

# FIXINSPECT<sup>®</sup>

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**VIKING**

Total Metrology Solutions

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Measuring Accessories  
Targets · Target Frame



*Fixed on precision*



## Hightech in Aluminium

Witte was founded in 1969 and initially manufactured complex, high-precision parts for the aerospace industry. Today Witte has developed into a leading manufacturer of fixturing systems and gauges for all kinds of applications.

Almost all major companies from automotive and aircraft industries rely on Witte products and their experience of over 45 years.



### Certification

Witte Barskamp is certified according to

- DIN EN ISO 9001
- DIN EN ISO 9100
- QSF-A (Aerospace suppliers)



## FIXINSPECT® Measuring Accessories

Fixinspect measuring accessories simplify and considerably speed up tactile and non-contact measuring processes. All Fixinspect accessories are mounted on workpiece features, where dimensional data is required. It is easier and faster to measure the accessories than the features themselves.

Defined contact surfaces and high-precision manufacturing of the accessories mean measuring results can be calculated back to the workpiece feature location.

### FIXINSPECT HK

Measuring accessories  
for tactile measuring

4



### FIXINSPECT PG

Measuring accessories  
for photogrammetry systems

16



### FIXINSPECT TA

Targets and reference markers  
for photogrammetric measuring

22



### FIXINSPECT KR

Target frame

25



### FIXINSPECT LT

Measuring accessories  
for laser trackers.  
Hidden point adapters

28

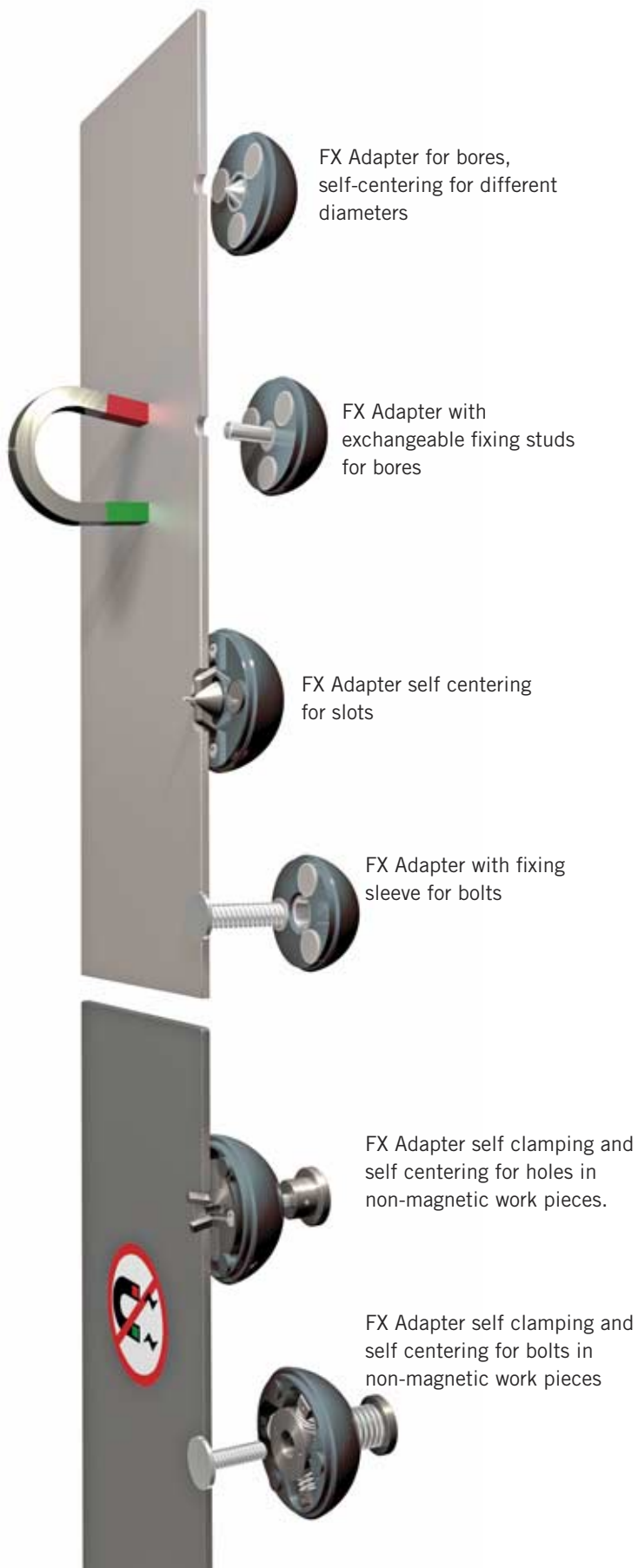


### FIXINSPECT FT

Feature Targets

34





## Fixinspect HK adapters for tactile measuring

FIXINSPECT HK measuring accessories comprise of accurately machined hemispheres fixed centrally in bores or on studs.

By touching the hemisphere surface the position of the bore or stud on the work piece can be defined precisely and much faster than with conventional methods.

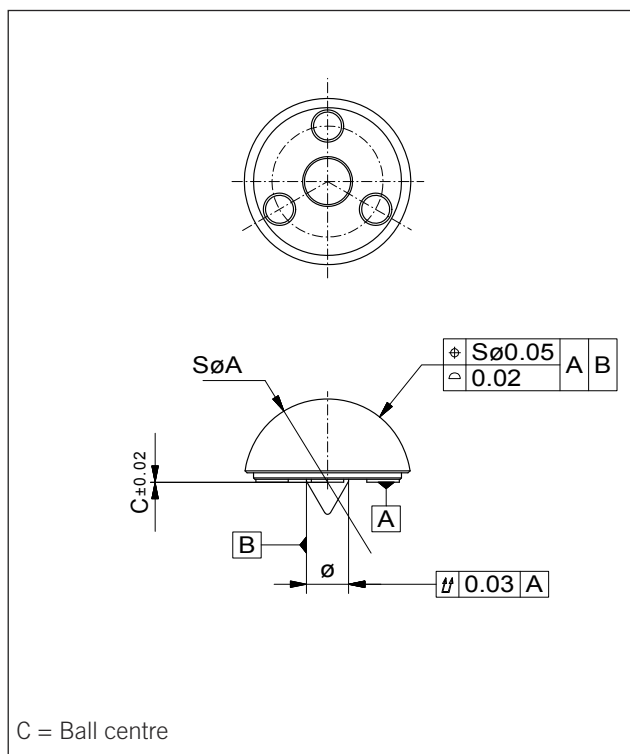
FIXINSPECT hemispheres can quickly be adapted to any desired bore diameter using exchangeable fixing studs in steps of 0,1mm.

The non-magnetic variety is centered via three spring loaded pins.

Centering on bolts takes place via fitted or threaded sleeves, for non-magnetic parts via clamping jaws.


Adapters with magnetic inserts are used for all magnetic work pieces, for non-magnetic metals and plastics pin or jaw adapters which simultaneously centre and clamp are used.

All hemispheres are made of high-tensile aluminium with a tolerance of 0,02mm, are anodized dark red and reflection free.



Form and position tolerances for Fixinspect "R" measuring accessories

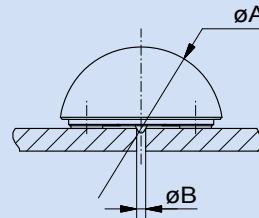
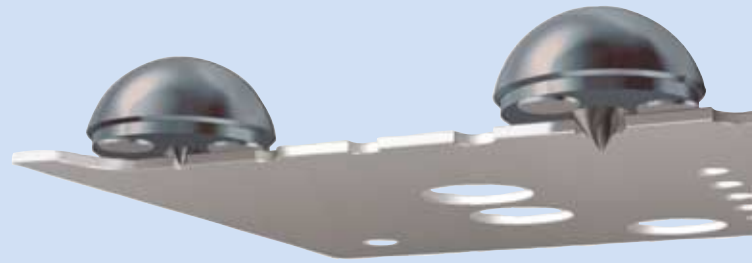
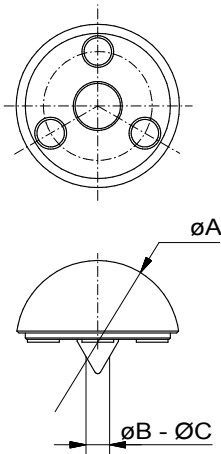


 **FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

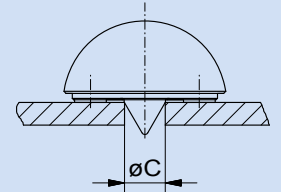
### FX Adapter

magnetic, self-centering

Nr.	A	B	C	g
85198	36	2	9	39
87488	30	4,5	8	20
89172	25	3	6	10
92427	36	8	14	44



Minimum hole diameter to be measured



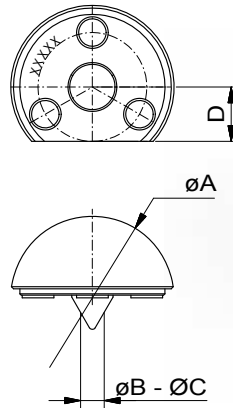
Maximum hole diameter to be measured

Springloaded FIXINSPECT® Adapters self-centre in bores. Hole diameters from 2mm to 9mm can be measured using the same adapter (#85198), without having to make any further changes using studs or sleeves.

### FX Adapter

magnetic, one flat, self-centering

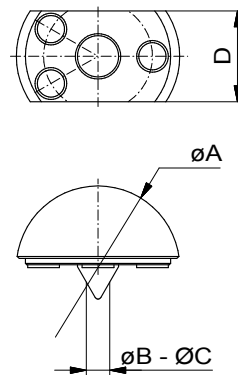
Nr.	A	B	C	D	g
85199	36	2	9	12	33
89101	30	4,5	8	7	21
89173	25	3	6	5	10



### FX Adapter

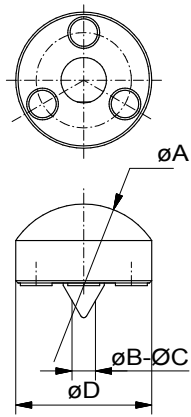
magnetic, parallel flats, self-centering

Nr.	A	B	C	D	g
85200	36	2	9	20	27
89103	30	4,5	8	17,5	18
90414	25	3	6	13	10



Preference item:  
Articles with green diamond →  
are available ex stock!

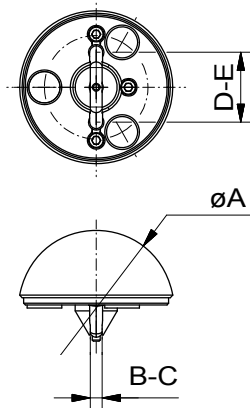




### FX Adapter

magnetic, elongated, self-centering

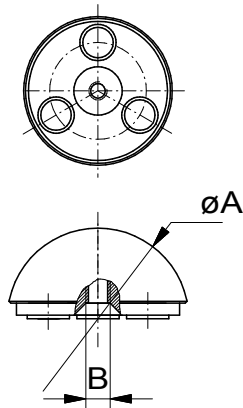
Nr.	A	B	C	D	g
85203	36	2	9	30	30
89108	30	3	6	20	10



### FX Adapter <sup>(DBGM)</sup>

magnetic, for slots

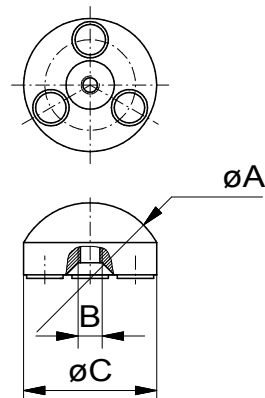
Nr.	A	B	C	D	E	g
281681	30	3,0	7,5	10,0	14,5	22
281682	36	4,0	8,5	12,0	16,5	36
281683	36	4,0	8,5	15,0	19,5	36
281684	36	5,0	9,5	16,0	20,5	36
281685	36	6,0	10,5	16,0	20,5	36



### FX Adapter

magnetic, for fixing stud M4

Nr.	A	B	g
84801	30	M4	20
84802	25	M4	10




### FX Adapter

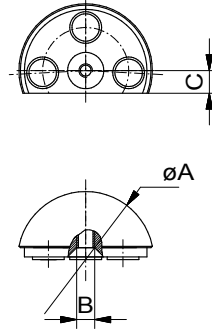
magnetic, elongated, for fixing stud M4

Nr.	A	B	C	g
84805	25	M4	22	10

### FX Adapter

magnetic, one flat surface, for fixing stud M4

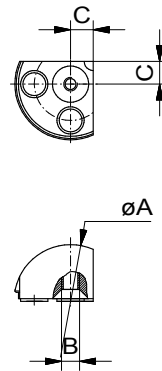
Nr.	A	B	C	g
84808	30	M4	5	10
 84809	25	M4	5	10



### FX Adapter 90°

magnetic, for fixing stud M4, corner cut to 90° angle

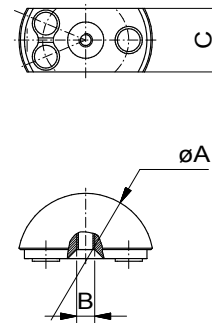
Nr.	A	B	C	g
84811	25	M4	5	10



### FX Adapter

magnetic, parallel flat surfaces, for fixing stud M4

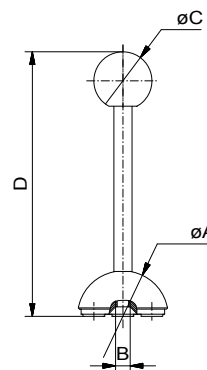
Nr.	A	B	C	g
84815	30	M4	14	12
84814	25	M4	14	8



### FX Adapter with ball tip


magnetic, for concealed measuring points, with screw-on grip

Nr.	A	B	C	D	g
84820	25	M4	16	73	50



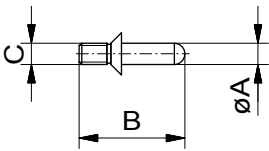
Preference item:  
Articles with green diamond →  
are available ex stock!



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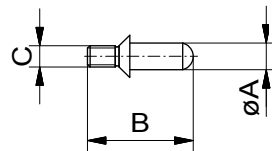
### Fixing studs

∅2,0 - ∅4,9; B=20



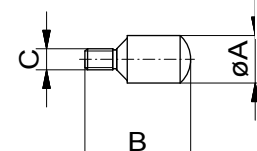
### Fixing studs

∅5,0 - ∅6,9; B=20



### Fixing studs

∅7,0 - ∅9,9; B=20



Nr	A	C	g
32050	2,0	M4	1
32051	2,1	M4	1
32052	2,2	M4	1
32053	2,3	M4	1
32054	2,4	M4	1
32055	2,5(M3)	M4	1
32056	2,6	M4	1
32057	2,7	M4	1
32058	2,8	M4	1
32059	2,9	M4	1

32060	3,0	M4	1
32061	3,1	M4	1
32062	3,2	M4	1
32063	3,3	M4	1
32064	3,4	M4	1
32065	3,5	M4	1
32066	3,6	M4	1
32067	3,7	M4	1
32068	3,8	M4	1
32069	3,9	M4	1

32070	4,0	M4	1
32071	4,1	M4	1
32072	4,2(M5)	M4	1
32073	4,3	M4	1
32074	4,4	M4	1
32075	4,5	M4	1
32076	4,6	M4	1
32077	4,7	M4	1
32078	4,8	M4	1
32079	4,9	M4	1

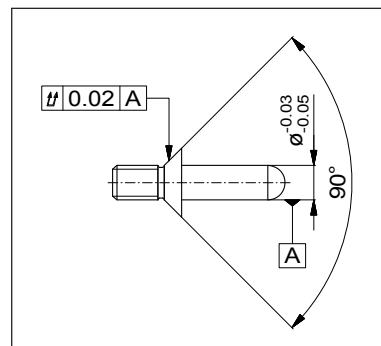
Nr	A	C	g
32080	5,0(M6)	M4	1
32081	5,1	M4	1
32082	5,2	M4	1
32083	5,3	M4	1
32084	5,4	M4	1
32085	5,5	M4	1
32086	5,6	M4	1
32087	5,7	M4	1
32088	5,8	M4	1
32089	5,9	M4	1

32090	6,0	M4	1
32091	6,1	M4	1
32092	6,2	M4	1
32093	6,3	M4	1
32094	6,4	M4	1
32095	6,5	M4	1
32096	6,6	M4	1
32097	6,7	M4	1
32098	6,8(M8)	M4	1
32099	6,9	M4	1

Nr	A	C	g
32100	7,0	M4	2
32101	7,1	M4	2
32102	7,2	M4	2
32103	7,3	M4	2
32104	7,4	M4	2
32105	7,5	M4	2
32106	7,6	M4	2
32107	7,7	M4	2
32108	7,8	M4	2
32109	7,9	M4	2

32110	8,0	M4	2
32111	8,1	M4	2
32112	8,2	M4	2
32113	8,3	M4	2
32114	8,4	M4	2
32115	8,5(M10)	M4	2
32116	8,6	M4	2
32117	8,7	M4	2
32118	8,8	M4	2
32119	8,9	M4	2

32120	9,0	M4	2
32121	9,1	M4	2
32122	9,2	M4	2
32123	9,3	M4	2
32124	9,4	M4	2
32125	9,5	M4	3
32126	9,6	M4	3
32127	9,7	M4	3
32128	9,8	M4	3
32129	9,9	M4	3



Form and position tolerances for Fixinspect "R" fixing studs

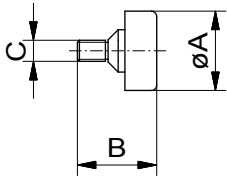
Preference item:  
Articles with green diamond →  
are available ex stock!





### Fixing studs

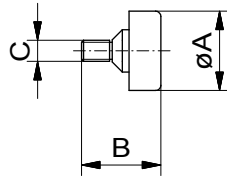
∅10,0 - ∅12,9; B=15



Nr	A	C	g
32150	10,0	M4	2
32151	10,1	M4	2
32152	10,2(M12)	M4	2
32153	10,3	M4	2
32154	10,4	M4	2
32155	10,5	M4	2
32156	10,6	M4	2
32157	10,7	M4	2
32158	10,8	M4	2
32159	10,9	M4	2
32160	11,0	M4	2
32161	11,1	M4	2
32162	11,2	M4	2
32163	11,3	M4	2
32164	11,4	M4	2
32165	11,5	M4	2
32166	11,6	M4	2
32167	11,7	M4	2
32168	11,8	M4	2
32169	11,9	M4	2
32170	12,0	M4	2
32171	12,1	M4	2
32172	12,2	M4	2
32173	12,3	M4	2
32174	12,4	M4	2
32175	12,5	M4	3
32176	12,6	M4	3
32177	12,7	M4	3
32178	12,8	M4	3
32179	12,9	M4	3

### Fixing studs

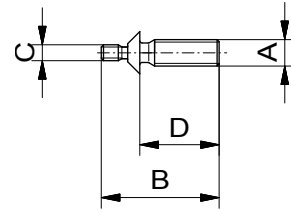
∅13,0 - ∅14,9; B=15



Nr	A	C	g
32180	13,0	M4	3
32181	13,1	M4	3
32182	13,2	M4	3
32183	13,3	M4	3
32184	13,4	M4	3
32185	13,5	M4	3
32186	13,6	M4	3
32187	13,7	M4	3
32188	13,8	M4	3
32189	13,9	M4	3
32190	14,0 (M16)	M4	3
32191	14,1	M4	3
32192	14,2	M4	3
32193	14,3	M4	3
32194	14,4	M4	3
32195	14,5	M4	3
32196	14,6	M4	3
32197	14,7	M4	3
32198	14,8	M4	3
32199	14,9	M4	3

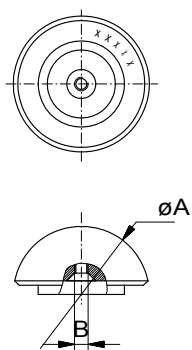
### Threaded fixing pins

M6 - M12



Nr	A	C	B	D	g
54566	M8	M4	15	10	3
32925	M6	M3	16	9	2
32926	M8	M3	16	9	3
32927	M10	M3	16	8	5
55019	M6	M3	18	10,7	2
55020	M8	M3	18	10,7	4
52223	M6	M4	20	12	3
52224	M8	M4	20	12	5
52225	M10	M4	20	12	10
52226	M12	M4	20	12	10
54517	M5	M3	23	15,7	2
53676	M6	M3	23	15,7	3
53677	M8	M3	23	15,7	5
53678	M10	M3	23	15,7	10
54519	M12x1,5	M3	23	15,7	10
55740	M12	M3	23	15,7	11
55534	M12x1,5	M3	49,3	40	30

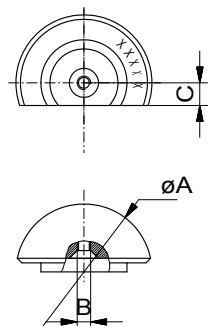




### FX adapter

threaded

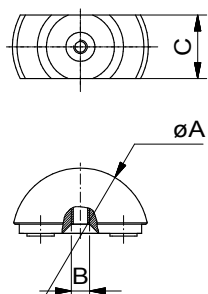
Nr.	A	B	$\varnothing g$
32010	30	M3	16
32012	25	M3	9



### FX adapter

threaded, one flat

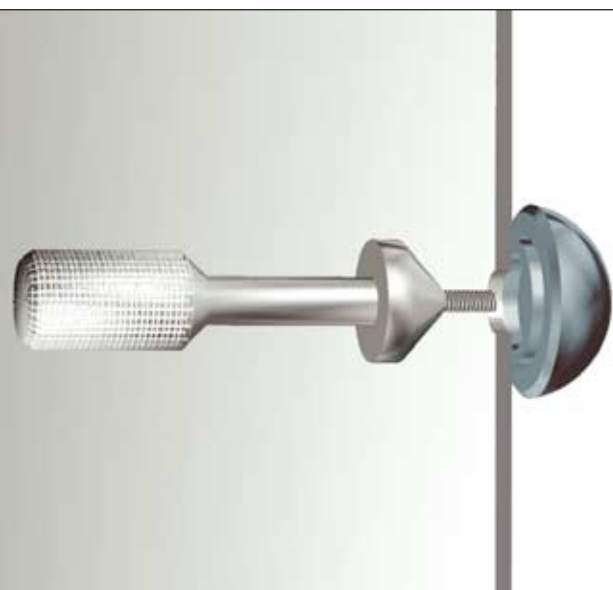
Nr.	A	B	C	$\varnothing g$
32014	30	M3	5	10
32016	25	M3	5	7



### FX adapter

threaded, parallel flats

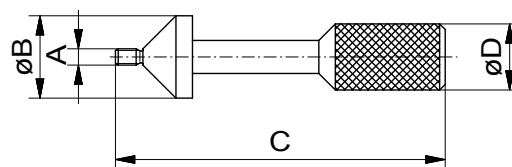
Nr.	A	B	C	$\varnothing g$
32018	30	M3	14	10
32020	25	M3	14	10



### Fixing screw

self-centering for threaded adapters

Nr.	A	B	C	D	$\varnothing g$
32022	M3	15	60	12	30



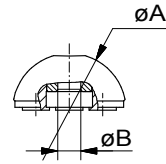
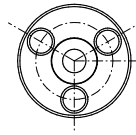
Preference item:  
Articles with green diamond →  
are available ex stock!



## FX adapter

magnetic, with fixing sleeve

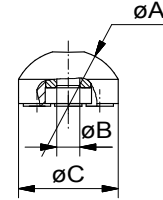
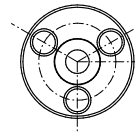
	Nr	A	B		
◆	84840	25	5,1	(M5)	11
◆	84833	30	5,1	(M5)	20
◆	84841	25	6,1	(M6)	10
◆	84834	30	6,1	(M6)	17
	84825	35	5,1	(M5)	33
◆	84835	30	8,1	(M8)	20
	84826	35	6,1	(M6)	33
	84836	30	10,1	(M10)	17
	84827	35	8,1	(M8)	31
	84828	35	10,1	(M10)	29



## FX adapter

magnetic, elongated, with fixing sleeve

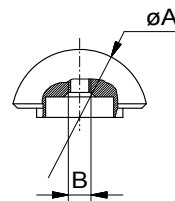
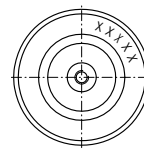
	Nr.	A	B	C	
	84846	25	5,1	(M5)	22
	84847	25	6,1	(M6)	22



## FX Adapter

with through thread

	Nr	A	B	
	51110	30	M4	20
	32025 *)	30	M5x1,5875	20
	54957	30	M5	10
	32026	30	M6	10
	32027	30	M8	14
	32028	30	M10	10
	55333	25	M4	10
	32033 *)	25	M5x1,5875	9
◆	54956	25	M5	9
◆	32034	25	M6	10
◆	32035	25	M8	10
◆	32036	25	M10	10

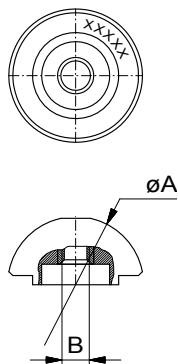


\*) For welded bolts, double thread, only one turn cut

Preference item:  
Articles with green diamond →  
are available ex stock!



**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.



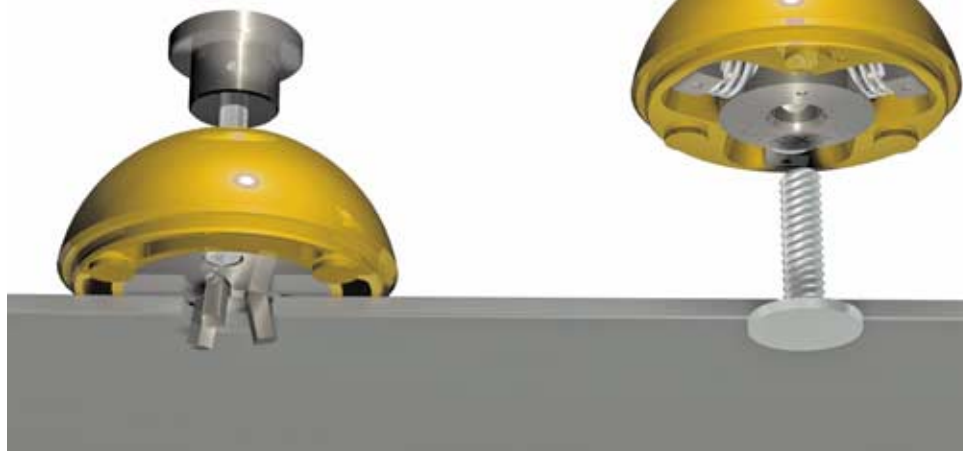
**i** \*) For welded bolts, double thread, only one turn cut

## FX adapter

with through thread and fixing sleeve

Nr	A	B	
96721	30	M4	20
96722 *)	30	M5x1,5875	20
96799	30	M5	10
96607	30	M6	10
96723	30	M8	14
96724	30	M10	10
96800	25	M4	10
96725 *)	25	M5x1,5875	9
96801	25	M5	9
96726	25	M6	10
96727	25	M8	10
96728	25	M10	10

FIXINSPECT accessories self clamping and self centering for holes in non-magnetic work pieces

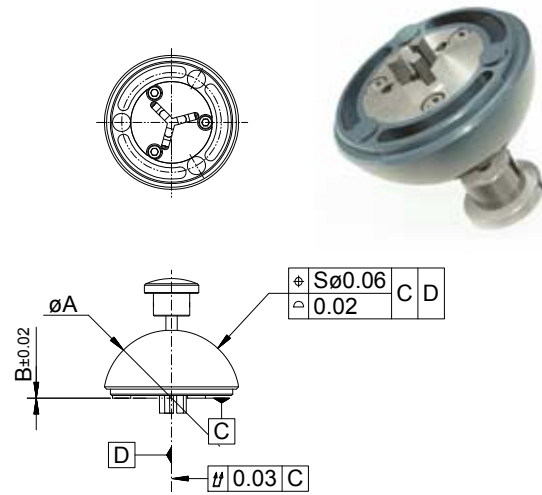


FIXINSPECT accessories self clamping and self centering for bolts in non-magnetic work pieces

### FX Adapter <sup>(DBGM)</sup>

with clamping pins for holes

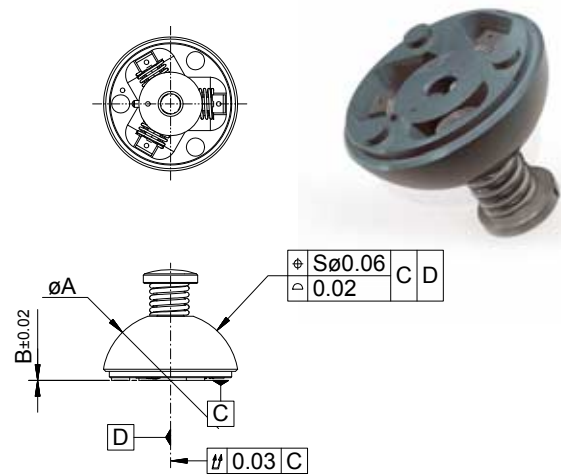
Nr.	A	B	C	g
281875	30	3,0	4,0	18
281827	30	4,0	5,0	18
281828	30	5,0	6,0	18
281829	30	6,0	7,0	18
281671	30	7,0	8,0	18
281672	36	8,0	9,5	30
281673	36	9,5	11,0	30
281674	36	11,0	12,5	30
281675	36	12,0	14,0	30



### FX Adapter <sup>(DBGM)</sup>

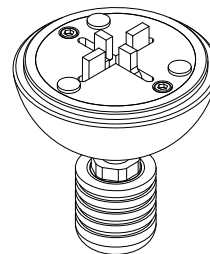
with clamping jaws for welded bolts

Nr.	A	B	C	g
281676	30	2,9	4,2	19
281677	30	4,2	5,5	19
281678	30	5,6	6,9	19
281679	36	7,0	8,4	35
281680	36	8,5	10,0	35



### FX Adapter <sup>(DBGM)</sup>

with 4 clamping pins, for slots



Details and technical data available on request



**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

<sup>(DBGM)</sup> = Utility model

## #84700 Set Fixinspect® HK

in wooden case, 236 pcs., 5,6 kg, comprising:

Measuring accessory (M-A) for threaded or pressed holes

Nr.	St.	Name
84801	4	M-A ø30 magnetic
84802	4	M-A ø25 magnetic
84805	1	M-A ø25/22 magnetic
84808	1	M-A ø30/20 magnetic
84809	1	M-A ø25/17,5 magnetic
84811	1	M-A ø25/17,5 magnetic
84814	1	M-A ø25/14 magnetic
84815	1	M-A ø30/14 magnetic
84820	1	M-A ø25 magnetic
32010	1	M-A ø30 threaded
32012	1	M-A ø25 threaded
32014	1	M-A ø30/20 threaded
32016	1	M-A ø25/17,5 threaded
32018	1	M-A ø30/14 threaded
32020	1	M-A ø25/14 threaded
32022	2	Fixing screw M3
32050	1	Fixing stud D=2,0
↓		↓
32209	1	Fixing stud D=15,9
31764	16	Threaded fixing pin M3/2,5
31765	2	Threaded fixing pin M4/3,3
31766	6	Threaded fixing pin M5/4,2
31767	4	Threaded fixing pin M6/5,0
31768	2	Threaded fixing pin M8/6,8
31769	2	Threaded fixing pin M10/8,5
31770	2	Threaded fixing pin M12/10,2
31771	2	Threaded fixing pin M16/14,0

All dias for fixing studs are included 1x except for:  
 32055 Dia 2,5 M3 2x  
 32063 Dia 3,3 M4 2x  
 32072 Dia 4,2 M5 2x  
 32080 Dia 5,0 M6 3x  
 32098 Dia 6,8 M8 3x  
 32115 Dia 8,5 M10 2x

The selection of items in this set comprises a comprehensive range of sizes for different applications.

Measuring accessory (M-A) for welded or threaded bolts

Nr.	St.	Name
84825	1	M-A ø35 with sleeve d=5,1
84826	1	M-A ø35 with sleeve d=6,1
84827	1	M-A ø35 with sleeve d=8,1
84828	1	M-A ø35 with sleeve d=10,1
84833	1	M-A ø30 with sleeve d=5,1
84834	1	M-A ø30 with sleeve d=6,1
84835	1	M-A ø30 with sleeve d=8,1
84836	1	M-A ø30 with sleeve d=10,1
84840	1	M-A ø25 with sleeve d=5,1
84841	1	M-A ø25 with sleeve d=6,1
84846	1	M-A ø22 with sleeve d=5,1
84847	1	M-A ø22 with sleeve d=6,1
32025	1	M-A ø30 threaded M5
32026	1	M-A ø30 threaded M6
32027	1	M-A ø30 threaded M8
32028	1	M-A ø30 threaded M10
32033	1	M-A ø25 threaded M5
32034	1	M-A ø25 threaded M6
32035	1	M-A ø25 threaded M8
32036	1	M-A ø25 threaded M10
85153	1	Wooden case with 2 metal trays



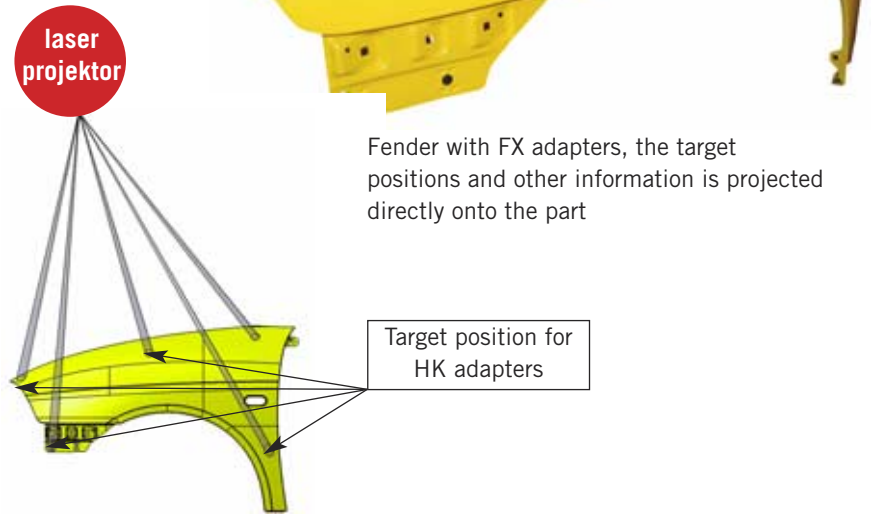
**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

## Laser pointer to mark mounting positions for Fixinspect accessories

### 3D laser projector

A programmable laser pointer projects accurate contours of measuring accessories in two colours on all kinds of parts. With the help of this technology target positions and type of adapter are shown in green on the surface of a part. Time consuming identification, mix-ups or omissions are avoided.

To remove adapters the same technology in red is used. Quantity, position and type of accessory can be configured at any time (all necessary information is placed in a CAD file). Apart from the outline contour also item number, name, additional information and arrows (i.e. for concealed positions not accessible to light rays) can be shown.



Fender with FX adapters, the target positions and other information is projected directly onto the part

## Witte-RFID

Radio Frequency Identification enables clear identification and comprehensive saving of all product relevant and life cycle data. Saving takes place on securely implanted transponders, which are written and read by electronic pens.

The transponders (D=8mm x H=3mm) have 500, 1000 or 2000 figure memory capacity. For fixed information (worldwide exclusive identity number, item number, name, manufacturer, date of production) approx 100 figures are required.

The remaining memory can be individually written (i.e. application, storage place, checking intervals etc.)

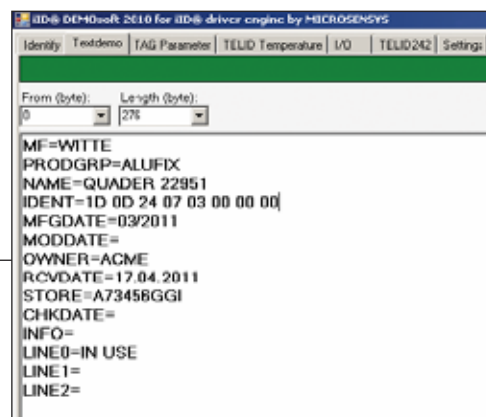
The pin can either be connected to a USB port or used wireless via Bluetooth. Reading and writing can be done on a PC via a standard program or special software (i.e. storage management).

All Witte Alufix components with a minimum size can be equipped ex works with a transponder. Retrofitting of used parts at a later date is also possible.



Reader pen with USB interface

Saved data RFID-chip with individually assembled information





## Measuring accessories for photogrammetry systems

The Fixinspect PG adapters can be placed on the work piece as needed and have an individual coded dot-matrix for measuring with photogrammetry systems. Magnets hold the dice to the work piece, pins or spring loaded cones ensure the exact positioning of the dice. Special adapters are available for work piece edges or corners.

Witte has developed a code system for photogrammetry accessories. Each code denotes the different configuration of dots on the 5 available surfaces of each dice as well as the colour in which it has been anodized.

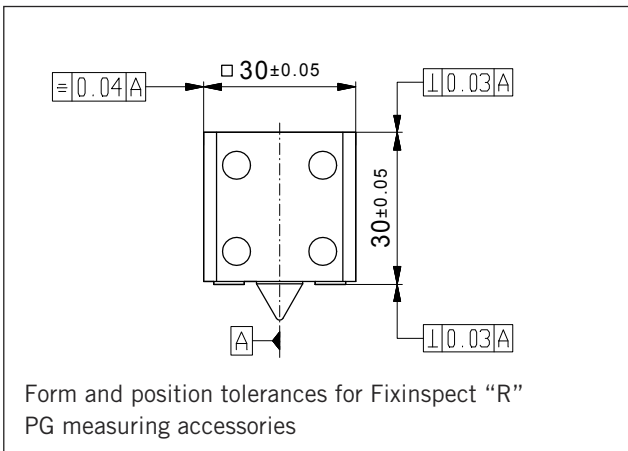
Code 1 is black, code 2 is red, code 3 is violet.

Individual coding is also available on request.

Please contact us for further information.

We reserve the right to make technical changes.

Fixinspect PG accessories in use



Example of use:  
FX PG "cube" 900101  
fixed on a keyless chuck  
82220

**i** This set up can be fixed i.e. on bolts or in large diameters

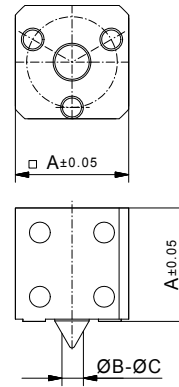
**i** Connection element required for this set up:  
Adapter M12x0,5/M4 # 57361



## PG adapter cube

magnetic, self-centering

Nr.	A	B	C	Code	
900102	30	2	9	1	29
900202	30	2	9	2	29
900302	30	2	9	3	29
900103	30	8	14	1	29
900203	30	8	14	2	29
900303	30	8	14	3	29

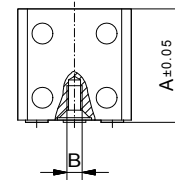
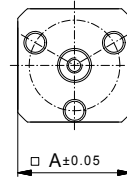


## PG adapter cube

magnetic, for use with fixing studs

Nr.	A	B	Code	
900101	30	M4	1	70
900201	30	M4	2	70
900301	30	M4	3	70

suitable fixing studs on pages 8-9



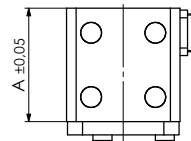
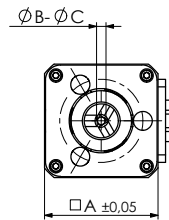
## PG adapter cube

with collet, self centering, operated by push pin

Nr.	A	B	C	Code	
900117	30	2,5	4,5	1	80
900217	30	2,5	4,5	2	80
900317	30	2,5	4,5	3	80

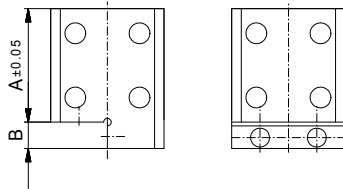
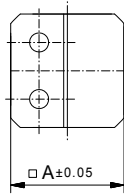
Nr.	A	B	C	Code	
900118	30	4,5	6,5	1	80
900218	30	4,5	6,5	2	80
900318	30	4,5	6,5	3	80

Nr.	A	B	C	Code	
900119	30	6,5	8,5	1	80
900219	30	6,5	8,5	2	80
900319	30	6,5	8,5	3	80



Version with clamping pins for holes on request

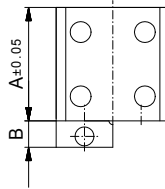
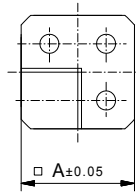
Special types / individual codes, i.e. layout of dots, on request  
Subject to technical changes



### PG adapter cube

magnetic, to mount on edges of workpiece

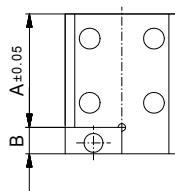
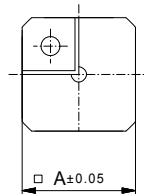
Nr.	A	B	Code	
900104	30	7	1	82
900204	30	7	2	82
900304	30	7	3	82
900109	30	25	1	104
900209	30	25	2	104
900309	30	25	3	104



### PG adapter cube

magnetic, 90° corner projection

Nr.	A	B	Code	
900105	30	7	1	78
900205	30	7	2	78
900305	30	7	3	78
900110	30	25	1	88
900210	30	25	2	88
900310	30	25	3	88



### PG adapter cube

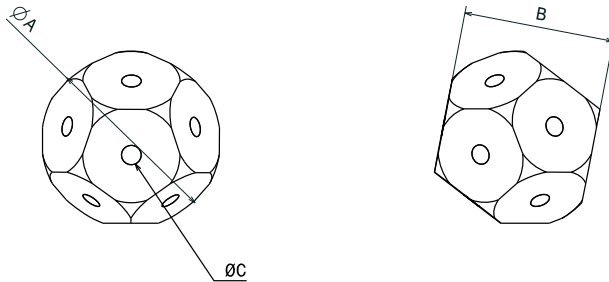
magnetic, 90° corner recess

Nr.	A	B	Code	
900106	30	7	1	84
900206	30	7	2	84
900306	30	7	3	84

### PG adapter „dodecahedron“

with fixing hole Dia 8<sup>H7</sup>

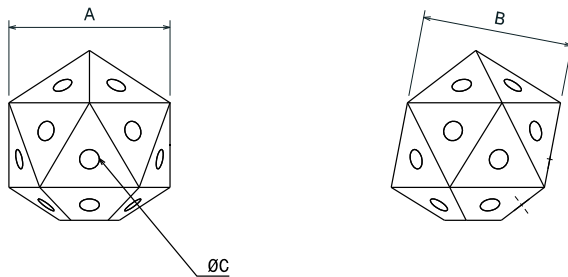
Nr.	A	B	C	
283759	50	42	5,5	135



### PG adapter „icosahedron“

with fixing hole Dia 8<sup>H7</sup>

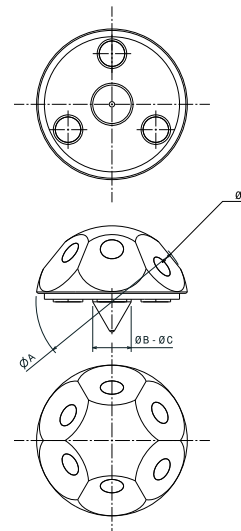
Nr.	A	B	C	
283760	44,96	42	5,5	122



### PG adapter „hexahedron“

magnetic, self centering

Nr.	A	B	C	D	
283761	36	2	9	5,5	30



Versions for non-magnetic metals and plastics on request

Special types / individual codes, i.e. layout of dots, on request  
Subject to technical changes



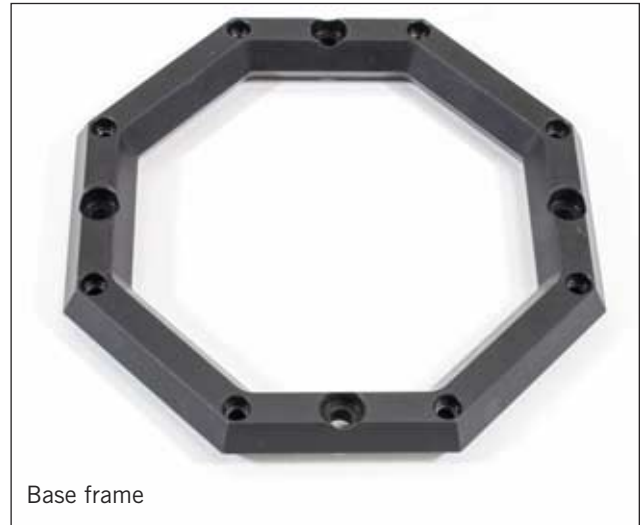
### #96877 Basic Set PG

Set of PG measuring accessories (PG M-A) with code 1 and fixing studs; 2,7kg; 37 pcs

900101	4	FX PG for use with fixing studs
900102	4	FX PG, self centering for 2-9mm
900103	4	FX PG, self centering for 8-14mm
900104	2	FX PG to sit on edges of workpieces
900105	4	FX PG with corner step 90°
900106	2	FX PG with cut out corner 90°
32110	4	Fixing stud ø8
32150	4	Fixing stud ø10
32170	4	Fixing stud ø12
32200	4	Fixing stud ø15
96878	1	Storage case



Example with Alufix baseplate, Parallel-vise, Single point target markers (not included in delivery).



Base frame



Bar, hexagonal

## #288362 Basic Set for Target Frames

152 pcs

414546	1	Upper frame ø250, octagonal
414547	1	Base frame ø250, octagonal
414549	1	Upper frame ø200, octagonal
414550	1	Base frame ø200, octagonal
414551	1	Upper frame ø150, octagonal
414552	1	Base frame ø150, octagonal
288751	24	Bar, hexagonal, with pin, L=100
10608-S1	12	Socket head screw M6 x 40
21386-1	12	Plain sleeve - AF25
21599-1	24	Positioning sleeve - AF16
10746-S1	24	Socket head screw M4 x 25
23250	24	Lock WAF3 - AF16
23249	24	Combi bolt M4 - AF16
54902	1	Combined pin spanner and key - AF16
98022	1	Torque wrench - AF25



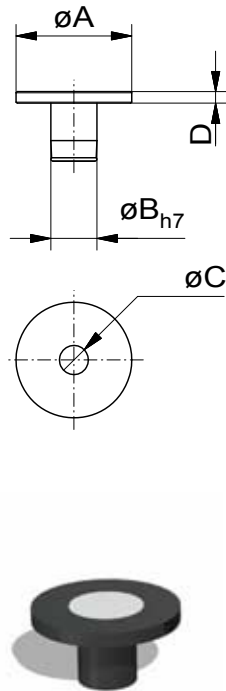
Upper frame with Combi bolts

## TA Position Marker Targets for digital camera measuring systems

Witte TA position marker targets replace the usual dot stickers. The targets have a circumferential slot with an O-ring guaranteeing a good fit into Alufix Classic or ECO Bars.

The targets support simple modification of camera angle and point density to create a reference. They offer unlimited reusability and changes of position, depending on application and camera angle.

**DBGM**: Utility model



## TA position marker target with ceramic insert

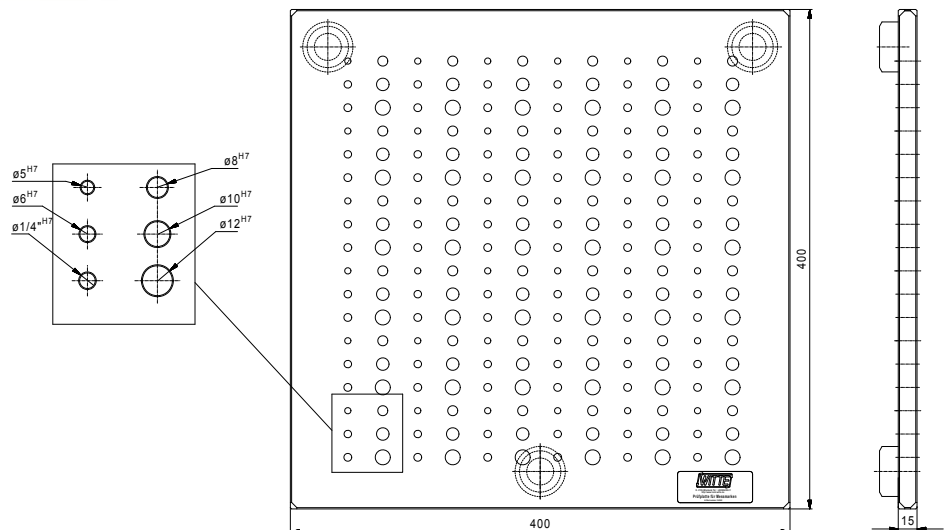
Nr.	A	B	C	D	
96203	20	8h7	10	2	8
96399	20	12,5h7	10	2	10
96745	15	8h7	5	2	17
283521	32	20	10	2	30



## Check plate for TA targets supplied in case

Nr.	A	B	C	
94868	15	400	400	2361

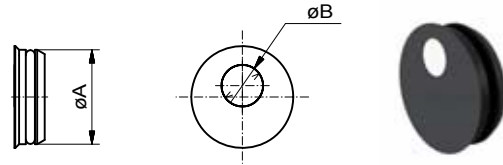
in high-tensile aluminium, anodized black, incl. 36 holes with Dia 5h7, 6h7, 1/4" h7, 8h7, 10h7, 12h7 for storing targets



## TA Position marker Target, flat <sup>(DBGM)</sup>

with target for Alufix bars

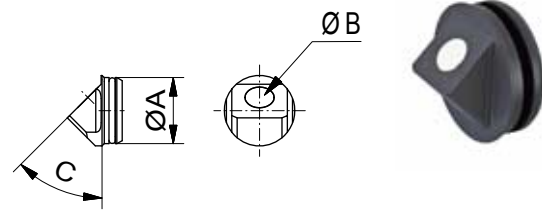
Nr.	A	B	AF	
283468	12,5	5,5	25	1
283469	20	5,5	40	1
283470	25	5,5	50	1



## TA Position marker Target, angled <sup>(DBGM)</sup>

with integrated angled target for Alufix bars

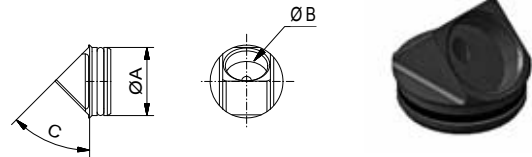
Nr.	A	B	C	AF	
283723	12,5	5,5	45°	25	3
283724	20	5,5	45°	40	4
283725	25	5,5	45°	50	5



## Holder for TA position marker Target angled <sup>(DBGM)</sup>

for Alufix bars, to mount TA Position marker #283468

Nr.	A	B	C	AF	
283726	20	12,5	45°	40	3
283727	25	12,5	45°	50	5



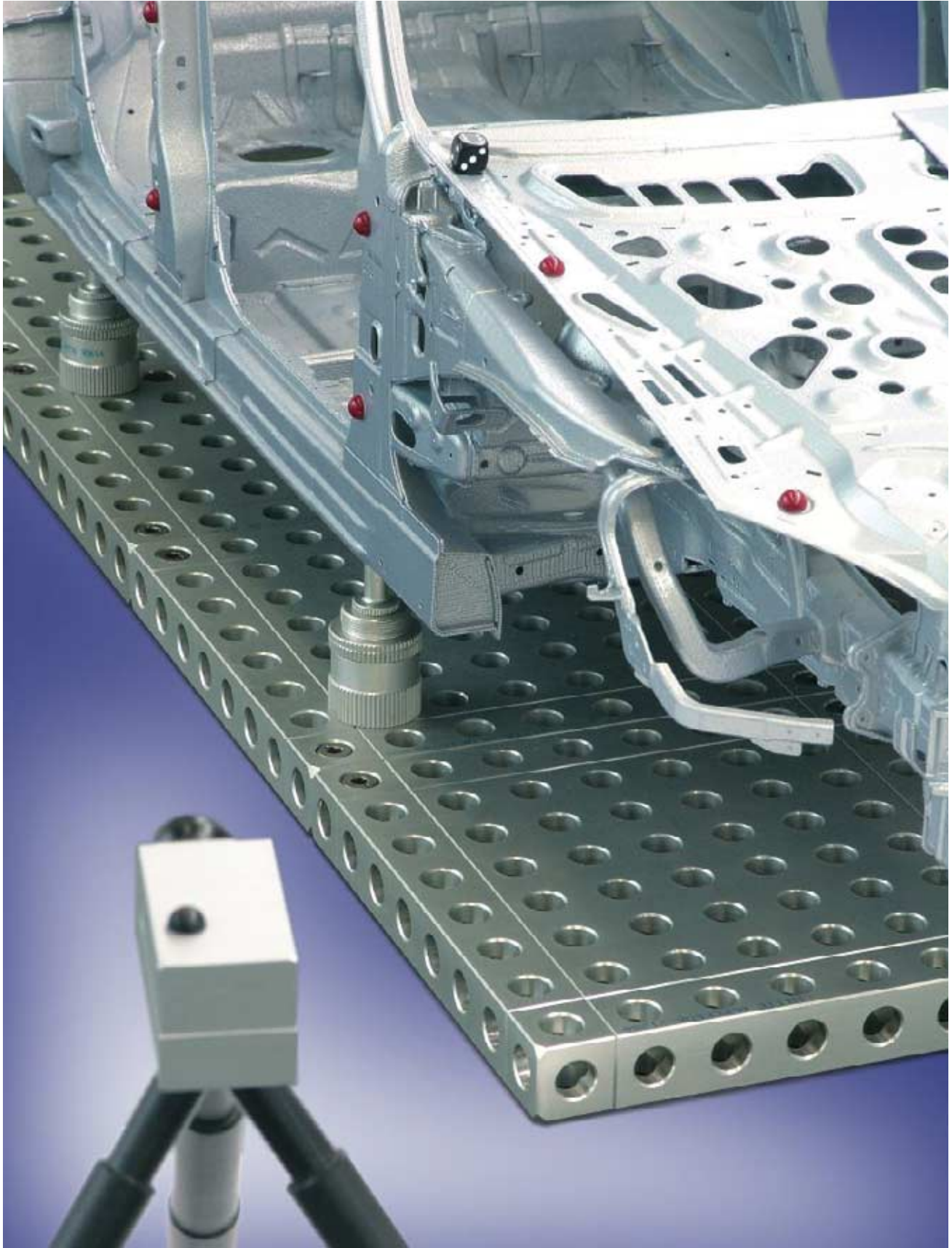
Application in an Alufix Light bar.  
Mounting targets on different sides results in individual dot layout for orientation



Available on request  
corner target holders (45°)

These targets can be mounted directly in Alufix Classic and ECO bar holes. All targets sit tightly in bars via a seal and a fitting lip.

<sup>(DBGM)</sup> : Utility model





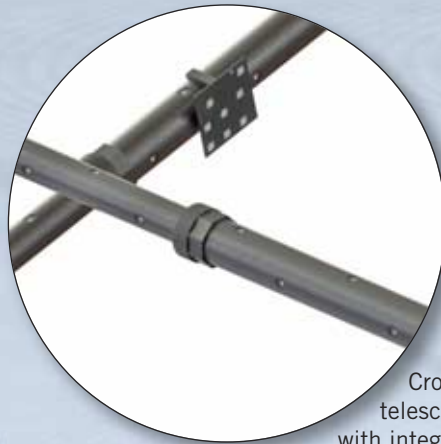


## KR Target frame for photogrammetry measuring systems

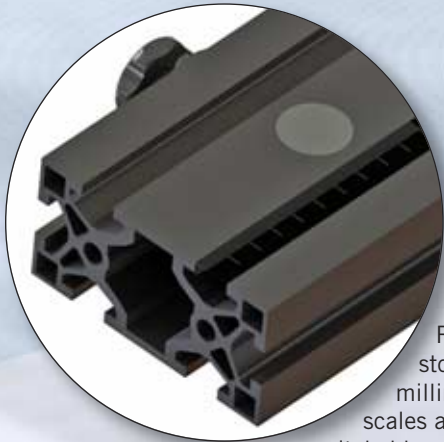
Setting frames are used where there is no fixture available on which to mount reference markers or targets. The components can be connected as a flat frame and several frames connected using struts represent a complete cage. All elements are combineable with each other and equipped with targets. Additional targets can be clipped on. The basis comprises of rails (in Aluquick) for positioning and securing telescopic columns (Telefix). Alternatively they can be set up on an Alufix frame or a Witte sandwich plate. To accommodate a vehicle roof taper serrated joints in Posifix enable angling of frame segments. All cross struts are engineered with telescopic function (in several basic lengths and corresponding adjustment ranges). This guarantees maximum flexibility in creation and desired size of frame. All rails and telescopic columns are marked with scales in millimeter to enable repeatability of frame when rebuilding.

 : Utility model

### Detail of Fixinspect KR Setting frames



Cross struts in telescopic fashion with integrated targets



Rails with stops, millimeter scales and switchable magnets to fix on steel base plate

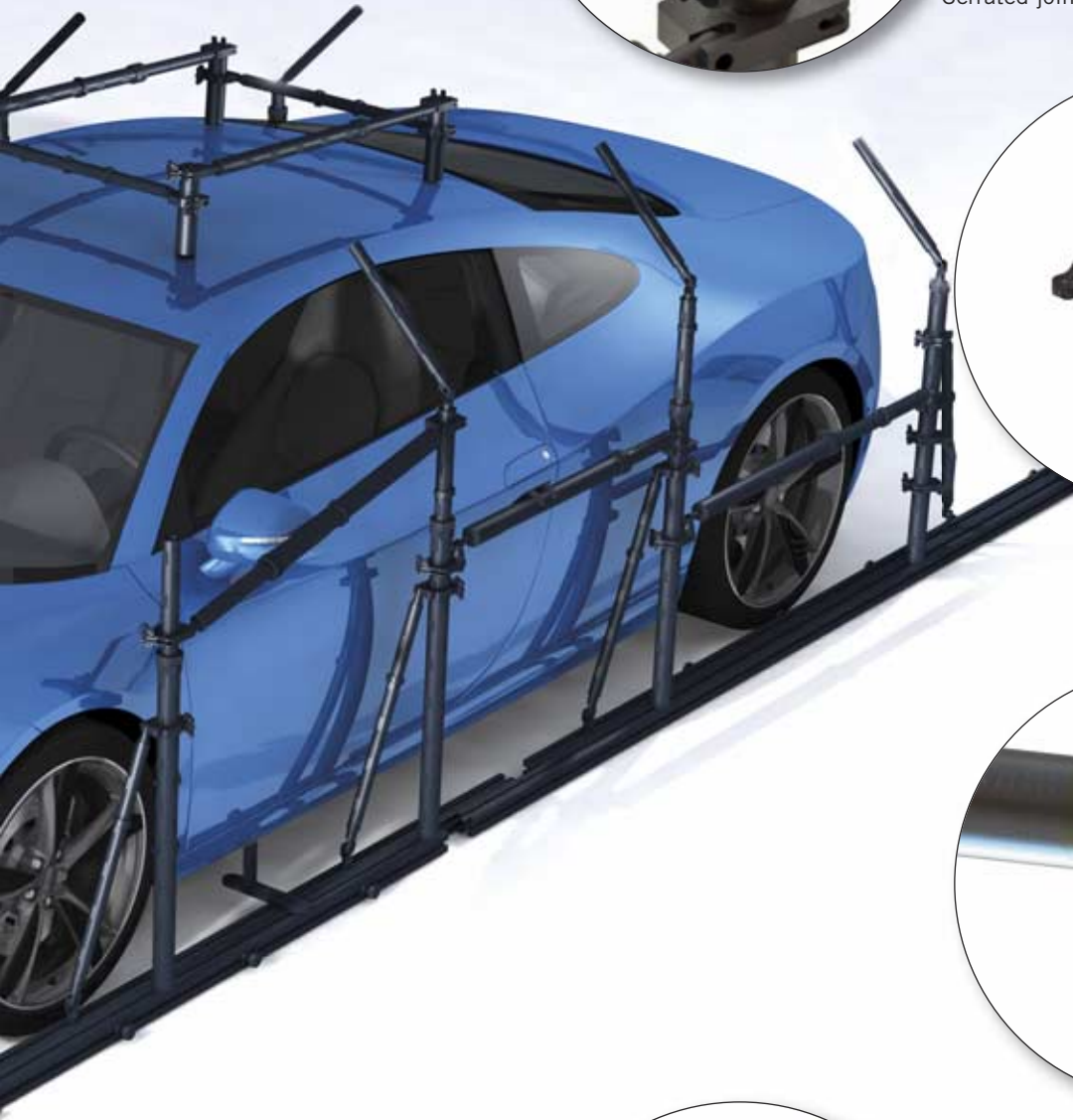


Telescopic column mounted to rail



Telescopic column with scale and eccentric clamp





Serrated joint



Strut with universal bracket



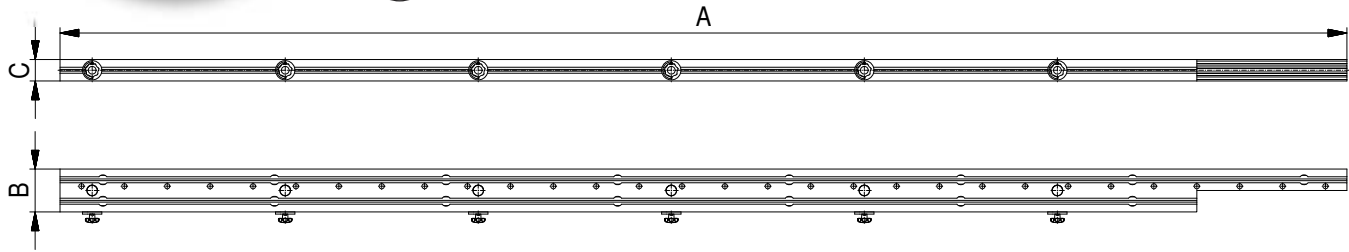
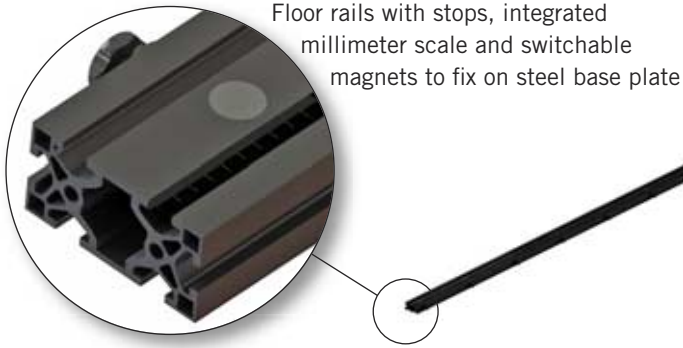
Cross strut with ball and magnetic seat



Target holder with clips mounted to telescope column/strut

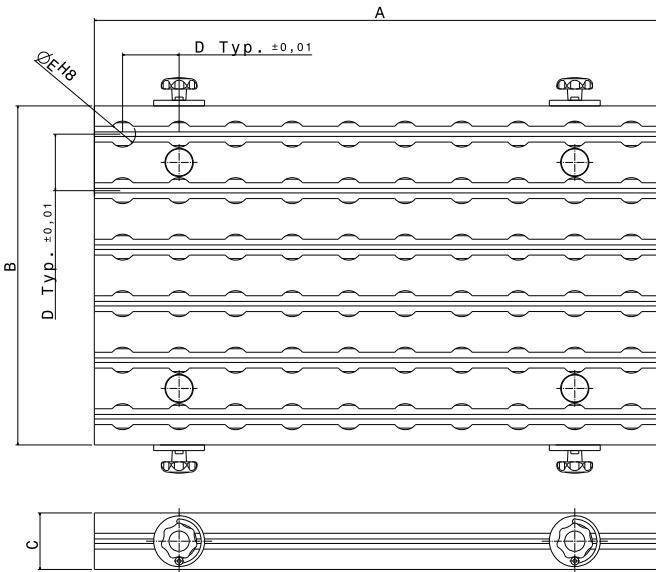
### Floor rail

Nr.	A	B	C	
284670-1	3000	100	50	-



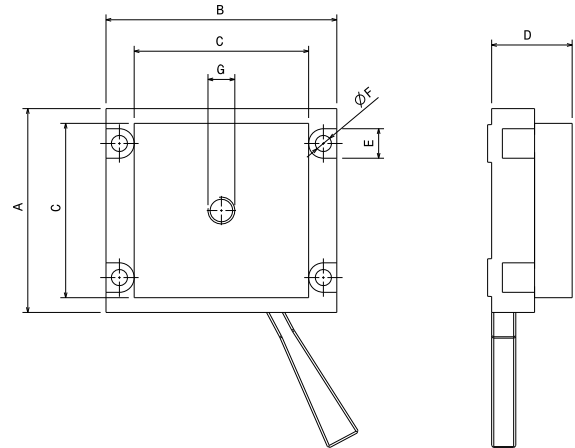
### Magnetic foot plate

Nr.	A	B	C	D	E	
285461-1	500	300	50	50	23	2550



### Quick change coupling floor rail

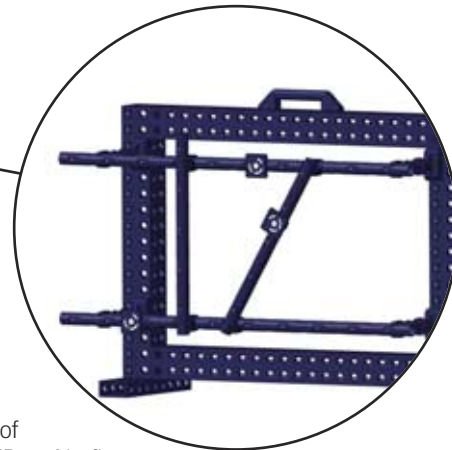
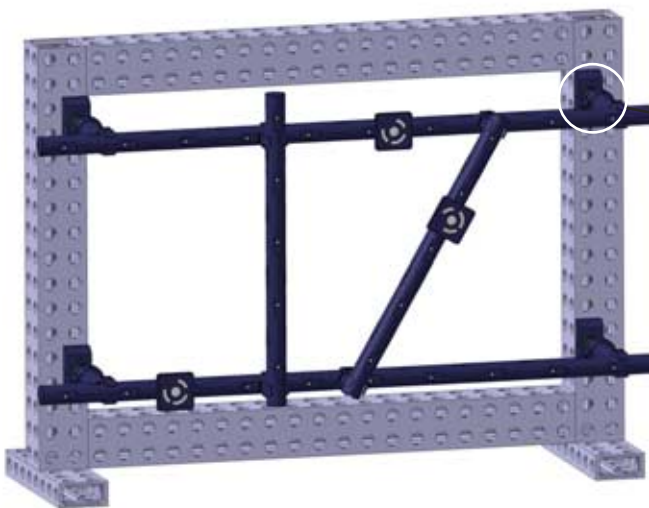
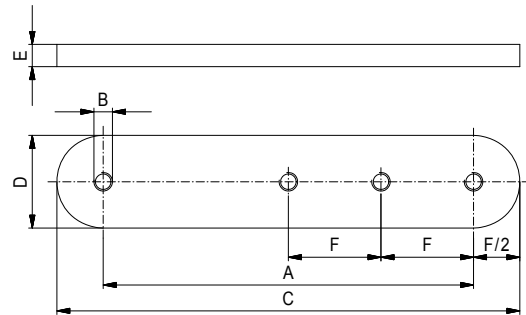
Nr	A	B	C	D	E	F	G	
285473-1	76	86	65	30	11	6	M10	392



### Toe plate M10

For offset of connection of telescopic tubes on floor rails

Nr.	A	B	C	D	E	F	
327025-1	200	M10	250	50	12	50	-



Connection of Fixinspect KR to ALufix using magnetic adapters

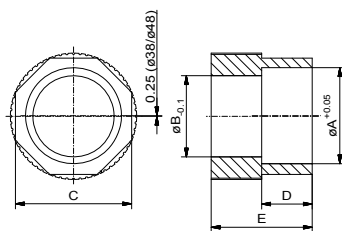
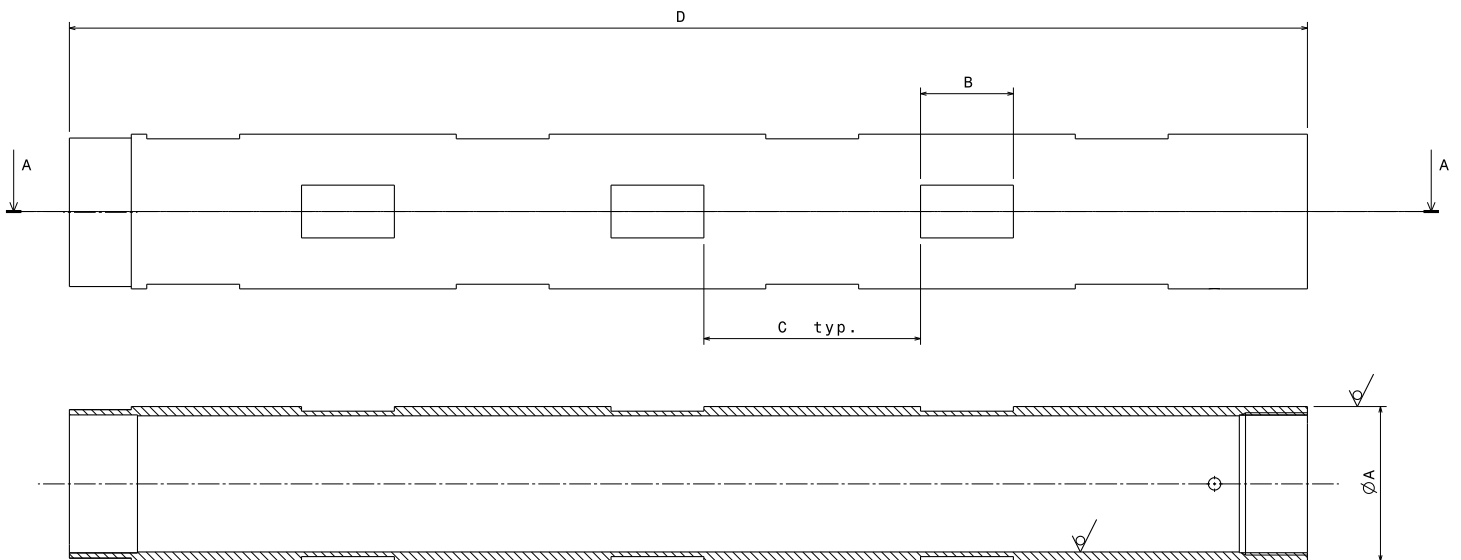


**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

## Telescopic tube



Nr.	$\varnothing A$	B	
326900-1	32	350	-
326901-1	32	550	-
326902-1	32	750	-
322697-1	40	350	-
322698-1	40	550	-
322699-1	40	750	-
322721-1	40	950	-
322722-1	40	1150	-
322694-1	50	400	-
322695-1	50	600	-
322696-1	50	800	-



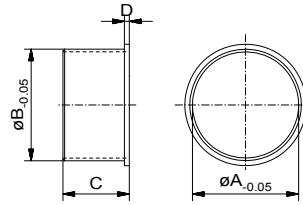
## Exciter nut

Nr.	A	B	C	D	E	
326904	38	32,15	SW46	20	40	-
322703	48	40,15	SW54	20	40	-

## Collar bush

M10

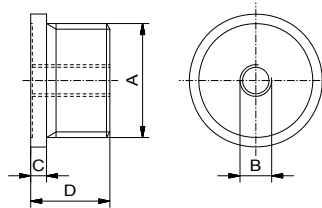
Nr.	$\varnothing A$	$\varnothing B$	C	D	
326905	32	33,6	20	1,5	-
322702	40	43,6	20	1,5	-



## End stop

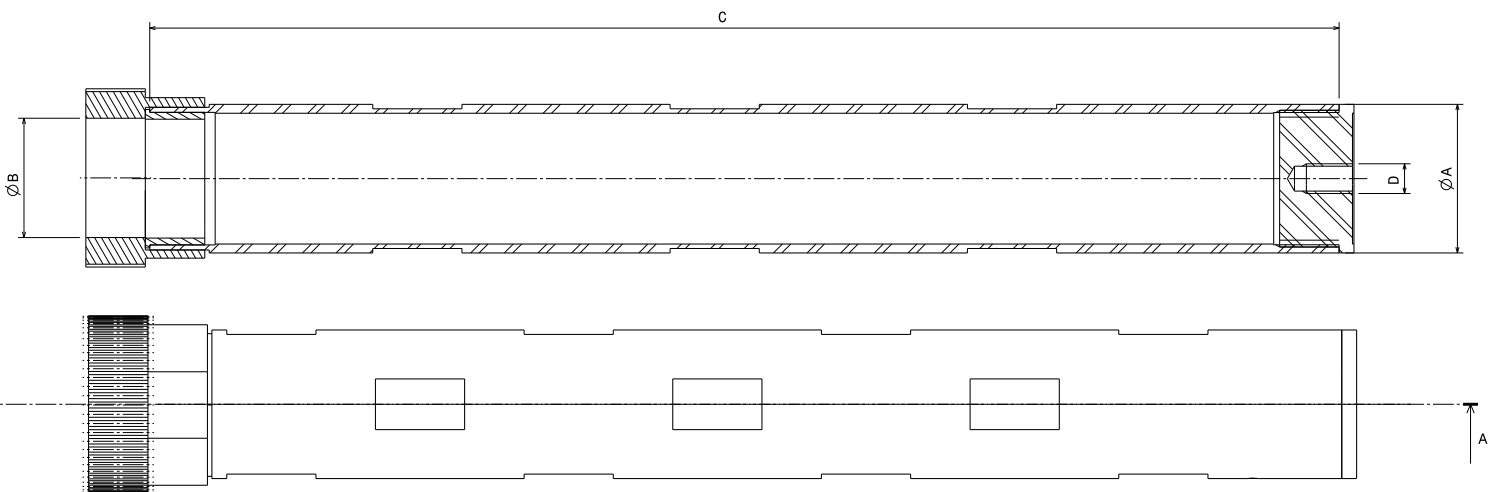
M10

Nr.	A	B	C	D	
326903	M30x1,5	M10	5	25	-
322700	M36x1,5	M10	5	25	
322701	M46x1,5	M10	5	25	



## Telescopic tube complete

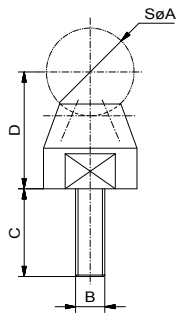
Nr.	A	B	C	D	$\varnothing E$	
284203-1	40	350	5	21,5	32	-
284204-1	40	550	5	21,5	32	
284205-1	40	750	5	21,5	32	
284611-1	40	950	5	21,5	32	
284612-1	40	1150	5	21,5	32	
284200-1	50	400	5	21,5	40	
284201-1	50	600	5	21,5	40	
284202-1	50	800	5	21,5	40	



**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

## Ball cup

with magnets

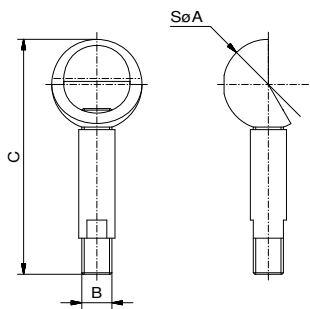


Nr.	SφA	B	C	D	
284207-1	30	M10	30	40	-



## Support ball

M10

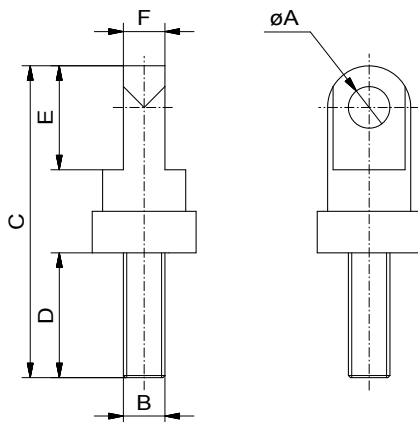


Nr.	SφA	B	C	
284655-1	30	M10	78	-



## Hinge

M10



Nr.	φA	B	C	D	E	F	
284656	10	M10	75	30	25	10	-

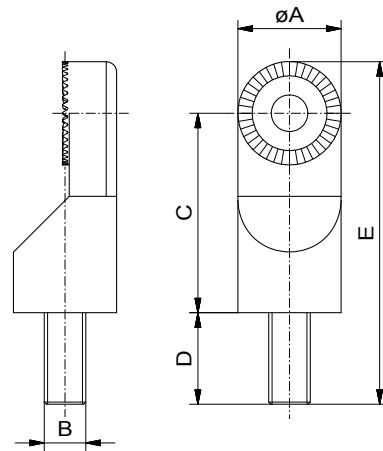




## Face adapter Posifix

M10

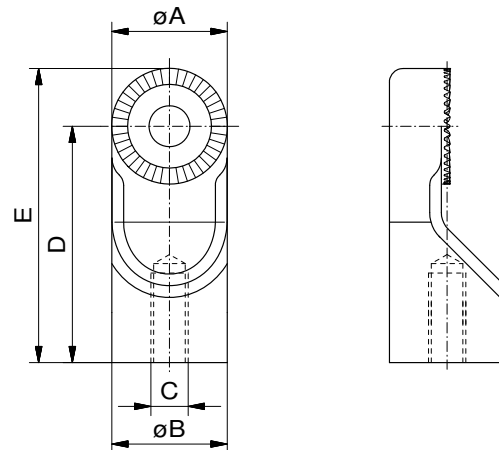
Nr.	øA	B	C	D	E	
284657-1	24,8	M10	48	22	82,4	-
284658-1	40,0	M10	69	20	109,0	-



## Face adapter Posifix

M10

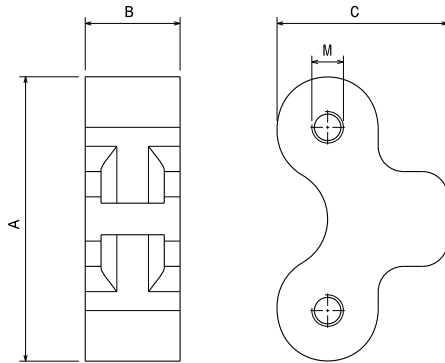
Nr.	øA	øB	C	D	E	
322723-1	24,8	24,8	M10	48	62,5	-
322715-1	39,8	40,0	M10	48	62,5	-




**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

## Magnetic support

double

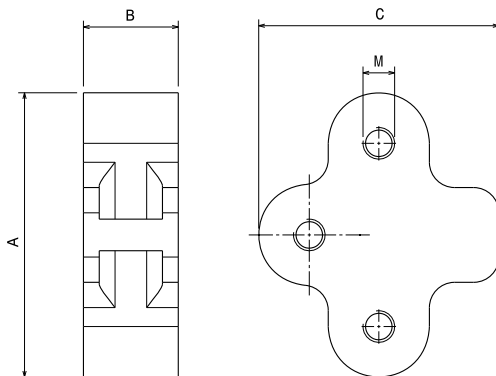



Nr.	A	B	C	M	
340371	90	30	54	10	88



## Magnetic support

triple



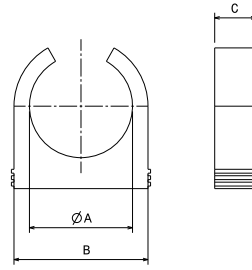
Nr.	A	B	C	M	
340372	90	30	76	10	125



## Clip

for target plate

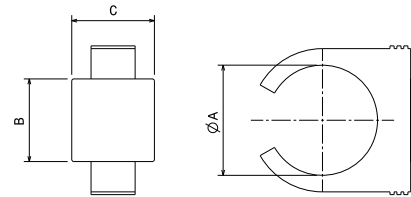
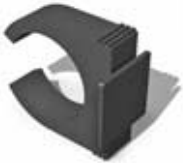
Nr.	A	B	C	D	E	
17688	32	40	16	11	5	1
17689	40	52	16	11	5	2
17690	50	65	18	11	6	3



## Clip

with target plate

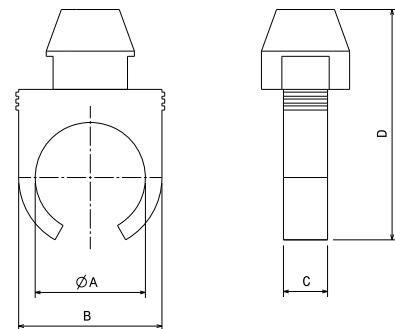
Nr.	A	B	C	
286221	32	30	30	31
286222	40	30	30	32
286223	50	30	30	33



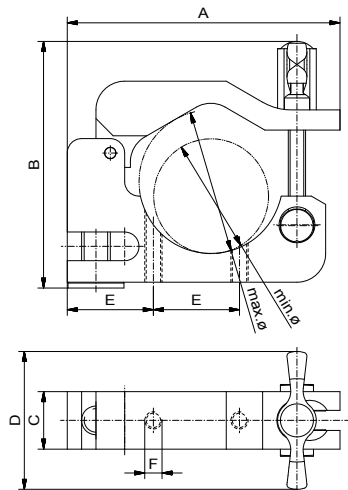
## Clip

with ball cup

Nr.	A	B	C	D	
286224	40	52	16	84	89



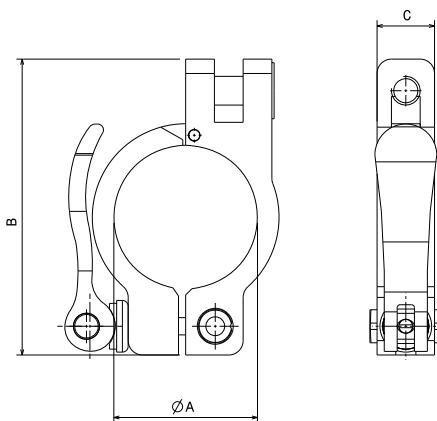
**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.



## Clip

with screw clamp

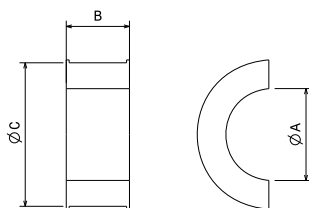
Nr.	min.ø	max.ø	A	B	C	D	E	F	
284206	40	50	95	86	20	48	-	-	90
284659	40	50	95-	86	20	48	30	M6	90



## Clamp clip

with excenter lever

Nr.	min.ø	max.ø	A	B	C	D	E	F	
285460	40	50	95	86	20	48	-	-	120



## Reducer cup

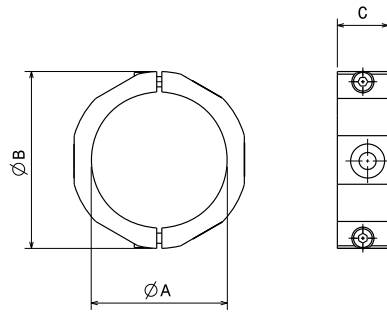
Nr.	A	B	C	
335100	32	22	50	15
385099	40	22	50	9



## Target ring

2-piece, with screws

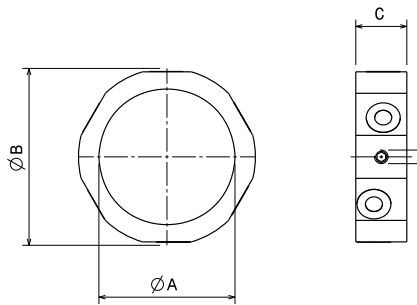
Nr.	A	B	C	g
285471	32	44	15	26
285467	40	52	15	34
285289	50	62	15	40



## Target ring

1-piece sleeve

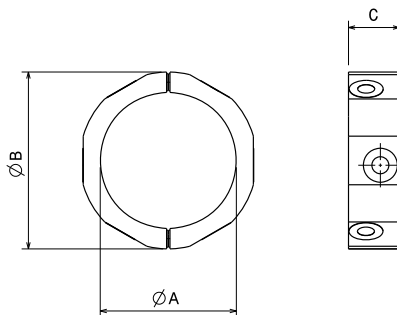
Nr.	A	B	C	D	g
285472	32	44	15	M4	26
285470	40	52	15	M4	34
285290	50	62	15	M4	40



## Target ring

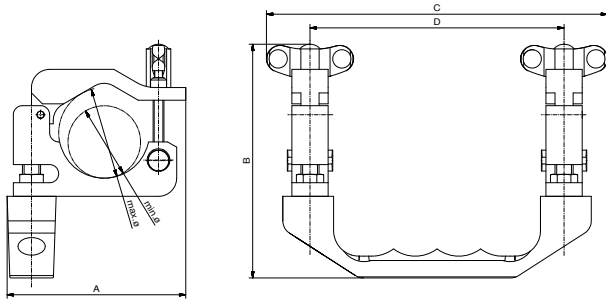
2-piece with magnet

Nr.	A	B	C	g
286218	32	44	15	26
286219	40	52	15	34
286220	50	62	15	40



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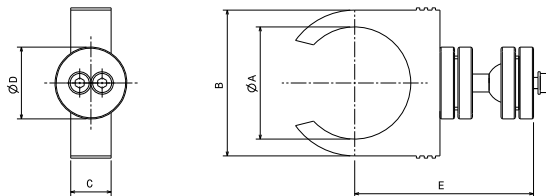
## Grip for telescopic tube



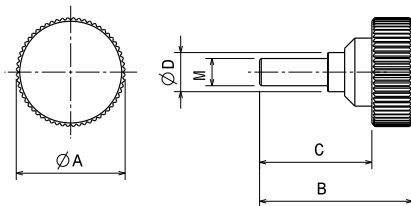
Nr.	min.ϕ	max.ϕ	A	B	C	D	g
284669	40	50	99	129	188	140	250



## „Tritop“- holder



Nr.	A	B	C	D	E	g
286217	50	65	18	32	80	150



## Knurled thread screw

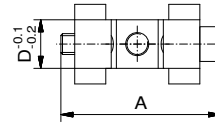
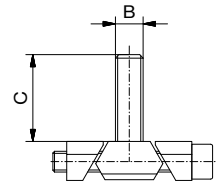
Nr.	A	B	C	D	M	g
286259-1	32	45	33	11,5	8	42



## Connector

for floor rail

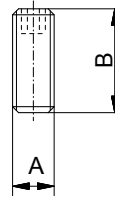
Nr.	System	A	B	C	D	
280521-1	AQ50	46	M10	24	14	30
280634-1	AQ40	41	M8	25	14	20
280635-1	AQ40	41	M8	10	14	20



## Threaded pin

DIN 913 M10x30

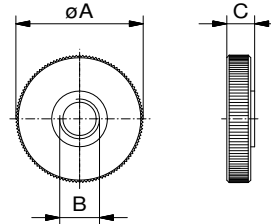
Nr.	A	B		
11540	M10	30	-	13



## Knurled nut

M10

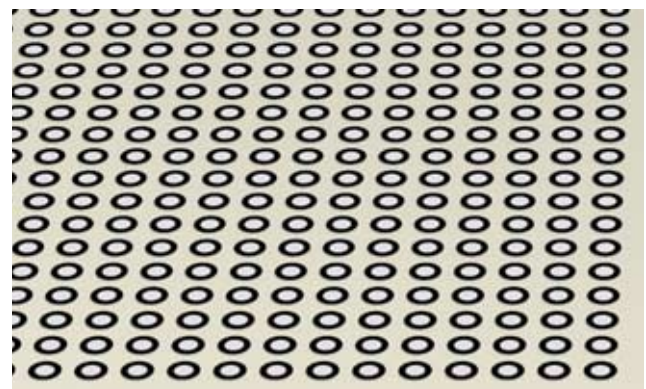
Nr.	$\varnothing A$	B	C	
306824-1	32	M10	7	11



## Single point target markers

white, non-coded, 3.000 pcs/pack,  
medium adhesive strength

Nr.	inner $\varnothing$	outer $\varnothing$	
19231	3	7	
19033	5	10	



**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.



Fixinspect LT  
Hidden point adapter  
See pages 32+33

## LT Measuring accessories for laser tracker

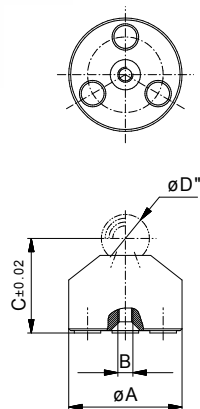
### For mounting spherical reflectors

Depending on requirement LT measuring accessories can be fixed to work piece and mounted with ball shaped reflectors for measuring with laser trackers.

Magnets fix this accessory to work pieces as well as fixing the reflector in its "nest".

Fixing studs or spring loaded tips guarantee the exact position in hole axis.

Special adapters are available for part edges and corners.



## LT adapter

magnetic, for use with exchangeable fixing studs

Nr.	A	B	C	D	$\bar{g}$
96426	30	M4	25	0,5"	36
96181	30	M4	30	1"	34
96182	30	M4	36	1,5"	32



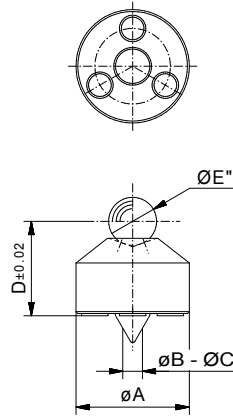
Suitable studs on pages 8-9 / D = inch



## LT adapter

magnetic, self centering

Nr	A	B	C	D	E	
96427	30	2	9	25	0,5"	38
96428	35	8	14	25	0,5"	78
96185	30	2	9	30	1,0"	30
96186	35	8	14	30	1,0"	58
96187	30	2	9	36	1,5"	28
96188	35	8	14	36	1,5"	36

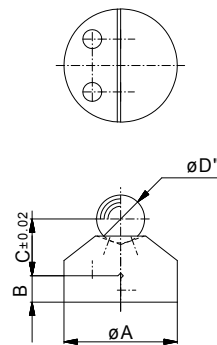


Versions for non-magnetic metals and plastics on request

## LT adapter

magnetic, for mounting on edges

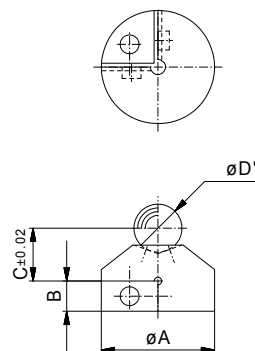
Nr.	A	B	C	D	
96429	30	7	15	0,5"	26
96190	30	7	20	1"	22
96191	30	8	26	1,5"	25



## LT adapter

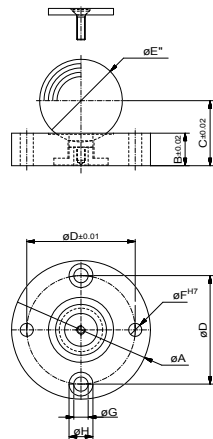
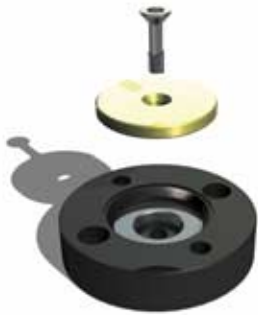
magnetic, for mounting on corners

Nr.	A	B	C	D	
96430	30	8	14	0,5"	24
96193	30	7	20	1"	26
96194	30	8	26	1,5"	28



## LT adapter

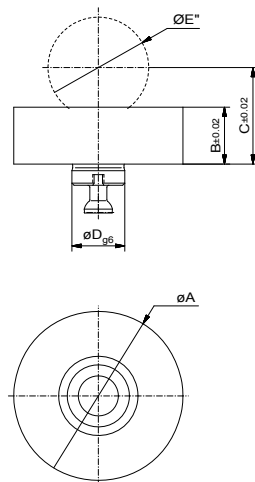
magnetic, with protective cap,  
two fixation holes and two fitted holes



Nr	A	B	C	D	E	F	G	H	
96196	64	15	30	50	1,5"	6	6,6	11	144

## LT Adapter with bolt fixing disk

For ALUFIX and ALUFIX ECO profiles



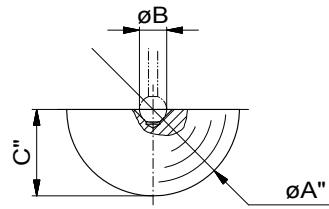
Nr	A	B	C	D	E	AF	
282730	64	21,5	36,5	20	1,5"	40	260
282749	64	21,5	36,5	25	1,5"	50	300



## LT adapter steel hemisphere

For tactile comparison measuring

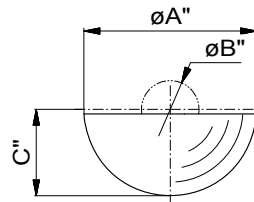
Nr.	A	B	C	g
54971	1,5"	6	0,75"	110
54972	1,5"	3	0,75"	111
54973	0,5"	6	0,25"	4
54974	0,5"	3	0,25"	4



## LT reducer adapter in steel

for small reflectors

Nr.	A	B	C	g
96245	1,5"	0,5"	0,75"	98
96246	1,5"	0,875"	0,75"	76



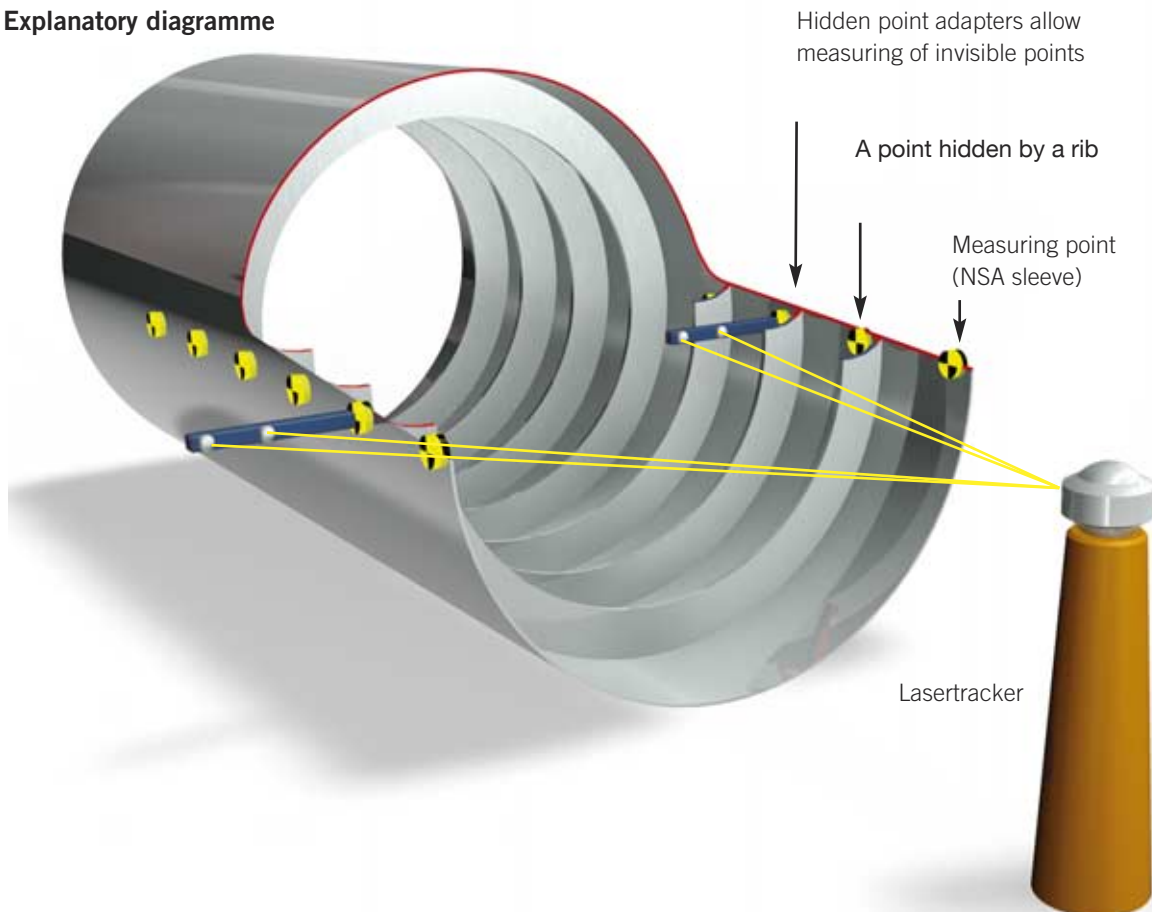
## LT Adapter Hidden Point

for measuring hidden points  
on inner and outer surfaces

- made of high tensile aluminium
- surface protection: anodized red
- characterized by low weight and compact design
- measuring is done by laser trackers via 0,5" reflector balls, which are mounted on integrated magnets
- adapters are fixed using hydraulic clamping pin
- comes as a standard with two or four ball seats
- other dimensions and special connections to work pieces are available on request



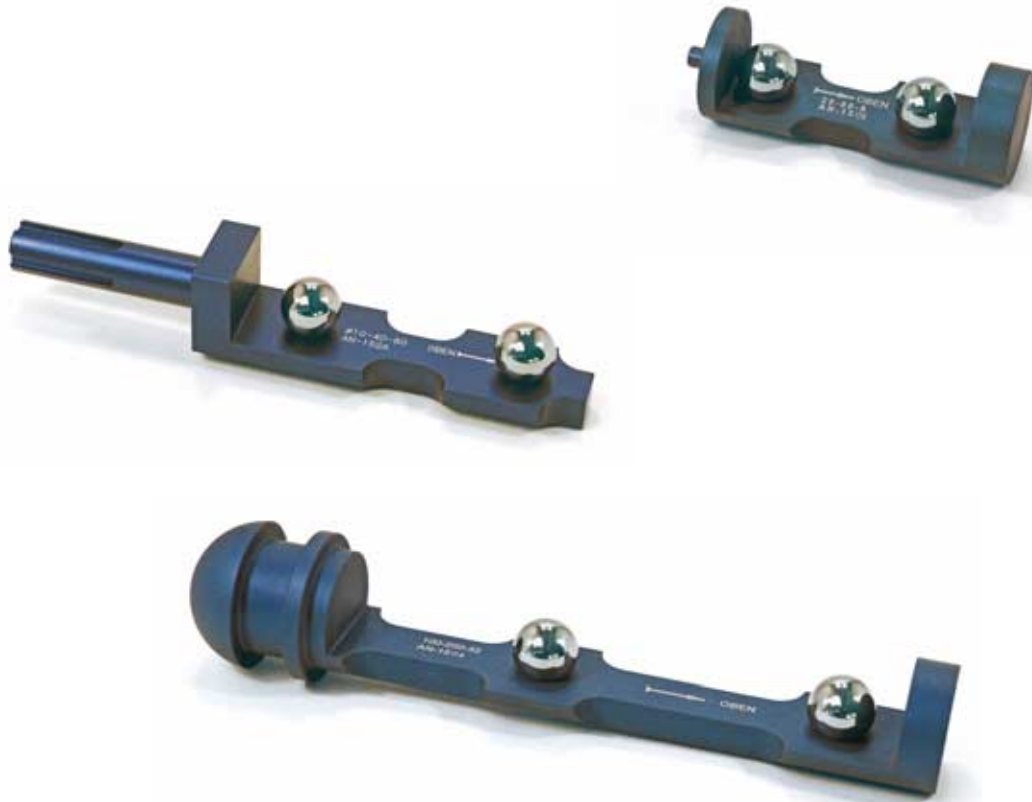
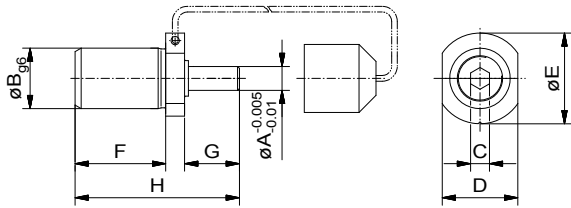
### Explanatory diagramme



## Hydraulic clamping pin

to fix Hiddenpoint adapters on a  
NSA 9501-100 sleeve96669

Nr	A	B	C	D	E	F	G	H	
96669	6,32	16	SW5	SW20	24	24	14,5	43,5	45



**FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.

Reflector balls shown are exemplary

## FT Adapter

### with suction cap

In order to avoid complex glueing and removing of retro reflective tapes, we offer a range of Fixinspect FT accessories, which complements our already well-known range of Fixinspect. These targets mounted with tapes, were conceived particularly for optical measuring purposes and can be easily fixed on workpieces and removed again as required.

For positioning on smooth as well as curved surfaces the adapters come with a suction cup and three-point contact. The spring loaded suction cup with bayonet lock in extended mode enables careful handling of workpiece. After pressing down lightly and turning 30° to the right the target is accurately secured ensuring defined height of tapes in relation to workpiece surface.

The pictures on the right show how to use the targets with suction cup.

1 Put adapter onto required position on workpiece



2 Press lightly to activate suction cup



3 Turn 30° to the right to lock into position



4 To release after measuring pull adapter up lightly and turn 30° to the left




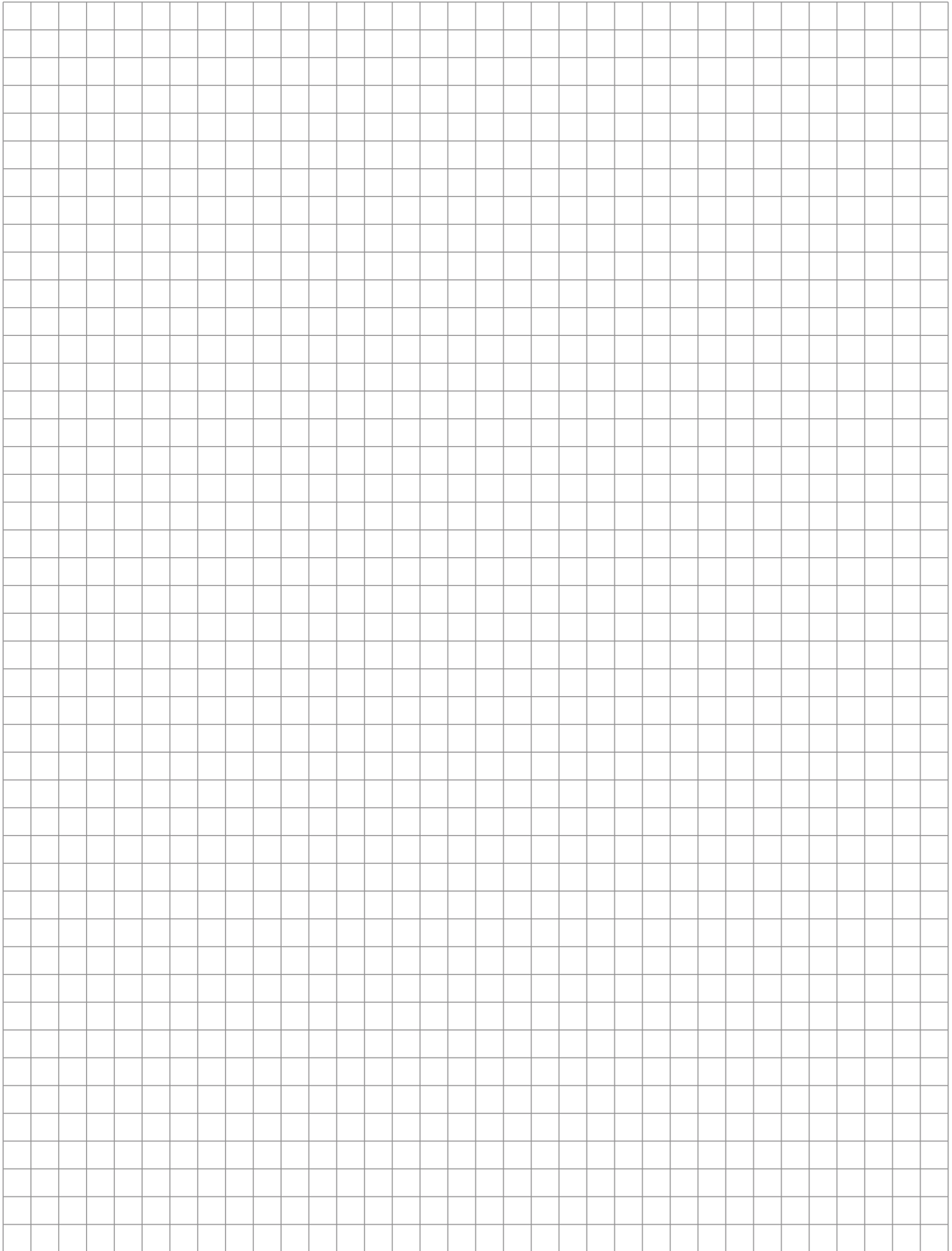
5 Access to sucker is free and adapter is easily removed to use again for new part



 More Info on **FIXINSPECT® FT** on request



 **FIXINSPECT** measuring accessories are available anodized in different colours. Red is standard, other colours on request.





Fixed on precision

### Germany

#### Witte Barskamp GmbH & Co. KG

Horndorfer Weg 26-28

D-21354 Bleckede

Germany

Tel.: +49 (0) 58 54/89-0

Fax: +49 (0) 58 54/89-40

E-mail: [info@witte-barskamp.de](mailto:info@witte-barskamp.de)

[www.witte-barskamp.de](http://www.witte-barskamp.de)

### Asia

#### Witte Far East Pte Ltd

20 Boon Lay Way

# 01 - 170

Singapore 609967

Singapore

Tel.: +65-6248 5961

Fax: +65-6898 4542

E-mail: [info@witteasia.com](mailto:info@witteasia.com)

[www.witteasia.com](http://www.witteasia.com)

### USA & Canada

#### Witte LP

2220 Northmont Pkwy, Suite 250

Duluth, Georgia 30096

USA

Phone: +1 (770) 982 99 32

Fax: +1 (770) 982 99 28

E-mail: [info@witteamerica.com](mailto:info@witteamerica.com)

[www.witteamerica.com](http://www.witteamerica.com)

### Mexico

#### Horst Witte de Mexico

S.A. de C.V., c/o Linco

Paseo Opera 4 Int 112-2

Lomas de Angelopolis

San Andres Cholula,

Puebla 72830, Mexico

Phone: +52 (222)563-7929

E-mail: [info@wittemexico.com](mailto:info@wittemexico.com)

[www.wittemexico.com](http://www.wittemexico.com)




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