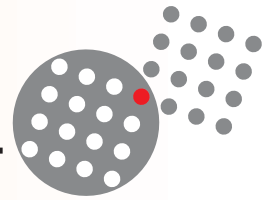


# 8STA Circular Miniature Connector Size 08 to 24



## FEATURES

- Derived from MIL-DTL 38999 (Eurofighter JN 1003 connector) utilises the extensive SOURIAU range of 38999 medium, high density, power, coaxial and triaxial contact layouts.
- Rugged aluminium body to ensure long time service life in the harshest environment.
- The 8STA range covers connectors from shell size 08 to 24 in 5 shell style :
  - 100% scoop proof.
  - EMI-RFI shielding and shell to shell continuity is provided by conductive plating and integral grounding ring fitting to the plug.
  - Environment sealing from interfacial seal and rear grommet (sealing IP 67).
  - Positive locking mechanism with locked colour indicator.
  - 6 colours coded keyway orientations.
  - Boot termination feature.



## TECHNICAL CHARACTERISTICS

### Mechanical characteristics

Shell	Aluminium alloy	
Shell plating	Conductive black zinc	
Insulator	Thermoplastic	
Grommet and seal	Liquid silicone rubber	
Contact	Copper alloy	
Contact plating	Gold	
Endurance	500 mating/unmating operations	
Shock	300 g for 3 ms and MILS-901 Grade A	
Vibration	147 m/s <sup>2</sup> , 10 to 2000 Hz (min. force in N)	
Contact retention	Size 22D : 45 N Size 20 : 60 N	Size 16 : 100 N Size 12 : 110 N

### Electrical characteristics

Test voltage rating (Vrms)	Service	M	N	I	II
	Sea level	1300	1000	1800	2300
Contact resistance	Size 22D : 14.6 mΩ		Size 16 : 3.8 mΩ		
Resistance of wire included in measurement	Size 20 : 7.3 mΩ		Size 12 : 1.7 mΩ		
Insulation resistance (at 500 Vdc)	≥ 5000 mΩ				
Contact rating	Size 22D : 5 A Size 20 : 7.5 A		Size 16 : 13 A Size 12 : 23 A		
Shell continuity	≤ 10 mΩ				

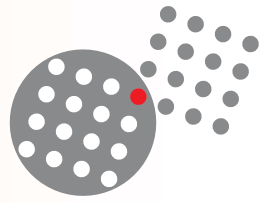
### Climatic characteristics

Temperature range	-55°C to +175°C
Sealing: mated connectors	IP 67
Salt spray	48 hours

### Resistance to fluids

Lubricant (oil)	MOTUL 300 competition
Unleaded petrol	(SP 95)
Motor car brake fluid	Lockheed DOT5

# 8STA Shell Size 08-24



## ORDERING INFORMATION

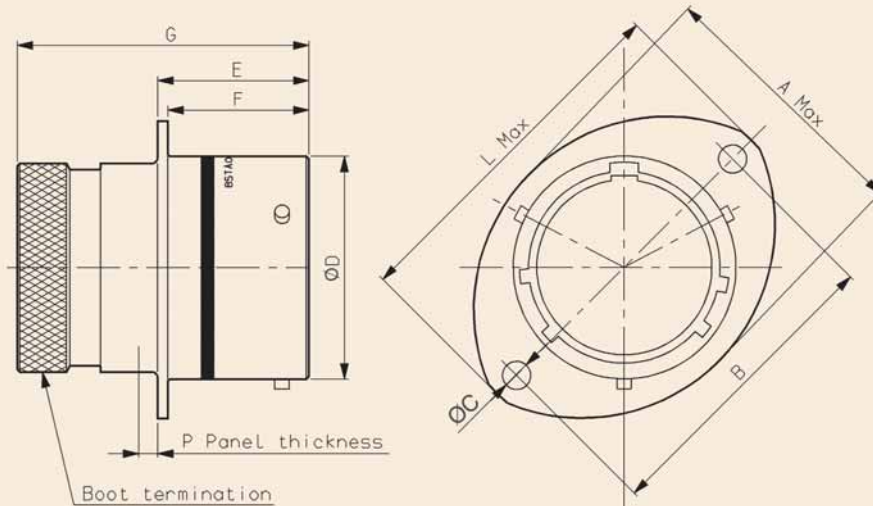
<b>Basic series</b>	<b>8STA</b>	<b>0</b>	<b>10</b>	<b>35</b>	<b>P</b>	<b>N</b>
<b>Shell style:</b>	<b>0:</b> Oval flange receptacle (for front or rear mounting) <b>1:</b> In line receptacle <b>2:</b> Oval flange receptacle with PCB contacts <b>6:</b> Plug <b>7:</b> Jam nut receptacle					
<b>Shell size:</b>	<b>08-10-12-14-16-18-20-22-24</b>					
<b>Contact layouts:</b>	See page 35					
<b>Type of contacts:</b>	<b>P:</b> Pin contacts <b>S:</b> Socket contacts					
<b>Orientation:</b>	<b>N:</b> Red - <b>A:</b> Yellow - <b>B:</b> Blue - <b>C:</b> Orange - <b>D:</b> Green - <b>U:</b> Universal					

## Protective caps

<b>Basic series</b>	<b>8STA</b>	<b>8</b>	<b>10</b>
<b>Shell style:</b>	<b>8:</b> Plug protective cap <b>9:</b> Receptacle protective cap		
<b>Shell size:</b>	<b>08-10-12-14-16-18-20-22-24</b>		

### Type 8STA0 \*\* Oval flange receptacle

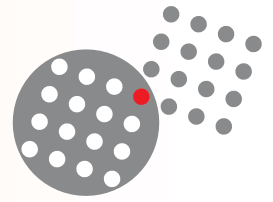
See table orientation page 29 for Key position



Shell size	A Max.	B ±0,20	Ø C <sup>0</sup> / <sub>+0.1</sub>	Ø D <sup>+0.2</sup> / <sub>-0.13</sub>	E <sup>0</sup> / <sub>+0.15</sub>	F <sup>0</sup> / <sub>-0.13</sub>	G Max.	L Max.	P Max.
08	16.50	21.40	3.20	12.00	17.21	16.05	33.50	27.20	3.00
10	19.50	25.90		15.00				32.00	
12	24.00	29.10		19.05				35.20	
14	27.00	32.50		22.22				38.40	
16	30.30	34.80		25.40				41.00	
18	33.70	38.20		28.57				44.70	
20	37.00	41.60		31.75				47.90	
22	40.40	45.00	34.90	51.00					
24	43.40	49.50	3.77	38.10	18.20	15.29	55.80		

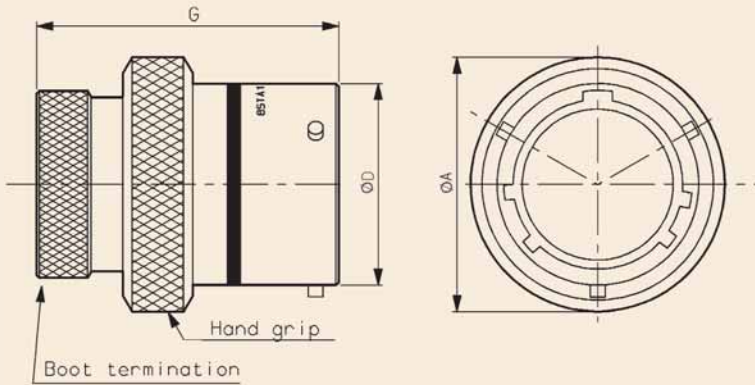
Panel cut out : see page 30

# 8STA Shell Size 08-24



## Type 8STA1 \*\* In line receptacle

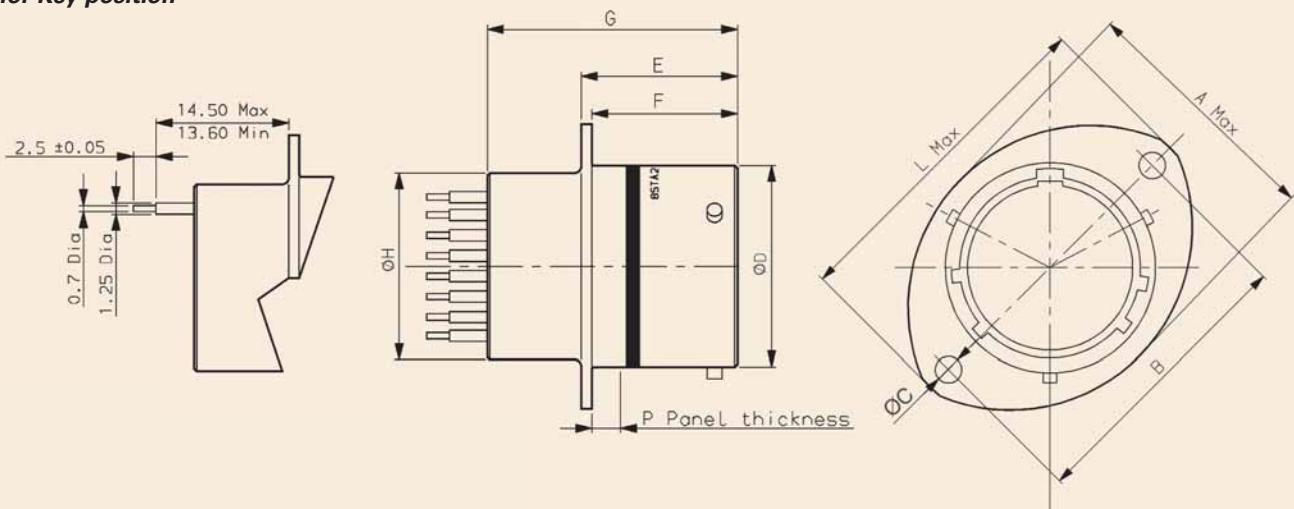
See table orientation page 29 for Key position



Shell size	Ø A Max.	Ø D <sup>+0.20</sup> / <sub>-0.13</sub>	G Max.
08	17.60	12.00	33.50
10	20.70	15.00	
12	25.10	19.05	
14	28.30	22.22	
16	31.40	25.40	
18	34.70	28.57	
20	38.10	31.75	
24	44.70	38.10	

## Type 8STA2 \*\* Oval flange receptacle with PCB contacts

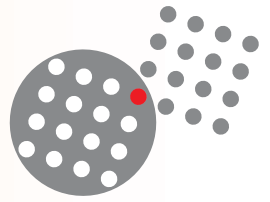
See table orientation page 29 for Key position



Shell size	A Max.	B ±0.20	Ø C <sup>0</sup> / <sub>+0.1</sub>	Ø D <sup>+0.20</sup> / <sub>-0.13</sub>	E <sup>0</sup> / <sub>+0.15</sub>	F <sup>0</sup> / <sub>-0.13</sub>	G Max.	ØH Max.	L Max.	P Max.
08	16.50	21.40	3.20	12.00	17.21	16.05	27.65	11.10	27.20	3.00
10	19.50	25.90		14.97						
12	24.00	29.10		19.05						
14	26.90	32.50		22.22						
16	30.30	34.80		25.40						
18	33.70	38.20		28.57						
20	37.00	41.60		31.77						
22	40.20	45.00		34.90						
24	43.40	49.50	3.77	38.10	18.20	15.29	36.40	55.80		

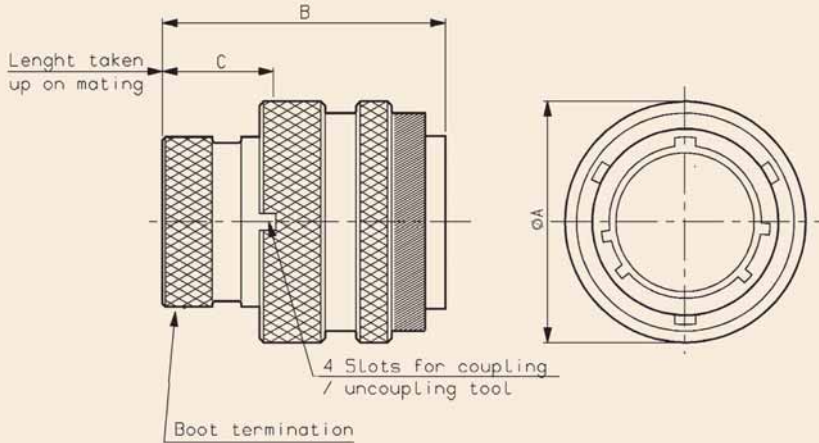
Panel cut out : see page 30

# 8STA Shell Size 08-24



## Type 8STA6 \*\* Plug

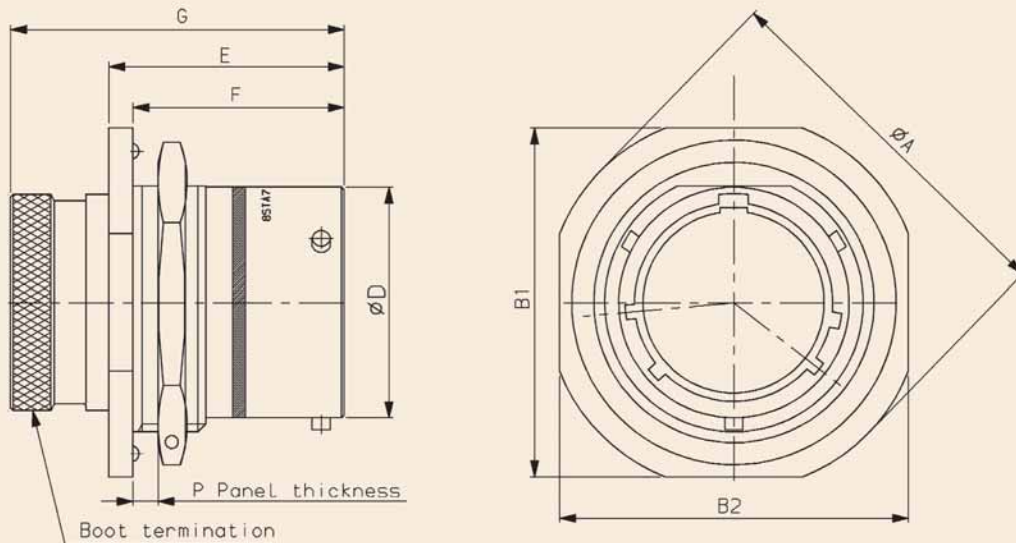
See table orientation page 29 for Key position



Shell size	Ø A Max.	B Max.	C Max.
08	18.70	33.50	15
10	21.50		
12	25.10		
14	29.00		
16	32.20		
18	35.40		
20	38.20		
22	41.30		
24	44.50		

## Type 8STA7 \*\* Jam nut receptacle

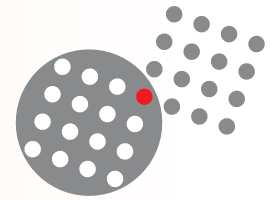
See table orientation page 29 for Key position



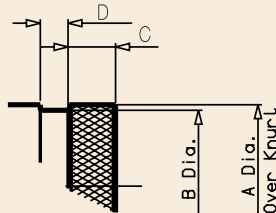
Shell size	Ø A ±0.03	B1-B2 ±0.24	Ø D $^{0}_{-0.12}$	E ±0.10	F ±0.24	G ±0.3	P Max.
08	26.90	24.10	11.97	25.91	23.24	36.71	3.00
10	30.15	27.30	14.94				
12	34.89	32.10	19.01				
14	38.06	34.92	22.18				
16	41.25	38.40	25.36	26.71	37.51		
18	44.41	41.60	28.53				
20	49.19	46.30	31.71				
22	52.33	49.50	34.88				
24	55.50	52.45	38.06				

Panel cut out : see page 30

# 8STA Shell Size 08-24

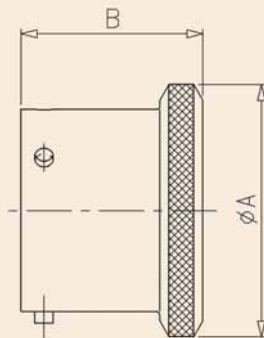


## Shrinkable termination detail



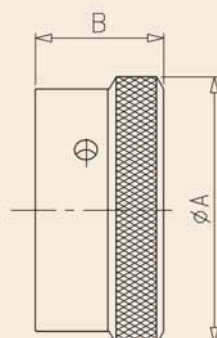
Shell size	Ø A	Ø B ±0.05	C ±0.05	D
08	10.62	9.70	6	3.5
10	13.72	12.65		
12	17.26	16.02		
14	20.41	19.00		
16	23.60	22.23		
18	26.76	25.22		
20	29.93	28.37		
22	33.11	31.86		
24	36.30	34.67		

## Metal protective caps – Plug type 8



Shell size	Ø A Max.	B Max.
08	17.50	21.00
10	20.50	
12	24.50	
14	27.70	
16	30.90	
18	34.00	
20	37.20	
22	40.40	
24	43.50	

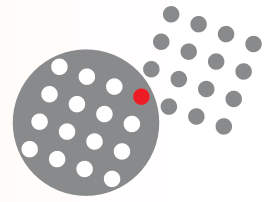
## Metal protective caps – Receptacle caps type 9



Shell size	Ø A Max.	B Max.
08	19.00	14.20
10	21.80	
12	26.10	
14	29.30	
16	32.50	15.00
18	35.30	
20	38.80	
22	42.00	
24	45.10	15.85



# 8STA Shell Size 08-24



## CONTACTS (Crimp & PCB contacts)

Size	Type	Contact dia Max	Part number	Admissible wire section				External dia over insulation (mm)	
				AWG		mm <sup>2</sup>		min	max
<b>Crimp contacts</b>				min	max	min	max	min	max
22D signal contact	Male	0.76	8599-0702 JJ	28	22	0.09	0.38	0.76	1.37
	Female		8599-0706 900						
20 signal contact	Male	1.00	8599-0703 SA	24	20	0.21	0.60	1.02	2.11
	Female		8599-0707 900						
16 signal contact	Male	1.60	8599-0704 MJ	20	16	0.60	1.34	1.65	2.77
	Female		8599-0708 900						
16 coaxial contact	Male	1.60	M39029/76 424	RG 174 RG 179 RG 316				1.65	2.60
	Female		M39029/77 428						
12 signal contact	Male	2.40	8599-0705 MJ	14	12	1.91	3.18	2.46	3.61
	Female		8599-0709 900						
12 coaxial contact	Male	2.40	M39029/28 211	RG 174 RG 179 RG 316				2.40	2.60
	Female		M39029/75 416						
08 power contact	Male	3.64	8599-7544	-	8	-	8.98	4.50	6.50
	Female		8599-7541						
	Boot		8599-4542						
	Reductor**		8599-7645						
08 coaxial contact	Male	3.64	M39029/59 366	RG 188A/U				-	2.80
	Female		M39029/60 367						
	Boot		8590-4571						
08 triaxial contact	Male	3.64	M39029/90-529	MIL-C17/176 00002 FILECA F2703/14 RAYCHEM CHEMINAX 10612 FILOTEX M 17/176 00002				3.15	3.40
	Female		M39029/91-530						
	Boot		8590-4571						
04 power contact	Male	5.75	8599-7520A 900	7		10	According wire used		
	Female		8599-7521A 900						
	Boot		8599-4590						
	Reductor*		8400-2351A	4		16			
	Male		8599-7520A 900						
	Female		8599-7521A 900						
	Boot		8599-4591						

\*Reductor must be used for wire 10 mm<sup>2</sup>

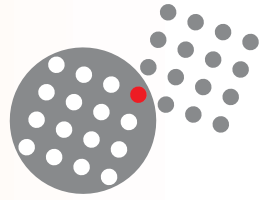
\*\*Reductor must be used for wire # 10

PCB contacts			
22D signal contact	For shell Type 2	Male	F1P1P3E-0001ALY
		Female	F1P1ES3-2201A00

Power connector : Power single contact # 4 for wires 10,16, 25, 35mm<sup>2</sup> : Please consult us.  
Grounded connector : Please consult us

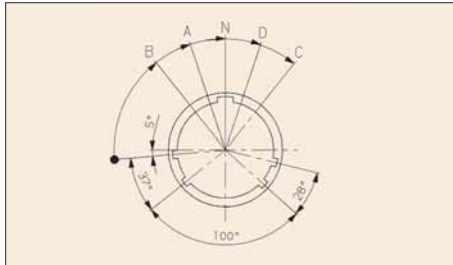


# 8STA Shell Size 08-24

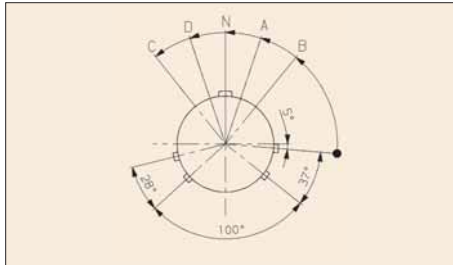


## ORIENTATION

Viewed from face of receptacle



Viewed from front of plug



Shell size	Orientations				
	N RED	A YELLOW	B BLUE	C ORANGE	D GREEN
8	95°	77°	-	-	113°
10	95°	81°	67°	123°	109°
12	95°	75°	63°	127°	116°
14	95°	74°	61°	129°	116°
16	95°	77°	65°	125°	113°
18	95°	77°	65°	125°	113°
20	95°	77°	65°	125°	113°
22	95°	80°	69°	121°	110°
24	95°	80°	69°	121°	110°

For each shell size, U orientation can be mateable with any others orientations

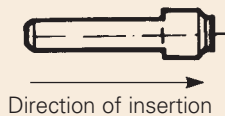
## Insertion and extraction of wired contacts

Coloured tip for insertion  
white tip for extraction.



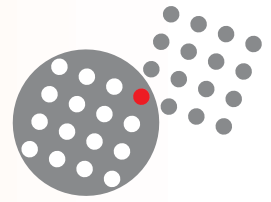
Contact size	Material	Part number		Part number	
		Spec.	SOURIAU	Insertion	Extraction
22D	plastic	M81969.14.01	-	Green	White
20	plastic	M81969.14.10	-	Red	
16	plastic	M81969.14.03	-	Blue	
12	plastic	M81969.14.04	-	Yellow	
8	plastic	M81969/14-06	-	-	Red
	metallic	-	8660-197	-	-
4	plastic	M81969/14-07	-	-	-
	metallic	-	8533-8175	-	-

## Filler Plug

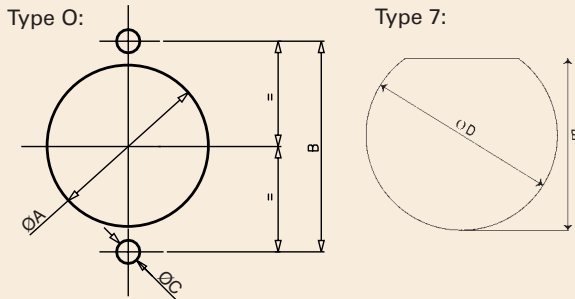


Contact size	Part number		Colour
	Spec.	SOURIAU	
22D	MS27488-22	8660-212	Black
20	MS27488-20	8522-389A	Red
16	MS27488-16	8522-390A	Blue
12	MS27488-12	8522-391A	Yellow

# 8STA Shell Size 08-24



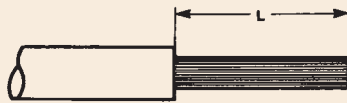
## Panel cut-out



Shell size	Ø A ±0.10	B ±0.20	Ø C ±0.20	Ø D ±0.10	E ±0.20
08	14.50	21.40	3.60	14.50	13.60
10	17.40	25.90		17.70	16.80
12	21.90	29.10		22.70	20.90
14	25.00	32.50		25.70	24.10
16	28.20	34.80		28.80	27.20
18	31.40	38.20		32.00	30.40
20	34.60	41.60		35.10	33.60
22	37.60	45.00	38.00	36.80	
24	41.00	49.50	4.10	42.00	39.90

## WIRING TOOLS

### Wire stripping



Contact size	L (mm)
26	4
22D	
20	6
16	
12	
8	12
4	

### Crimping (contacts sizes : 22D, 20, 16, 12, 8 & 4)

Contact size	Type	Pliers-locators-turrets						
		M22520/1-01		M22520/2-01		M300BT	M22520/23-01	
		Part number turret		Part number locator		Part number locator	Die	Locator
		Spec.	SOURIAU	Spec.	SOURIAU			
22D	Male	-	-	M22520/2-09	8476-09	-	-	-
	Female	-	-	M22520/2-07	8476-07	-	-	-
20	Male	M22520/1-04	8365-04	M22520/2-10	8476-10	-	-	-
	Female				8476-10	-	-	-
16	Male	M22520/1-04	8365-04	-	-	-	-	-
	Female			-	-	-	-	-
12	Male	M22520/1-04	8365-04	-	-	-	-	-
	Female			-	-	-	-	-
8*	Male	-	-	-	-	SP 593	M22520/23-02	8599-9601
	Female	-	-	-	-			
4*	Male	-	-	-	-	-	M22520/23-04	M22520/23-11
	Female	-	-	-	-			

\* Pneumatic pliers for contacts

M 22 520/1-01 + M 22 520/1-04

M22520/2-01 + M22520/2-09 or / order M22520/2-07

