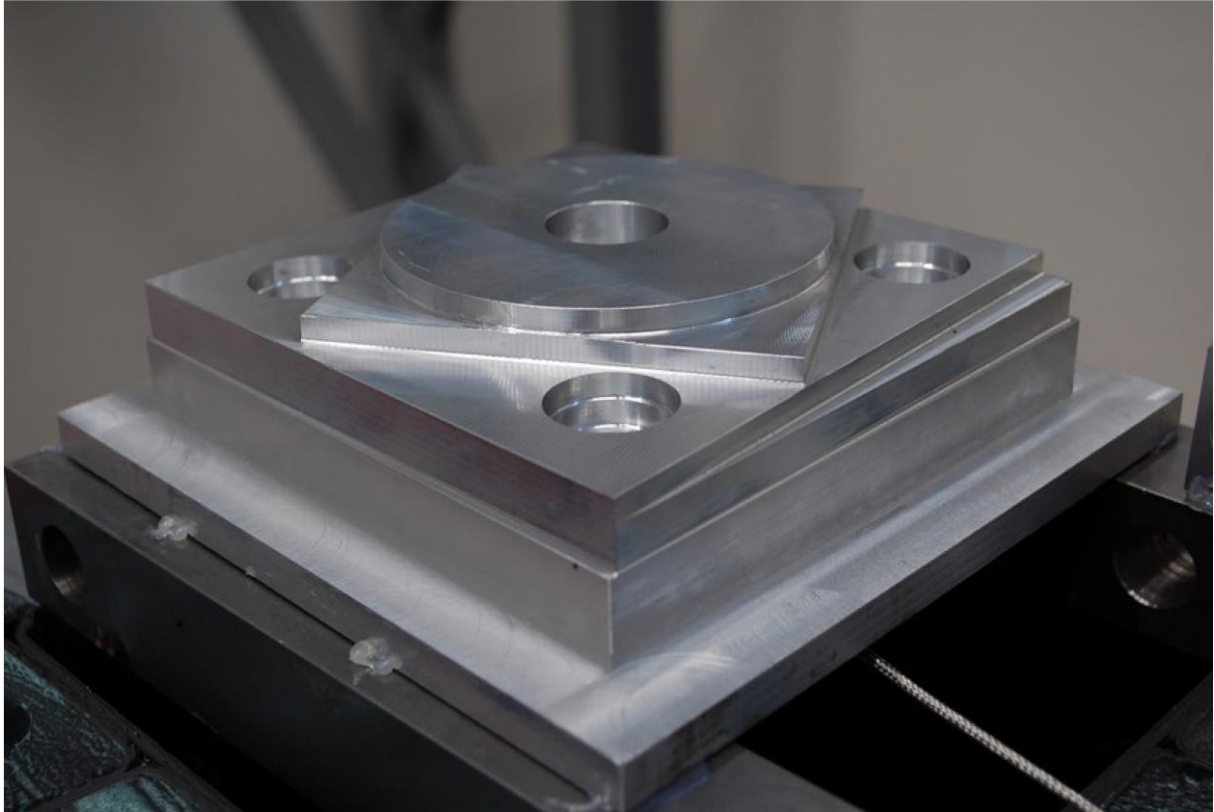# Anhang zum Projekt 68p8

1. Hergestellte Prüfwerkstück

Die Prüfwerkstück wurde auf die WZM MCV 754 QUICK von Ph.D. Student (Ing. Tuma) an der TU Brno bearbeitet.

Die Werkzeugmaschine WZM 754 QUICK.

2. Die Messung mit Laser Tracer

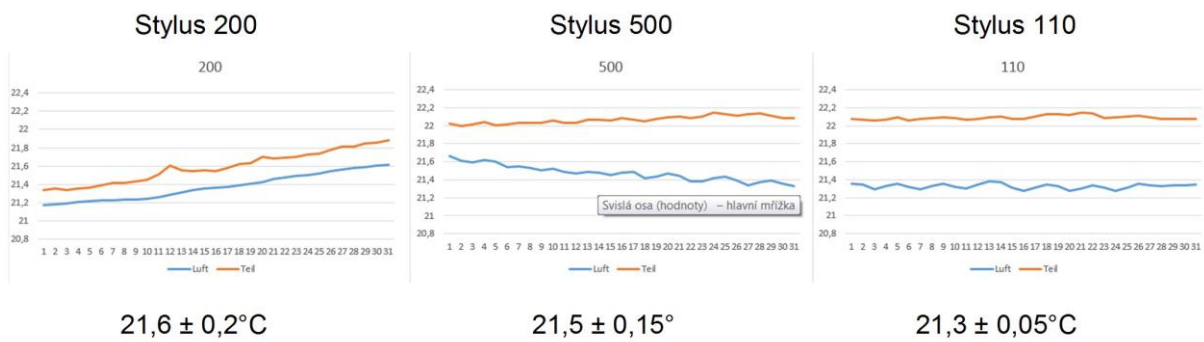Die Messung wurde von Ph.D. Student (Ing. Knobloch) im Labor vom Intemac Soluitons durchgeführt.

Kompozitfundament und Tracker

T-Probe und Zubehör

Temperatur

Stylus 200	Stylus 500	Stylus 110
21,6 ± 0,2°C	21,5 ± 0,15°	21,3 ± 0,05°C

Temperatur im Halle

Koordinatensystem

Das Koordinatensystem wurde in die Referenzebene A gesetzt und der Nullpunkt ist durch den Schnittpunkt der Zylinderachse und der Referenzebene A gebildet.
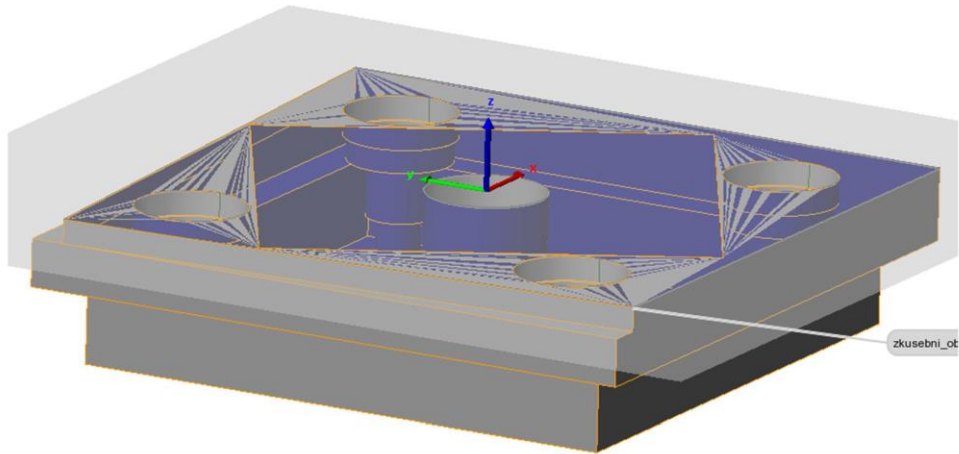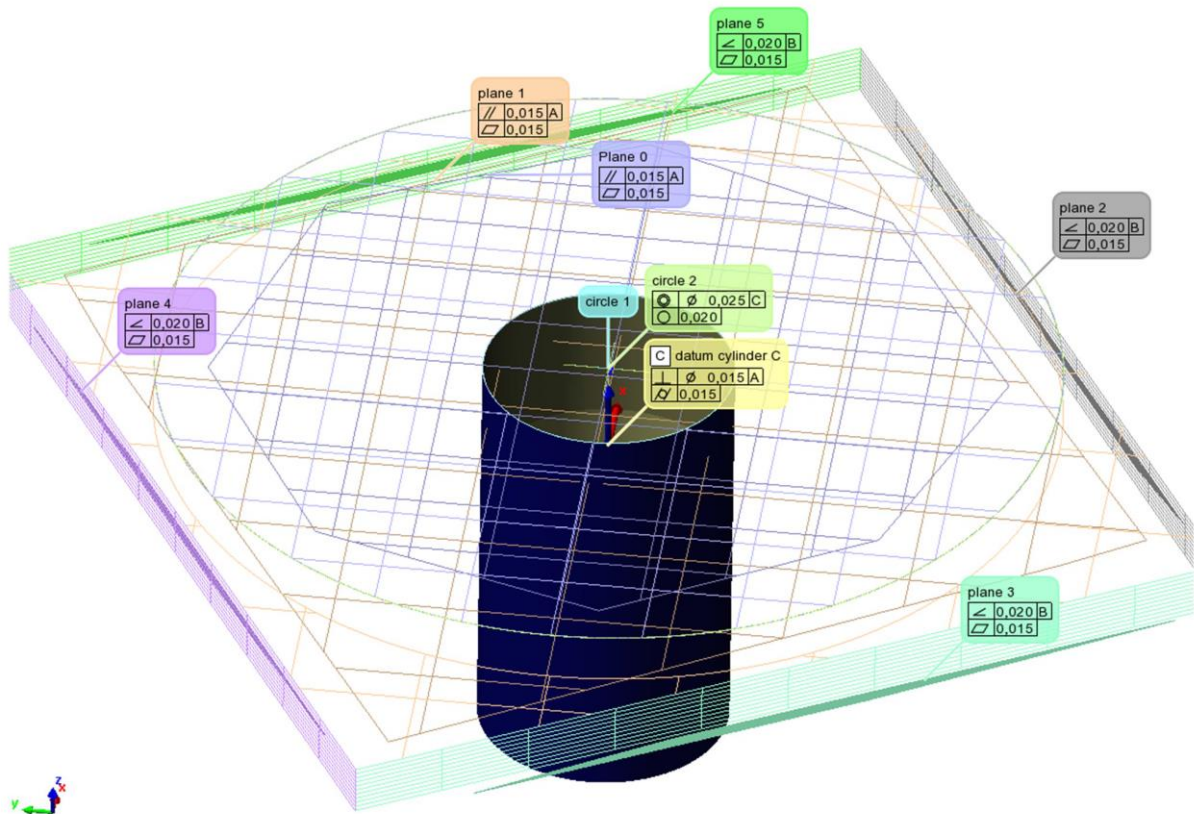

Abb.4: Lage des Koordinatensystem

plane 8
⟂ 0,020 B
▱ 0,015

plane 19
▱ 0,015

plane 23
▱ 0,015

A datum plane A
▱ 0,015

plane 12
⟂ 0,015 B
▱ 0,020

plane 22
▱ 0,015

plane 16
▱ 0,015

plane 15
▱ 0,015

plane 20
▱ 0,015

plane 10
⟂ 0,020 B
▱ 0,015

plane 13
∥ 0,015 A
▱ 0,015

plane 7
∠ 0,020 B
▱ 0,015

plane 17
▱ 0,015

plane 18
▱ 0,015

plane 14
∥ 0,015 A
▱ 0,015

B datum plane B
▱ 0,015

plane 21
▱ 0,015

cylinder 2
cylinder 7
cylinder 11

cylinder 5
cylinder 6
cylinder 10

D datum cylinder D
cylinder 8
cylinder 12

cylinder 9
cylinder 4
cylinder 13

Ergebnisse

Table Type   Statistical Process Control (Values per Piece)

Object	Control	Stylus 200	Stylus 500	Stylus 110 -1
Plane 0	Parallelism A	0,022	0,018	0,017
Plane 0	Flatness	0,016	0,015	0,009
datum cylinder C	Perpendicularity A	0,010	0,033	0,015
datum cylinder C	Cylindricity	0,035	0,050	0,029
datum cylinder C	Diameter	29,944	29,908	29,942
circle 1	Diameter	29,944	29,908	29,942
circle 2	Concentricity C	0,023	0,057	0,025
circle 2	Circularity	0,019	0,040	0,011
circle 2	Diameter	107,845	107,883	107,837
plane 1	Parallelism A	0,023	0,026	0,021
plane 1	Flatness	0,017	0,018	0,015
plane 2	Angularity B	0,008	0,016	0,040
plane 2	Flatness	0,007	0,007	0,005
plane 3	Angularity B	0,007	0,071	0,010
plane 3	Flatness	0,006	0,014	0,006
plane 4	Angularity B	0,009	0,028	0,013
plane 4	Flatness	0,000	0,012	0,006
plane 5	Angularity B	0,015	0,071	0,019
plane 5	Flatness	0,008	0,030	0,006
datum plane A	Flatness	0,024	0,020	0,022
plane 7	Angularity B	0,032	0,056	0,009
plane 7	Flatness	0,023	0,044	0,006
plane 8	Angularity B	0,022	0,017	0,025
plane 8	Flatness	0,006	0,016	0,024
datum plane B	Flatness	0,016	0,088	0,010
plane 10	Perpendicularity B	0,140		0,024
plane 10	Flatness	0,136	0,031	0,020
plane 11	Parallelism B	0,031	0,076	0,046
plane 11	Flatness	0,018	0,048	0,016
plane 12	Perpendicularity B	0,020		0,015
plane 12	Flatness	0,019	0,020	0,010
plane 13	Parallelism A	0,012	0,009	0,006
plane 13	Flatness	0,005	0,005	0,003
plane 14	Parallelism A	0,009	0,005	0,011
plane 14	Flatness	0,001	0,004	0,004
plane 15	Flatness	0,017	0,005	0,002
plane 15	Centroid Z	-17,972	-17,971	-17,972
plane 16	Flatness	0,001	0,006	0,006
plane 16	Centroid Z	-17,970	-17,959	-17,967
plane 17	Flatness	0,003	0,006	0,005
plane 17	Centroid Z	-17,974	-17,957	-17,966
plane 18	Flatness	0,005	0,007	0,005
plane 18	Centroid Z	-17,975	-17,966	-17,974
plane 19	Flatness	0,038	0,050	0,061
plane 19	Centroid Z	-36,251	-36,237	-36,242
plane 20	Flatness	0,019	0,038	0,011
plane 20	Centroid Y	-82,094	-82,074	-82,089
plane 21	Flatness	0,034	0,023	0,008
plane 21	Centroid X	-81,983	-82,096	-81,980
plane 22	Flatness	0,014	0,036	0,013
plane 22	Centroid Y	81,441	81,471	81,380
plane 23	Flatness	0,025	0,025	0,011
plane 23	Centroid X	81,257	81,198	81,261

Table Type Statistical Process Control (Values per Piece)

Object	Control	Stylus 200	Stylus 500	Stylus 110 -1
pattern 1	Diameter	147,083	147,098	147,073
cylinder 2	Diameter	27,933	27,909	27,866
cylinder 2	Midpoint X	51,979	51,886	51,966
cylinder 2	Midpoint Y	52,005	52,049	51,998
datum cylinder D	Diameter	27,937	27,909	27,914
datum cylinder D	Midpoint X	-52,040	-52,134	-52,026
datum cylinder D	Midpoint Y	52,001	52,033	52,000
cylinder 4	Diameter	27,932	27,946	27,789
cylinder 4	Midpoint X	-52,019	-52,112	-51,972
cylinder 4	Midpoint Y	-51,996	-51,988	-52,034
cylinder 5	Diameter	27,939	27,928	27,775
cylinder 5	Midpoint X	51,991	51,914	52,034
cylinder 5	Midpoint Y	-51,982	-51,941	-51,957
pattern 2	Diameter	147,079	147,102	147,352
cylinder 6	Diameter	25,946	25,882	25,919
cylinder 6	Midpoint X	51,981	51,919	52,005
cylinder 6	Midpoint Y	-51,985	-51,947	-51,985
cylinder 7	Diameter	25,920	25,912	25,904
cylinder 7	Midpoint X	51,969	51,886	52,193
cylinder 7	Midpoint Y	52,019	52,050	52,524
cylinder 8	Diameter	25,917	25,914	25,929
cylinder 8	Midpoint X	-52,025	-52,110	-52,021
cylinder 8	Midpoint Y	52,003	52,041	52,001
cylinder 9	Diameter	25,923	25,887	25,906
cylinder 9	Midpoint X	-52,011	-52,115	-52,019
cylinder 9	Midpoint Y	-52,009	-51,999	-51,992
pattern 3	Diameter	147,102	147,077	147,080
cylinder 10	Diameter	19,939	19,945	19,945
cylinder 10	Midpoint X	51,990	51,903	51,996
cylinder 10	Midpoint Y	-51,997	-51,945	-51,979
cylinder 11	Diameter	19,946	19,870	19,942
cylinder 11	Midpoint X	51,965	51,864	51,979
cylinder 11	Midpoint Y	52,008	52,056	52,019
cylinder 12	Diameter	19,936	19,914	19,953
cylinder 12	Midpoint X	-52,045	-52,122	-52,023
cylinder 12	Midpoint Y	51,998	52,017	52,001
cylinder 13	Diameter	19,956	19,958	19,943
cylinder 13	Midpoint X	-52,033	-52,092	-52,010
cylinder 13	Midpoint Y	-52,013	-51,996	-51,999