

**SUBMINIATURE COAXIAL CONNECTORS**

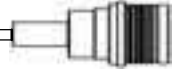
# **QMA series**

**Member of the Quick Lock Family**



ISO 9001 APPROVED





*Head Office - Rosny sous Bois*

Since 1952, **RADIALL** has specialized in the field of coaxial connectors and cables assemblies. **RADIALL's** experience and high technology focus, combined with our large worldwide production capability have made the company a major supplier of RF coaxial connectors in the world and the number one in Europe.

### RESEARCH & DEVELOPMENT

The ever increasing sophistication of microwave communication systems is continually requiring components to meet a higher level of performance. **RADIALL's** research and development groups understand these needs and are committed to searching for product solutions that will be needed in the future. They also are providing continued improvements to our already extensive lines of high performance products. All our engineer teams are equipped with state of the art equipment and facilities, in an effort to provide the best solutions to our customers.



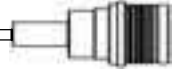
*CAD workstation*



*Screw-machining shop*

### MANUFACTURING

**RADIALL** knows that the quality of the connectors components is directly related to the mechanical precision of the machining process, along with good quality procedures. In an effort to continually meet the highest quality standards, all our production plants are equipped with the latest state of the art production equipment. **RADIALL's** manufacturing process maintains strict control of all procedures and incorporates all tooling, machining, surface treatment and assembly operations into the manufacturing process of each production group.



Base station of cellular network

## QUALITY ASSURANCE

**RADIALL**, as a TQM company, continually searches for improvements to the quality process. We operate a Quality Assurance Program that has been developed in accordance with the national and **CECC** agencies (equivalent to **MIL-I-45208** and **MIL-C-45662** standards). This program has enabled us to achieve QPL approval on several of our connector series. **RADIALL's** Quality Assurance Program operates at all levels of manufacturing from the initial raw incoming material to the final testing procedures just prior to shipping. All test equipment is part of the quality process and is continually inspected on a regular scheduled basis. All production plants in Europe are **AQA P4-NATO** certified.

## HIGH RELIABILITY

Reliability of inter-connection systems is of the utmost importance in telecommunications applications. This industry need has led **RADIALL** to link high performance design, manufacturing and quality control. This has given the company the capability to produce connectors that will operate in the most stringent environments. The wide range of our product offering allows us to propose the best complete solution for your exact need.

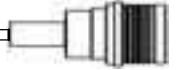


Microwave test device

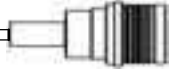


## ISO 9001 ACCREDITATION

This certificate is witness to **RADIALL's** achievement and commitment to the Total Quality Process. **RADIALL** has always been, since its inception, a company committed to being a Total Quality supplier. Quality is our way of life at **RADIALL**.



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### The "Quick Lock Formula®"

QMA and QN connectors, patented products, become some real standard for the RF Telecommunications industry.

The "QLF" trademark, **Quick Lock Formula®**, standard applies to QMA and QN series and guarantees the full intermateability between suppliers using this trademark. Using QLF certified connectors also guarantees the high level of performance of the RF transmission.

QMA (Quick Lock SMA) and QN connectors (Quick Lock N) enable fast, secured and easy matings with minimum space requirements. The QMA and QN series are the perfect alternative to SMA and N connectors in new generation telecommunication systems as well as in many other RF applications.



### Cost Effective solution

The **QMA** series, Quick Lock Formula® approved, is the new patented innovative **snap-on** generation of brass SMA connectors. With the same interface dimensions, **QMA** connectors have the same high electrical performances as the SMA series with an easier and faster mounting design. **QMA** series offers a cost effective solution for new generations of base stations.

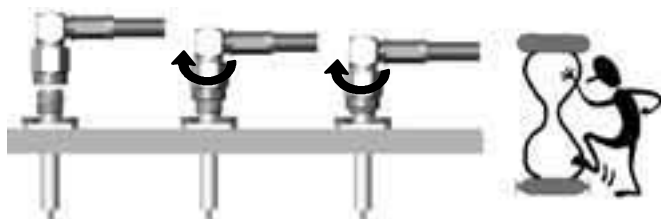
The **QMA** series is designed for DC to 18 GHz. Engagement life is 100 matings, just as standard commercial SMA connectors, with total reliability. They are easy and fast to connect and disconnect.

The new **QMA** series offers a large range of connectors: straight and right angle plugs, bulkhead jacks, flange receptacles, PCB receptacles, adapters ... Models are either full crimp, crimp or solder type for flexible, semi-rigid or conformable cables.

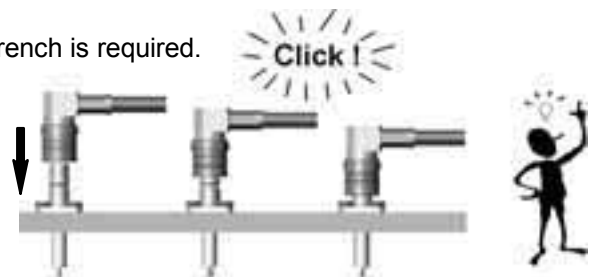
### Saving mounting time : 10 times faster!

With its snap-on mating system, **QMA** connectors are 10 times quicker to mount than a screw-on SMA. It takes less than 2 seconds to connect **QMA** connectors in field conditions.

Risk in damaging or scratching the panel is limited as no torque wrench is required.



Screw-on connectors : SMA

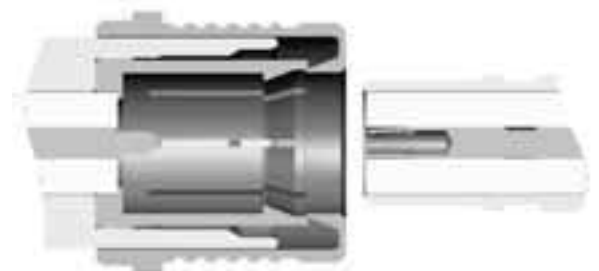


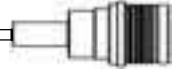
Snap-on connectors and member of the Quick Lock formula® approved : QMA

### Secure connection : Click !

Snap-on connection is insured by a chamfer. Moreover, a positive locking system insures a good and secure connection. The disengagement force is lower than the panel tear-off force, preventing from any panel damaging.

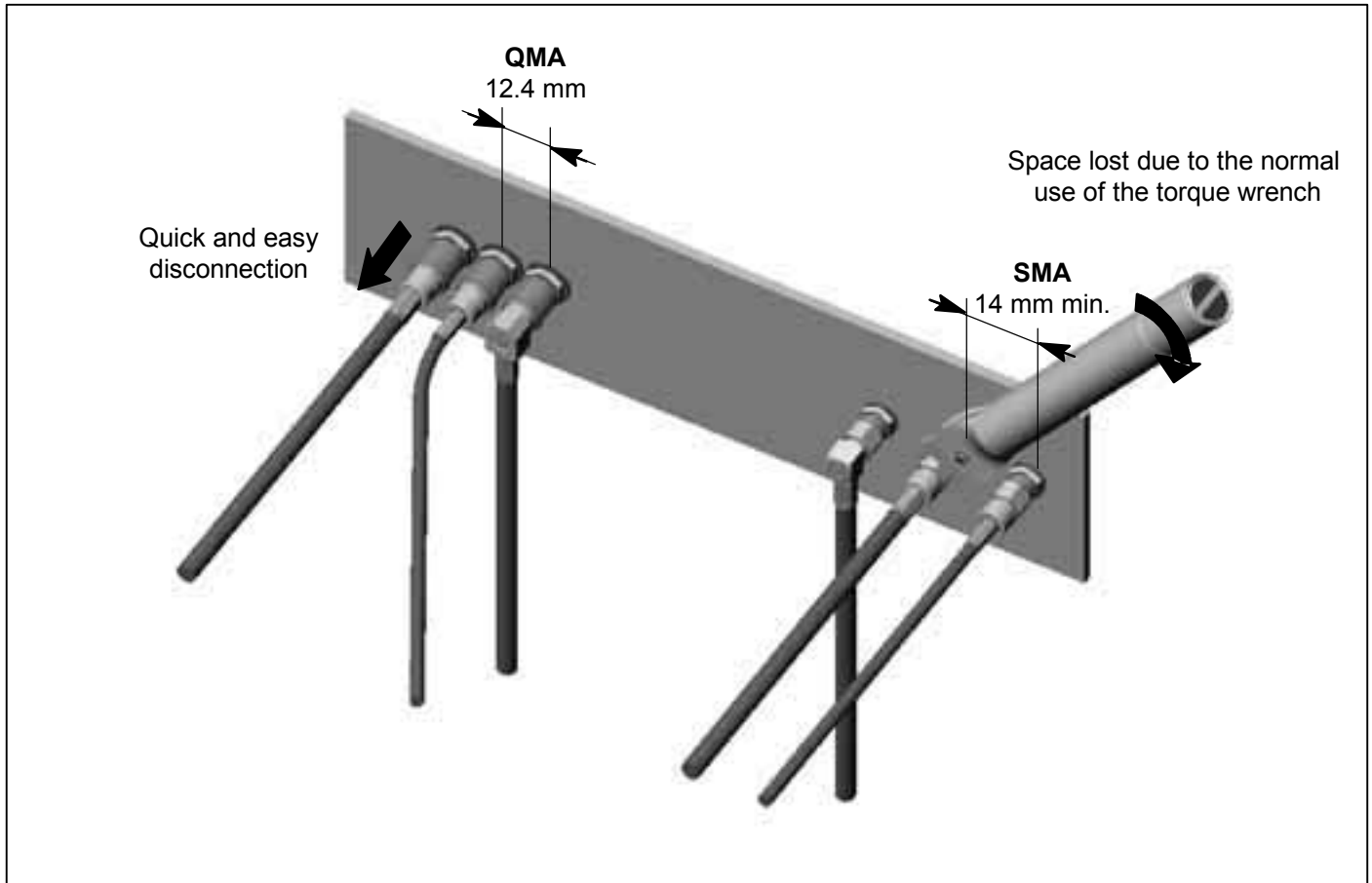
**QMA** connectors have been successfully tested against vibration.





### Space-saving

**QMA** connectors have a lower space requirement since space for the use of a torque wrench is not necessary. The distance between connectors is therefore optimized on the panel.



For very compact assembly in which there is not enough space to disconnect by hand, a very easy to use extraction tool (p.17) is available to disconnect either straight or right angle **QMA** connectors.

### Flexibility: 360° rotation

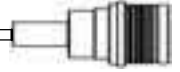
The cabled plug can freely rotate around the jack, which allows more flexibility during the mounting process and eases installation in the equipment.

Moreover, it prevents from any added stress on the cable and any return loss reduction due to cable bending.



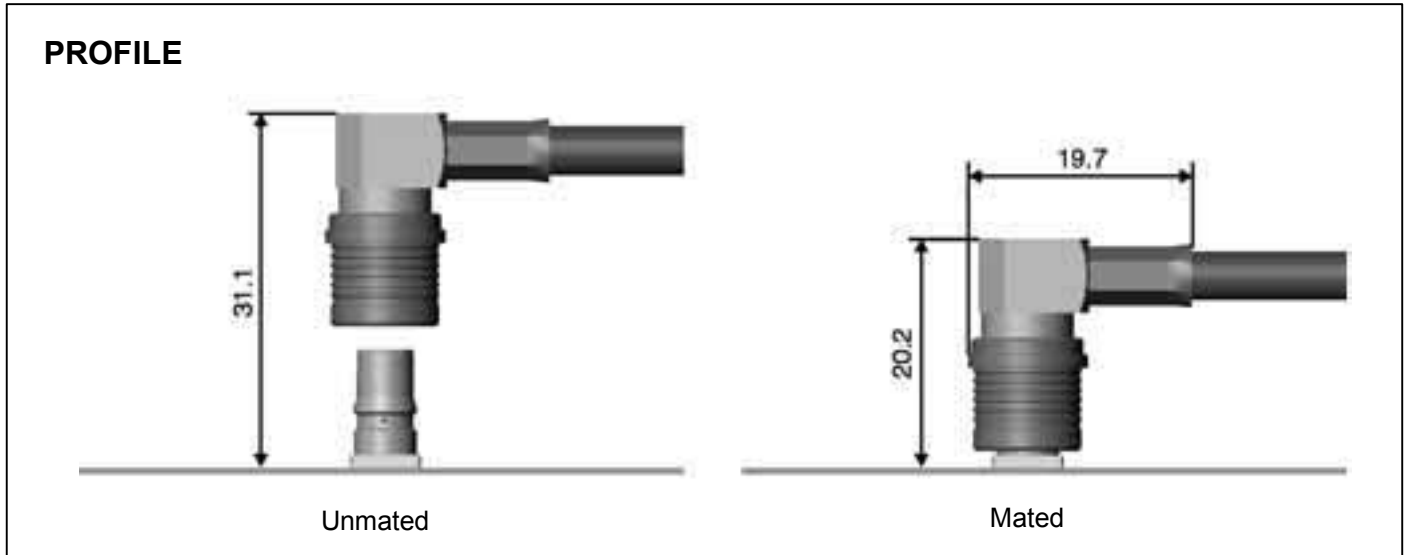
### QMA implementation

You can at anytime switch from **SMA** to **QMA** connectors since panel or PCB cut out and crimping tool required are the same.



## Packaging

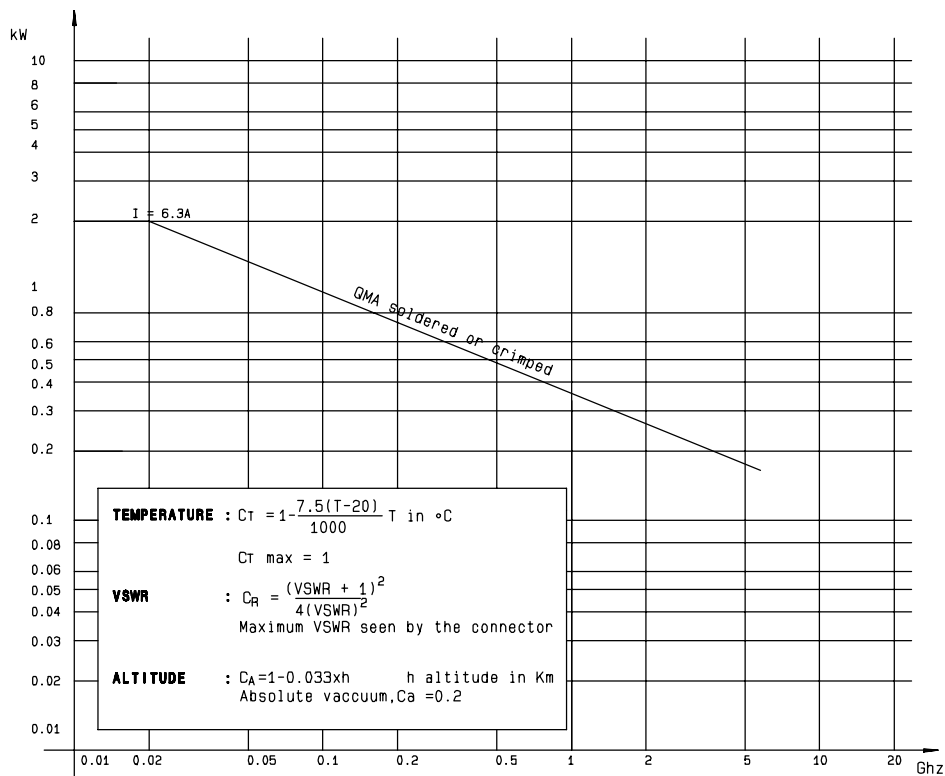
Standard packaging is 100 pieces. Unit packaging is available upon request. SMT receptacles are delivered in tape and reel of 100, 250 or 300 pieces.

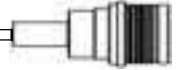


## Measure adapters

In order to ease the implementation of **QMA** connectors in new systems, Radiall has developed a full range of **QMA/SMA 3.5** adapters (p.14).

## Power range





## ELECTRICAL CHARACTERISTICS

Impedance		50 Ω
Frequency range		DC - 6 GHz (optimized) DC - 18 GHz (working range)
V.S.W.R. typical	DC - 3 GHz 3 GHz - 6 GHz	1.06 1.12
Max insertion loss		0.25 dB
Insulation resistance		5000 MΩ
Voltage rating		≤ 500 V RMS 50 Hz, sea level
Dielectric withstanding voltage		1500 V RMS 50 Hz, sea level
Contact resistance	center contact outer contact	< 3 mΩ < 2.5 mΩ
Admissible power @ 2.5 GHz (continuous power)		125 W @ T = 40°C (150 W @ T = 23°C)
Passive Intermodulation		-120 dBc @ 1.8 GHz (2x20W) (static)
RF leakage	DC - 3GHz 3 - 6 GHz	- 80 dB min - 70 dB min

## MECHANICAL CHARACTERISTICS

Mechanical endurance		100 matings
Engagement and disengagement force	Engagement Disengagement	25 N 20 N
Retention force for interface		> 60 N
Cable retention	2.6 / 50 S 2.6 / 50 D 5 / 50 S 5 / 50 D 5.7 / 50 D	90 N 110 N 180 N 200 N 220 N
Distance between connectors: c. to c.		12.4 mm min.
Vibration		40 m.s <sup>-2</sup> at 500 Hz

## ENVIRONMENTAL CHARACTERISTICS

Temperature range		- 40, + 80 °C
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## MATERIALS

Connector bodies		Brass
Male center contact		Brass
Female center contact		Beryllium copper
Outer contact		Bronze
Other metallic parts		Brass
Insulators		PTFE

## PLATING

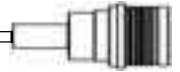
Bodies		BBR*
Solder bodies		BBR*
SMT Bodies		GBR**
Outer contacts		BBR*
Center contacts		GOLD

\* : Bright Bronze Radiall

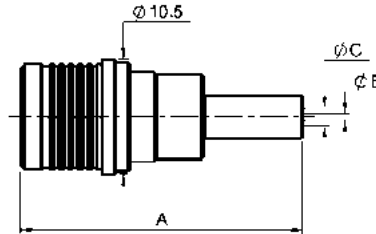
\*\* : Gold Bronze Radiall

All dimensions are given in mm.



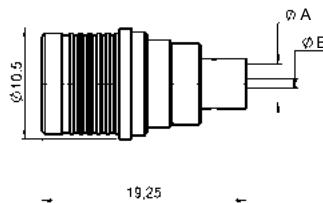


## STRAIGHT PLUGS FULL CRIMP TYPE FOR FLEXIBLE CABLES



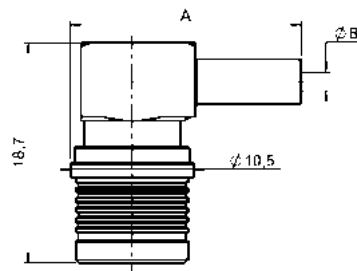
cable	part number	dimension			captive center contact	assembly	finish
		A	B	C			
2.6 / 50 S	<b>R123 071 000</b>	25.5	0.6	1.61	yes	M01	BBR*
2.6 / 50 D	<b>R123 072 000</b>	25.5	0.6	1.61	yes	M01	BBR*
5 / 50 S	<b>R123 075 000</b>	28.5	1.05	3.11	yes	M01	BBR*
5 / 50 D	<b>R123 076 000</b>	28.5	1.05	3.11	yes	M01	BBR*

## STRAIGHT PLUGS SOLDER TYPE FOR SEMI-RIGID CABLES



cable	part number	dimensions		captive center contact	assembly	finish
		A	B			
.085"	<b>R123 054 000</b>	2.275	0.6	yes	M05	BBR*
.141"	<b>R123 055 000</b>	3.675	1	yes	M05	BBR*

## RIGHT ANGLE PLUGS CRIMP TYPE FOR FLEXIBLE CABLES

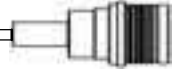


A right angle plug for 5.7 mm dia. cable is also available, please consult us.

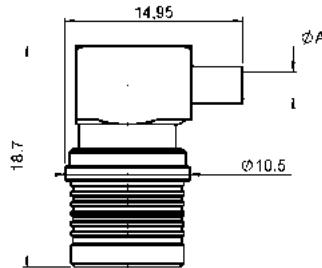
cable	part number	dimensions		captive center contact	assembly	finish
		A	B			
2.6 / 50 S	<b>R123 172 000</b>	19.7	1.61	yes	M02	BBR*
2.6 / 50 D	<b>R123 174 000</b>	19.7	1.61	yes	M02	BBR*
5 / 50 S	<b>R123 175 000</b>	22.7	3.1	yes	M02	BBR*
5 / 50 D	<b>R123 176 000</b>	22.7	3.1	yes	M02	BBR*

\* : Bright Bronze Radiall

Packaging: 100 pcs. For unit packaging, add "W" after the P/N.

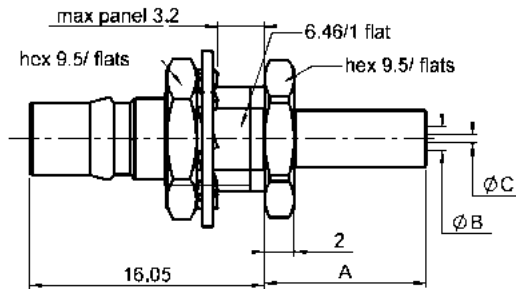


### RIGHT ANGLE PLUGS SOLDER TYPE FOR SEMI-RIGID CABLES



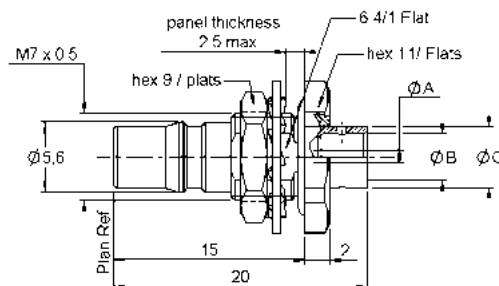
cable	part number	captive center contact	dimension A	assembly	finish
.085"	<b>R123 153 000</b>	yes	2.25	M03	BBR*
.085"	<b>R123 153 003</b>	yes	2.25	M03	Gold
.141"	<b>R123 154 000</b>	yes	3.7	M03	BBR*
.141"	<b>R123 154 003</b>	yes	3.7	M03	Gold

### STRAIGHT BULKHEAD JACKS FULL CRIMP TYPE FOR FLEXIBLE CABLES



cable	part number	dimensions			captive center contact	assembly	cut out	finish
		A	B	C				
2.6 / 50 S	<b>R123 312 000</b>	11	0.6	1.61	yes	M01	P02	BBR*
2.6 / 50 D	<b>R123 313 000</b>	11	0.6	1.61	yes	M01	P02	BBR*
5 / 50 S	<b>R123 314 000</b>	14	1.05	3.11	yes	M01	P02	BBR*
5 / 50 D	<b>R123 315 000</b>	14	1.05	3.11	yes	M01	P02	BBR*

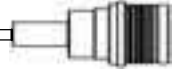
### STRAIGHT BULKHEAD JACKS SOLDER TYPE FOR SEMI-RIGID CABLES (*panel seal*)



cable	part number	dimension			assembly	cut out	finish
		A	B	C			
.085"	<b>R123 326 003</b>	0.6	2.275	3.05	M05	P02	Gold
.141"	<b>R123 305 023</b>	1	3.7	4.8	M05	P02	Gold

\* : Bright Bronze Radiall

Packaging: 100 pcs. For unit packaging, add "W" after the P/N.



### STRAIGHT FLANGE RECEPTACLE

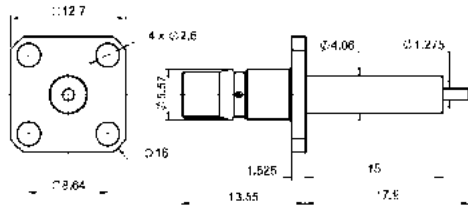


Fig. 1

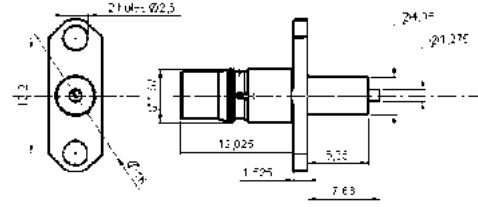
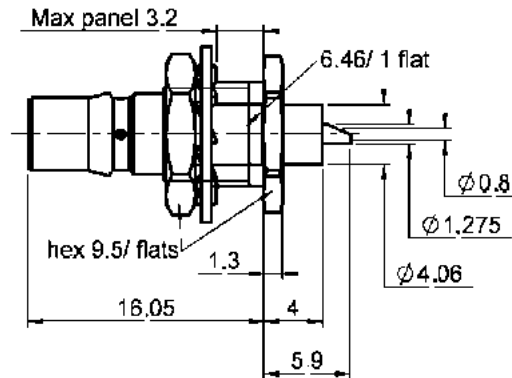


Fig. 2

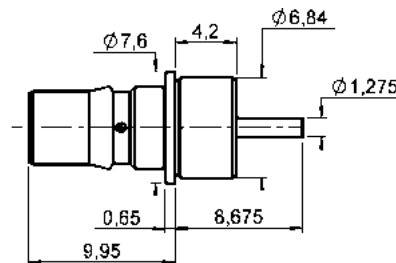
part number	Fig.	captive center contact	cut out	finish
R123 415 000	1	yes	P01	BBR*
R123 464 030	2	yes	P04	BBR*

### STRAIGHT BULKHEAD RECEPTACLE



part number	captive center contact	cut out	finish
R123 553 000	yes	P02	BBR*

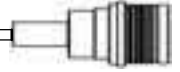
### PRESS MOUNT RECEPTACLE



part number	captive center contact	cut out	finish
R123 590 027	yes	P05	GBR

\* : Bright Bronze Radiall

Packaging: 100 pcs. For unit packaging, add "W" after the P/N.



### STRAIGHT PCB RECEPTACLES

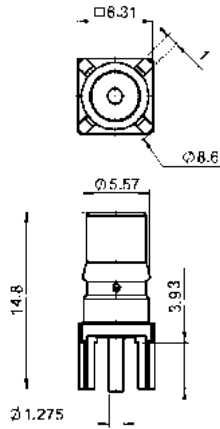


Fig. 1

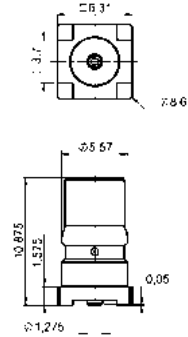


Fig. 2

part number	fig.	captive center contact	finish	assembly	PCB cut out	packaging	note
R123 426 003	1	yes	GBR		P03	100	
R123 426 003W	1	yes	GBR		P03	1	
R123 427 803	2	yes	GBR	M04		100 / reel	SMT
R123 427 803W	2	yes	GBR	M04		1	SMT
R123 427 823	2	yes	GBR	M04		300 / reel	SMT

### RIGHT ANGLE PCB RECEPTACLES

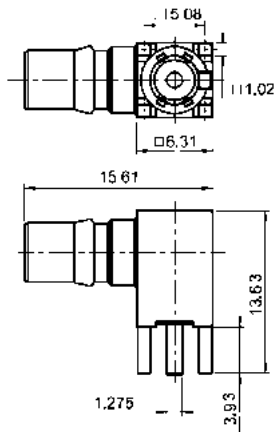


Fig. 1

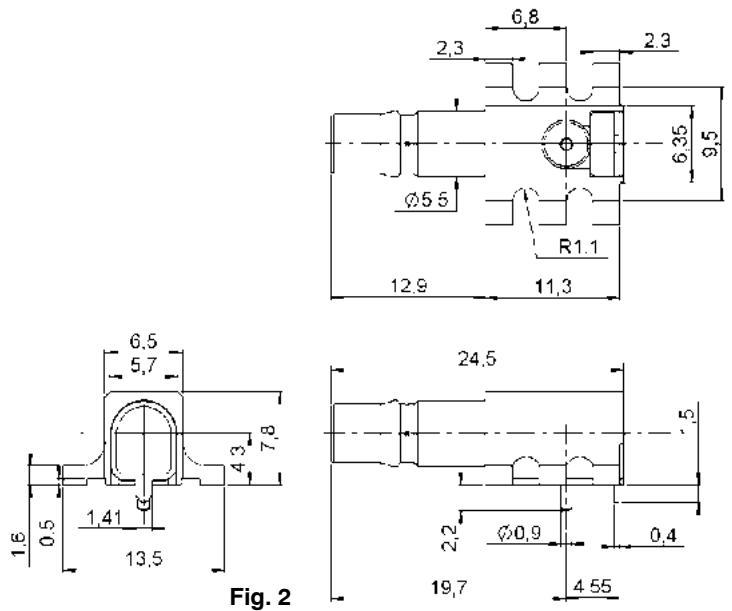
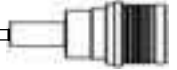
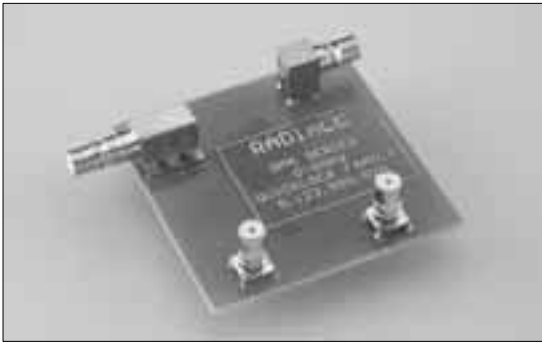


Fig. 2

part number	fig.	captive center contact	finish	assembly	PCB cut out	packaging	note
R123 680 003	1	yes	GBR		P03	100	
R123 680 003W	1	yes	GBR		P03	1	
R123 682 817	2	yes	GBR	M04		250 reel	SMT
R123 682 827	2	yes	GBR	M04		100 / reel	SMT
R123 682 827W	2	yes	GBR	M04		1	SMT

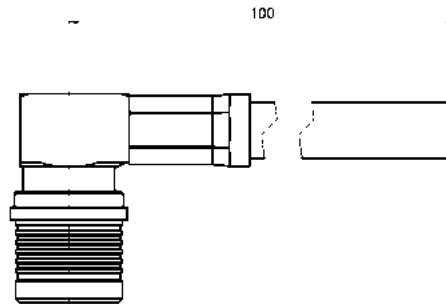


## DEMONSTRATION BOARD



part number
<b>R123 990 020W</b>

## QMA PIGTAIL



part number	description	length
<b>R284 V01 01 003</b>	R123 176 000+C291 320 007	10 cm

## IN SERIES ADAPTERS

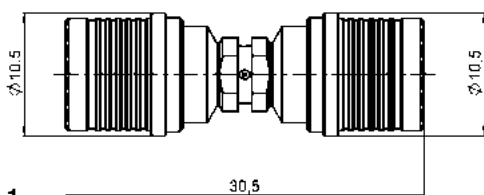


Fig. 1

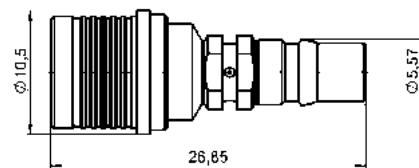


Fig. 2

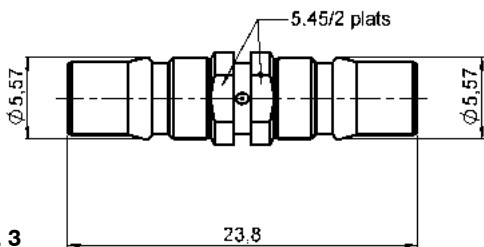
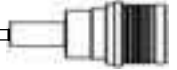


Fig. 3

part number	fig.	captive center contact	finish	note
<b>R123 703 000</b>	1	yes	BBR*	QMA MALE - QMA MALE
<b>R123 704 000</b>	2	yes	BBR*	QMA FEMALE - QMA MALE
<b>R123 705 000</b>	3	yes	BBR*	QMA FEMALE - QMA FEMALE

\* : Bright Bronze Radiall

Packaging: 100 pcs. For unit packaging, add "W" after the P/N.



### QMA / SMA

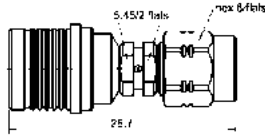


Fig. 1

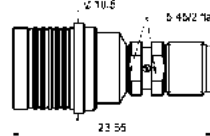


Fig. 2

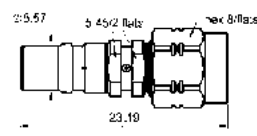


Fig. 3

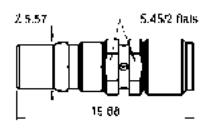


Fig. 4

part number	fig.	captive center contact	finish	packaging	note
R191 910 000	1	yes	BBR*	1	QMA MALE - SMA MALE
R191 911 000	2	yes	BBR*	1	QMA MALE - SMA FEMALE
R191 912 000	3	yes	BBR*	1	QMA FEMALE - SMA MALE
R191 913 000	4	yes	BBR*	1	QMA FEMALE - SMA FEMALE

### QMA / SMA 3.5

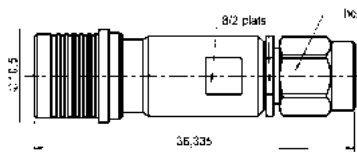


Fig. 1

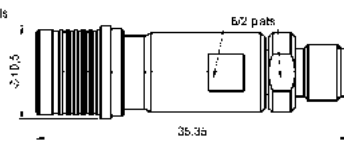


Fig. 2

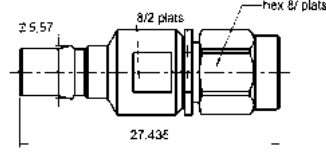


Fig. 3

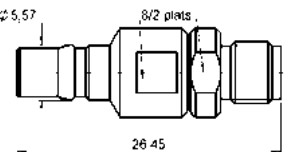


Fig. 4

part number	fig.	finish	packaging	note
R191 914 700	1	passivated	1	QMA MALE - SMA 3.5 MALE
R191 915 700	2	passivated	1	QMA MALE - SMA 3.5 FEMALE
R191 916 700	3	passivated	1	QMA FEMALE - SMA 3.5 MALE
R191 917 700	4	passivated	1	QMA FEMALE - SMA 3.5 FEMALE

### QMA / N

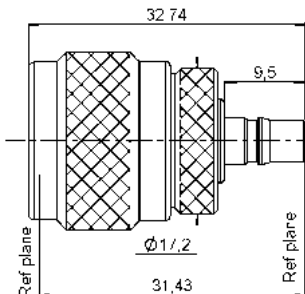


Fig. 1

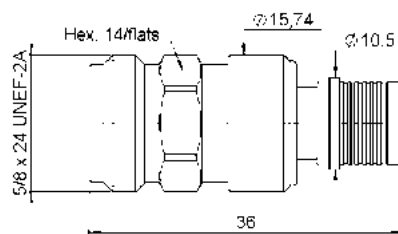


Fig. 2

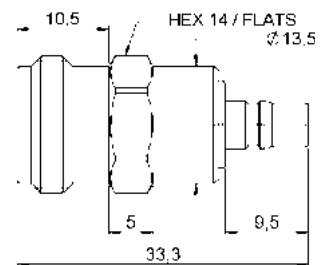
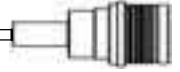


Fig. 3

part number	fig.	finish	packaging	note
R191 762 000	1	BBR*	1	QMA FEMALE - N MALE
R191 763 000	2	BBR*	1	QMA MALE - N FEMALE
R191 764 000	3	BBR*	1	QMA FEMALE - N FEMALE

\* : Bright Bronze Radiall

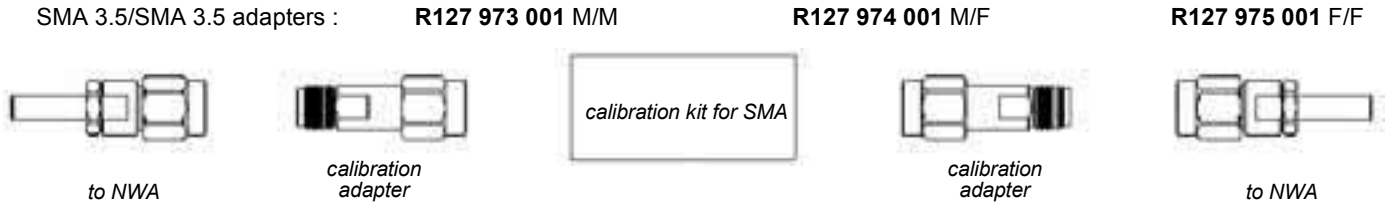
# QMA



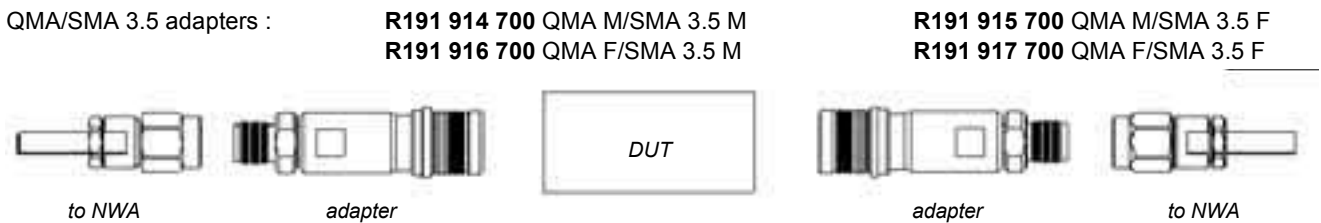
## QMA Calibration process

To calibrate your module equipped with QMA connectors and measure VSWR, Radiall recommends to use the following process :

1 - Calibration with SMA 3.5 to SMA 3.5 calibration adapters and a SMA calibration kit.

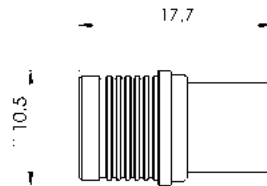


2 - Exchange of the calibration adapter with the required QMA adapters



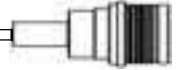
SMA 3.5/SMA 3.5 adapters and QMA/SMA 3.5 adapters have the same electrical length and the same return loss and this allows an accurate measure.

## LOW POWER TERMINATION



part number	frequency range (GHz)	V.S.W.R. (max)		power (W)		impedance ( $\Omega$ )	type	weight (g)
		DC - 1	1 - 2.5	avg.	peak			
<b>R404 114 000</b>	DC - 2.5	$\leq 1.08$	$\leq 1.20$	1	100	50 +/- 5%	male	5

Unit packaging.



## GENERAL SPECIFICATIONS - RF PERFORMANCES COAXIAL SWITCHES

Impedance	50 $\Omega$	
Frequency range	DC - 6 GHz	
	DC - 3 GHz	3 - 6 GHz
V.S.W.R. (max)	1.20	1.30
Insertion Loss (max)	0.20 dB	0.30 dB
Isolation (min)	80 dB	70 dB
Average power *	120 W	80 W
Actuator terminals	Solder pins (250°C max./ 30sec.)	
Construction	splashproof	
Operating temperature range	-40, +85 °C	
Storage temperature range	-55, +85 °C	

\* average power at 25°C for RF path

## GENERAL SPECIFICATIONS - ADDITIONAL SPECIFICATIONS S.P.D.T SWITCHES

Life	2.500.000 cycles
Switching time (nominal voltage ;25°C)	10 ms
Weight (max)	45 g

## QMA S.P.D.T. SWITCHES

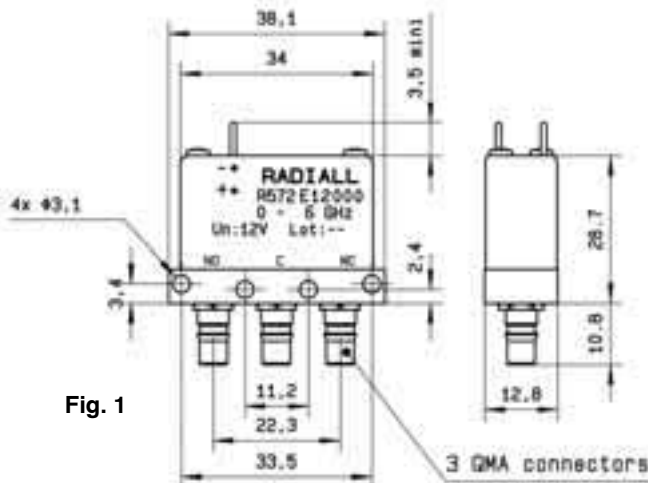


Fig. 1

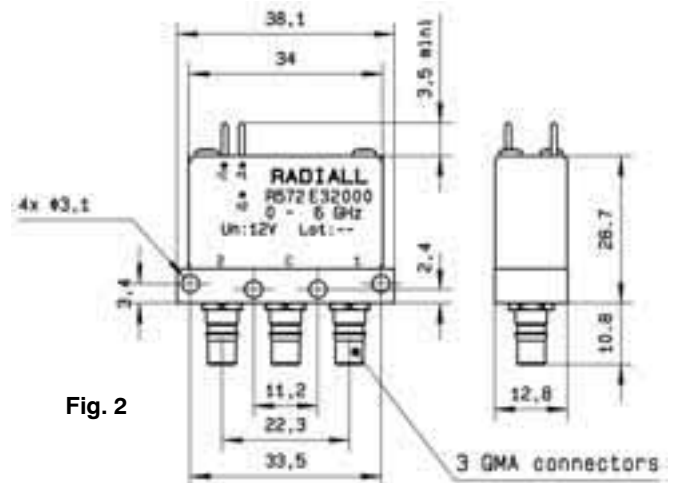
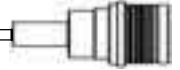


Fig. 2

part number	Fig.	actuator	Nominal current at 25°C ( $\pm 10\%$ ) mA	Actuator voltage (nominal) Vcc
R572 E12 000	1	Failsafe	160	12 (10.2 to 13)
R572 E13 000			65	28 (24 to 30)
R572 E32 000	2	Latching	210	12 (10.2 to 13) negative common
R572 E33 000			80	28 (24 to 30) negative common





## GENERAL SPECIFICATIONS - ADDITIONAL SPECIFICATIONS D.P.D.T SWITCHES

Life	2.500.000 cycles
Switching time (nominal voltage ;25°C)	15 ms
Weight (max)	85 g

## QMA D.P.D.T. SWITCHES

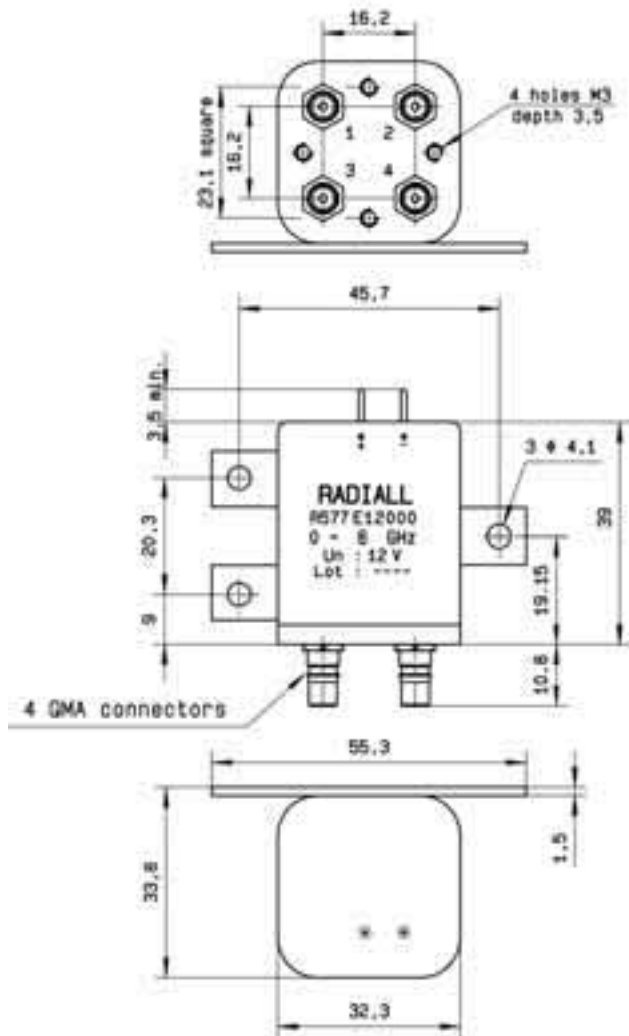


Fig. 1

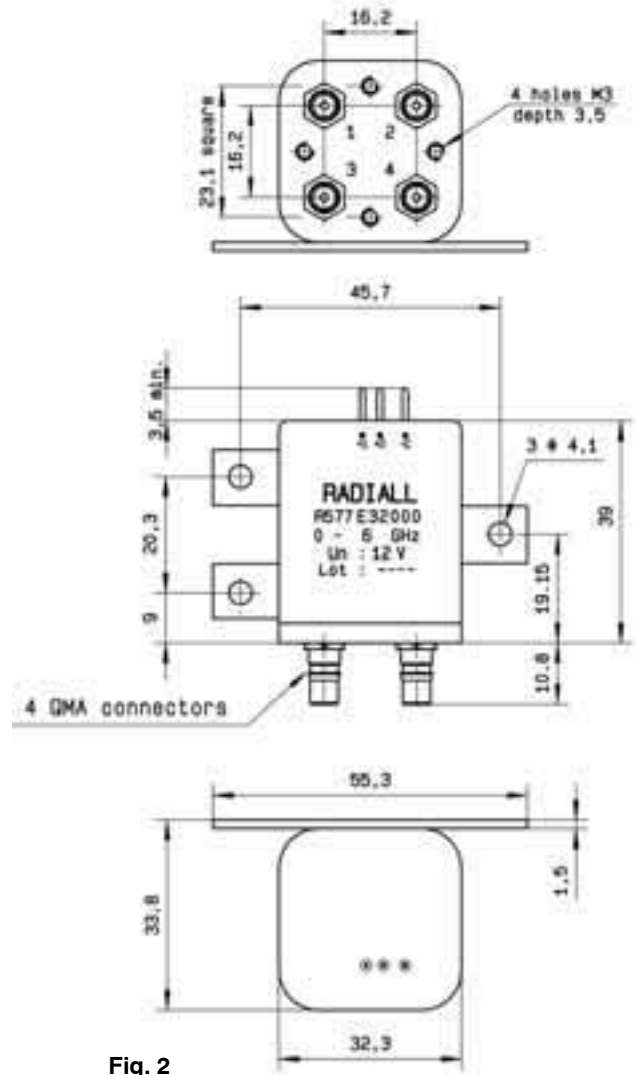
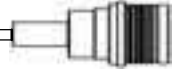


Fig. 2

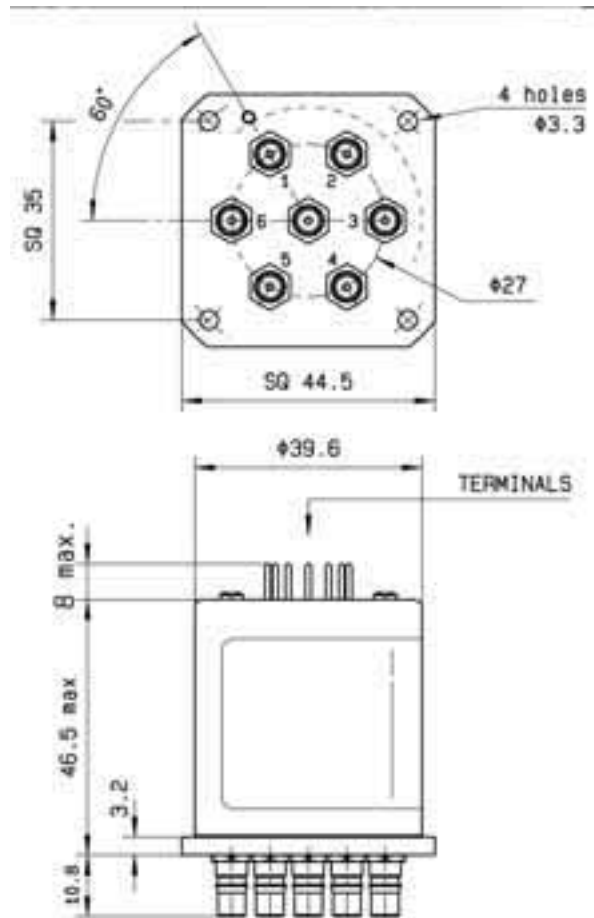
part number	Fig.	actuator	Nominal current at 25°C (±10%) mA	Actuator voltage (nominal) Vcc
R577 E12 000	1	Failsafe	340	12 (10.2 to 13)
R577 E13 000			140	28 (24 to 30)
R577 E32 000	2	Latching	320	12 (10.2 to 13) negative common
R577 E33 000			125	28 (24 to 30) negative common



## GENERAL SPECIFICATIONS - ADDITIONAL SPECIFICATIONS S.P.n.T SWITCHES

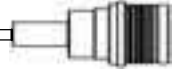
Life	5.000.000 cycles per position
Switching time (nominal voltage ;25°C)	15 ms
Weight (max)	180 g

## QMA S.P.n.T. SWITCHES



part number	actuator	Nominal current at 25°C (±10%) mA	Actuator voltage (nominal) Vcc
<b>R573 E02 600</b>	Normally Open	250	12 (10.2 to 13) negative common
<b>R573 E03 600</b>		102	28 (24 to 30) negative common
<b>R573 E22 600</b>	Latching	320 / reset : 1920 *	12 (10.2 to 13) negative common
<b>R573 E23 600</b>		125 / reset : 750 *	28 (24 to 30) negative common

\* reset : supply voltage time 1 sec max/duty cycle 20%



*Joule effect soldering device*

Compliant with European standard n° 89/336/CEE and 73/23/CEE (electromagnetic compatibility and low voltage)

It allows to solder :

- center contacts and bodies to semi-rigid cables,
- center contacts to flexible cables,
- solder pot receptacles.

P/N of the soldering device: **R282 800 000**.

Please, ask for our leaflet about Joule effect soldering device **D1 035 DE**.

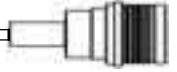
Radiall recommends to always carry out soldering operations in well ventilated areas and to make use of fume extraction equipment.

Our fume extraction device complies also with European standards n° 89/336/CEE, 89/392/CEE and 73/23/CEE. Its flow is adjustable up to 240 m<sup>3</sup>/h and it uses active coal filter.

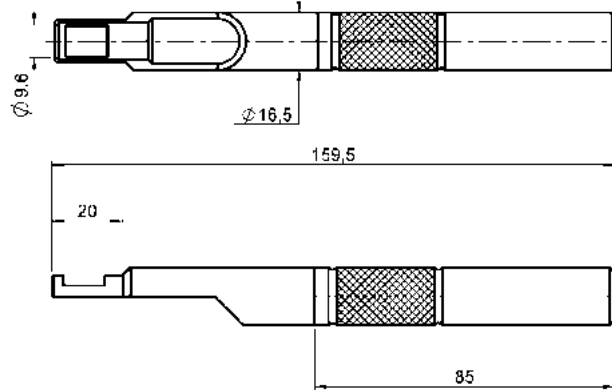
P/N of the fume extraction device: **R282 803 000**.



*Fume extraction device*



## EXTRACTION TOOL (optional for high density applications)



part number
<b>R282 868 230</b>

This tool can be used with either straight or right angle connectors.

## CRIMP TOOLS (DIES INCLUDED)

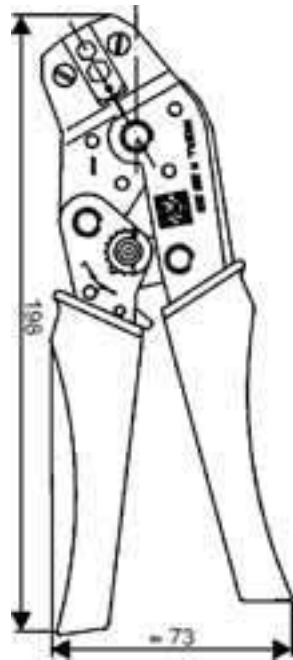


Fig. 1

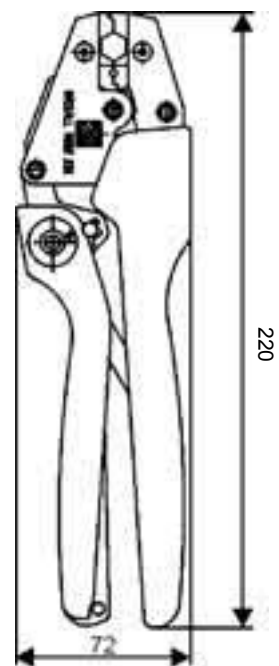
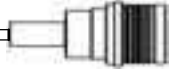


Fig. 2

part number	fig.	cable group	color of handles			
<b>R282 211 000</b>	1	2 / 50 S - 2.6 / 50 S	red	4.52 (.178)	3.25 (.128)	2.67 (.105)
<b>R282 223 000</b>	1	5 / 50 S - 5 / 50 D	orange	6.48 (.255)	5.41 (.213)	1.73 (.068)
<b>R282 271 000</b>	2	2.6 / 50 D	black	3.84 (.131)	3.25 (.128)	0.72* (.028)



\* Square crimping print.



## MIL CRIMP TOOL (M22520/5-01) R282 293 000 (DIES NOT INCLUDED)



## DIES

part number	cable group		
R282 235 003	2.6 / 50 S	3.25 (.128)	2.67 (.105)
R282 235 011	5 / 50 S - 5 / 50 D	5.41 (.213)	1.73 (.068)
R282 235 037	2.6 / 50 D	3.84 (.131)	2.67 (.105)

## CRIMP TOOL FOR CENTER CONTACT R282 281 000



## POSITIONER FOR CENTER CONTACT CRIMP TOOL

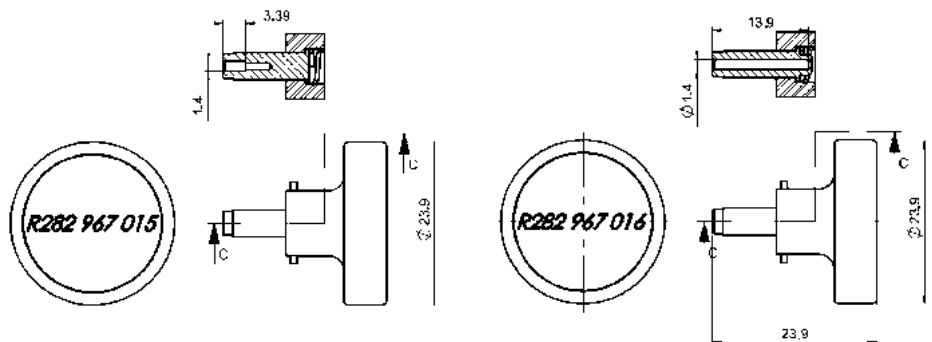
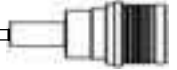


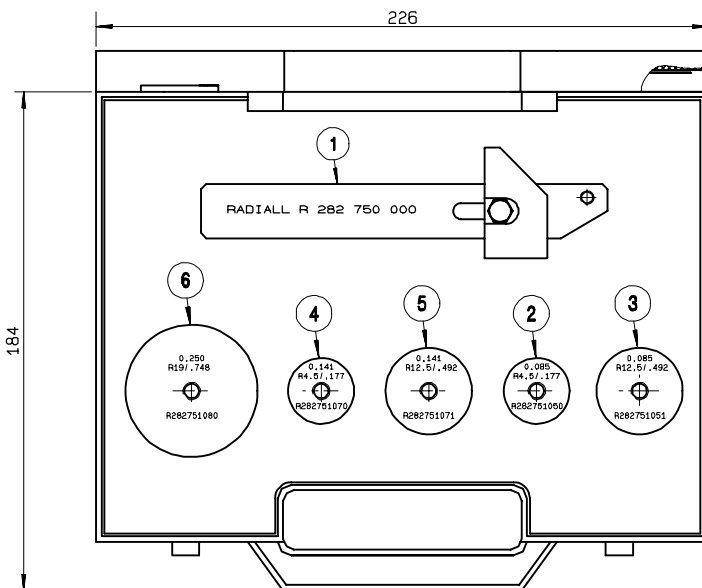
Fig. 1

Fig. 2

part number	fig.
R282 967 015	1
R282 967 016	2

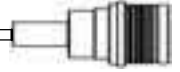


### BENDING KIT FOR SEMI-RIGID CABLES .085" / .141" / .250"

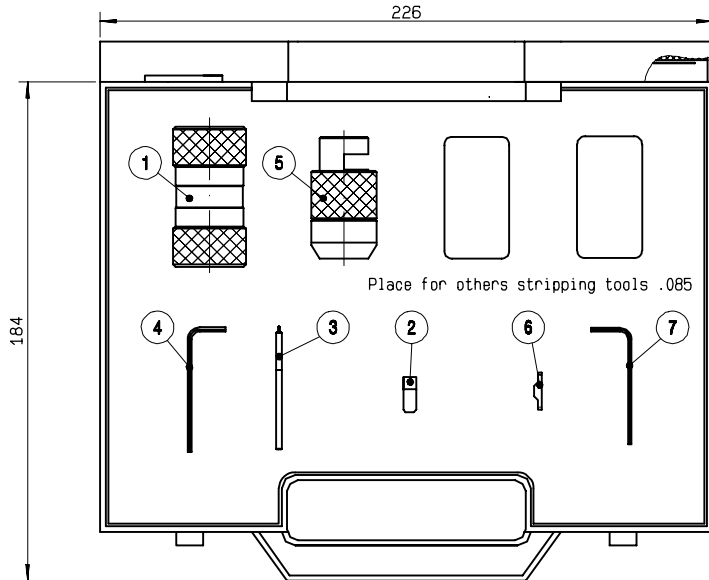


PART NUMBER		<b>R282 102 000</b>	
1	-	R282 750 000	Bending tool
2	-	R282 751 050	Bending gauge .085
3	-	R282 751 051	Bending gauge .085
4	-	R282 751 070	Bending gauge .141
5	-	R282 751 071	Bending gauge .141
6	-	R282 751 080	Bending gauge .250

Inside the box, every part number can be ordered separately.

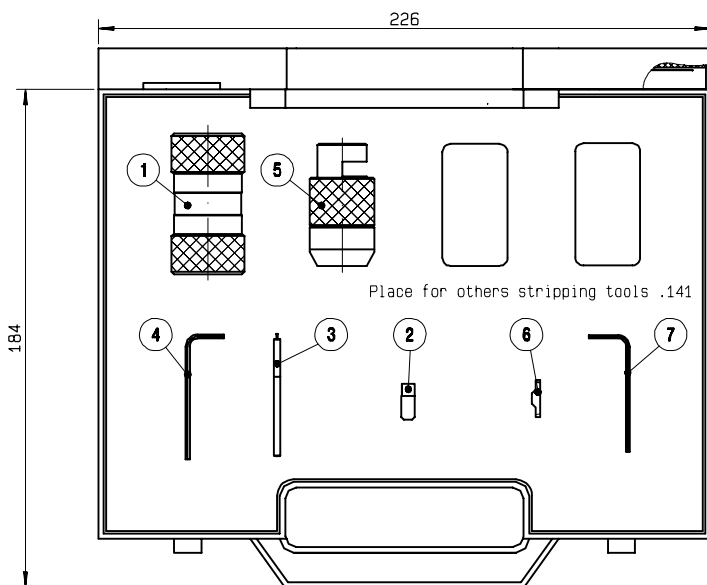


### STRIPPING (3.17mm) + CONING KIT FOR SEMI-RIGID CABLE .085”



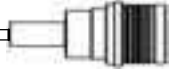
PART NUMBER	<b>R282 114 125</b>	
1 -	R282 051 000	Stripping tool .085
2 -	R282 055 000	Replacement stripping blade
3 -	R282 864 110	Blade installation gauge .085
4 -	R282 344 150	1.5 mm across flats male hex key
5 -	R282 063 000	Coning and length-setting tool 3.17 long on .085
6 -	R282 056 085	Replacement coning blade
7 -	R282 344 127	1.27 mm across flats male hex key

### STRIPPING (3.17mm) + CONING KIT FOR SEMI-RIGID CABLE .141”



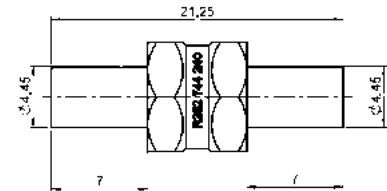
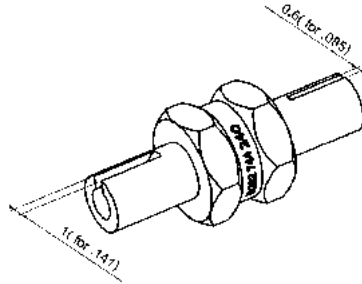
PART NUMBER	<b>R282 114 165</b>	
1 -	R282 053 000	Stripping tool .141
2 -	R282 055 000	Replacement stripping blade
3 -	R282 864 120	Blade installation gauge .141
4 -	R282 344 150	1.5 mm across flats male hex key
5 -	R282 067 000	Coning and length-setting tool 3.17 long on .141
6 -	R282 056 118	Replacement coning blade
7 -	R282 344 127	1.27 mm across flats male hex key

Inside the box, every part number can be ordered separately.



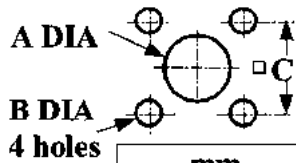
### POSITIONER FOR RIGHT ANGLE PLUGS FOR SEMI-RIGID CABLES

part number
<b>R282 744 240</b>



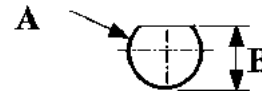
### PANEL / PCB CUT OUT

#### P01



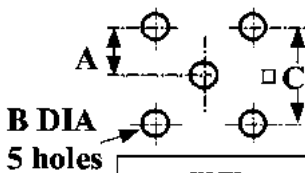
	mm	
	Maxi	mini
<b>A</b>	4.2	4.1
<b>B</b>	2.7	2.6
<b>C</b>	8.69	8.59

#### P02



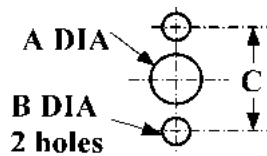
	mm	
	Maxi	mini
<b>A</b>	7.3	7.2
<b>B</b>	6.65	6.5

#### P03



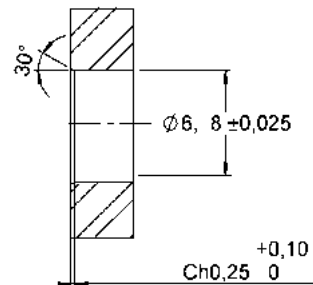
	mm	
	Maxi	mini
<b>A</b>	2.59	2.49
<b>B</b>	1.7	1.6
<b>C</b>	5.13	5.03

#### P04



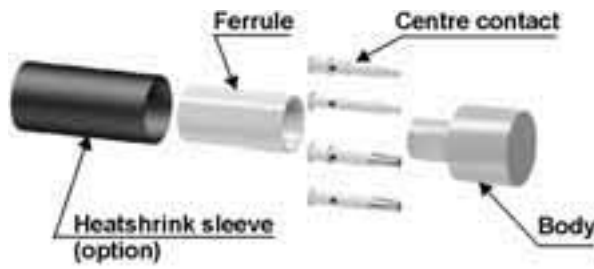
	mm	
	Maxi	mini
<b>A</b>	4.2	4.1
<b>B</b>	2.65	2.6
<b>C</b>	12.25	12.15

#### P05

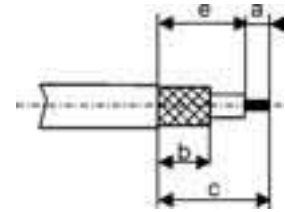




### M 01



#### STRIPPING DIMENSIONS



part number	stripping dim.				hex. dim. H	ferrule		center contact
	a	b	c	e		standard crimp tools dies included	MIL standard <b>R282 293 000</b> (M22520/5-01)+ dies	crimp tool <b>R282 281 000</b> + positioner
<b>R123 071 000</b>	3	6.3	10.8	7.8	3.25	R282 211 000	R282 235 003 (M22520/5-03)	R282 967 015 Selection N° 5
<b>R123 072 000</b>					3.84	R282 271 000	R282 235 037 (M22520/5-37)	R282 967 015 Selection N° 5
<b>R123 075 000</b>					5.41	R282 223 000	R282 235 011 (M22520/5-11)	R282 967 015 Selection N° 7
<b>R123 076 000</b>								
<b>R123 312 000</b>	2.8	6.5	11	8.2	3.25	R282 211 000	R282 235 003 (M22520/5-03)	R282 967 016 Selection N° 5
<b>R123 313 000</b>					3.84	R282 271 000	R282 235 037 (M22520/5-37)	R282 967 016 Selection N° 5
<b>R123 314 000</b>					5.41	R282 223 000	R282 235 011 (M22520/5-11)	R282 967 016 Selection N° 7
<b>R123 315 000</b>								

**1**

Slide the heatshrink sleeve onto the cable (Option).  
Slide the ferrule onto the cable.  
Strip the cable.



**4**

Slide the cable into the body until it bottoms against insulator.



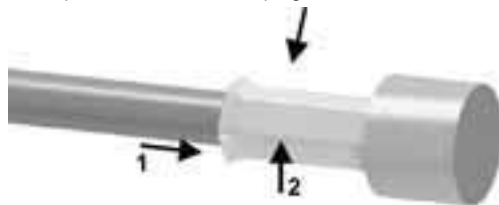
**2**

Slide the centre contact on until it bottoms against the cable dielectric.  
Crimp the centre contact with crimping tool.



**5**

Slide the ferrule over the braid.  
Crimp the ferrule with crimping tool.



**3**

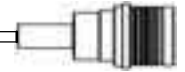
Fan the braid.



**6**

Cut the excess of braid if necessary.  
Slide the sleeve over the ferrule and heatshrink it in place (Option).

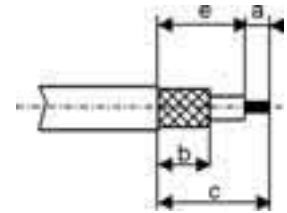




### M 02



#### STRIPPING DIMENSIONS



part number	stripping dim.				hex. dim. H	ferrule	
	a	b	c	e		standard crimp tools dies included	MIL standard <b>R282 293 000</b> (M22520/5-01)+ dies
R123 172 000	2	7	13	11	3.25	R282 211 000	R282 235 003 (M22520/5-03)
R123 174 000					3.84	R282 271 000	R282 235 037 (M22520/5-37)
R123 175 000					5.41	R282 223 000	R282 235 011 (M22520/5-11)
R123 176 000							

**1**  
Slide the heatshrink sleeve onto the cable (Option).  
Slide the ferrule onto the cable.  
Strip the cable.



**2**  
Fan the braid.



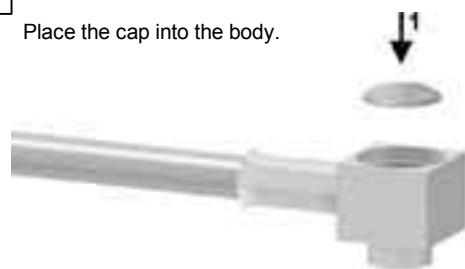
**3**  
Push the connector body under the braid.  
Slide the ferrule over the braid.



**4**  
Crimp the ferrule with crimping tool.  
Solder the inner conductor.

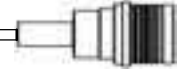


**5**  
Place the cap into the body.



**6**  
Press on the cap flush or slightly below the surface of the body assembly.  
Slide the sleeve over the ferrule and heatshrink it in place (Option).

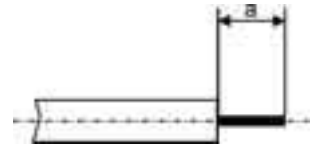




# M 03



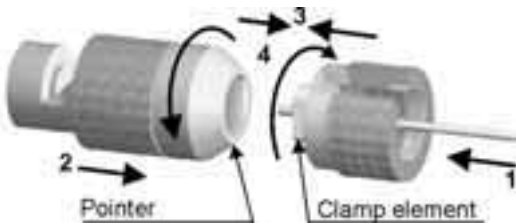
### STRIPPING DIMENSIONS



part number	stripping dim. a	stripping tool	pointer	assembly jig	positioner
R123 153 000 R123 153 003 R123 154 000 R123 154 003	3.17	R282 053 000	R282 067 000	R282 740 000	R282 744 220

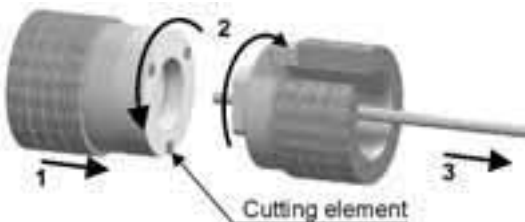
**1**

Insert the cable into the clamping element.  
Present the pointer in front of the clamping element.  
Push the cable until it stops, while holding the clamping element pushed on the hollow part of the pointer.  
Turn the clamping part until the release of the pointer.



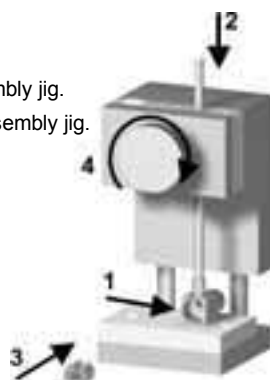
**2**

Present the cutting element in front of the cutting element.  
Push and turn both elements, back part opposite to the front part.  
Once they reach the stop, pull without revolving.



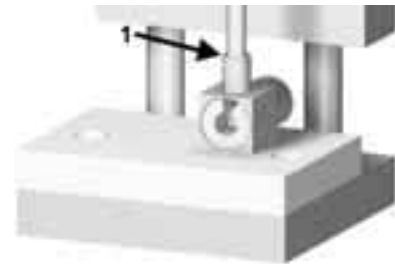
**3**

Insert the cable into the body.  
Secure the positioner into the assembly jig.  
Place the sub-assembly into the assembly jig.  
Tighten.



**4**

Put three rings of solder around the cable.  
Solder the body onto the cable.



**5**

After cooling, remove the assembly from the jig.  
Remove the positioner.  
Solder the inner conductor.

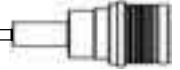


**6**

Place the cap into the body.  
Press on the cap flush or slightly below the surface of the body assembly.







## M04

1

Deposit solder paste 'Sn95 Ag4 Cu0.5' on mounting zone by screen printing application. We recommend a low residue flux. We advise a thickness of 150 micromm (5.850 microinch). Verify that the edges of the zone are clean.

2

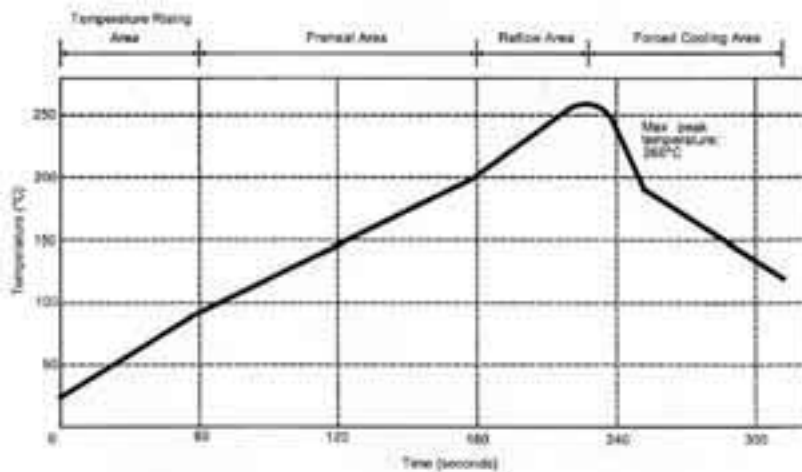
Placement of the receptacle on the mounting zone with an automatic 'pick and place' machine. Video camera is preferred to check the positioning of the component. Adhesive agents are forbidden on the receptacle.

3

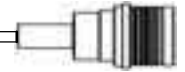
Soldering by infra-red reflow. We give hereafter, the typical profile to use.

4

Cleaning of printed circuit boards.



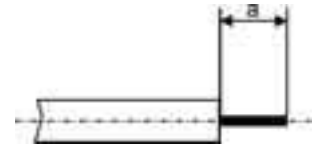
Parameter	Value	Unit
Temperature rising Area	1 - 4	°C/sec
Max Peak Temperature	260	°C
Max dwell time @260°C	10	sec
Min dwell time @235°C	20	sec
Max dwell time @235°C	60	sec
Temperature drop in cooling Area	-1 to - 4	°C/sec
Max dwell time above 100°C	420	sec



# M 05



### STRIPPING DIMENSIONS

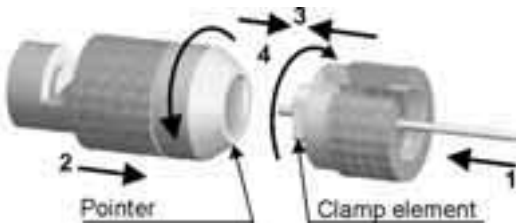


We recommend a thermal preconditioning cable

part number	stripping dim. a	stripping tool	pointer	assembly jig	positioner	control gauge
R123 054 000	3.17	R282 051 000	R282 063 000	R282 740 000	R282 744 220	R282 862 090
R123 055 000			R282 067 000			R282 862 070
R123 305 023	4.5	R282 053 000	R282 066 010			-
R123 326 003			-			

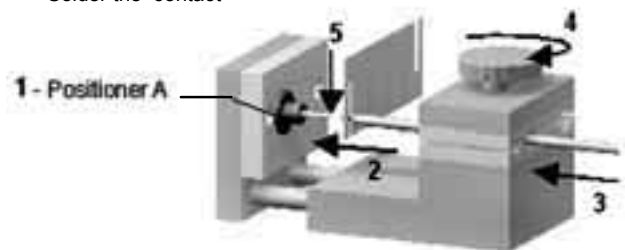
**1**

Insert the cable into the clamping element.  
 Present the pointer in front of the clamping element.  
 Push the cable until it stops, while holding the clamping element pushed on the hollow part of the pointer.  
 Turn the clamping part until the release of the pointer.



**3**

Mount the positioner A.  
 Slide the centre contact into the positioner A.  
 Insert the solder gauge between the centre contact and the cable.  
 Tighten  
 Solder the contact



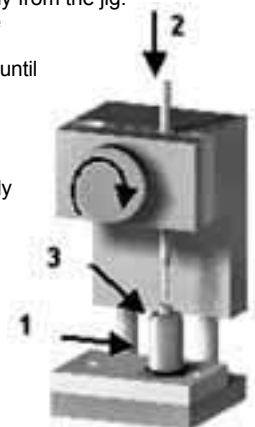
**2**

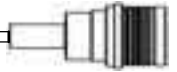
Present the cutting element in front of the cutting element.  
 Push and turn both elements, back part opposite to the front part.  
 Once they reach the stop, pull without revolving.



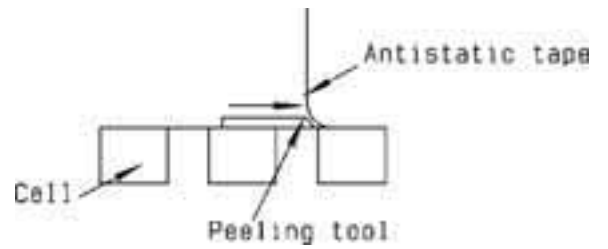
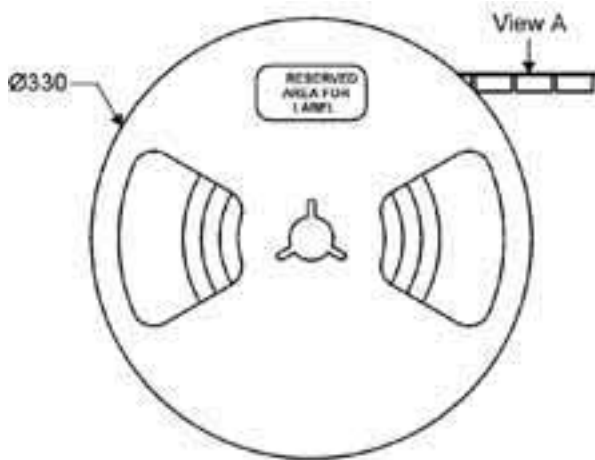
**4**

After cooling, remove the assembly from the jig.  
 Positioning the connector onto the Assembly jig.  
 Slide the cable into the connector until it bottoms against the insulator  
 Tighten.  
 Put three rings of solder around the cable and solder.  
 After cooling, remove the assembly from the jig.





### TAPE AND REEL



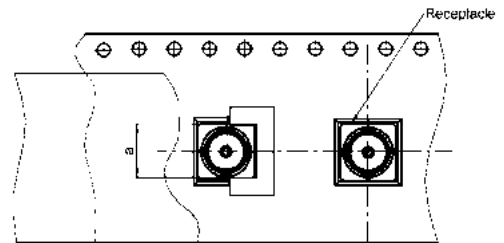
### ACCORDING TO IEC 286-3 STANDARD

#### MATERIALS

Reel: polyester

Carrier tape: antistatic PETG (polyester)

Cover tape: polyester

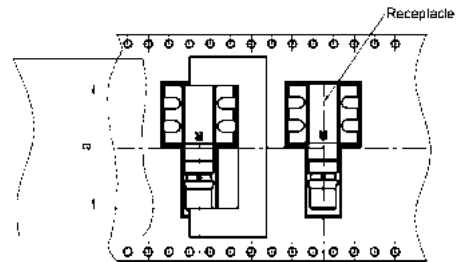


### PRECAUTION FOR USE

Automated pick and place machines use standard tooling to peel the antistatic film off.

There is thus a risk for the two legs being deformed while they pass through the tool during the suction operation.

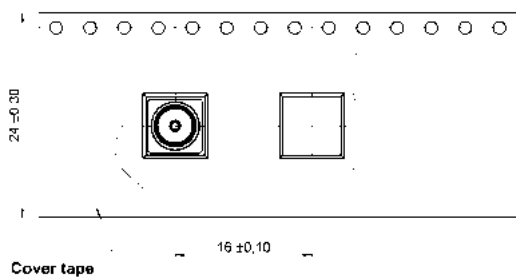
The user must then widen the "a" dimension of the peeling tool.



### View A

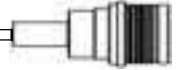
R123 427 803

R123 427 823



R123 682 827





### CABLE DIMENSION REFERENCE CHART

The following tables are presented as a convenient reference only. For detailed specifications, refer to the relevant standard or cable manufacturer's specifications. All dimensions are nominal unless otherwise specified.

CABLE	IMP. NOM. Ω	DIMENSIONS inch (mm)				CABLE GROUPE inch (mm)/Ω	
		CORE		DIELECTRIC	SCREEN DIA. + numb.		JACKET
		Composition	DIA nom.				

#### FLEXIBLE AND SEMI-RIGID CABLES MIL-C-17-F and LMR CABLES

RG 6A/U	75	single core	.028 (0,72)	.185 (4,70)	.263 (6,70) (D)	.332 (8,43)	.315 (8)/75 D
RG 11A/U	75	7 X 0,40	.047 (1,20)	.285 (7,25)	.340 (8,64) (S)	.405 (10,29)	.394 (10)/75 S
RG 58C/U	50	19 X 0,18	.035 (0,89)	.116 (2,95)	.150 (3,81) (S)	.195 (4,95)	.197 (5)/50 S
RG 59B/U	75	single core	.022 (0,57)	.146 (3,71)	.191 (4,85) (S)	.242 (6,15)	.236 (6)/75 S
RG 62B/U	93	single core	.025 (0,64)	.146 (3,71)	.191 (4,85) (S)	.242 (6,15)	.236 (6)/93 S
RG 71B/U	93	single core	.025 (0,64)	.146 (3,71)	.208 (5,28) (D)	.245 (6,22)	.236 (6)/93 D
RG 141A/U	50	single core	.039 (0,99)	.116 (2,95)	.146 (3,71) (S)	.190 (4,83)	.197 (5)/50 S
RG 142B/U	50	single core	.037 (0,94)	.116 (2,95)	.171 (4,34) (D)	.195 (4,95)	.197 (5)/50 D
RG 174A/U	50	7 X 0,16	.019 (0,48)	.060 (1,52)	.088 (2,24) (S)	.110 (2,79)	.102 (2,6)/50 S
RG 178B/U	50	7 X 0,10	.012 (0,30)	.033 (0,84)	.054 (1,37) (S)	.071 (1,80)	.079 (2)/50 S
RG 179B/U	75	7 X 0,10	.012 (0,30)	.063 (1,60)	.083 (2,13) (S)	.110 (2,54)	.102 (2,6)/75 S
RG 188A/U	50	7 X 0,18	.020 (0,51)	.060 (1,52)	.081 (2,06) (S)	.110 (2,79)	.102 (2,6)/50 S
RG 212/U	50	single core	.056 (1,41)	.185 (4,70)	.210 (5,34) (D)	.331 (8,43)	.315 (8)/50 D
RG 213/U	50	7 X 0,75	.089 (2,25)	.285 (7,25)	.340 (8,64) (S)	.405 (10,29)	.394 (10)/50 S
RG 214/U	50	7 X 0,75	.089 (2,25)	.285 (7,25)	.360 (9,14) (D)	.425 (10,80)	.433 (11)/50 D
RG 216/U	75	7 X 0,40	.047 (1,20)	.285 (7,25)	.360 (9,15) (D)	.425 (10,80)	.433 (11)/75 D
RG 217/U	50	single core	.106 (2,69)	.370 (9,40)	.463 (11,76) (D)	.545 (13,84)	.551 (14)/50 D
RG 218/U	50	single core	.195 (4,95)	.680 (17,27)	.760 (19,30) (S)	.870 (22,10)	.866 (22)/50 S
RG 316/U	50	7 x 0,17	.020 (0,51)	.060 (1,52)	.081 (2,06) (S)	.098 (2,49)	.102 (2,6)/50 S
RD 316	50	7 x 0,17	.020 (0,51)	.060 (1,52)	.087 (2,22) (D)	.110 (2,80)	.102 (2,6)/50 D
RG 400	50	19 x 0,2	.039 (1)	.116 (2,95)	.169 (4,30) (D)	.197 (5)	.197 (5)/50 D
RG 393	50	7 x 0,8	.094 (2,4)	.285 (7,25)	.346 (8,80) (D)	.390 (9,9)	.394 (10)/50 D
RG 401/U	50	single core	.064 (1,63)	.209 (5,31)	--	.250 (6,35)	.250"
RG 402/U	50	single core	.036 (0,92)	.117 (2,98)	--	.141 (3,58)	.141"
RG 405/U	50	single core	.020 (0,51)	.066 (1,68)	--	.087 (2,20)	.085"
LMR 200	50	single core	.044 (1,12)	.116 (2,95)	.144 (3,66) (S)	.197 (5)	.197 (5)/50 S
LMR 400	50	single core	.109 (2,77)	.285 (7,24)	.320 (8,13) (S)	.405 (10,3)	.405 (10,3)/50 S
LMR 600	50	single core	.176 (4,47)	.455 (11,56)	.490 (12,45) (S)	.591 (15)	.591 (15,2)/50 S

#### FLEXIBLE CABLES NF-C 93-550 / SEMI-RIGID CABLES NF-C 93-551

KX 3B	50	7 X 0,16	.019 (0,48)	.059 (1,50)	.088 (2,23) (S)	.10 (2,54)	.102 (2,6)/50 S
KX 4	50	7 X 0,75	.089 (2,25)	.285 (7,25)	.340 (8,64) (S)	.405 (10,29)	.394 (10)/50 S
KX 6A	75	7 X 0,20	.024 (0,60)	.146 (3,70)	.191 (4,85) (S)	.240 (6,10)	.236 (6)/75 S
KX 8	75	7 X 0,40	.047 (1,20)	.285 (7,25)	.340 (8,64) (S)	.405 (10,29)	.394 (10)/75 S
KX 13	50	7 X 0,75	.089 (2,25)	.285 (7,25)	.360 (9,14) (D)	.425 (10,80)	.433 (11)/50 D
KX 14	50	single core	.197 (5,00)	.681 (17,30)	.760 (19,30) (S)	.870 (22,10)	.866 (22)/50 S
KX 15	50	19 X 0,18	.035 (0,89)	.116 (2,95)	.150 (3,81) (S)	.195 (4,95)	.197 (5)/50 S
KX 21A	50	7 X 0,10	.012 (0,30)	.034 (0,87)	.054 (1,37) (S)	.071 (1,80)	.079 (2)/50 S
KX 22A	50	7 X 0,18	.020 (0,51)	.059 (1,50)	.081 (2,06) (S)	.098 (2,50)	.102 (2,6)/50 S
KX 22D	50	7 X 0,17	.020 (0,51)	.059 (1,50)	.098 (2,50) (D)	.118 (3,00)	.102 (2,6)/50 D
KX 23	50	7 X 0,34	.040 (1,02)	.116 (2,95)	.171 (4,34) (D)	.200 (5,10)	.197 (5)/50 D
KX 24	50	7 X 0,80	.094 (2,40)	.285 (7,25)	.360 (9,14) (D)	.429 (10,90)	.433 (11)/50 D
KX 25	75	7 X 0,23	.028 (0,71)	.146 (3,70)	.176 (4,47) (S)	.232 (5,90)	.236 (6)/75 S
KX 30	93	single core	.025 (0,64)	.146 (3,70)	.191 (4,85) (S)	.242 (6,15)	.236 (6)/93 S
KX 52	75	single core	.025 (0,64)	.146 (3,70)	.185 (4,70) (S)	.240 (6,10)	.236 (6)/75 S
KS 1	50	single core	.020 (0,515)	.066 (1,67)	--	.086 (2,18)	.085"
KS 2	50	single core	.036 (0,915)	.118 (3,00)	--	.140 (3,58)	.141"
KS 3	50	single core	.064 (1,63)	.210 (5,33)	--	.250 (6,35)	.250"

#### CORRUGATED CABLES 50 Ω

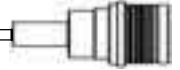
HELIAX FSJ1-50A			.075 (1,90)	.185 (4,70)	.252 (6,40)	.291 (7,40)	1/4"/50 spiral
HELIAX FSJ2-50			.110 (2,8)	.275 (7)	.375 (9,50)	.415 (10,50)	3/8"/50 spiral
HELIAX FSJ4-50B			.142 (3,60)	.342 (8,70)	.480 (12,20)	.520 (13,20)	1/2"/50 spiral
HELIAX LDF5-50A			.354 (9)	.929 (23,6)	1.016 (25,8)	1.102 (28)	7/8"/50 annulat.
GEDELEX 3,7/50 CCES - 1/2"			.140 (3,56)	.331 (8,40)	.472 (12,00)	.531 (13,50)	1/2"/50 spiral
GEDELEX 2,3/50 CC - 1/4"			.094 (2,40)	.236 (6,00)	.295 (7,50)	.394 (10,00)	1/4"/50 annulat.
HELIAX LDF4-50A			.189 (4,80)	.457 (11,60)	.551 (14,00)	.630 (16,00)	1/2"/50 annulat.
GEDELEX 4,8/50 CCFP - 1/2"			.189 (4,80)	.468 (11,90)	.543 (13,80)	.650 (16,50)	1/2"/50 annulat.

#### ETHERNET CABLES 50 Ω

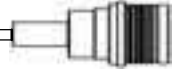
ACOME P 1977 A (BULL approval)			.085 (2,17)	.242 (6,15)	.325 (8,26) (D)	.406 (10,30)	Ethernet
BELDEN 9880			.085 (2,17)	.247 (6,27)	.315 (8,00) (D)	.405 (10,28)	Ethernet
FILOTEX 63227			.085 (2,17)	.252 (6,40)	.327 (8,30) (D)	.406 (10,30)	Ethernet
BICC H8 112			.085 (2,17)	.250 (6,35)	.326 (8,29) (D)	.406 (10,30)	Ethernet
PRECICABLE CY 120			.094 (2,40)	.252 (6,40)	.323 (8,20) (D)	.406 (10,30)	Ethernet
TIMES A A4779			.087 (2,20)	.242 (6,14)	.370 (9,40) (D)	.409 (10,40)	Ethernet

(S) : 1 braid ; (D) : 2 braids

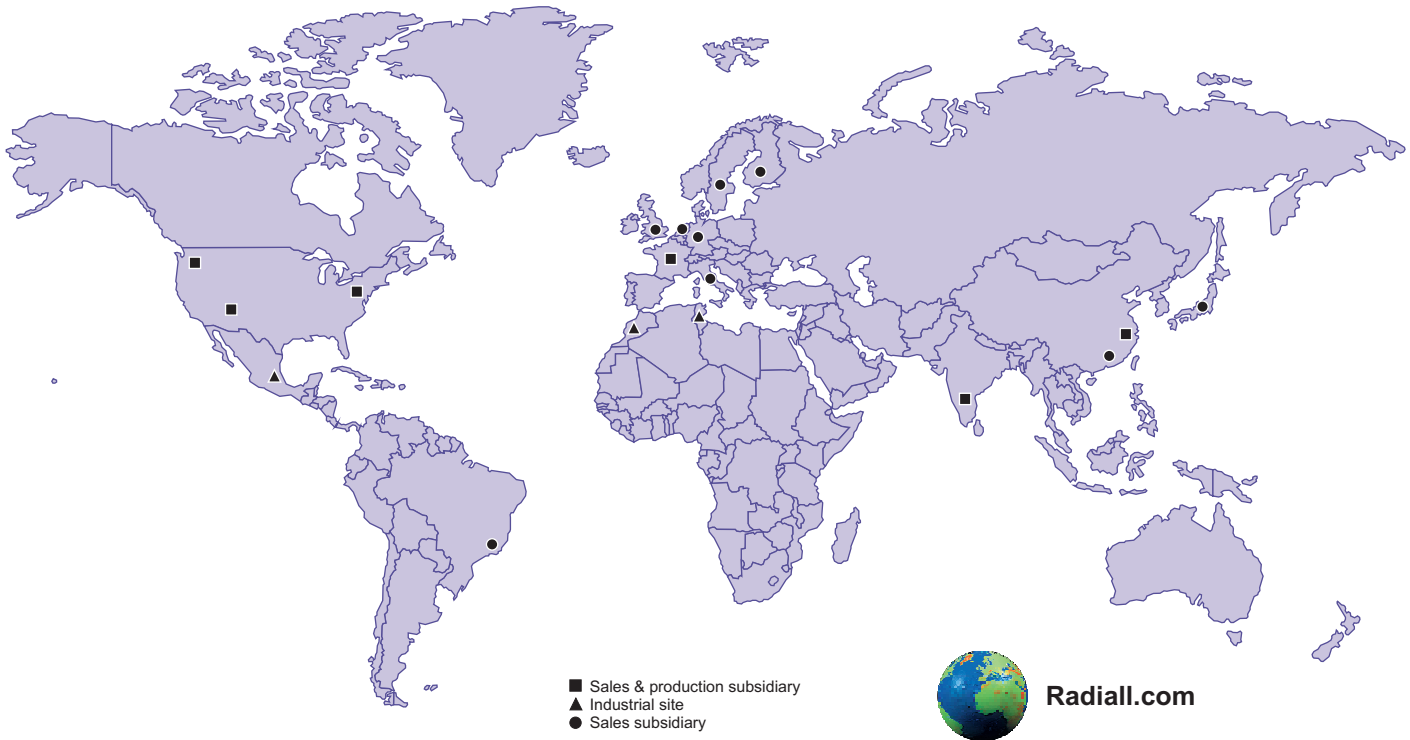




Part number	Description	Page
R123 054 000	straight plug solder type for .085" cable	9
R123 055 000	straight plug solder type for .141" cable	9
R123 071 000	straight plug full crimp type for 2.6/50/S cable	9
R123 072 000	straight plug full crimp type for 2.6/50/D cable	9
R123 075 000	straight plug full crimp type for 5/50/S cable	9
R123 076 000	straight plug full crimp type for 5/50/D cable	9
R123 153 000	right angle plug solder type for .085" cable	10
R123 153 003	right angle plug solder type for .085" cable	10
R123 154 000	right angle plug solder type for .141" cable	10
R123 154 003	right angle plug solder type for .141" cable	10
R123 172 000	right angle plug crimp type for 2.6/50/S cable	9
R123 174 000	right angle plug crimp type for 2.6/50/D cable	9
R123 175 000	right angle plug crimp type for 5/50/S cable	9
R123 176 000	right angle plug crimp type for 5/50/D cable	9
R123 312 000	straight bulkhead jack for 2.6/50/S cable	10
R123 313 000	straight bulkhead jack for 2.6/50/D cable	10
R123 314 000	straight bulkhead jack for 5/50/S cable	10
R123 315 000	straight bulkhead jack for 5/50/D cable	10
R123 415 000	straight flange receptacle	11
R123 426 003	straight PCB receptacle (packaging : 100 pces)	12
R123 426 003W	straight PCB receptacle (packaging : unit)	12
R123 427 803	straight SMT receptacle (packaging : 100 pces/ reel)	12
R123 427 803W	straight SMT receptacle (packaging : unit)	12
R123 427 823	straight SMT receptacle (packaging : 300 pces/ reel)	12
R123 464 030	straight flange receptacle	12
R123 553 000	straight bulkhead receptacle	11
R123 590 027	press mount receptacle	11
R123 680 003	right angle PCB receptacle (packaging : 100 pces)	12
R123 680 003W	right angle PCB receptacle (packaging : unit)	12
R123 682 817	right angle SMT receptacle (packaging : 250 pces/reel)	12
R123 682 827	right angle SMT receptacle (packaging : 100 pces/reel)	12
R123 682 827W	right angle SMT receptacle (packaging : unit)	12
R123 703 000	QMA male - QMA male	13
R123 704 000	QMA female - QMA male	13
R123 705 000	QMA female - QMA female	13
R123 990 020W	demonstration board	13
R191 763 000	QMA male - N female adapter	14
R191 764 000	QMA female - N female adapter	14
R191 910 000	QMA male - SMA male adapter	14
R191 911 000	QMA male - SMA female adapter	14
R191 912 000	QMA female - SMA male adapter	14
R191 913 000	QMA female - SMA female adapter	14
R191 914 700	QMA male - SMA 3.5 male adapter	14
R191 915 700	QMA male - SMA 3.5 female adapter	14
R191 916 700	QMA female - SMA 3.5 male adapter	14
R191 917 700	QMA female - SMA 3.5 female adapter	14



Part number	Description	Page
R282 051 000	stripping tool .085"	23
R282 053 000	stripping tool .141"	23
R282 055 000	replacement stripping blade	23
R282 056 085	replacement coning blade	23
R282 056 118	replacement coning blade	23
R282 063 000	coning and length setting tool 3.17 long on .085"	23
R282 067 000	coning and length setting tool 3.17 long on .141"	23
R282 102 000	bending kit for semi-rigid cables	22
R282 114 125	stripping (3.17) + coning kit for semi-rigid cables .085"	23
R282 114 165	stripping (3.17) + coning kit for semi-rigid cables .141"	23
R282 211 000	crimp tool (dies included)	20
R282 223 000	crimp tool (dies included)	20
R282 235 003	dies	21
R282 235 011	dies	21
R282 235 037	dies	21
R282 271 000	crimp tool (dies included)	20
R282 281 000	crimp tool for center contact	21
R282 293 000	MIL crimp tool (dies not included)	21
R282 344 127	1.27 across flats male hex key	23
R282 344 150	1.5 across flats male hex key	23
R282 744 240	positioner for right angle plugs for semi rigid cables	24
R282 750 000	bending tool	22
R282 751 050	bending gauge .085"	22
R282 751 051	bending gauge .085"	22
R282 751 070	bending gauge .141"	22
R282 751 071	bending gauge .085"	22
R282 751 080	bending gauge .250"	22
R282 800 000	joule effect soldering device	19
R282 803 000	fume extraction device	19
R282 864 110	blade installation gauge .085"	23
R282 864 120	blade installation gauge .141"	23
R282 868 230	extraction tool	20
R282 967 015	positioner for center contact crimp tool	21
R282 967 016	positioner for center contact crimp tool	21
R284 V01 01 003	QMA pigtail	13
R404 114 000	male type low power termination	15
R572 E12 000	QMA SPDT switches failsafe 12 V	16
R572 E13 000	QMA SPDT switches failsafe 28 V	16
R572 E32 000	QMA SPDT switches latching 12 V	16
R572 E33 000	QMA SPDT switches latching 28 V	16
R573 E02 600	QMA SPnT switches normally open 12 V	18
R573 E03 600	QMA SPnT switches normally open 28 V	18
R573 E22 600	QMA SPnT switches latching 12 V	18
R573 E23 600	QMA SPnT switches latching 28 V	18
R577 E12 000	QMA DPDT switches failsafe 12 V	17
R577 E13 000	QMA DPDT switches failsafe 28 V	17
R577 E32 000	QMA DPDT switches latching 12 V	17
R577 E33 000	QMA DPDT switches latching 28 V	17



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- ▲ Industrial site
- Sales subsidiary

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### AMERICA

#### North America

##### RADIALL-RF and microwave components

##### RADIALL-Multipin connectors and fiber optic components

##### JERRIK-Filter connectors

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##### LARSEN-Antennas

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##### AEP-Coaxial connectors & cable assemblies

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