

DC

DIAMOND

COATED STYLI



KNOW HOW

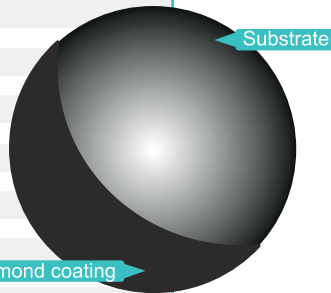
DC styli with diamond coated ball are the perfect alternative to existing ball materials. They can be used to measure extremely hard, very rough, abrasive and sharp surfaces tactilely by scanning.

Compared to ruby or silicon nitride, our nanocrystalline DC balls achieve the highest lifetime and thus the lowest wear. The standard portfolio of diamond coated balls currently includes the ball diameter 0.3mm; 0.5mm; 0.8mm; 1 mm; 2mm; 3mm; 5mm and 8mm. The roundness is <150nm (grade 5)

The shop offers a selection of standard sizes with a threaded connection in M2, M3 and M5. Of course, all special styli specifications, including L or T styli, styli for roundness measurement or for production machines with an M4 thread are available within 3 days.



Physical property	High Precision Sphere
Diamond type	Nanocrystalline diamond coating
Diamond purity	> 93%
Surface roughness R_a	< 2 nm
Coating thickness	25 μm
Young's modulus	700 GPa
Hardness	7,000 HV (68 GPa)
Fracture strength	5 GPa
Thermal expansion coefficient	$1.2 \times 10^{-6}/\text{K}$
Wear coefficient	$10^{-8} \text{ mm}^3/\text{Nm}$
Intrinsic electrical resistivity	> 10^9 ohm cm



+ Advantage:

- Low to no material adhesion
- Almost no wear
- Highest lifetime
- Fewer Calibrations
- Special styli available

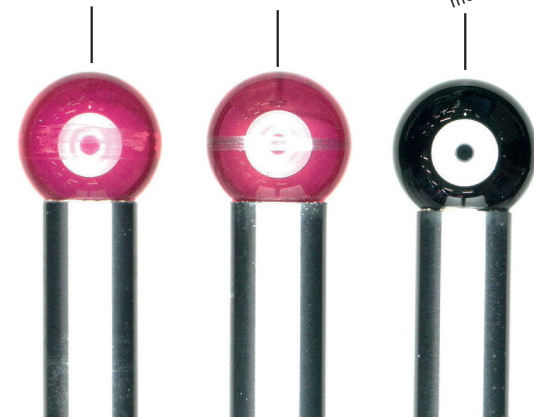
- Disadvantage:

- One time cost intensive purchase
- Not useful for every measurement task
- High storage costs

Ruby sphere:
First signs of wear after 2000m scan measurement. The ceramic material Al_2O_3 acts very abrasively on the ruby ball.

Ruby sphere:
Material application after a short scan measurement of an aluminum alloy (AlCuMgPb).

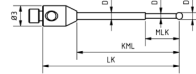
DC sphere:
Neither abrasion nor application for measurements over 15 km measuring distance.



CATALOG

M2

Styli stepped shaft

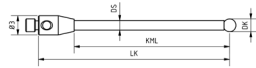


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	LK	KML	DS	DSE	MLK	weight / g
TM2-DC1020	1,05	20	15	1	0,7	5	0,400

M2

Styli straight shaft

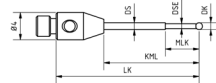


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	LK	KML	DS	weight / g
TM2-DC2020	1,05	20	15	1	0,400
TM2-DC3020	3,05	20	14	1,5	0,400

M3

Styli stepped shaft

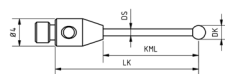


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	LK	KML	DS	DSE	MLK	weight / g
TM2-DC1021	1,05	21	14	1	0,7	5	0,700

M3

Styli straight shaft

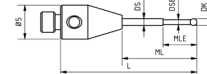


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	LK	KML	DS	weight / g
TM3-DC2021	2,05	21	14	1	0,800
TM3-DC3021	3,05	21	14	1,5	0,900
TM3-DC3050	3,05	50	43	2	2,100

M3 XXT

Styli stepped shaft

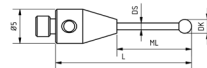


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	L	ML	DS	DSE	MLE	weight / g
TM3-DC1020-XXT	1,05	20	11	1	0,7	5	0,700

M3 XXT

Styli straight shaft



DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	L	ML	DS	weight / g
TM3-DC2020-XXT	2,05	20	11	1	0,700

M3 XXT

Styli straight shaft

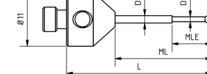


DK Material = Diamond coated / DS Material = carbon

Part-No.	DK	L	ML	DS	weight / g
TM3-DC3050-OC-XXT	3,05	50	41	2	0,800
TM3-DC5050-OC-XXT	5,05	50	41	3,5	1,400

M5

Styli stepped shaft

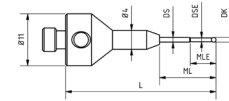


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	L	ML	DS	DSE	MLE	weight / g
ASZ-DC0332	0,3	32	12	1	0,5/0,23	4,5/1,3	6,500
ASZ-DC0532	0,5	32	12	1	0,5/0,23	5/2,6	6,500

M5

Styli stepped shaft

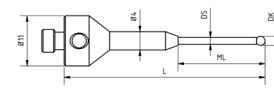


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	L	ML	DS	DSE	MLE	weight / g
ATG-DC0325	0,3	25	15	1	0,5/0,23	4,5/1,3	5,600
ATG-DC03525	0,5	25	15	1	0,6/0,32	4,5/2,6	5,600
ATG-DC0825	0,8	25	15	1	0,5	4,6	5,600
ATG-DC1020	1,05	20	10	1	0,7	5	5,600
ATG-DC1025	1,05	25	15	1	0,7	5	5,700
ATG-DC1030	1,05	30	20	1,5	0,7	5	6,100

M5

Styli stepped shaft

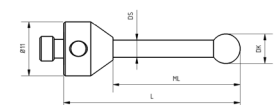


DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	L	ML	DS	DSE	MLE	weight / g
ATG-DC0832	0,8	32	12	1	0,5	4,6	6,800
ATG-DC1032	1,05	32	12	1	0,7	5	6,800
ATG-DC2032	2,05	32	12	1,5			7,300
ATG-DC2044	2,05	44	19	1,5			8,000
ATG-DC2058	2,05	58	33	1,5			8,700

M5

Styli straight shaft



DK Material = Diamond coated / DS Material = carbide

Part-No.	DK	L	ML	DS	weight / g
ATG-DC2020	2,05	20	10	1	5,700
ATG-DC2030	2,05	30	20	1,5	5,800
ATG-DC2040	2,05	40	30	1,5	5,900
ATG-DC3020	3,05	20	10	1,5	5,800
ATG-DC3033	3,05	33,5	23,5	2	6,700
ATG-DC3040	3,05	40	30	2	7,100
ATG-DC3050	3,05	50	40	2	7,500
ATG-DC3058	3,05	58	48	2	7,900
ATG-DC50100	5,05	100	90	3,5	18,700
ATG-DC5030	5,05	30	20	2	6,700
ATG-DC5053	5,05	53	43	3,5	12,200
ATG-DC5075	5,05	75	65	3,5	15,200
ATG-DC80100	8,05	100	87	6	32,100
ATG-DC80114	8,05	114,5	101,5	6	36,400
ATG-DC8063	8,05	63,5	50,5	6	23,000
ATG-DC8075	8,05	75	62	6	25,000