

BERNSTEIN



Electronic-Tools

ESD



BERNSTEIN 6-644 ESD Germany
non insulating
TW 3

BERNSTEIN Germany
1-851 Ceramic antistatic
0.9 x 0.3

BERNSTEIN Germany
4-021 ESD non insulating
PH 000

anti-acid ESD
stainless Antistatic
BERNSTEIN
5-052-13



EPA 6900 ELECTRONIC SERVICE CASE



The service case made from **conductive material** for maintenance and installation tasks in **ESD protected areas** with a full assortment of special **ESD-tools**. For use at electrostatically endangered components and plants.

EPA ELECTRONIC SERVICE CASE

The service case made from **conductive material** for maintenance and installation tasks in **ESD protected areas** with a full assortment of special ESD-tools. For use at electrostatically endangered components and plants.

6900  EPA with tool set

6915  EPA without tool set



Description:

The body of the case, the tool trays as well as the bottom tray with adjustable partitions are made from conductive material which is **tested by German TÜV** according to **DIN EN IEC Norm 10 00 15 part 5**. The tools of this set have been tested with good results by several testing laboratories adequate to **DIN EN 61340-5-1, 61340-2-1, 61340-2-3** for work in ESD protected areas. The sturdy shells are pressed with the stable double aluminium frame.

32 tools are clearly arranged on two tool trays, one of it on both sides. The lid of the case has a pocket for documentations etc. The bottom tray allows with its partitions a clear arrangement of additional tools and instruments.

The case has two locks.

Outside dimensions: 460 x 165 x 310 mm

Weight without tools: approx. 5.400 kg

Weight with tools: approx. 6.280 kg

Tool set:

No.	Description of individual tools	No.	Description of individual tools
2-101	Tin knife with ceramic blade, 115 mm	4-632	Screwdriver with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, 100 x 4.0 mm
2-265	2 Test prods , red and black, extremely slim, pointed and flexible, blade made from 1 mm steel wire	4-633	Screwdriver with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, 125 x 5.5 mm
2-620	PLCC extractor	4-662	Cross-recess screwdriver Pozidriv size 1, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 80 mm
3-654-15	Side cutters EUROline-Conductive , 125 mm, for hard wire up to 0.4 mm Ø, for copper wire up to 1.5 mm Ø, slim rounded head, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard	4-663	Cross-recess screwdriver Pozidriv size 2, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 100 mm
3-671-15	End cutters EUROline-Conductive , 130 mm, for copper wire up to 0.6 mm Ø, extremely slim, straight, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard	5-191	Tweezers , made from conductive and acid-resistant black plastic material, reinforced with glass fibre, 120 mm, with straight, rounded tips
3-682-15	Flat nose pliers EUROline-Conductive , 130 mm, extremely slim, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard	5-192	Tweezers , made from conductive and acid-resistant black plastic material, reinforced with glass fibre, 120 mm, with straight, 3 mm flat-hand tips
3-133-13	Side cutters , 145 mm, for hard wire up to 1.25 mm Ø, for soft wire up to 2.5 mm Ø, chrome-plated, conductive black hand-guard	5-194	Tweezers , made from conductive and acid-resistant black plastic material, reinforced with glass fibre, 120 mm, with bent, pointed tips
3-245-13	Telephone pliers , 200 mm, snipe nose, with cutting edge for hard wire, chrome-plated, conductive black hand-guard	6-612	Socket wrench with conductive handle, blade from chrome vanadium, nickel-plated, A/F 2.0 mm
3-732-13	Combination pliers , 165 mm, chrome-plated, conductive black hand-guard	6-617	Socket wrench with conductive handle, blade from chrome vanadium, nickel-plated, A/F 4.0 mm
4-603	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 50 x 1.5 mm	6-621	Socket wrench with conductive handle, blade from chrome vanadium, nickel-plated, A/F 5.5 mm
4-605	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 60 x 2.0 mm	6-659	TORX-screwdriver T 4, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-606	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 60 x 2.5 mm	6-661	TORX-screwdriver T 5, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-621	Cross-recess screwdriver size 000, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip	6-662	TORX-screwdriver T 6, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-622	Cross-recess screwdriver size 00, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip	6-663	TORX-screwdriver T 7, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-623	Cross-recess screwdriver size 0, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip	6-665 L	TORX-screwdriver T 9 with hole, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
		7-422	ESD brush , bristles width 20 mm

To complete the set we recommend:

9-316/5	5 Chip-Container , conductive box with lid, black, internal dimensions: 118 x 32 x 14 mm	6-675	Extra long TORX-screwdriver T 10 with hole, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 300 mm
9-356	ESD-Handling-Set , foldable, with contact bracelet and earth wire	6-676 L	Extra long TORX-screwdriver T 15 with hole, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 300 mm
4-643	Extra long screwdriver with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, 300 x 5.5 mm	6-677 L	Extra long TORX-screwdriver T 20 with hole, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 300 mm
4-656	Extra long cross-recess screwdriver PH size 1, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 300 mm		
4-657	Extra long cross-recess screwdriver PH size 2, with conductive special-square pattern handle, blade from chrome vanadium, chrome-plated, with black tip, blade length 300 mm		

ELECTRONIC-SERVICE TOOL SETS

The tool sets for mobile use at electrostatically endangered components



2220 **BERNSTEIN** SERVICE-SET ANTISTATIC with tool set

2221 Case with zip fastener, without tools

Description:

Elegant zipper case, made from **conductive** black imitation leather and **conductive** pockets for 12 ESD-tools and foldable ESD-workbench pad with accessories.

Outside dimensions: 320 x 250 x 50 mm (when closed)

Weight with tools: approx. 0.950 kg

Tool set:

No.	Description of individual tools
2-620	PLCC-extractor
3-601-13	Side cutters , 120 mm, for hard wire up to 0.4 mm Ø, for soft wire up to 1.0 mm Ø, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
3-632-13	Flat nose pliers , 120 mm, plain jaws, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
3-633-13	Snipe nose pliers , 120 mm, plain jaws, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
4-601	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 50 x 0.8 mm
4-605	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 60 x 2.0 mm
4-606	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 60 x 2.5 mm
4-621	Cross-recess screwdriver size 000, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip



No.	Description of individual tools
4-622	Cross-recess screwdriver size 00, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-623	Cross-recess screwdriver size 0, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
5-191	Tweezers , made from conductive plastic material, reinforced with glass fibre, 120 mm, with straight, rounded tips
5-192	Tweezers , made from conductive plastic material, reinforced with glass fibre, 120 mm, with straight, 3 mm flat-hand tips
9-354	ESD-handling-set , consisting of: foldable green workbench pad (surface resistance according to DIN 53482: approx. 10 ⁸ ohm), 500 x 400 x 0.35 mm, contact bracelet 9-342, earth wire 2500 mm long with 1 Mohm safety resistor

2300 **BERNSTEIN** ESD/EGB Service-Set with tools



Description:

The foldable green portfolio at the same time serves as an electrically **conductive** workbench pad of 680 x 680 x 0.35 mm. The surface resistance according to DIN 53482 is approx. 10⁸ ohm.

The workbench pad has 3 press-stud receptacles for connecting the contact bracelet and the earth wire.

With 2 additional press-buttons the pad may be closed as tool bag.

The 2 patch pockets carry the contact bracelet and the earth wire.

Furthermore 16 conductive tools are placed in pockets, ready to hand.

Outside dimensions: 330 x 240 x 20 mm (when closed)

Weight with tools: approx. 0.850 kg

Tool set:

No.	Description of individual tools
2-166	Glass fibre contact cleaner , with rotary mechanism, plastic casing
2-620	PLCC-extractor
3-601-13	Side cutters , 120 mm, for hard wire up to 0.4 mm Ø, for soft wire up to 1.0 mm Ø, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
3-633-13	Snipe nose pliers , 120 mm, plain jaws, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
4-601	Screwdriver with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip, 50 x 0.8 mm
4-605	Screwdriver with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip, 60 x 2.0 mm
4-606	Screwdriver with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip, 60 x 2.5 mm
4-621	Cross-recess screwdriver size 000, with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip
4-622	Cross-recess screwdriver size 00, with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip
4-623	Cross-recess screwdriver size 0, with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip

No.	Description of individual tools
5-191	Tweezers made from conductive, black plastic material, reinforced with glass fibre, 120 mm, with rounded tips
5-194	Tweezers made from conductive, black plastic material, reinforced with glass fibre, 120 mm with bent, pointed tips
6-616	Socket wrench with conductive handle, blade made from chrome vanadium, nickel-plated, A/F 3.5 mm
6-661	TORX screwdriver T 5, with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip
6-664	TORX screwdriver T 8, with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip
6-666 L	TORX screwdriver T10 with bore-hole in the tip, with conductive handle, blade made from chrome vanadium, chrome-plated, with black tip
9-342	Contact bracelet cloth armband, allergy-free, edges and surface insulating, spiral cord, 1 Mohm safety resistor, combined press-stud and terminal connection, to DIN EN 100 015/1
9-346	Earth wire with 1 Mohm safety resistor, 2500 mm long, with terminal connection resp. press-stud, for connecting workbench pad and floor cover and connection to an earth potential



ELECTRONIC-SERVICE TOOL SETS

Special service sets for the maintenance and repairing of mobile phones and other high sensitive IT-Instruments

The tools are clearly arranged in cases made from **conductive** black imitation leather, with zip fastener.
2251 Case with zip fastener, without tools

Outside dimensions: 190 x 135 x 35 mm (when closed)

2250 **BERNSTEIN** CARAT with tool set

9-piece set **conductive** tools from the series EUROline-Conductive to meet the most exacting standards.

Weight with tools: approx. 0.360 kg



Tool set:

No.	Description of individual tools
3-672-15	End cutters EUROline-Conductive , 130 mm, for copper wire up to 0.6 mm Ø, cutting edge 20° angular, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard
3-683-15	Snipe nose pliers EUROline-Conductive , 130 mm, plain jaws, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard
4-601	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 50 x 0.8 mm
4-603	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 50 x 1.5 mm
4-621	Cross-recess screwdriver size 000, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-623	Cross-recess screwdriver size 0, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
5-191	Tweezers , made from conductive and acid-resistant black plastic material, reinforced with glassfibre, 120 mm, with straight, rounded tips
6-661	TORX-screwdriver T 5, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
6-663	TORX-screwdriver T 7, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip

2270 **BERNSTEIN** ACCENT with tool set

9-piece set **conductive** tools with bright steel polished pliers

Weight with tools: approx. 0.360 kg

Tool set:

No.	Description of individual tools
3-601-13	Side cutters , 120 mm, for hard wire up to 0.4 mm Ø, for soft wire up to 1.0 mm Ø, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
3-633-13	Snipe nose pliers , 120 mm, plain jaws, bright steel-polished, box joint, double leaf spring, with conductive black hand-guard
4-601	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 50 x 0.8 mm
4-603	Screwdriver with conductive handle, blade from chrome vanadium, chrome-plated, with black tip, 50 x 1.5 mm
4-621	Cross-recess screwdriver size 000, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
4-623	Cross-recess screwdriver size 0, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
5-191	Tweezers , made from conductive and acid-resistant black plastic material, reinforced with glassfibre, 120 mm, with straight, rounded tips
6-661	TORX-screwdriver T 5, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip
6-663	TORX-screwdriver T 7, with conductive handle, blade from chrome vanadium, chrome-plated, with black tip



3-680 **BERNSTEIN** EUROline-Conductive set of pliers

4-piece set **conductive** pliers from the series EUROline-Conductive to meet highest quality standards

Weight with tools: approx. 0.390 kg

Tool set:

No.	Description of individual tools
3-651-15	Mini side cutters EUROline-Conductive , 120 mm, without sideface, for soft wire up to 0.6 mm Ø, copper wire up to 1.2 mm Ø, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard
3-672-15	End cutters EUROline-Conductive , 130 mm, for copper wire up to 0.6 mm Ø, cutting edge 20° angular, box joint, double leaf spring, fine polished and bright burnished, conductive bicoloured hand-guard
3-682-15	Flat nose pliers EUROline-Conductive , 130 mm, plain jaws, finish as before
3-683-15	Snipe nose pliers EUROline-Conductive , 130 mm, plain jaws, finish as before





SPECIAL ELECTRONIC PLIERS EUROline-Conductive

Box joint 

Double leaf spring

High quality steel

Fine polished and bright burnished, for dazzle free working

Ergonomically formed bicoloured hand-guard from

conductive anti-slide material

The pliers of this program have been tested with good results by several testing laboratories adequate to **DIN EN 61340-5-1, 61340-2-1, 61340-2-3** for work in ESD protected areas

CUTTING PLIERS

No.	Length		Finish	cutting capacity mm Ø			Weight g
	mm	inches		Copper-wire	Soft wire	Hard wire	

Mini side cutters EUROline-Conductive

with very slim, rounded head for finest operations

3-651-15	120	4 3/4	without side face	1.2	0.6	-	55
3-651-15 DR	120	4 3/4	without side face, with retaining spring	1.2	0.6	-	55

Mini side cutters EUROline-Conductive

with very slim, pointed head for finest operations

3-652-15	120	4 3/4	without side face	1.0	0.6	-	55
3-653-15	120	4 3/4	without side face, with special flat cutting edge	1.0	0.6	-	55

Side cutters EUROline-Conductive

with slim, rounded head, available with or without side face

3-654-15	125	5	with side face	1.5	1.0	0.4	60
3-655-15	125	5	without side face	1.5	1.0	-	60

Side cutters EUROline-Conductive

with slim, pointed head, available with or without side face

3-656-15	125	5	with side face	1.2	1.0	0.4	60
3-657-15	125	5	without side face	1.2	1.0	-	60

End cutters EUROline-Conductive

extremely slim, without side face, for precision work at points difficult to reach

3-671-15	130	5 1/8	straight	0.6	-	-	60
3-672-15	130	5 1/8	cutting edge 20° angular	0.6	-	-	60

Top cutters EUROline-Conductive

extremely slim, without side face, head 45° angular, for flush cutting directly in front of and behind the components.

3-673-15	130	5 1/8	cutting edge inside	0.6	-	-	60
3-674-15	130	5 1/8	cutting edge outside	0.6	-	-	60

Oblique top cutters EUROline-Conductive

cutting plane 29° angular, flush cutting for horizontal and vertical use

3-675-15	115	4 1/2	without side face	1.2	1.0	0.4	65
----------	-----	-------	--------------------------	-----	-----	-----	----





SPECIAL ELECTRONIC PLIERS EUROline-Conductive

CUTTING PLIERS

No.	Length		Finish	cutting capacity mm Ø			Weight g
	mm	inches		Medium hard wire	Hard wire	Piano-wire	

Carbide mini side cutters EUROline-Conductive

for continuous heavy work, **with inserted carbide cutting edges**,
only for tough nickel and electrode wires

3-661-15	120	4 3/4	with side face very slim rounded head	1.2	1.0	0.6	60
3-663-15	120	4 3/4	with side face very slim pointed head with special flat cutting edge	0.6	0.5	-	60

Carbide oblique top cutters EUROline-Conductive

for continuous heavy work, **with inserted carbide cutting edges**,
cutting plane 29° angular, for horizontal and vertical use,
only for tough nickel and electrode wires

3-667-15	115	4 1/2	without side face	0.6	0.5	0.3	65
----------	-----	-------	-------------------	-----	-----	-----	----

Glas fibre mini side cutters EUROline-Conductive

for continuous heavy work, **with inserted carbide cutting edges**,
with special side face, **for cutting glass fibre only**, max. Ø 2.0 mm

3-665-15	120	4 3/4	very slim rounded head				60
----------	-----	-------	------------------------	--	--	--	----

ROUND, FLAT, SNIPE NOSE PLIERS

No.	Length		Finish	Weight g
	mm	inches		

Round nose pliers EUROline-Conductive

extremely slim

3-681-15	130	5 1/8	short plain jaws	60
----------	-----	-------	------------------	----

Flat nose pliers EUROline-Conductive

extremely slim

3-682-15	130	5 1/8	short plain jaws	60
3-688-15	130	5 1/8	short, ultra slim plain jaws	60

Snipe nose pliers EUROline-Conductive

extremely slim

3-683-15	130	5 1/8	short plain jaws	55
3-685-15	140	5 1/2	long plain jaws	65
3-686-15	140	5 1/2	long serrated jaws	65
3-687-15	130	5 1/8	short plain jaws, ultra slim pointed for precise handling of tiny components	60



3-661-15



3-663-15



3-667-15



3-665-15



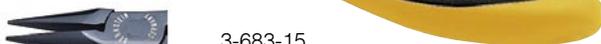
3-681-15



3-682-15



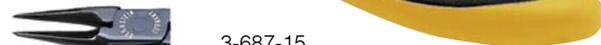
3-688-15



3-683-15



3-685-15



3-687-15

SPECIAL ESD ELECTRONIC PLIERS

Box joint 
 Double leaf spring
 Bright steel-polished
 With **conductive** black handguard



CUTTING PLIERS

No.	Length		Finish	Cutting capacity mm Ø		Weight g
	mm	inches		Soft wire	Hard wire	

Side cutters

with slim, rounded head, available with or without side face

3-601-13	120	4 3/4	with side face	1.0	0.4	70
3-602-13	120	4 3/4	without side face	1.0	-	70

Side cutters

with slim, pointed head, available with or without side face

3-603-13	120	4 3/4	with side face	0.8	-	65
3-604-13	120	4 3/4	without side face	0.8	-	65

End cutters

with angular tips and oblique cutting edge,
 for flush cutting, for soft wire only

3-606-13	120	4 3/4	without side face	0.4	-	55
----------	-----	-------	--------------------------	-----	---	----

ROUND, FLAT AND SNIPE NOSE PLIERS

No.	article	Length		Finish	Weight g
		mm	inches		
3-631-13	Round nose pliers	120	4 3/4	plain jaws	55
3-632-13	Flat nose pliers	120	4 3/4	plain jaws	55
3-633-13	Snipe nose pliers	120	4 3/4	plain jaws	55
3-634-13	Snipe nose pliers, angular	120	4 3/4	plain jaws	55

SETS OF ELECTRONIC PLIERS

3-650 Set of conductive pliers, 5 pieces

in a practical table support from antistatic material

Tool set:

Weight: 320 g

No.	Description of individual tools
3-601-13	Side cutters , 120 mm, for hard wire up to 0.4 mm Ø, for soft wire up to 1.0 mm Ø
3-631-13	Round nose pliers , 120 mm, plain jaws
3-632-13	Flat nose pliers , 120 mm, plain jaws
3-633-13	Snipe nose pliers , 120 mm, plain jaws
3-634-13	Snipe nose pliers , angular, 120 mm, plain jaws

3-630 Set of conductive pliers, 3 pieces

in a wallet of recycable nylon

Tool set:

Weight: 240 g

No.	Description of individual tools
3-601-13	Side cutters , 120 mm, for hard wire up to 0.4 mm Ø, for soft wire up to 1.0 mm Ø
3-632-13	Flat nose pliers , 120 mm, plain jaws
3-633-13	Snipe nose pliers , 120 mm, plain jaws



3-601-13



3-603-13



3-606-13



3-631-13



3-632-13



3-633-13



3-634-13



SPECIAL ESD ELECTRONIC PLIERS

Lap joint 

Double leaf spring

Bright polished – chrome-plated

With **conductive** black handguard



CUTTING PLIERS

No.	Length		Finish	Cutting capacity mm Ø		Weight g
	mm	inches		Soft wire	Hard wire	

Side cutters

with slim, rounded head

3-901-13	125	5	with side face	1.0	0.4	75
----------	-----	---	-----------------------	-----	-----	----

Side cutters

with slim, pointed head and special flat cutting edge, for soft wire only

3-902-13	125	5	without side face	0.8	-	75
----------	-----	---	--------------------------	-----	---	----

Top cutters

with 3 mm wide cutting edge, jaw length 20 mm, for flush cutting, for soft wire only

3-905-13	135	5 1/2	without side face	0.8	-	80
----------	-----	-------	--------------------------	-----	---	----

End cutters

with angular tips and oblique cutting edge, for flush cutting, for soft wire only

3-906-13	135	5 1/2	without side face	0.8		80
----------	-----	-------	--------------------------	-----	--	----

ROUND, FLAT AND SNIPE NOSE PLIERS

Round nose pliers

3-931-13	130	5 1/8	plain jaws			80
----------	-----	-------	------------	--	--	----

Flat nose pliers

3-932-13	130	5 1/8	plain jaws			80
----------	-----	-------	------------	--	--	----

Snipe nose pliers

3-933-13	130	5 1/8	plain jaws			80
----------	-----	-------	------------	--	--	----

SIDE CUTTERS, TELEPHONE AND COMBINATION PLIERS

Lap joint, bright polished – chrome-plated

With **conductive** black handguard

Side cutters

swedish design

3-133-13	145	5 3/4	chrome-plated	2.5	1.25	160
----------	-----	-------	---------------	-----	------	-----

Telephone pliers snipe nose, long straight serrated jaws, with cutting edges for hard wire

3-245-13	200	8	chrome-plated			190
----------	-----	---	---------------	--	--	-----

Combination pliers

with wire cutter, for hard wire

3-732-13	165	6 1/2	chrome-plated			220
----------	-----	-------	---------------	--	--	-----



3-901-13



3-902-13



3-905-13



3-906-13



3-931-13



3-932-13



3-933-13



3-133-13



3-245-13



3-732-13



3-901-7



3-902-7



3-905-7



3-906-7



3-932-7



3-933-7



3-191-17



3-192-17

ESD SPECIAL ELECTRONIC PLIERS

Lap joint



Black burnished, double leaf spring

With **conductive** black dip insulation

CUTTING PLIERS

No.	Length		Finish	Cutting capacity mm Ø		Weight g
	mm	inches		Soft wire	Hard wire	
Side cutters with slim, rounded head						
3-901-7	120	4 3/4	with side face	1.0	0.4	70

Side cutters with slim, pointed head, special flat cutting edge, for soft wire only						
3-902-7	120	4 3/4	without side face	0.8	-	70

Top cutters with 3 mm wide cutting edge, jaw length 20 mm, for flush cutting, for soft wire only						
3-905-7	125	5	without side face	0.8	-	70

End cutters with angular tips and oblique cutting edge, for flush cutting, for soft wire only						
3-906-7	125	5	without side face	0.8	-	75

FLAT-SNIPE NOSE PLIERS

No.	Length		Finish	Weight g
	mm	inches		
Flat nose pliers				
3-932-7	120	4 3/4	short, plain jaws	75

Snipe nose pliers				
3-933-7	125	5	short, plain jaws	70

ESD PRINTPLIERS

With openingspring and

conductive black, soft handguard

No.	Length		Finish	Cutting capacity mm Ø		Weight g
	mm	inches		Soft wire	Hard wire	
Electronic side cutters with pointed head, for flush cutting						
3-191-17	130	5 1/8	without side face	1.0	-	70

Stripping side cutters with pointed head, for flush cutting						
3-192-17	125	5	without side face	0.8	-	60

ESD INTERCHANGEABLE SCREWDRIVER-SET

for special service

Practical tool rolls made from conductive material are equipped with double-ended screwdriver-blades and ESD handle with brass clamping sleeve, suitable for hexagon blades of A / F 4 mm

blade: chrome vanadium, hexagon material, A / F 4 x 120 mm, hardened over its full length, matt chrome-plated, black tip

4-920 9-piece interchangeable screwdriver set with ESD-handle

Contents: ESD-interchangeable handle
 3 blades widths 1.5 / 3.0 mm, 2.0 / 3.5 mm, 2.5 / 4.0 mm
 2 cross-recess blades PH 000 / PH 00, PH 0 / PH 1
 3 TORX blades T 5 / T 6, T 7 L / T 8 L, T 9 L / T 10 L ("L" with bore hole)

Weight: 170 g

4-960 11-piece interchangeable screwdriver set with ESD-handle

Contents: ESD-interchangeable handle
 2 blades widths 1.5 / 3.0 mm, 2.0 / 4.0 mm,
 2 cross-recess blades PH 000 / PH 00, PH 0 / PH 1
 4 TORX blades T 3 / T 4, T 5 / T 6, T 7 L / T 8 L, T 9 L / T 10 L ("L" with bore hole)
 2 Tri Wing / Four Wing blades TW 1 / FW 1, TW 2 / FW 2

Weight: 170 g



4-960

ESD SCREWDRIVERS

with special-square pattern handle from impact-resistant, **conductive** black plastic

Blade: chrome vanadium, hardened over its full length, matt chrome-plated, with black tip

Handle: impact-resistant, **conductive**, black plastic, electrostatic discharge according to DIN EN 100015/1



Screwdrivers

No.	Blade length mm	Blade width mm	Blade thickness mm	Handle size mm	Weight
4-632	100	4.0	0.8	92 x 21	46 g
4-633	125	5.5	1.0	100 x 23	75 g
4-643	300	5.5	1.2	100 x 23	108 g

Cross-recess screwdrivers

No.	Size	Blade length mm	Blade Ø mm	Handle size mm	Weight
4-652	1	80	4.5	92 x 21	49 g
4-653	2	100	6.0	100 x 23	78 g

extra long screwdrivers

4-656	1	300	4.5	100 x 23	87 g
4-657	2	300	6.0	100 x 23	120 g

Cross-recess screwdrivers Pozidriv

4-662	1	80	4.5	92 x 21	49 g
4-663	2	100	6.0	100 x 23	78 g

Tri Wing screwdrivers

4-641	TW 0	70	4.5	92 x 21	42 g
4-642	TW 1	70	4.5	92 x 21	42 g
4-643	TW 2	70	4.5	92 x 21	42 g
4-644	TW 3	70	4.5	92 x 21	42 g
4-645	TW 4	70	6.0	92 x 21	53 g
4-646	TW 5	70	6.0	92 x 21	54 g



ESD ELECTRONICS SCREWDRIVERS



with slim, ergonomically formed handles from black **conductive** plastic. The swivel top guarantees a precise working without exhaustion.

Blade: chrome vanadium, hardened over its full length, chrome-plated, with black tip

Handle: impact-resistant **conductive**, black plastic, electrostatic discharge according to DIN EN 100015/1

Screwdrivers

No.	Blade length mm	Blade width mm	Blade thickness mm	Blade Ø mm	Handle length mm	Weight
4-601	50	0.8	0.20	2.5	90	12 g
4-602	50	1.2	0.25	2.5	90	12 g
4-603	50	1.5	0.30	2.5	90	12 g
4-604	50	1.8	0.30	2.5	90	12 g
4-605	60	2.0	0.40	2.5	90	12 g
4-606	60	2.5	0.40	2.5	90	12 g
4-607	60	3.0	0.50	3.0	90	14 g

Cross-recess Screwdrivers

No.	Size	Blade length mm	Blade Ø mm	Handle length mm	Weight
4-621	000	50	2.5	90	12 g
4-622	00	50	2.5	90	12 g
4-623	0	50	3.0	90	14 g

4-610 6-piece screwdriver set

in a practical table support from **conductive** material

Contents: 6 screwdrivers No. 4-601, 4-603, 4-604, 4-605, 4-606, 4-607

Weight: 141 g

4-620 6-piece screwdriver and cross-recess screwdriver set

in a practical table support from **conductive** material

Contents: 3 screwdrivers No. 4-602, 4-605, 4-607
3 cross-recess screwdrivers No. 4-621, 4-622, 4-623

Weight: 145 g

Wrench keys

No.	A/F mm	Blade length mm	Handle length mm	Weight
6-631	0.7	50	90	11 g
6-632	0.9	50	90	12 g
6-633	1.3	50	90	12 g
6-634	1.5	50	90	12 g
6-635	2.0	60	90	12 g
6-636	2.5	60	90	14 g

6-630 6-piece wrench key set

in a practical support from **conductive** material

Contents: 6 wrench keys No. 6-631, 6-632, 6-633, 6-634, 6-635, 6-636

Weight: 142 g



4-610



4-620

ESD SPECIAL-TOOLS



with slim, ergonomically formed handles from black, **conductive** plastic. The swivel top guarantees a precise working without exhaustion.

Blade: chrome vanadium, hardened over its full length, chrome-plated, black tip, "L" with bore-hole in the tip

Handle: impact-resistant, **conductive** black plastic, electrostatic discharge according to DIN EN 100015/1



TORX-screwdrivers



No.	Size	Blade length mm	for metric thread	Handle length mm	Weight
6-656	T 1	50	M 0.9	90	10 g
6-657	T 2	50	M 1.0-1.2	90	10 g
6-658	T 3	50	M 1.2-1.4	90	10 g
6-659	T 4	50	M 1.4-1.6	90	12 g
6-661	T 5	50	M 1.6-2	90	12 g
6-662	T 6	50	M 2	90	16 g
6-663	T 7	50	M 2.5	90	13 g
6-664	T 8	60	M 2.5	90	14 g
6-665 L	T 9	60	M 3	90	19 g
6-666 L	T 10	60	M 3-3.5	90	20 g

extra long TORX screwdrivers with conductive special-square pattern handle

No.	Size	Blade length mm	for metric thread	Handle length mm	Weight
6-675 L	T 10	300	M 3-3.5	92 x 21	60 g
6-676 L	T 15	300	M 3.5-4	92 x 21	65 g
6-677 L	T 20	300	M 4-5	100 x 21	80 g



6-660



6-660 6-piece TORX-screwdriver-set,

in a practical support from **conductive** material

Contents: 6 TORX-screwdrivers No. 6-661, 6-662, 6-663, 6-664, 6-665, 6-666

Weight: 163 g

Socket wrenches



No.	A/F mm	Blade length mm	Handle length mm	Weight
6-611	1.5	70	90	14 g
6-612	2.0	70	90	14 g
6-613	2.5	70	90	14 g
6-614	3.0	70	90	14 g
6-615	3.2	70	90	14 g
6-616	3.5	70	90	15 g
6-617	4.0	70	90	15 g
6-618	4.5	70	90	16 g
6-619	5.0	70	90	16 g
6-621	5.5	70	90	20 g



6-610 6-piece socket wrenches

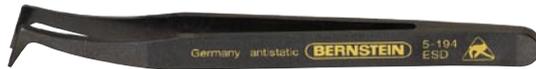
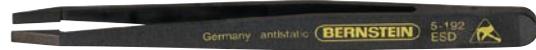
in a practical support from **conductive** material

Contents: 6 Socket wrenches No. 6-612, 6-614, 6-617, 6-618, 6-619, 6-621

Weight: 156 g



6-610



5-190



ESD TWEEZERS

made from **antistatic**, black plastic material, reinforced with glass fibre, conductive and acid-resistant

No.	Length		Finish	Weight
	mm	inches		
5-191	120	4 3/4"	straight, rounded tips	5 g
5-192	120	4 3/4"	straight, 3 mm flat-hand tips, grip surface offset	4 g
5-193	120	4 3/4"	straight, 6 mm flat, and wide tips	5 g
5-194	120	4 3/4"	bent, pointed tips	5 g
5-195	120	4 3/4"	straight, pointed tips, grip surface offset	4 g

5-190 6-piece set of ESD tweezers

in a practical table support from **conductive** material

Contents: 5 tweezers made from conductive black plastic material, No. 5-191, 5-192, 5-193, 5-194, 5-195
1 tweezers with ceramic tips No. 5-095

Weight: 120 g

5-090 5-piece set of ESD tweezers

in a practical table support from **conductive** material

Contents: 5 tweezers made from conductive black plastic material, No. 5-191, 5-192, 5-193, 5-194, 5-195

Weight: 94 g

TWEEZERS FROM CERAMIC

Ceramic tweezers meet highest standards due to their excellent mechanical, thermic and electrical features, non magnetic, antistatic, acid-resistant and alkaliproof, solder-repellent and heat-resistant.

Ceramic tweezers (each seperately in a plastic case)

5-081	130	5 1/8"	straight, pointed	15 g
5-082	130	5 1/8"	straight, microscopic-pointed	16 g

Ceramic-tipped tweezers (each seperately in a plastic case)

5-095	130	5 1/8"	especially slim and pointed	6 g
5-096	130	5 1/8"	slim, 2mm flat tips	6 g

TITAN TWEEZERS

Tweezers made from Titan are for highest demands, have a light weight, immunity to corrosion, even to aggressive acids, they are antimagnetic, antibacterial, solder-repellent, and non-reflective.

The melting point is 1677°C.

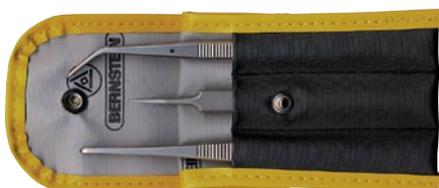
5-031	110	4 3/8"	matt-stainless, sharply pointed	9 g
5-035	120	4 3/8"	matt-stainless, sharply pointed	9 g
5-036	145	5 3/4"	matt-stainless, straight - round - wide tips with fine serration	15 g
5-037	150	6 "	matt-stainless, fine bent tips	15 g

5-030 3-piece set of electronic tweezers from titan

in a wallet of recycable nylon

Contents: Nr. 5-031, 5-036, 5-037

Weight: 60 g



SPECIAL-TWEEZERS FOR THE SMD-TECHNIQUE

high precision tweezers from special steel
 stainless – matt finish – anti-magnetic – acid-resisting
– on request with ESD coating (-13)

No.	Length		Finish	Weight
	mm	inches		
5-049	110	4 3/8"	straight, very sharply pointed	12 g
5-051	115	4 1/2"	straight pointed	15 g
5-051-13	115	4 1/2"	as above with ESD coating	15 g
5-052	110	4 3/8"	bent, very sharply pointed	13 g
5-052-13	110	4 3/8"	as above with ESD coating	13 g
5-053	110	4 3/8"	obliquely angled, very sharply pointed	13 g
5-053-13	110	4 3/8"	as above with ESD coating	13 g
5-054	120	4 3/4"	sickle-shape-curved, very sharply pointed	16 g
5-055	120	4 3/4"	sickle-shaped, very sharply pointed	15 g
5-056	120	4 3/4"	slightly bent, very sharply pointed	15 g
5-057	120	4 3/4"	self-locking, straight-pointed	13 g
5-058	120	4 3/4"	self-locking, bent, pointed	13 g
5-059	120	4 3/4"	flat, rounded tips, 2.0 mm width	15 g
5-061	115	4 1/2"	bent, flat rounded tips,	16 g
5-062	115	4 1/2"	35° angled, 2.0 mm width, with gripping cavity Ø 0.8 mm	16 g
5-063	115	4 1/2"	35° angled, 3.5 mm width, with gripping cavity Ø 0.8 mm	16 g
5-065	120	4 3/4"	straight, 3.0 mm width with gripping cavity Ø 0.8 mm	16 g
5-066	120	4 3/4"	30° angled, 2.5 mm width	15 g
5-067	120	4 3/4"	tip 45° angled, 2.0 mm width	15 g
5-068	120	4 3/4"	tip angled, 1.6 mm width	13 g
5-071	85	3 3/8"	thin, straight-pointed	8 g
5-073	140	5 1/2"	long-thin, straight, very sharply pointed	13 g
5-075	140	5 1/2"	straight, very sharply pointed, grip surface offset	13 g
5-076	120	4 3/4"	rigid, straight, pointed	19 g
5-077	130	5 1/8"	round, tapering, pointed	16 g
5-078	130	5 1/8"	tapering, chisel, 1.0 mm width	16 g



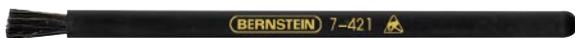
5-050 6-piece set of special tweezers for the SMD-technique in a wallet of recycable nylon

Contents: 6 high quality ESD tweezers made from special steel

No. 5-051, 5-052, 5-054
 5-058, 5-061, 5-062

Weight: 120 g





TOOLS FROM CERAMIC

Antistatic – antimagnetic – electrically insulating

Material: zirconium oxide

Adjusting screwdrivers

with blades from ceramic and conductive handle No.: 1-851 – 1-876

Bits to use with screwdriver handle No.: 1-751 – 1-776

No.	Length mm	No.	Length mm	Blade tip mm	Weight g
1-851	110	1-751	32	-	10 / 1
1-852	110	1-752	32	-	10 / 1
1-853	110	1-753	32	-	10 / 1
1-854	110	1-754	32	-	10 / 1
1-855	110	1-755	32	-	10 / 1
1-856	110	1-756	32	-	10 / 1
1-857	110	1-757	32	-	10 / 1
1-858	110	1-758	32	-	10 / 1
1-861	110	1-761	32	1.95 SW	10 / 1
1-862	110	1-762	32	2.45 SW	10 / 1
1-863	110	1-763	32	2.60 SW	10 / 1
1-864	110	1-764	32	KS Gr. 000	10 / 1
1-865	110	1-765	32	KS Gr. 00	10 / 1
1-866	110	1-766	32	KS Gr. 0	10 / 1
1-867	110	1-767	32	2.40 x 0.80	10 / 1
1-873	110	1-773	32	0.70 x 1.40	10 / 1
1-874	110	1-774	32	3.00 x 1.00	10 / 1
1-875	110	1-775	32	1.20 x 1.20	10 / 1
1-876	110	1-776	32	1.30 x 0.40	10 / 1

1-750 Ceramic adjusting screwdrivers set

13-piece set in a box with hinged lid

Weight: 90 g

Contents: double-ended handle No. 1-735,
12 ceramic bits, length 32 mm
No. 1-751, 1-752, 1-753, 1-744, 1-755, 1-756,
1-757, 1-761, 1-762, 1-765, 1-766, 1-767

Tin knife with ceramic blade

for working at printed circuit boards, 105 mm long,
handle from **conductive** black plastic

No. 2-101 Tin knife with ceramic blade

Weight: 9 g

Ceramic blade scissors

for cutting e.g. aramid yarns and fiber optic cables, antistatic and
electrically insulating, black plastic handles reinforced with glass-fibre

No.	mm	Length inches	Finish	Weight
5-353	125	5 "	blade length 45 mm	30 g

SPECIAL TOOLS

ESD Brushes

with **conductive** handle, natural bristles with **conductive** fibres

No.	Finish	Bristles	Total length mm	Weight
7-421	round	6 mm Ø	150	7 g
7-422	flat	20 mm wide	150	26 g

Lightning Tweezers

Nickel-plated steel-tweezers with **LED light**

The lightning tweezers is focussing the light to the working area at the
tweezers tips enabling optimal visibility e.g. for positioning of smallest
components without additional light source.

Power Supply: 2 x 3 Voltage Lithium Batteries

Function: when pressing the tweezers jaws the light will be switched on

No.	Length mm	Length inches	Finish	Weight
5-171	120	4 3/4 "	straight, pointed, finely serrated	39 g
5-172	120	4 3/4 "	with fine bent tips	39 g