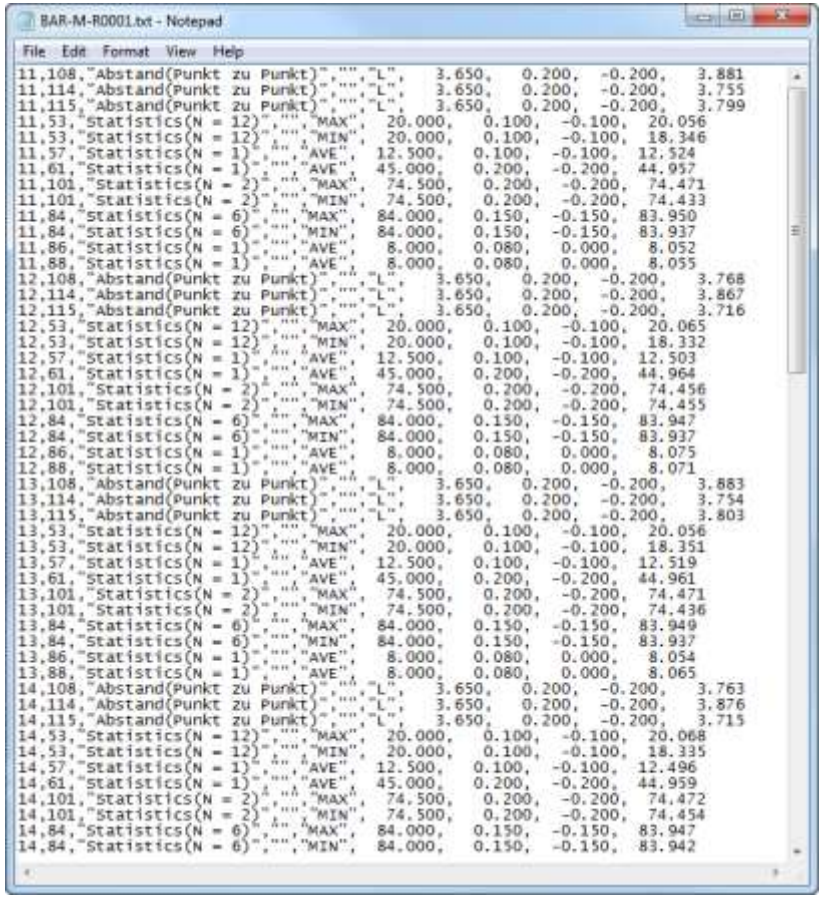
- We try to work with the *.csv document and it doesn't work so we switch our effort to the ***.txt** CMM results file

			Nominal	Obere Tol	Untere To	11	12	13	14	15	16	17	18	19	20
	108.Abst L		3.65	0.2	-0.2	3.881	3.788	3.883	3.763	3.765	3.76	3.759	3.869	3.869	3.871
	114.Abst L		3.65	0.2	-0.2	3.755	3.867	3.754	3.876	3.874	3.887	3.869	3.755	3.756	3.759
	115.Abst L		3.65	0.2	-0.2	3.799	3.716	3.803	3.715	3.711	3.713	3.714	3.81	3.801	3.798
	53.Statisti MAX		20	0.1	-0.1	20.056	20.065	20.056	20.068	20.07	20.062	20.062	20.057	20.062	20.059
	53.Statisti MIN		20	0.1	-0.1	18.346	18.332	18.351	18.335	18.333	18.333	18.331	18.346	18.342	18.344
	57.Statisti AVE		12.5	0.1	-0.1	12.524	12.503	12.519	12.496	12.503	12.504	12.503	12.505	12.523	12.506
	61.Statisti AVE		45	0.2	-0.2	44.957	44.964	44.961	44.959	44.954	44.956	44.986	44.957	44.951	44.956
	101.Statisi MAX		74.5	0.2	-0.2	74.471	74.456	74.471	74.472	74.469	74.48	74.48	74.478	74.469	74.476
	101.Statisi MIN		74.5	0.2	-0.2	74.433	74.455	74.436	74.454	74.444	74.448	74.456	74.45	74.425	74.447
	84.Statisti MAX		84	0.15	-0.15	83.95	83.947	83.949	83.947	83.943	83.951	83.947	83.951	83.952	83.95
	84.Statisti MIN		84	0.15	-0.15	83.937	83.937	83.937	83.942	83.935	83.934	83.942	83.937	83.946	83.94
	86.Statisti AVE		8	0.08	0	8.052	8.075	8.054	8.074	8.074	8.074	8.074	8.068	8.065	8.071
	88.Statisti AVE		8	0.08	0	8.055	8.071	8.065	8.072	8.066	8.07	8.071	8.073	8.064	8.072

CMM Templates

Nikon VM

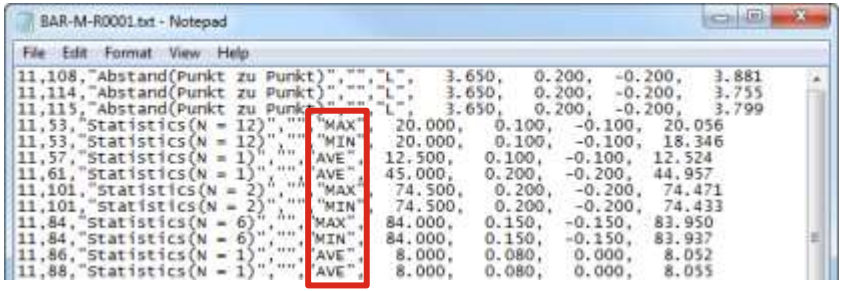
- The *.txt is fairly straight forward
- CSV structure with **{comma}** and text delimitated with “”
- That’s why we start by editing the **CSV** template!

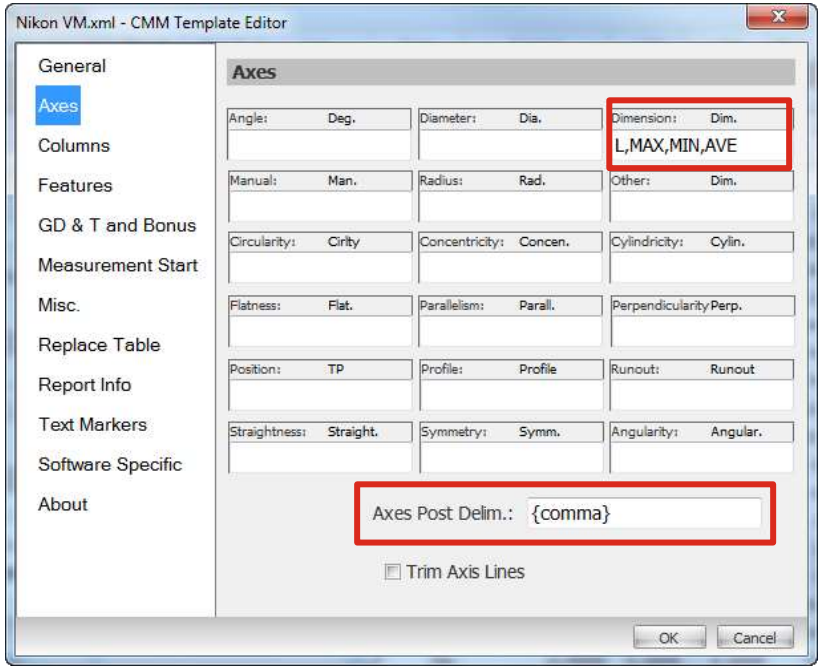


CMM Templates

Nikon VM

- We then modify the **Axes** to match the document
- And change the delimiter to **{comma}**

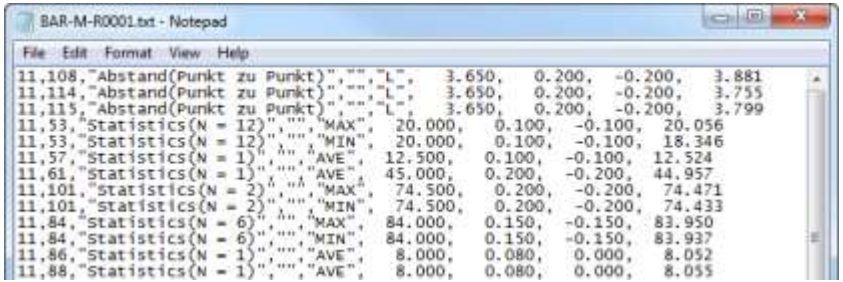


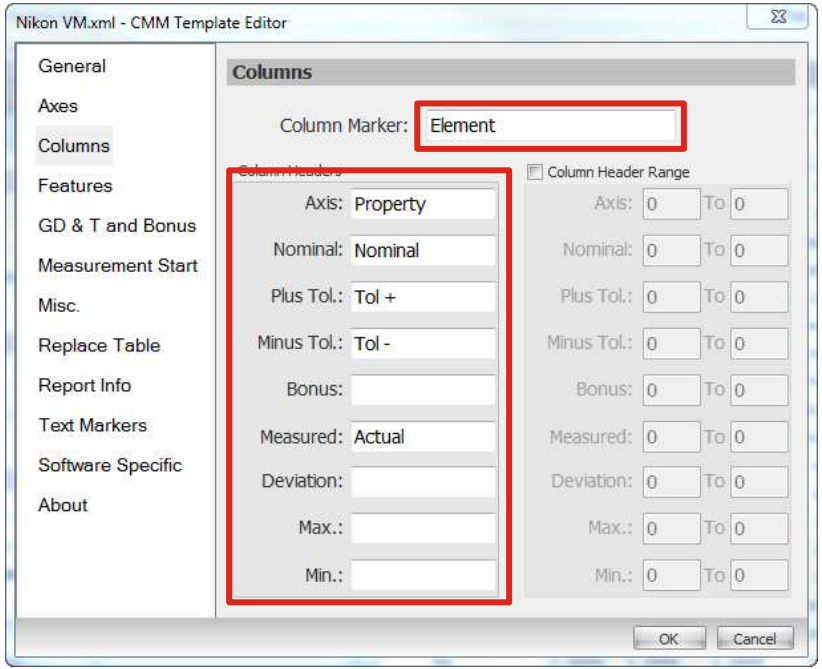


CMM Templates

Nikon VM

- We also need to indicate the columns





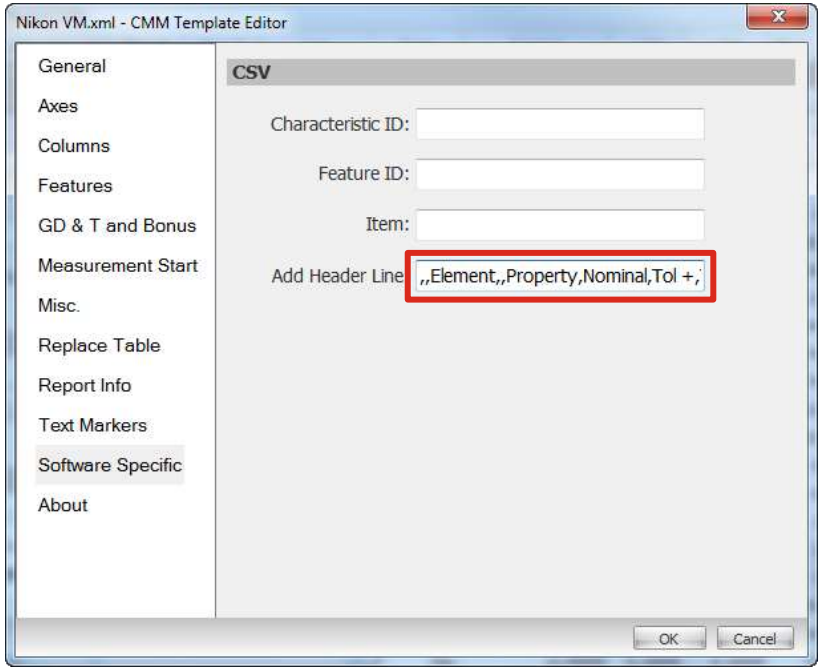
CMM Templates

Nikon VM

- Since there is no column header in the *.txt file we need to add it in **Software Specific** and be careful to respect the syntax of the document

11,108,"Abstand(Punkt zu Punkt)","","L", 3.650, 0.200, -0.200, 3.881

,,Element,,Property,Nominal,Tol +,Tol -,Actual



CMM Templates

Nikon VM

- To support multiple measurements, each set of measurements will have to start with the keyword “**START**” and this need to be indicated in the template…