



Fig 1

To connect camera connector KKD12, first of all, put the following parts onto the camera cable:

1. PVC hose transp. 4420511, L=1m
2. Thermo-shrinkable tube bl. 4412593
3. Sleeve 800601042
4. Plug housing 800600942
5. Cable entry 800602342
6. Tapered ring 800604242

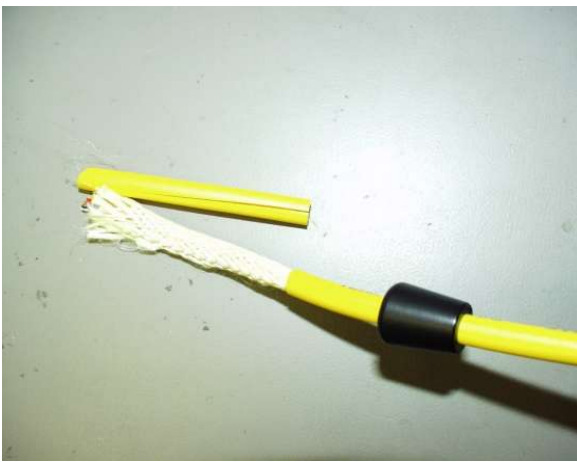


Fig 2

Strip off approx.10 cm of cable sheath with cable stripping knife.

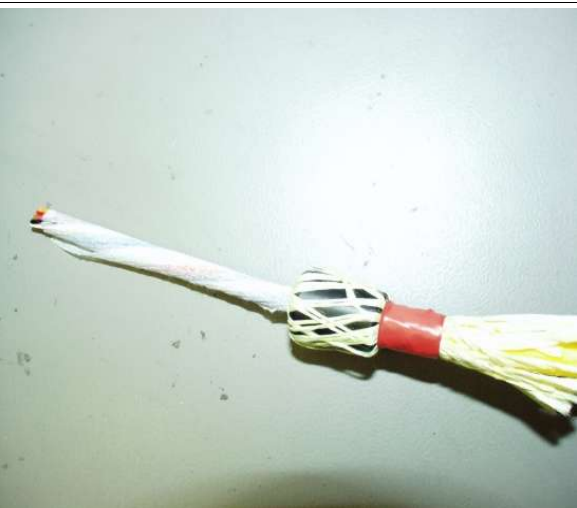


Fig. 3

Push tapered ring up to the front edge of cable sheath, pull Kevlar braiding back evenly over tapered ring and secure with insulating tape.

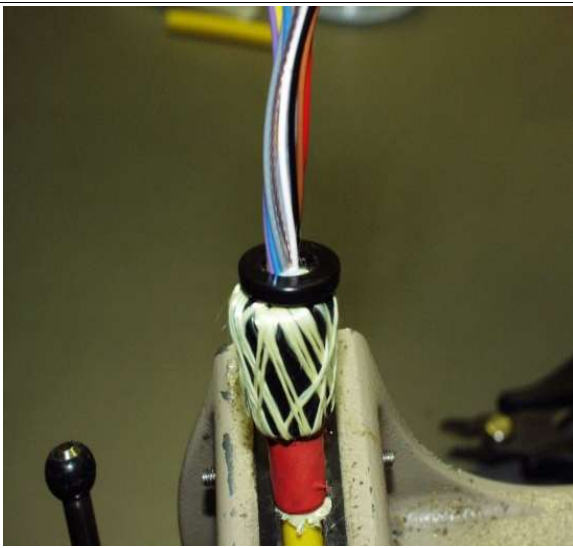


Fig. 4

Expose cable wires and put thrust ring with its bulgy side on Kevlar braiding.

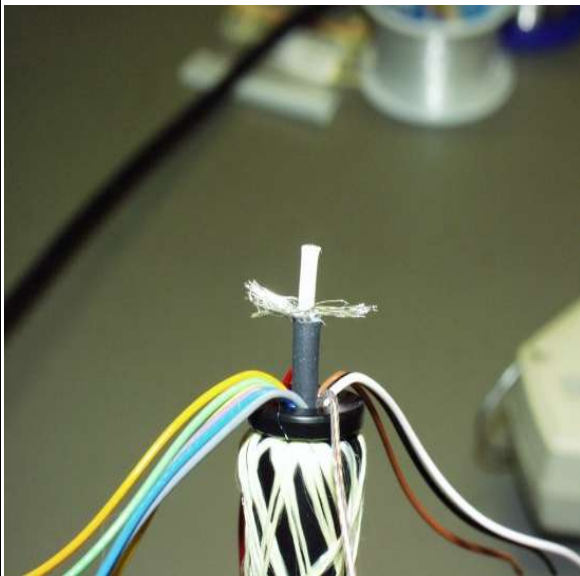


Fig. 5

Cut off end of coaxial cable to approx. 2.5cm and strip approx. 1cm. Shrink on a piece of thermo-shrinkable tube 4412536 approx. 1.5 cm long.

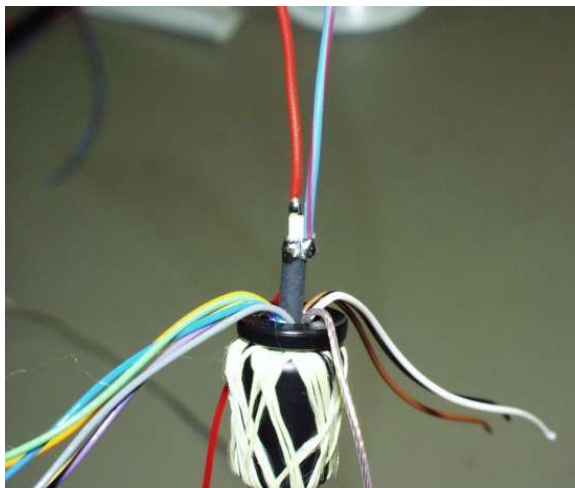


Fig. 6

Strip approx. 2-3mm at end of inner conductor, twist screen round inner conductor and tin both. Then solder a piece of 0.25mm² red wire approx. 5 cm long to inner conductor and a piece of 0.25 mm² blue wire approx. 5 cm long to outer conductor.

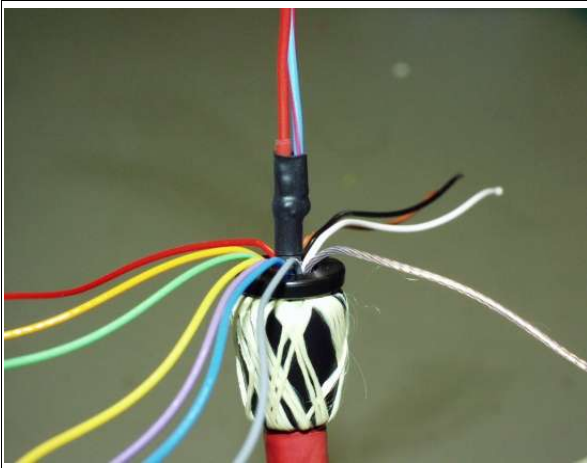


Fig. 7

Shrink on a piece of thermo-shrinkable tube 4403587 over inner conductor and a piece of thermo-shrinkable tube 4412533 over the whole coaxial cable.

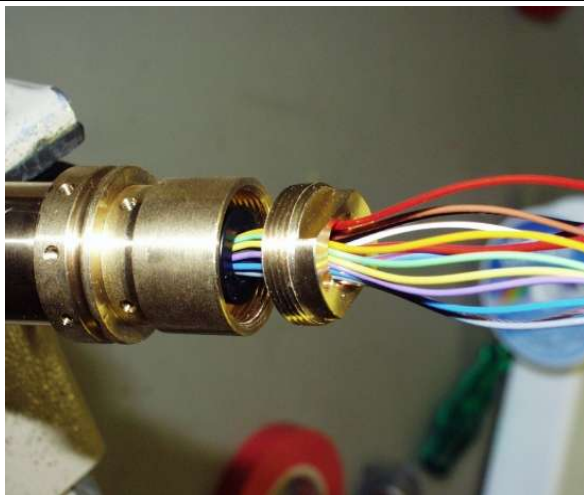


Fig. 8

Press tapered ring into cable entry and screw in thrust washer.



Fig. 9

Tighten thrust screw with no. 13 fork spanner and apply counter pressure with a no. 19 fork spanner.

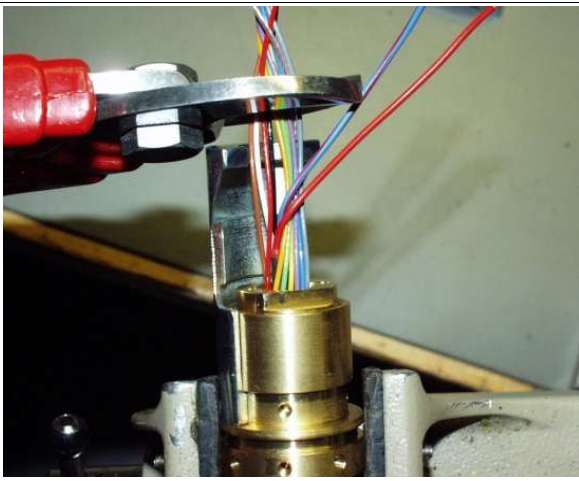


Fig. 10

To cut cable wires to length, screw on one half of plug holder 800600232 and cut off the cable wires such that they overlap the front edge by approx. 1 cm.



Fig. 11

Plug housing 800600942
Insulator 4420185
Insulator holder 800600842
Nut 800600342
Protection cap 048905642
2x O-Ring 21.95x1.78 4412154
2x O-Ring 20.35x1.78 4412156



Fig. 12

Grease O-rings lightly with silicon grease and put them onto cable entry and plug housing.



Fig. 13

To prepare, insert insulator with insulator holder into plug housing, strip approx. 2 mm of cable wires and tin.



Fig. 14

Put pieces of thermo-shrinkable tube 4412536 (1.6/0.8x0.25 PVDF KYNAR) onto cable wires and solder on cable wires acc. to wiring diagram KT180 801700136. Then push pieces of thermo-shrinkable tube onto soldering contacts and shrink on.



Fig. 15

Put a piece of insulating tube with green/yellow marking (6480629), length approx. 1 cm, onto brown wire and then solder on a soldering lug 2.6 ; 12mm long.

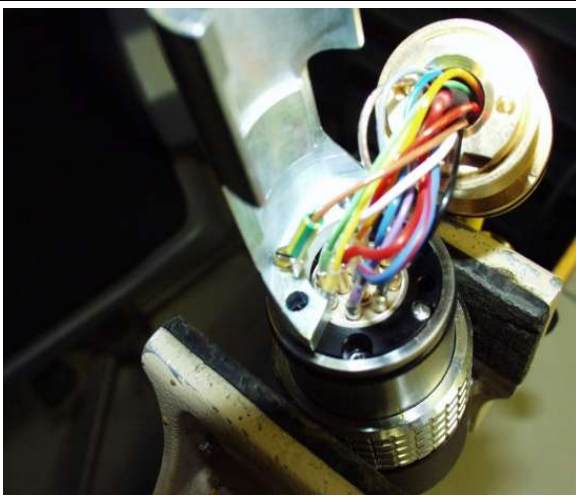


Fig. 16

Screw on one half of plug housing 800600232. (Secure screws with Loctite 243!) Screw soldering lug tight next to the fixing screw where there is a tapped hole with a cheese-head screw M2x12 DIN 84 CUZN (6001402). (PE conductor)



Fig. 17

Sort out cable wires a bit and screw cable entry to plug holder with countersunk screws M 2.5x4 (6000330). (Secure screws with Loctite 243)

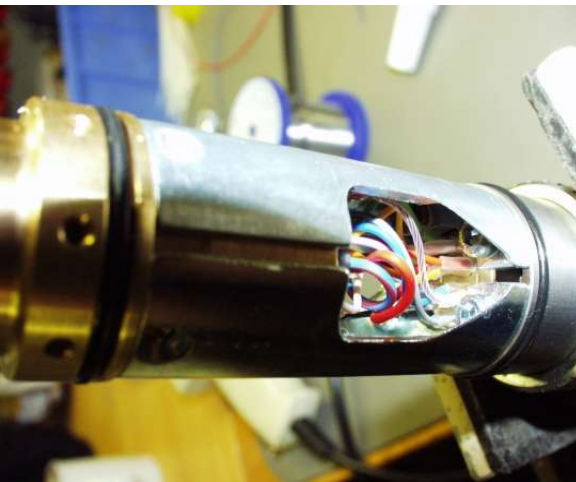


Fig. 18

Screw on second half of plug holder. It is best to use a 2,5mm ball head wrench for hex socket head screws to screw in the hex socket head screws on the cable entry side. With this tool, you can tighten the screws from the outside through the "window" in the plug holder.



Fig. 19

Press the PVC tube which was initially put onto the camera cable against the cable entry and lace over a length of approx. 2 cm with 1mm perlon wire (4442033).



Fig. 20

Put sleeve on and lace it over cable entry with 1mm perlon wire as shown in Fig. 20.



Fig. 21

Furthermore, lace rear end of sleeve over PVC tube and lace PVC tube behind it over camera cable.



Fig. 22

Lace the rear end of PVC tube once again over camera cable.



Fig. 23

After lacing, wind a layer of vulcanizing tape 4412502 round the perlon wire.



Fig. 24

Finally, push thermo-shrinkable tubes which were put on previously over the lacings and shrink on with a hot air blower.

Part list / Repairing

Part no.	Qty	description	always	dem,want
4412154	1	O-Ring 21,95x1,78-NBR	x	
4412156	1	O-Ring 20,35x1,78-NBR	x	
4412502	1m	Vulcanizing tape	x	
4412557	0,1m	Thermo shrinkable tube black	x	
4420185	1	Insulator connector	x	
4420511	1m	PVC hose transp.	x	
4442033	2,5m	Perlon wire	x	
6001452	4	Slotted cheese head screw M3x12	x	
800600232	1	Plug holder set		x
800600342	1	nut		x
800601042	1	sleeve		x
4412593	0,2m	Thermo shrinkable tube black	x	
4412536	0,2m	Thermo shrinkable tube black	x	
4403587	2cm	Thermo shrinkable tube black	x	
4412533	2cm	Thermo shrinkable tube black	x	
6480629	2cm	Thermo shrinkable gn/ge	x	
6480682	1	Soldering tab	x	
4403627	10ml	Loctite 243	x	



Fig. 25

Connecting instructions for right angle Bendix plug at winch end:

- 1. Put thermo-shrinkable tube, red 9/3x0.75 4412543, length approx. 17cm, onto camera cable. (Serves as end marking later on)**
- 2. Push PG screw coupling and rubber seal of right angle Bendix plug onto camera cable.**

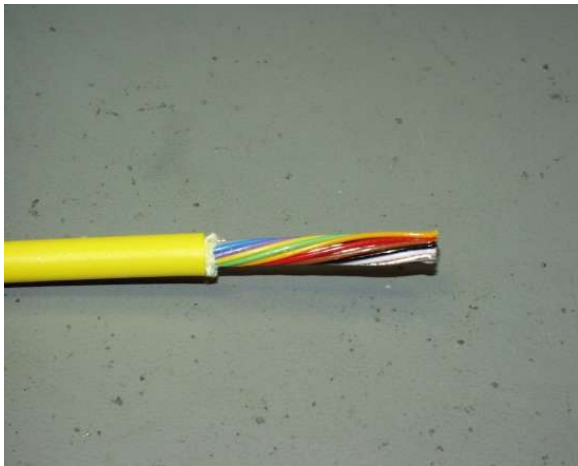


Fig. 26

Strip off approx. 3.5cm of cable sheath with cable stripping knife.

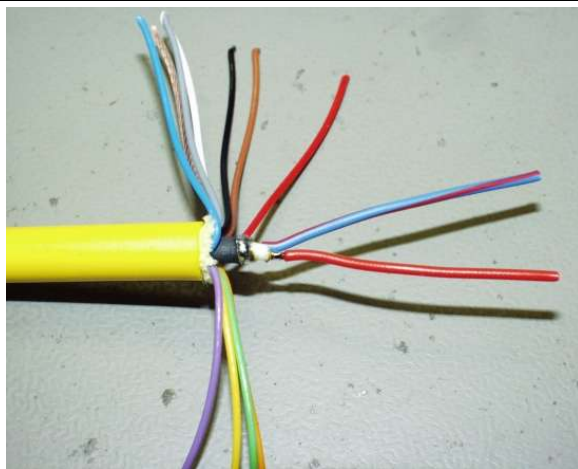


Fig. 27

Shorten end of coaxial cable to a length of approx 1cm and solder on a piece of red and a piece of blue 0.25qmm² wire. Shrink on pieces of thermo-shrinkable tube over soldered joints.

(Same procedure as fig. 6, connection to KKD12)

Cut off the two pieces of soldered on wire to the same length as the other cable wires.



Fig. 28

Strip approx. 2-3 mm of cable wires and tin the ends.



Fig. 29

Solder on cable wires acc. to wiring diagram 801700136.



Fig. 30

Sort out cable wires and screw the two halves of the plug together.



Tighten PG screw coupling with no. 14 fork spanner.

Windenanschlusskabel adapter cable

KW180

Kamerakabel camera cable

Stecker BK3 connector BK3	Farbe colour	Funktion function	Funktion function
A	innen inner	Video	video
B	außen outer	Video GND	video grd
G	rs pink	LG A	distance measurement A
H	gr	LG B	distance measurement B
E	gn	RS485 A	RS485 A
F	ge	RS485 B	RS485 B
J	br	+12V	+12V
L	us-bl	GND	GND
K	us	-12V	-12V
D	bl	PGND	PGND
C	rt	+60V	+60V
I	Schirm shield	PE	earth
R	su	Lit	Kamera + camera
S	vio	v	Kamera - camera
U	gr/rs	gr/blnk	KRA L + cam. master 1
W	rt-bl	r/b	KRA L - cam. master 1
X	us-gn	u/gn	KRA R + cam. master 2
Y	br-gn	b/gn	KRA R - cam. master 2
T	us-ge	u/g	ZSH + ext. lighting 1
U	ge-br	g/b	ZSH - ext. lighting 1
M	br-bl	b/b	PA potential equalization
N	us-gr	u/g	FB A remote control A
P	gr-br	g/b	FB B remote control B
a	us-rs	u/pnk	Notaus + emergency stop
Z	rs-br	rs/b	Notaus R emergency stop

ST1	3pol HE14	ST4	12pol HE14	ST9	2x6pol HE14	ST2	6pol HE14	ST11	5pol JST ZR	ST6	2x8pol HE14	ST5	6pol DR	ST8	8pol DR								
Video	1	Video GND	2	Kamera +	1	+12 U	us	1	+12 J	us	1	LG A	ge	u	4	Ucr	us	u	5				
				Kamera -	2	GND	br	2	GND	br	2	LG B	gr	u/gn	6	Rleck	ge	u	6				
				KRA L +	3	LG A	ge	u	4	LE A	ge	u	4	Winde on	or	u	7	GND	vio	parale	8		
				KRA L -	4	LG B	gr	u/gn	5	LE B	gr	u/gn	5	Reserve		4	NC		3			3	
				KRA R +	5	Schirm shield	3			Spiralkabel				NC		3	Notaus +	rt	r	2			2
				KRA R -	6									Notaus R	su	u	1			1			1
				ZSH +	7																		
				ZSH -	8																		
				PA	9																		
				FB A	10																		
				FB B	11																		
				FB A	12																		
				FB B	11																		

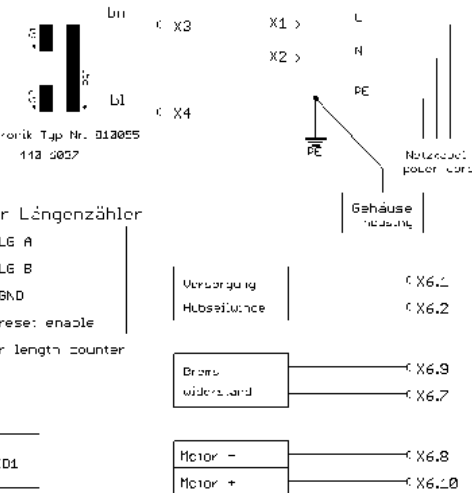
Steckv. Schleifring connector slip ring	Schleifring slip ring	Steckv. Kamerakabel connector camera cable
rt	r	A
bl	b	B
gr/rs	gr/blnk	E
gr	gr	D
vio	v	C
rt/bl	r/b	M
br	b	N
br/gn	b/gn	H
rs	rs	J
su	su	E
ge	g	F
gr	gr	P
us	u	L
		K

310/11 oder 521/11	KKD 12
innen inner	1
außen outer	2
or	4
bl	3
rt	11
us	12
vio	7
su	8
gr	5
ge	6
br	9
transp.	10
gr	9

ST11 5pol JST ZR	Längengeber 8017 005 01	BU1 7pol Tuchel
1 +12 J	us	3
2 GND	br	2
3 LE A	ge	4
4 LE B	gr	5
5 UCC	rt	3
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10		10
11		11
12		12

ST11 6pol HE14	Kübler Längenzähler Kübler length counter	
LE A	su	4
LE B	gr	5
GND	br	2
GND	us	3
2	LE A	
1	LE B	
6	GND	
4	reset enable	

ST7 2pol ZR	ST10 2pol DR
LED1 +	1
LED1 -	2
LED2 +	1
LED2 -	2

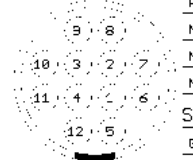


BK3 Steckv. Kamerakabel connector camera cable

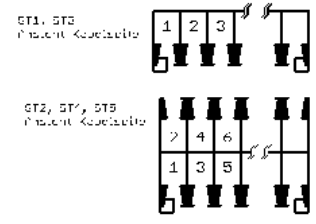


Stecker (Klotzseite) plug (soldering side)
Stecker (Lötseite) plug (soldering side)
Buchse (Lötseite) socket (soldering side)

KKD 12



Buchse (Lötseite) socket (soldering side)
Stecker (Steckseite) plug (plug side)
Buchse (Steckseite) socket (plug side)



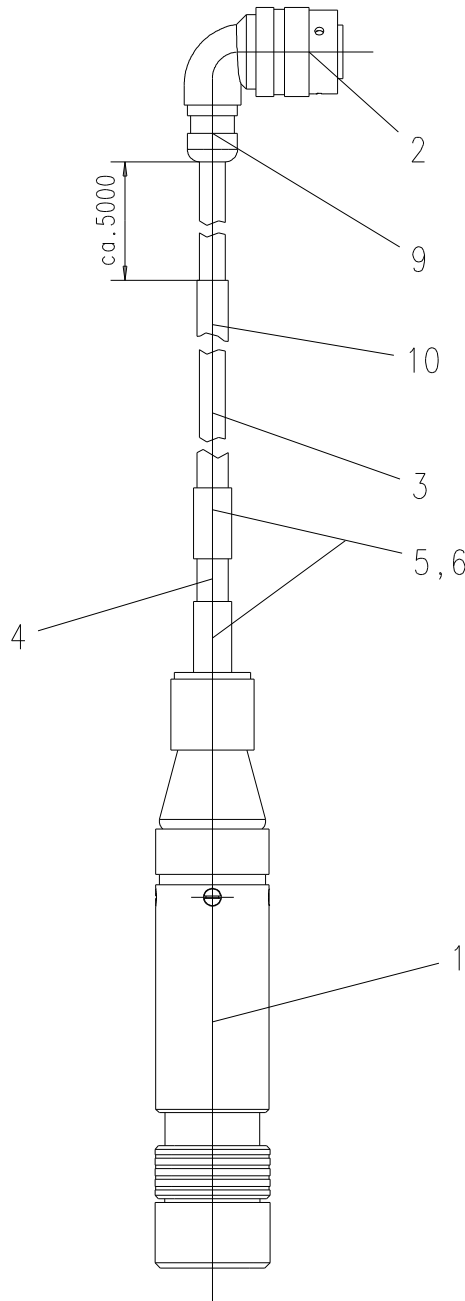
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Zust	Änderung	Datum	Name			Ersatz für : . . .
						Ersetzt durch : . . .

IBAK Kiel - Wehdenweg 122 - 24148 Kiel - Germany

Stückliste/ Parts List

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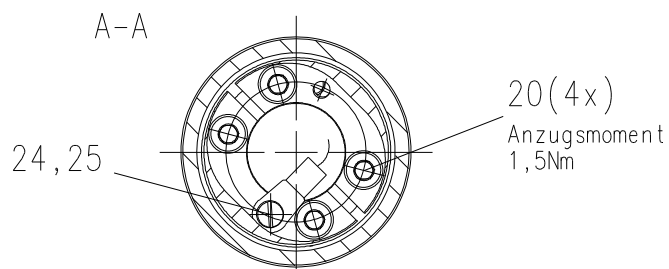
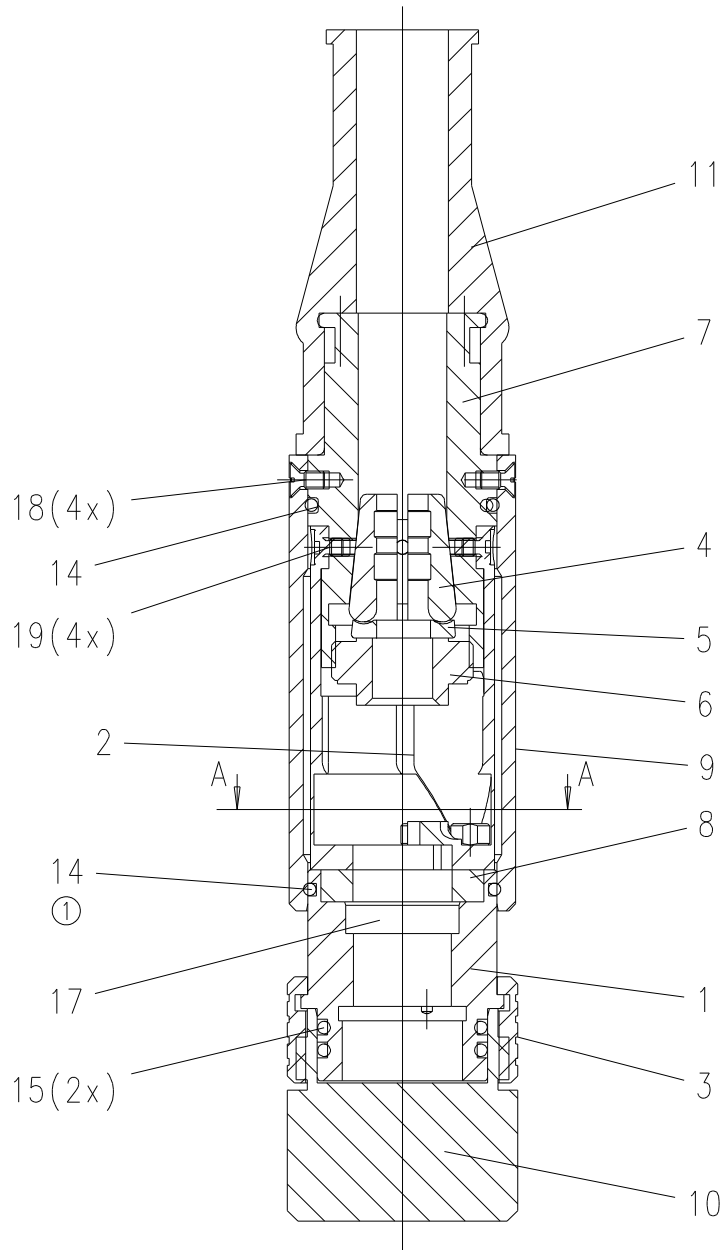
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printing date: 12.09.2005

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1	800604040	KAMERAKABELDOSE KKD12 CAMERA CABLE	1,000	STK PCS	9
2	801706442	GERAETESTECKER BEARBEITET APPLIACE CONNECTOR	1,000	STK PCS	9
3	4404924	KAMERAKABEL TYP 524/11 CAMERA CABLE TYPE 524/11	200,000	M M	
4	4420511	PVC-SCHLAUCH PVC-TUBE	1,000	M M	9
5	4442033	PERLONDRAHT 1 MM PERLON WIRE	6,000	M M	9
6	4412593	SCHRUMPFSCHLAUCH, SCHWARZ SHRINK-ON SLEEVE, BLACK	0,240	M M	9
7	4412557	SCHRUMPFSCHLAUCH, SCHWARZ SHRINK-ON SLEEVE, BLACK	0,060	M M	9
8	4403627	KLEBSTOFF LOCTITE 243 ADHESIVE	0,001	STK PCS	0
9	4411589	KABELVERSCHR. PG7 IP 68 CABLE SCREW COUPLING	1,000	STK PCS	9
10	4412543	SCHRUMPFSCHLAUCH, ROT SHRINK-ON TUBE	0,200	M M	9
21	430580148	MONTAGEPLAN FÜR KKD ASSEMBLY DIAGRAM	1,000	STK PCS	0
22	08000054P	PRÜFPLAN TEST PLAN	1,000	STK PCS	0

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Zust	Änderung	Datum	Name			Ersatz für :		Ersetzt durch :	

IBAK Kiel - Wehdenweg 122 - 24148 Kiel - Germany

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Druckdatum:

printing date:

12.09.2005

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1	800601541	GEHÄUSE, KOMPL. HOUSING	1,000	STK PCS	9
2	800600232	STECKERHALTERPAAR PAIR OF CONNECTOR HOLDERS	1,000	STK PCS	9
3	800600342	MUTTER NUT	1,000	STK PCS	9
4	800604242	KONUS CONE	1,000	STK PCS	9
5	800604142	DRUCKSCHEIBE THRUST WASHER	1,000	STK PCS	9
6	800602242	DRUCKSCHRAUBE PRESSING SREW	1,000	STK PCS	9
7	800602342	KABELEINFÜHRUNG CABLE ENTRY	1,000	STK PCS	9
8	800600842	BUCHSENHALTER SOCKET HOLDER	1,000	STK PCS	9
9	800600942	STECKERGEHÄUSE PLUG HOUSING	1,000	STK PCS	9
10	048905642	SCHUTZKAPPE PROTECTION CAP	1,000	STK PCS	9
11	800601042	MANSCHETTE SLEEVE	1,000	STK PCS	9
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Teilenr./ Part No Benennung/ description

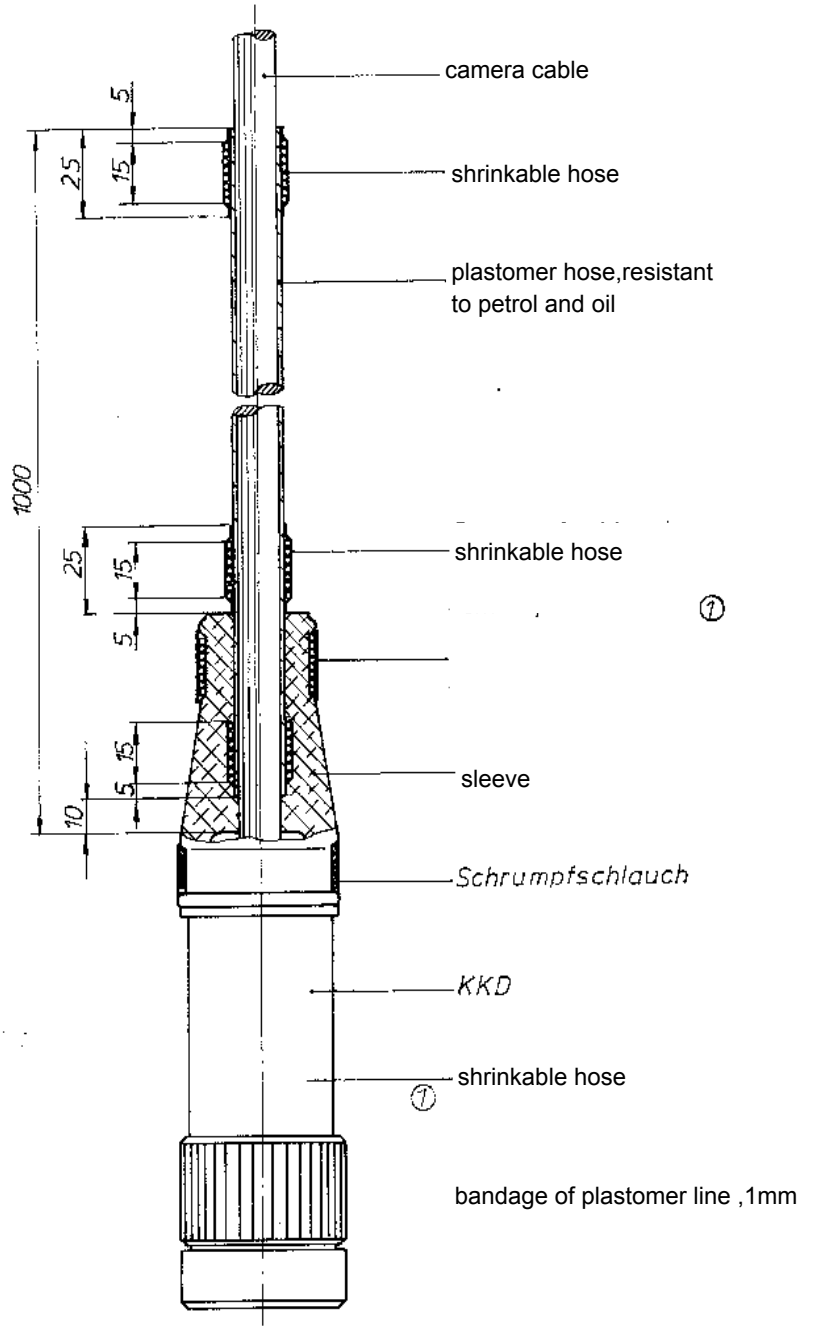
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printing date: 12.09.2005


Pos.	Teilenr./ Part No	Benennung/ description	Menge/ Qty.	ME/ unit	ETeil/ sparepart
15	4412156	O-RING 20,35X1,78 - NBR O-RING	2,000	STK PCS	9
17	4420185	ISOLATIONSEINSATZ BUCHSE INSULATING INSERT	1,000	STK PCS	9
18	6000659	SENKSCHRAUBE M2,5X5 COUNTERSUNK SCREW	4,000	STK PCS	9
19	6000330	SENKSCHRAUBE M2,5X4 COUNTERSUNK SCREW	4,000	STK PCS	9
20	6001452	ZYLINDERSCHRAUBE M3X12 SLOTTED CHEESE HEAD SCREW	4,000	STK PCS	0
24	6001402	ZYLINDERSCHRAUBE M2X12 SLOTTED CHEESE HEAD SCREW	1,000	STK PCS	9
25	6480682	LÖTÖSE 2,6 ; 12MM LANG SOLDERING TAB	1,000	STK PCS	9

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				Zul. Abw. DIN 7168	Oberfläche	Maßstab 1 : 2	Gewicht
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				Bearb. 05.08.86	Fiew		
				Gepr.			
				Norm			
3	Änd. Anw. 4628	19.2.97	Sch	 IBAK Wehdenweg 122 D-2300 KIEL 14		4 3058 01 48	
2	Änd. Anw. 4126	14.11.94	Sch				
1	Ändm. 1765	14.12.90	Sch				
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