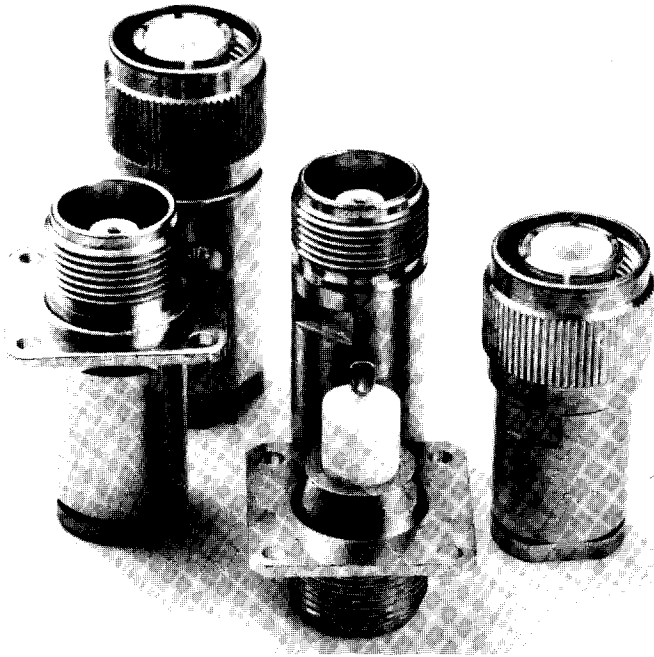


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4	Characteristics : <ul style="list-style-type: none">- Electrical- Mechanical- Environmental- Materials
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6	Straight plugs Straight jack - Flange jack - Flange receptacle - Adaptors
<hr/> HN2 SERIES <hr/>	
7	Characteristics : <ul style="list-style-type: none">- Electrical- Mechanical- Environmental- Materials
8	Plug - Receptacle - Adaptor
9	HN inter series coaxial adaptors
10 - 11	Accessories Connector to cable assembly
<hr/> UHF SERIES <hr/>	
12	Numerical listing of standards UG - PL
13	Introduction
14	Interface dimensions - Coupling principle
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19	Plug - Receptacle - Adaptors
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21	Accessories
22 - 23	Connector to cable assembly

standard coaxial connectors



HN series HN.2

STTA - Marine approved
GAM Listed

INTRODUCTION

Standard coaxial connectors with screw coupling fully interchangeable with HN connectors made to the US MIL Specification. Designed for use in all systems where good R.F. and mechanical performance is required at higher voltages than N series connectors can be used.

AMERICAN SPECIFICATIONS

For HN connectors MIL - C - 3643 A
For HN2 connectors MIL - C - 3655 B

Note : Some of the connector code nos. are shown in this catalogue in blue signifying that they are non standard. This does not mean that they are only made to order, only that we do not guarantee to hold as large stocks of these as the standard types and if our stock is exhausted, delay in additional quantities may be a little extended. In any case, please contact Radiall.

March 1987 Edition

characteristics

ELECTRICAL CHARACTERISTICS

Impedance	:	50 Ω
Recommended frequency range		
– maximum	:	0 - 3 GHz
– recommended	:	0 - 2 GHz
V.S.W.R. (for the recommended frequency range)	:	< 1.25 up to 2 GHz
Test voltage	:	5000 V.rms. Except connectors for 5/50-6/75-6/93 cable groups and elbow adaptor M-F : 3000 V.rms

MECHANICAL CHARACTERISTICS

Life	:	500 matings
Vibration	:	20 g
Shock	:	1/2 sinusoidal (severity 100 A)

MATERIALS

Contacts and interfaces	:	Heat treated beryllium copper
Other pieces	:	Brass
Insulators	:	PTFE
Gaskets	:	Neoprene, silicone

ENVIRONMENTAL

Temperature range	:	- 55°C + 155°C
Salt spray	:	48 H
Panel sealing	:	Splashproof

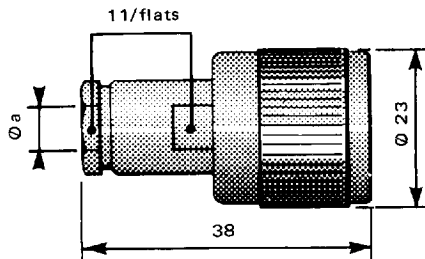
COAXIAL CABLES SUITABLE

The cable groups are classified by ext. dia (mm) / impedance (Ω)

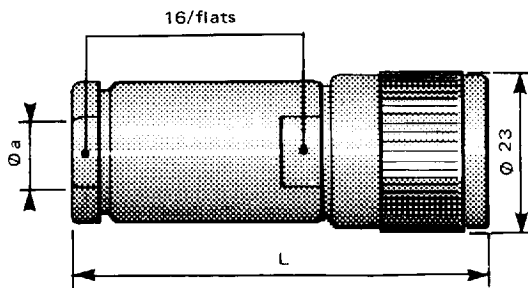
FLEXIBLE CABLES								
5/50 Ω single screen	5/50 Ω double screen	6/75 Ω	6/93 Ω	6/130 Ω	10/50 Ω	11/50 Ω	14/50 Ω	22/50 Ω
RG. 58 C/U	RG. 142 B/U	RG. 59 B/U	RG. 62 B/U	125 PMSA	RG. 165/U	RG. 214/U	RG. 217/U	RG. 218/U
RG. 141 A/U	RG. 223/U	RG. 140/U	RG. 71 B/U		RG. 213/U	RG. 225/U		RG. 219/U
RG. 303/U	RG. 400/U	URM 70	URM 96		RG. 215/U	URM 91		URM 74
		URM 90			URM 67	URM 112		URM 75
URM 43	URM 301	KX. 6A						
URM 72		KX. 25						
URM 76		KX. 52						
URM 108		KX. 53						

CODE No.	UG. REF.	T Y P E	CABLE GROUP Ω	ASSEMBLY CODE	MAX. ϕ_a	WEIGHT (g)
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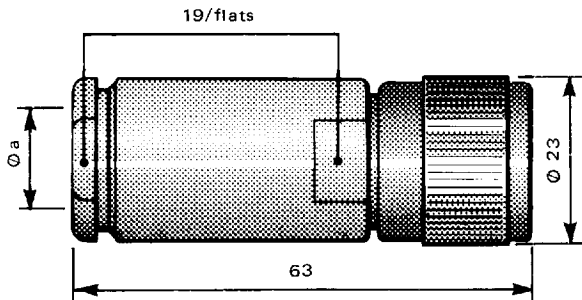
STRAIGHT PLUGS



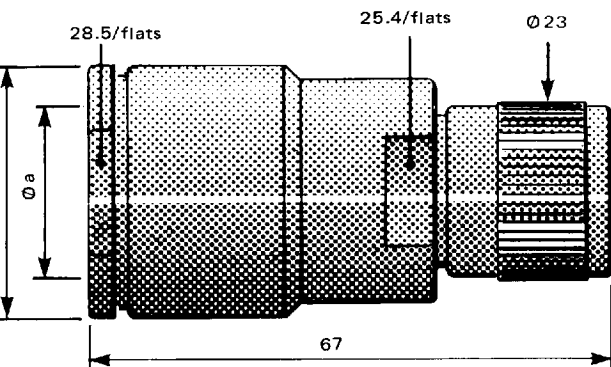
R 176 006		Cable clamp - shouldered centre contact	5/50 Ω	M01	5,6	48
R 176 012		Cable clamp - shouldered centre contact	6/75 + 93 Ω	M01	6,5	47
R 176 012 150		Cable clamp - shouldered centre contact Ceramic insulator	6/75 + 93 Ω		6,5	47



R 176 018		Cable clamp - shouldered centre contact	10/50 Ω 11/50 Ω	M02	11,2	72
L = 49						
R 176 019	UG.59B/U	Cable clamp - shouldered centre contact	10/50 Ω 11/50 Ω	M03	11,2	83
L = 56,5						
R 176 021		Cable clamp - shouldered centre contact	10/50 Ω 11/50 Ω	M05	11,2	80
L = 53						



R 176 027	UG.494A/U	Cable clamp - shouldered centre contact	14/50 Ω	M04	14,4	95
R 176 027 150		Cable clamp - shouldered centre contact Ceramic insulator	14/50 Ω		14,4	100



R 176 029	UG.495B/U	Cable clamp - shouldered centre contact	22/50 Ω	M04	22,9	184
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Non standard (see note page 3)

HN series

CODE No.	UG. REF.	T Y P E	CABLE GROUP Ω	ASSEMBLY CODE	MAX. ϕ_a	WEIGHT (g)
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STRAIGHT JACK

R 176 218	UG.60D/U	Cable clamp - shouldered centre contact	10/50 Ω 11/50 Ω	M03	11,2	66
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STRAIGHT FLANGE JACK

R 176 268	UG.61D/U	Cable clamp	10/50 Ω 11/50 Ω	M03	11,2	75
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FLANGE RECEPTACLE

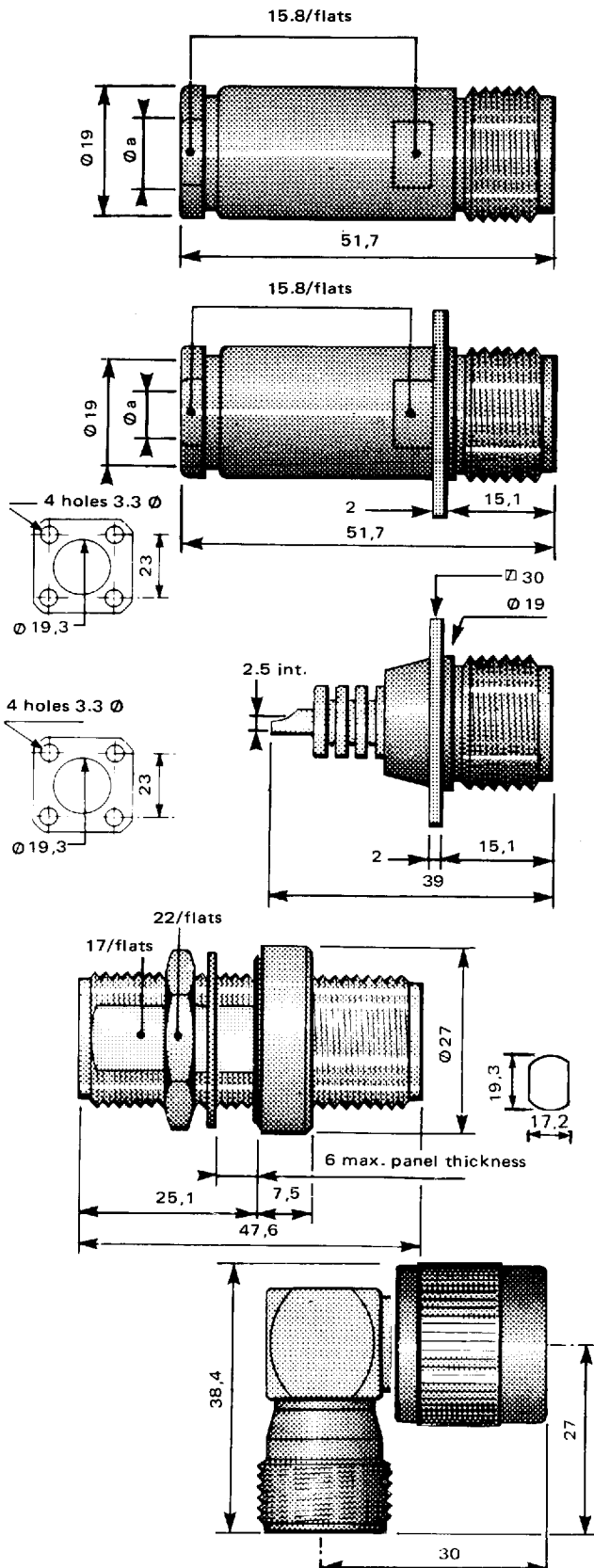
R 176 404	UG.496/U	Square flange - solder pot				38
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ADAPTORS

R 176 754		Bulkhead female - female, splashproof panel seal				80
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R 176 754 150		Bulkhead female - female, splashproof panel seal Ceramic insulator				80
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R 176 770	UG.212C/U	Elbow male - female				73
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ELECTRICAL CHARACTERISTICS

Impedance	:	95 Ω
Frequency range	:	0 to 500 MHz
Test voltage at sea level	:	500 V peak
Insulation resistance	:	> 5 000 M Ω

MECHANICAL CHARACTERISTICS

Life	:	500 matings
Vibration	:	1/2 sinusoidal (severity 100 A)

ENVIRONMENTAL

Temperature range	:	- 50°C + 125°C
Salt spray	:	48 Hrs

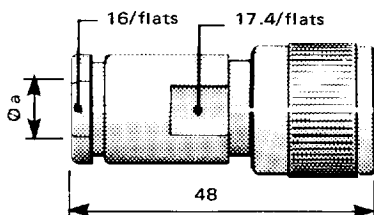
MATERIALS

Contacts and interfaces	:	Heat treated beryllium copper
Other pieces	:	Brass
Insulator	:	Rexolite
Gasket	:	Silicone rubber

COAXIAL CABLES SUITABLE

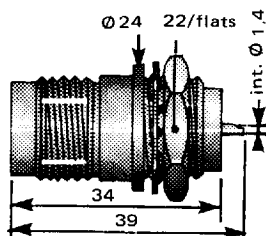
BELDEN P/N Y 15662 FILOTEX étude 36 403
 IBM P/N 7362211

CODE No.	T Y P E	CABLE GROUP Ω	MAX. ϕ_a
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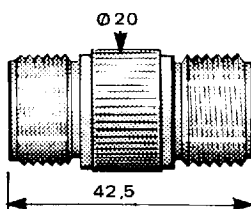


R 616 008	Straight plug - cable clamp	Belden P/N Y15662 IBM P/N 7362211	8,7
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Assembly code M06



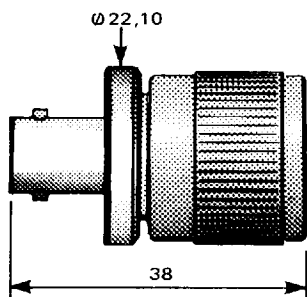
R 616 549	Bulkhead receptacle - solder pot		
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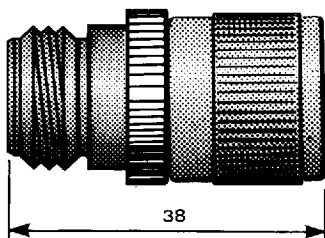
R 616 705	Adaptor female - female		
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HN inter series coaxial adaptors

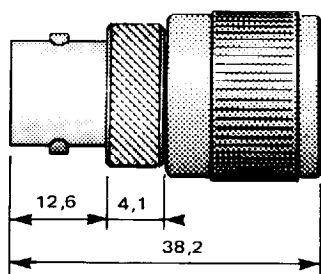
CODE No.	UG. REF.	1ST INTERFACE	2ND INTERFACE	WEIGHT (g)
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R 191 449 UG.309/U **BNC** female - **HN** male 46

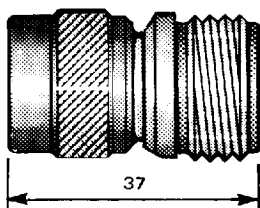


R 191 737 **N** female - **HN** male 55



R 191 931 UG.702/U **C** female - **HN** male 50

Non standard (see note page 3)



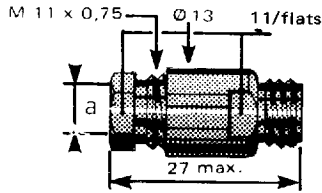
R 191 933 UG.703A/U **C** male - **HN** female 45

Non standard (see note page 3)

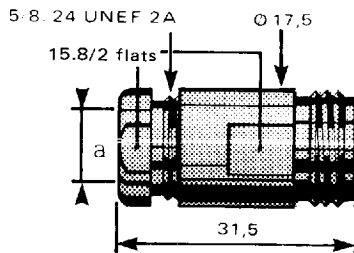
Also available . R 191 358 HN female - SMA-RIM female with square flange
 R 191 941 LC male - HN female bulkhead mounting with panel seal

CODE No.	UG. REF.	DESCRIPTION	CABLE GROUP Ω	MAX. ϕ_a	WEIGHT (g)
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ACCESSORIES

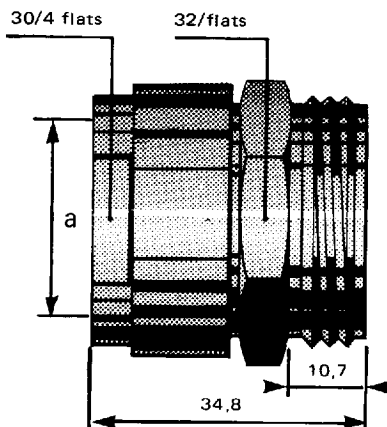


R 280 012		Superior cable clamp	6/75 Ω	6,7	7
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R 280 019		Superior cable clamp	10/50 Ω 11/50 Ω	11,2	11
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Non standard (see note page 3)



R 280 129		Armoured cable clamp	22/50 Ω	24,6	110
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Non standard (see note page 3)

connector to cable assembly

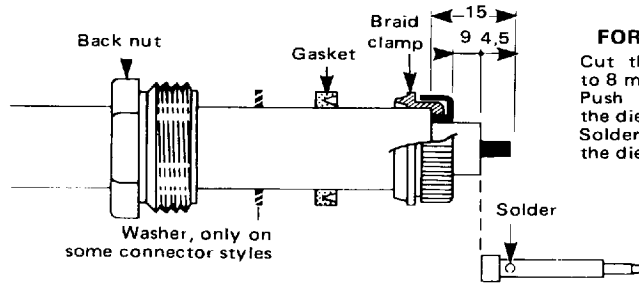
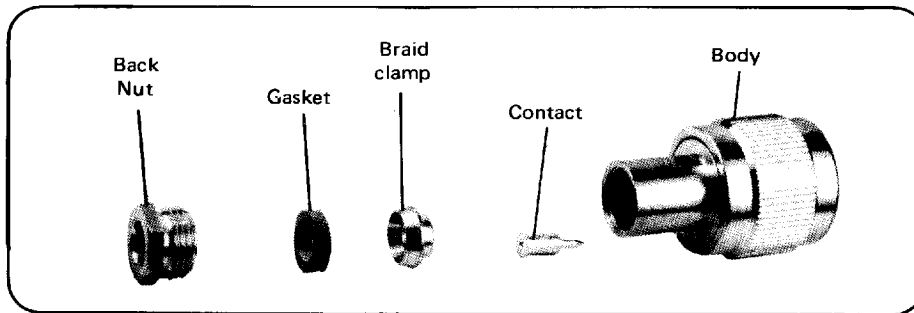
TOOLING

- 100 or 250 W Resistance soldering iron with soldering tweezers (alternatively 30 W soldering iron)
- Tin solder (Pb + Ag) 180°C, Ø0.5
- Sharp knife.

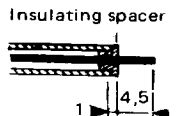
M01

50 Ω IMPEDANCE

R 176 006
R 176 012



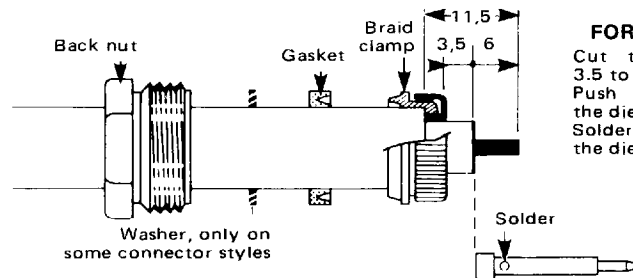
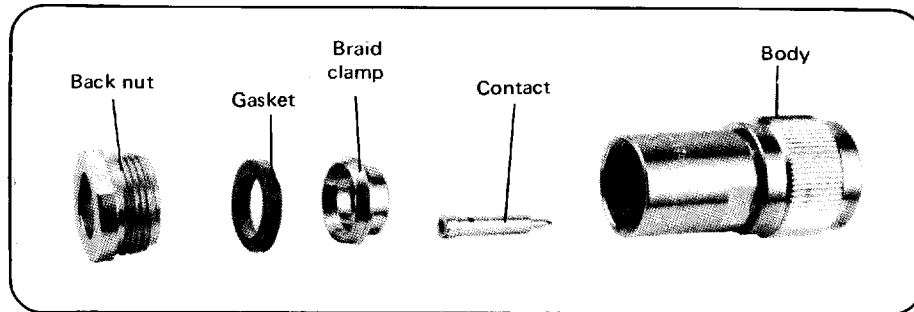
FOR AIR SPACED CABLES
Cut the dielectric back from 9 to 8 mm.
Push the insulating spacer into the dielectric.
Solder the contact flush against the dielectric.



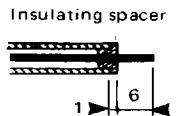
M02

50 Ω IMPEDANCE

R 176 018



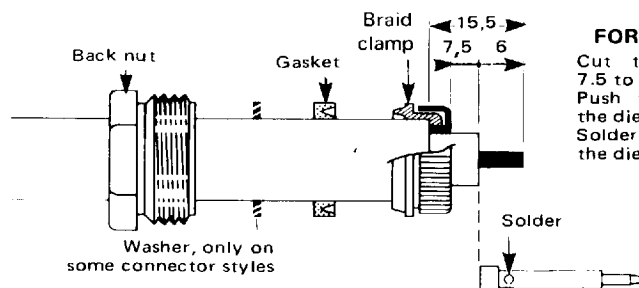
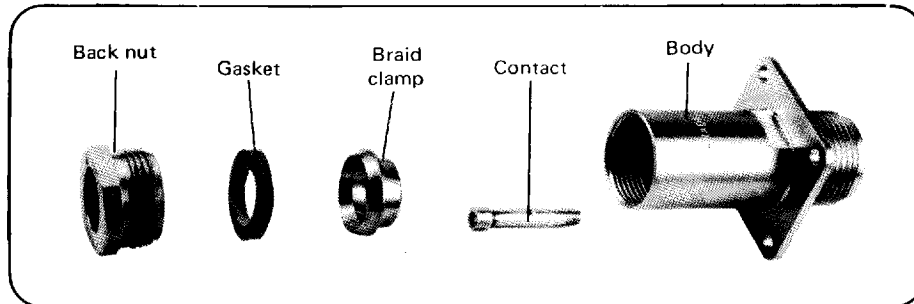
FOR AIR SPACED CABLES
Cut the dielectric back from 3.5 to 2.5 mm.
Push the insulating spacer into the dielectric.
Solder the contact flush against the dielectric.



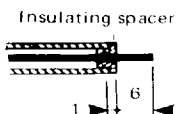
M03

50 Ω IMPEDANCE

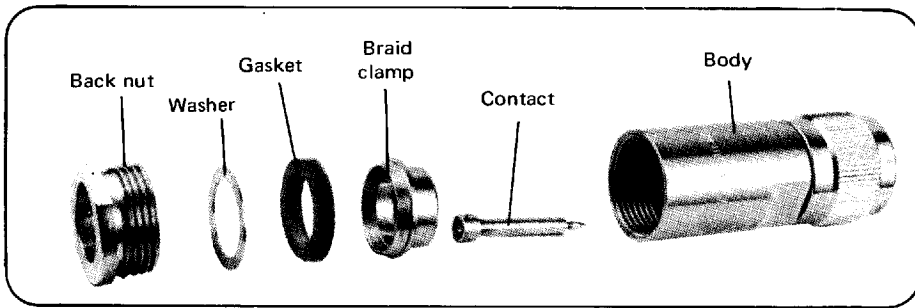
R 176 019
R 176 218
R 176 268



FOR AIR SPACED CABLES
Cut the dielectric back from 7.5 to 6.5 mm.
Push the insulating spacer into the dielectric.
Solder the contact flush against the dielectric.



connector to cable assembly



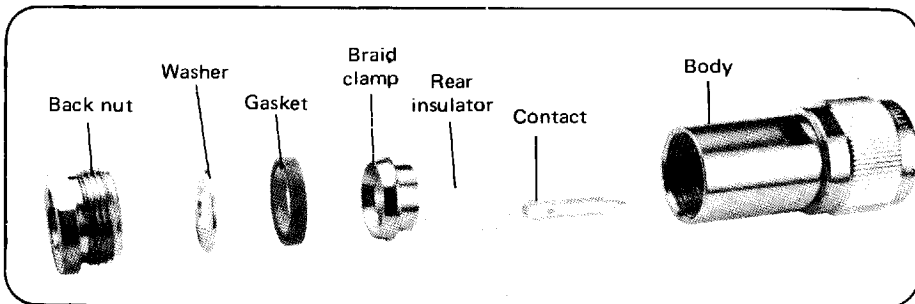
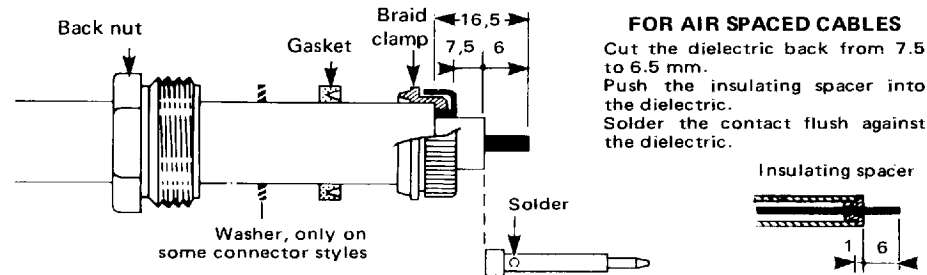
TOOLING

- 100 or 250 W Resistance soldering iron with soldering tweezers (alternatively 30 W soldering iron)
- Tin solder (Pb + Ag) 180°C, Ø0.5
- Sharp knife.

M04

50 Ω IMPEDANCE

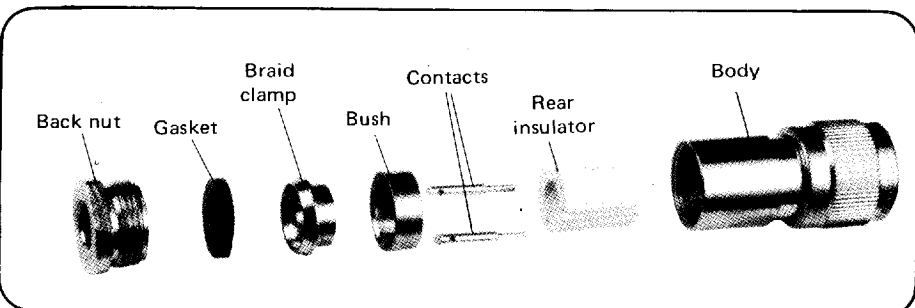
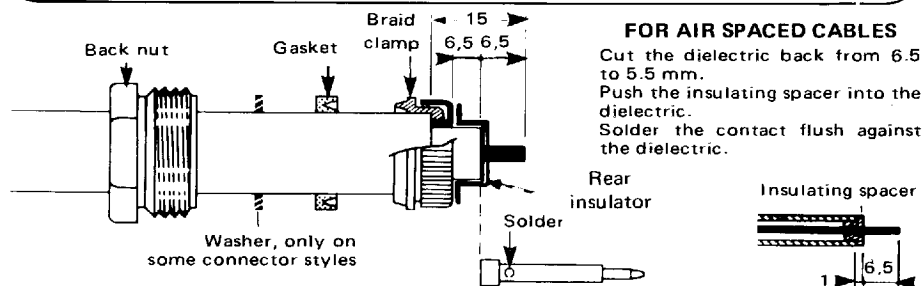
R 176 027
R 176 029



M05

50 Ω IMPEDANCE

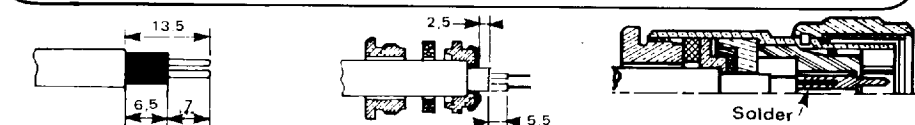
R 176 021



M06

95 Ω IMPEDANCE

R 616 008



- Strip the cable as shown.
- Comb out the braid.
- Slide on back nut, gasket and braid clamp.

- Fold back the braid and cut it as shown.
- Cut back the dielectric as shown.
- Strip the sheath from the centre conductors.

- Solder the contacts, respecting the polarity (reference mark on insulator). Slide contacts into insulator.
- Conductor colour copper to be inserted in hole in insulator marked by a black spot.
- Insert assembly into body, aligning polarizing groove in insulator with pip inside body.

HN-UHF series

NUMERICAL LISTING OF STANDARDISED CONNECTORS

— CHRONOLOGICAL BY REF. NO. —

HN SERIES

UG REF.	RADIALL CODE No.
59 B/U	R 176 019
60 D/U	R 176 218
61 D/U	R 176 268
212 C/U	R 176 770
494 A/U	R 176 027
495 B/U	R 176 029
496 /U	R 176 404

UHF SERIES

MIL REF.	RADIALL CODE No.
PL 258	R 155 705
PL 259 A	R 155 003
PL 259 B	R 155 004
PL 259 T	R 155 005
PL 274	R 155 725
SO 239 B	R 155 404
SO 239 T	R 155 405
M 358	R 155 780
M 359	R 155 770

HN INTER SERIES ADAPTORS

UG REF.	RADIALL CODE No.	DESCRIPTION
309 /U	R 191 449	BNC female - HN male
702 /U	R 191 931	C female - HN male
703 A/U	R 191 933	C male - HN female

UHF INTER SERIES ADAPTORS

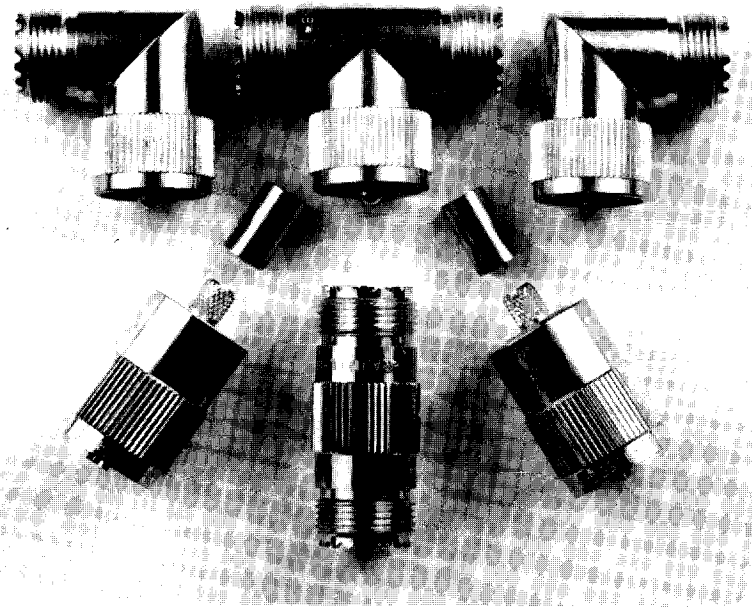
UG REF.	RADIALL CODE No.	DESCRIPTION
83 A/U	R 191 733	N female - UHF male
146 /U	R 191 731	N male - UHF female
225 /U	R 191 445	BNC male - UHF female
273 /U	R 191 447	BNC female - UHF male

ACCESSORIES

UG REF.	RADIALL CODE No.	DESCRIPTION
106/U	R 280 417	Receptacle Hood
175/U	R 260 207	UHF reducing adaptor
176/U	R 260 211	UHF reducing adaptor
177/U	R 280 407	Receptacle hood

standard coaxial connectors

UHF series UHF.2



INTRODUCTION

Standard coaxial connectors with toothed edge screw coupling. Impedance is non constant and there may be a degree of voltage reflection.

Designed as a general purpose connector to operate satisfactorily up to 500 MHz. Ideally suited for mobile radio equipment and ship to shore communications.

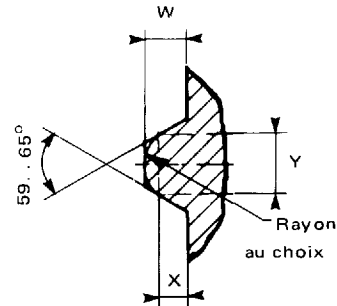
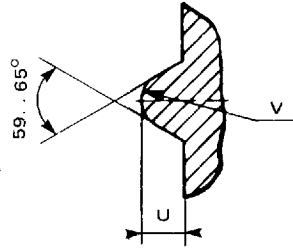
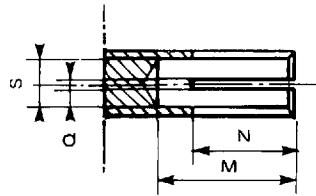
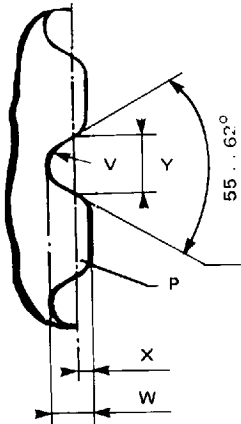
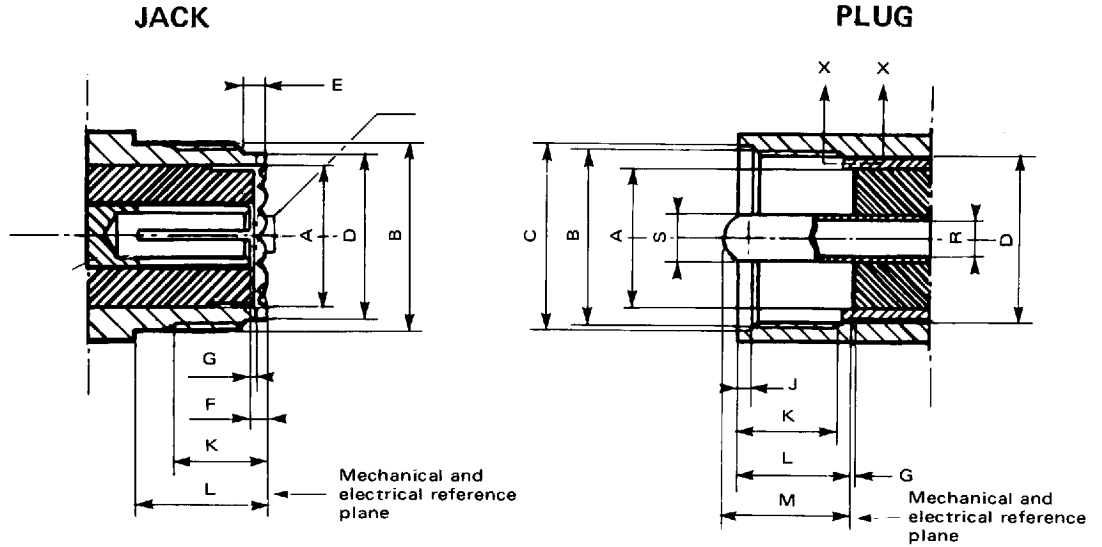
INTERNATIONAL SPECIFICATION

169 - 12 for UHF

Note : Some of the connector code nos. are shown in this catalogue in blue signifying that they are non standard. This does not mean that they are only made to order, only that we do not guarantee to hold as large stocks of these as the standard types and if our stock is exhausted, delay in additional quantities may be a little extended. In any case, please contact Radiall.

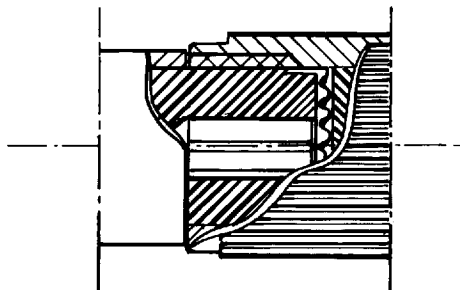
UHF series

INTERFACE DIMENSIONS



16 grooves equally spaced

COUPLING PRINCIPLE



JACK

SIZE IN MILLIMETERS
MIN. MAX.

PLUG

SIZE IN MILLIMETERS
MIN. MAX.

Letter	MIN.	MAX.	MIN.	MAX.
A	11,56	12,22	11,56	12,22
B	5/8 - 24 UNEF - 2B		5/8 - 24 UNEF - 2B	
C	14,00	14,25	16,00	
D	1,19	1,96	13,92	
G	1,02		0,00	
J	0,03		1,19	4,27
K	7,87		8,76	
L	11,10			9,91
M	11,76			11,10
P	0,64			
R				3,35
S	4,039		3,912	4,013
U				0,89
V	0		0,38	0,64
W	0,89			0,89
X	0,41	0,6	0,6	0,75
Y	1,01	1,04	1,3	1,55

ELECTRICAL CHARACTERISTICS

Impedance	:	50 Ω
Maximum frequency range	:	500 MHz
Test voltage (at sea level)	:	2000 V. rms - 50 Hz
Working voltage (at sea level)	:	750 V
Insulation resistance (under 500 V)	:	$\leq 5 \text{ G}\Omega$
Contact resistance		
- centre contact	:	5 m Ω max.
- outer contact	:	5 m Ω max.

MECHANICAL CHARACTERISTICS

Life	:	500 matings
------	---	-------------

ENVIRONMENTAL

Temperature range (according to type of insulator)		
- PTFE	:	- 55 + 155° C
- bakelite	:	- 40 + 165° C
- styramic	:	- 40 + 70° C
Salt spray	:	48 Hrs
Panel sealing	:	splashproof

MATERIALS

Contacts and interfaces	:	heat treated beryllium copper
Other parts	:	brass
Insulators	:	PTFE (T) - bakelite (B) or styramic (St.)
Gaskets	:	Neoprene or silicone rubber

COAXIAL CABLES SUITABLE

The cable groups are classified by ext. dia (mm) / impedance (Ω)

FLEXIBLE CABLES

5/50 Ω

6/75 Ω

6/93 Ω

10/50 Ω

10/75 Ω

SPECIAL
CABLES

RG. 58 C/U
RG. 141 A/U
RG. 142 B/U
RG. 223/U
RG. 303/U
RG. 400/U
URM 43
URM 72
URM 76
URM 108
URM 301

RG. 59 B/U
RG. 140/U
URM 70
URM 90
KX. 6A
KX. 25
KX. 52
KX. 53

RG. 62 A/U
RG. 71 B/U
URM 96
125 PMSA

RG. 165/U
RG. 213/U
RG. 215/U
URM 67

RG. 11 A/U
RG. 12 A/U
RG. 144/U
URM 57
RG. 63 B/U

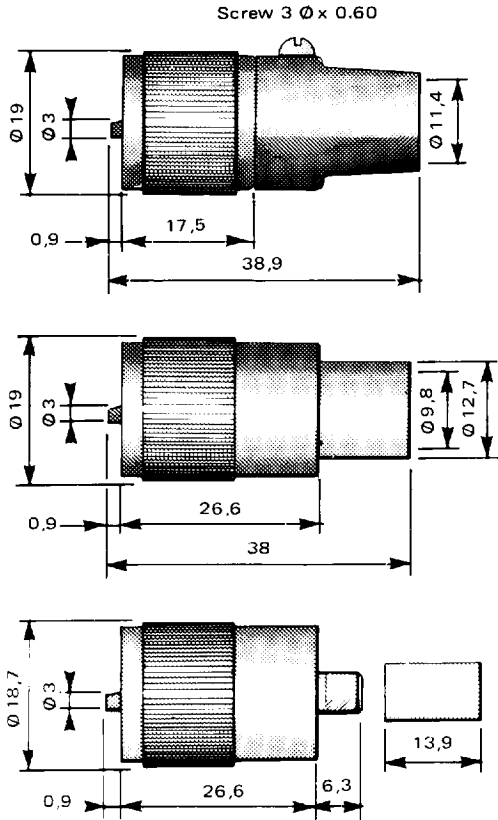
50 PPD
3.5 mm \emptyset

UHF series

T : PTFE
 B : Bakelite
 St : Styramic

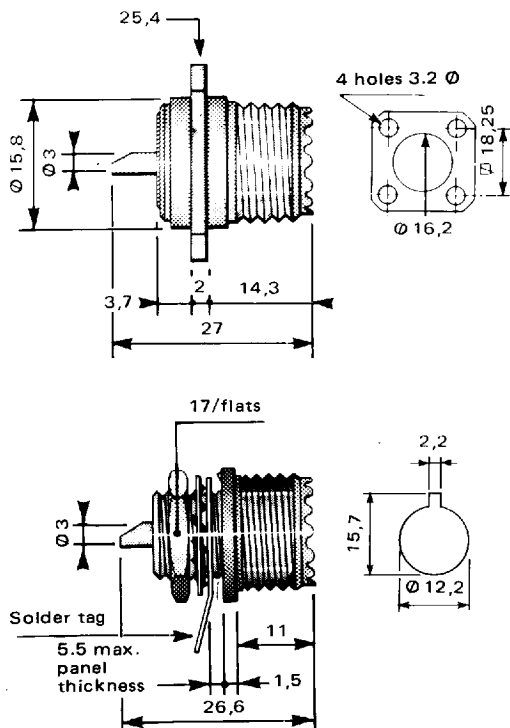
CODE No.	MIL REF.	T Y P E	ASSEMBLY CODE	CABLE GROUP Ø	INSULATOR	WEIGHT (g)
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STRAIGHT PLUGS



R 155 003	PL 259 A		M01	10/50 + 75 Ω	T	31
R 155 004	PL 259 B		M01	10/50 + 75 Ω	B	24
R 155 005	PL 259 T		M01	10/50 + 75 Ω	T	25
R 155 074		Crimp	M04	6/75Ω	T	24

RECEPTACLES



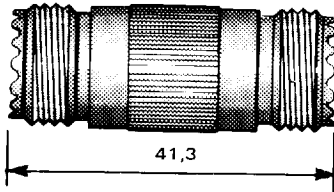
R 155 404	SO 239 B	Square flange - solder pot			B	22,5
R 155 405	SO 239 T	Square flange - solder pot			T	22
R 155 560		Bulkhead - solder pot			T	9,5

UHF series

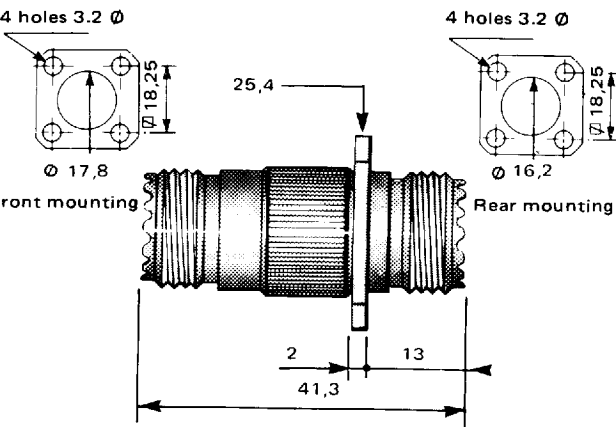
T : PTFE
 B : Bakelite
 St : Styramic

CODE No.	MIL REF.	TYPE	INSULATOR	WEIGHT (g)
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ADAPTORS

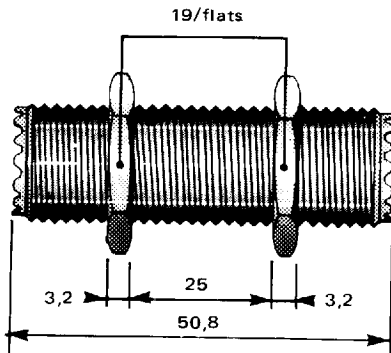


R 155 705	PL 258	Straight female - female	St.	34,5
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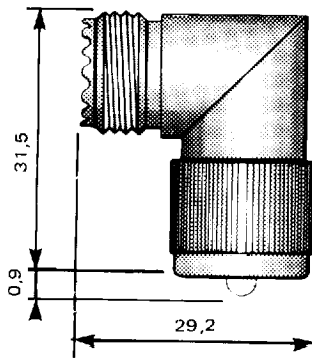
R 155 715		Flange female - female	St.	42
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Non standard (see note page 13)



R 155 725	UG 363/U PL 274	Bulkhead female - female	St.	46,5
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Non standard (see note page 13)



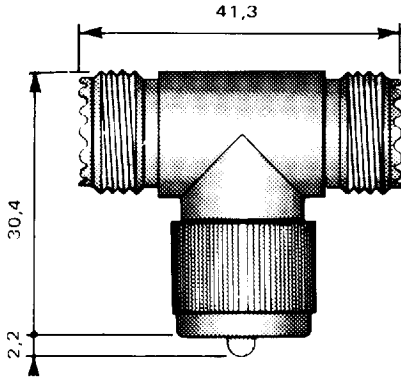
R 155 770	M 359	Elbow male - female	St.	38
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UHF series

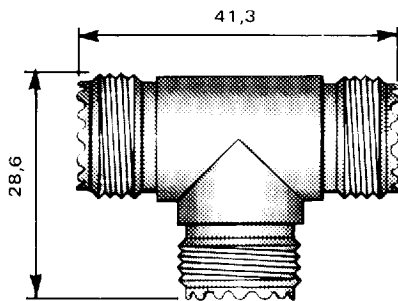
T : PTFE
 B : Bakelite
 St : Styramic

CODE No.	MIL REF.	T Y P E	INSULATOR	WEIGHT (g)
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ADAPTORS

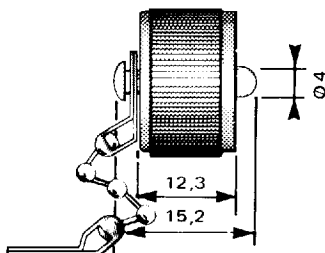


R 155 780	M 358	Tee female - female/male	St.	46,5
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R 155 782		Tee female - female/female	St.	41
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PROTECTION AND SHORT CIRCUIT CAPS



Chain length : 70 mm

R 155 862		Short circuit cap		16
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Non standard (see note page 13)

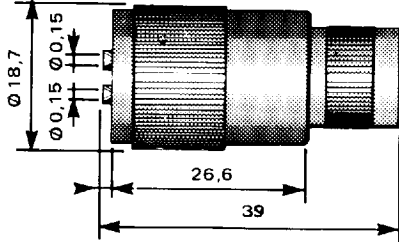
Also available : R 161 853 Protection cap and chain.

UHF 2 series

P : Polyethylene
V : Voltalef

CODE No.	TYPE	INSULATOR	WEIGHT (g)
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STRAIGHT PLUG



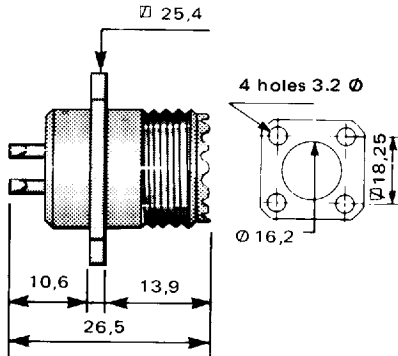
R 156 003

Cable : RG. 22 B/U

V 35

Non standard (see note page 13)

RECEPTACLE



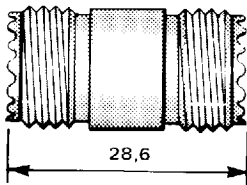
R 156 403

Square flange - solder pot

P 24

Non standard (see note page 13)

ADAPTORS

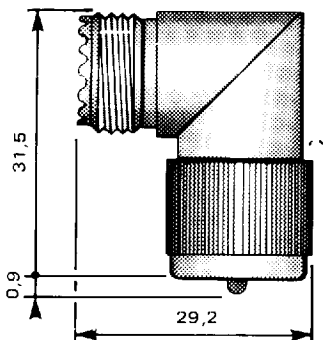


R 156 705

Straight female - female

P 30

Non standard (see note page 13)



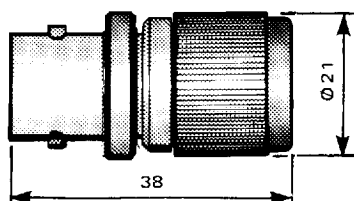
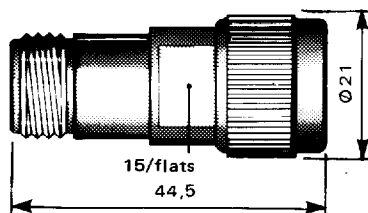
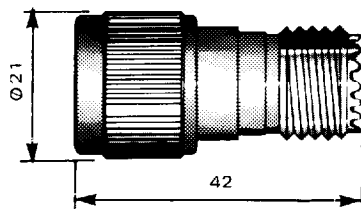
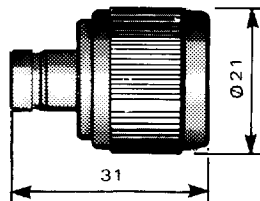
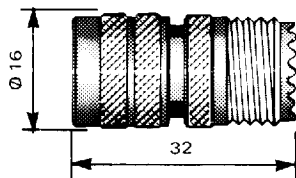
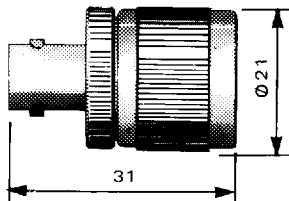
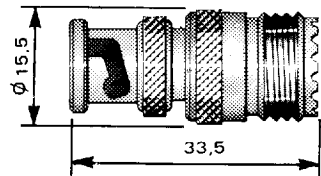
R 156 770

Elbow male - female

P 40

Non standard (see note page 13)

UHF inter series coaxial adaptors



CODE No.	UG. REF.	1ST INTERFACE	2ND INTERFACE	WEIGHT (g)
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R 191 445	225/U	BNC male	UHF female	23
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R 191 447	273/U	BNC female	UHF male	24
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R 191 630		mQ male	UHF female	30
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Non standard (see note page 13)

R 191 632		mQ female	UHF male	34
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R 191 731	146/U	N male	UHF female	41
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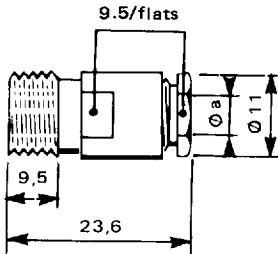
R 191 733	83 A/U	N female	UHF male	59
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R 191 921		C female	UHF male	55
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Non standard (see note page 13)

CODE No.	UG. REF.	T Y P E	CABLE GROUP Ω	ASSEMBLY CODE	MAX. ϕ_a	WEIGHT (g)
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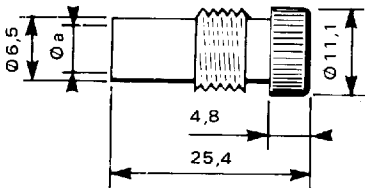
ACCESSORIES



R 280 004 Cable clamp 50 PPD M03 3,5 9

R 280 007 Cable clamp 5/50 Ω M03 5,6 8

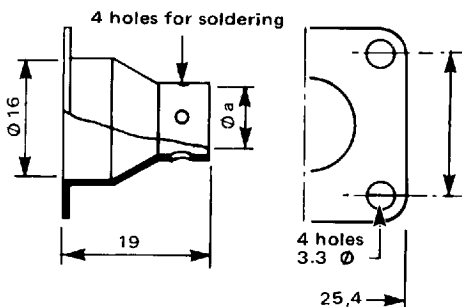
R 280 010 Cable clamp 6/75 Ω M03 6,4 7



R 280 205 Reducing adaptor 50 PPD M02 3,5 11

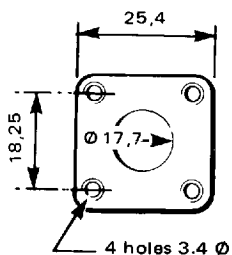
R 280 207 UG. 175/U Reducing adaptor 5/50 Ω M02 5,6 8,5

R 280 211 UG. 176/U Reducing adaptor 6/75 Ω
6/93 Ω M02 6,4 7



R 280 407 UG. 177/U Receptacle hood 3,8 5

R 280 417 UG. 106/U Receptacle hood 8,8 4,5



R 280 505 Flange gasket
1.5 mm thick
Neoprene rubber 0,8

connector to cable assembly

TOOLING

- 100 or 250 W Resistance soldering iron with soldering tweezers (alternatively 30 W soldering iron)
- Tin solder (Pb + Ag) 180°C, Ø 0.5
- Sharp knife.

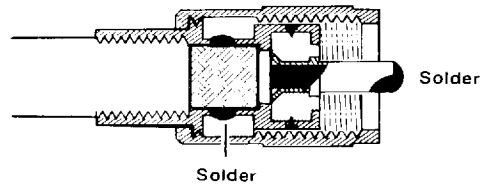
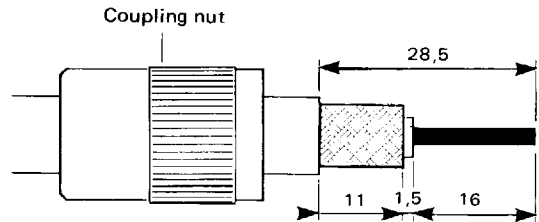
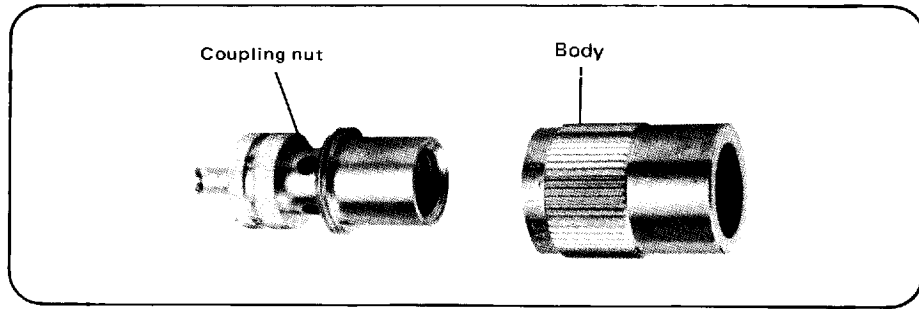
M01

50 Ω IMPEDANCE

R 155 003

R 155 004

R 155 005



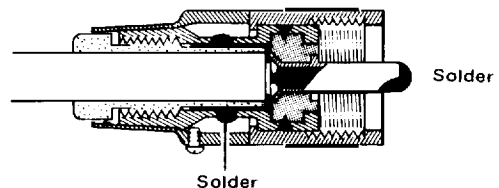
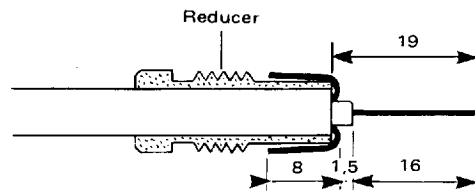
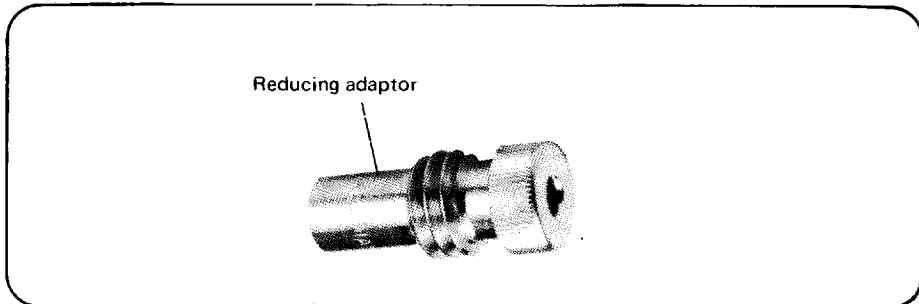
M02

IMPEDANCE

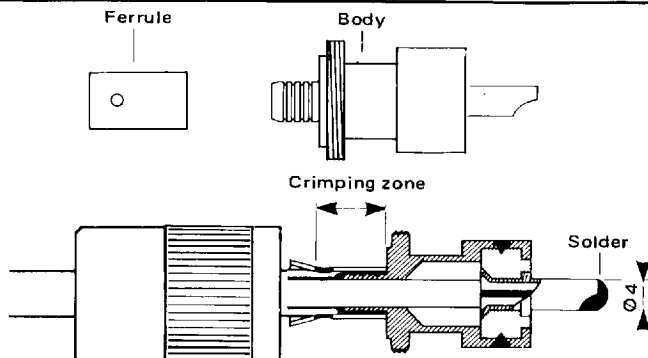
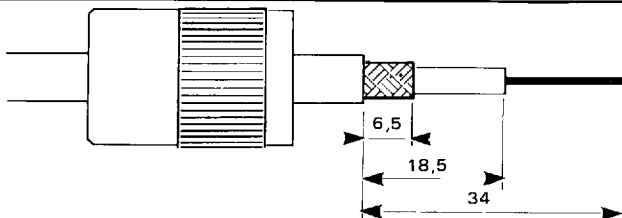
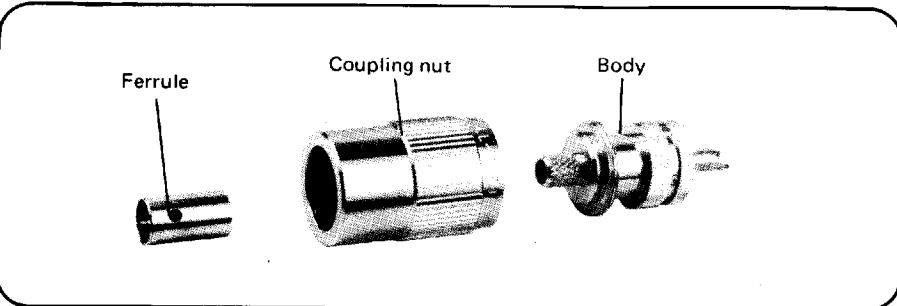
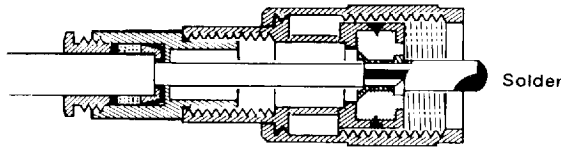
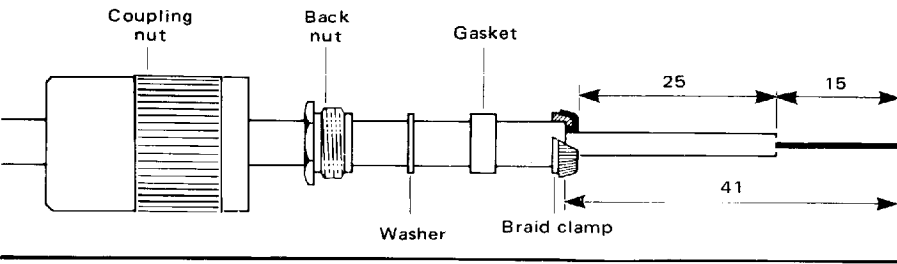
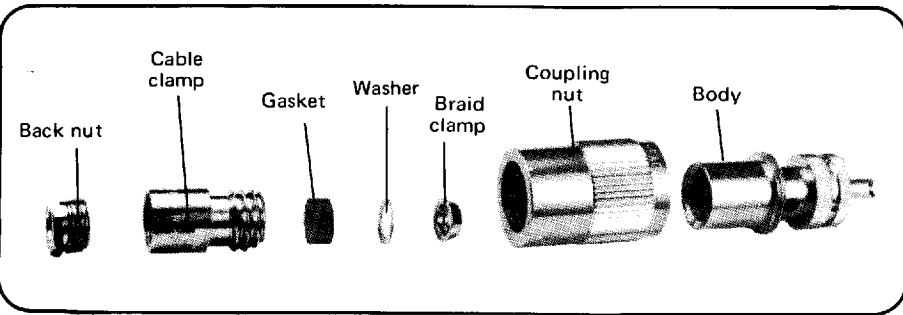
R 280 205

R 280 207

R 280 211



connector to cable assembly



TOOLING

- 100 or 250 W Resistance soldering iron with soldering tweezers (alternatively 30 W soldering iron)
- Tin solder (Pb + Ag) 180°C, Ø0.5
- Sharp knife.

M03

50 Ω IMPEDANCE

R 155 005	R 155 005
+	+
R 280 007	R 280 010
R 155 004	R 155 004
+	+
R 280 007	R 280 010

M04

50 Ω IMPEDANCE

R 155 074

TOOLING

- 100 or 250 W Resistance soldering iron with soldering tweezers (alternatively 30 W soldering iron)
- Tin solder (Pb + Ag) 180°C, Ø0.5
- Sharp knife.
- Radial crimp tool R 282 221