

# TNC Series - T5 (50 $\Omega$ ) / T7 (75 $\Omega$ )



## Features :

- Similar to BNC connector
- Threaded coupling interface
- Ideal in vibration-intensive applications
- 50 $\Omega$  and 75 $\Omega$ , connectors are available
- Delrin or Teflon insulator is optional
- Many cable choices available

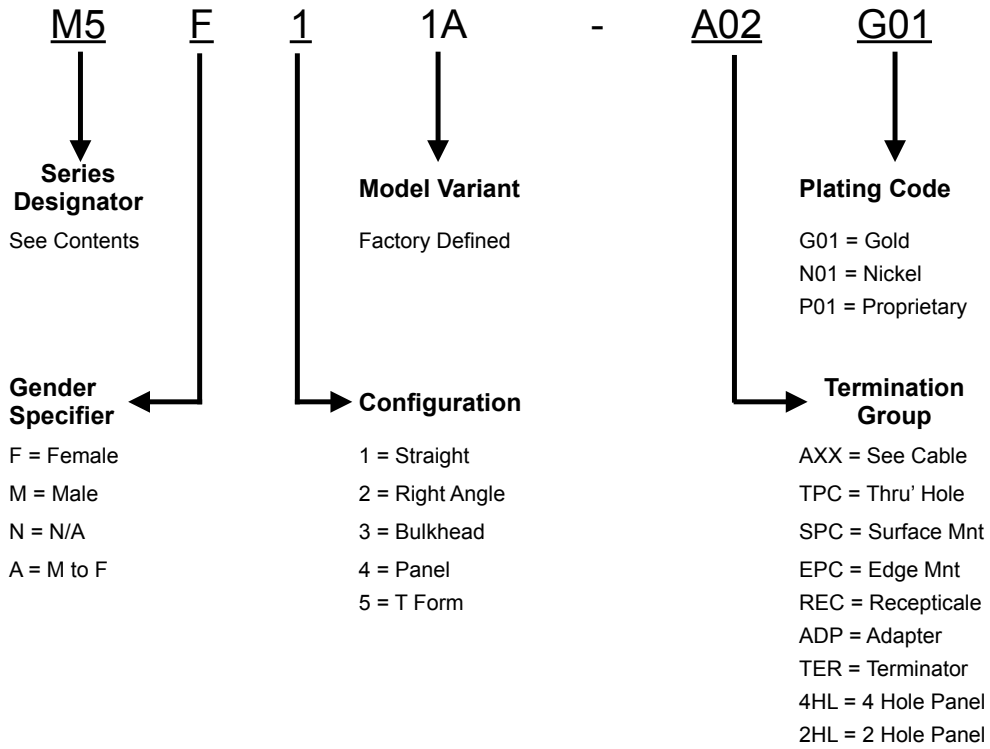
## Applications :

- Antennas
- Telecom Base Stations
- In-Building Networks
- Telecom
- RFID Tag Antenna
- Instrumentation





## PART NUMBER CONFIGURATION



## ELECTRICAL SPECIFICATIONS

<u>Impedance</u>	<u>50 <math>\Omega</math> / 75 <math>\Omega</math></u>
<u>Frequency Range</u>	<u>0 – 11 GHz / 0 – 3 GHz</u>
<u>Working Voltage</u>	<u><math>\geq</math> 500 VRMS</u>
<u>Dielectric Withstanding Voltage</u>	<u>1500 VRMS at sea level</u>
<u>VSWR</u>	<u>Straight : 1.15 max</u>
	<u>Right Angle : 1.2 max</u>
<u>Contact Resistance</u>	<u>Center Contact : <math>\leq</math> 1.5 m<math>\Omega</math></u>
	<u>Outer Contact : <math>\leq</math> 0.2 m<math>\Omega</math></u>
<u>Insulation Resistance</u>	<u>5,000 M<math>\Omega</math> min.</u>
<u>Insertion loss</u>	<u>0.2dB max.</u>

## MATERIAL SPECIFICATIONS

<u>Body and outer contacts</u>	<u>Brass, nickel plated</u>
<u>Male contact</u>	<u>Brass, gold plated</u>
<u>Female contact</u>	<u>Phosphor Bronze, gold plated</u>
<u>Insulator</u>	<u>Delrin or PTFE</u>
<u>Crimp ferrule</u>	<u>Copper or brass, nickel plated</u>

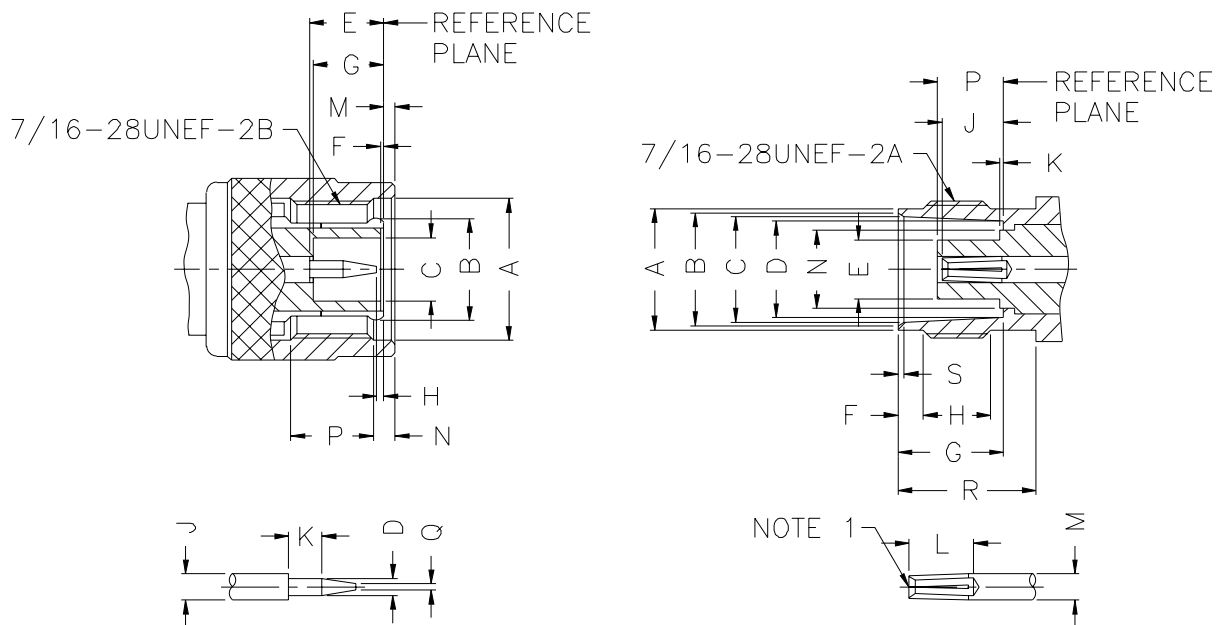
## MECHANICAL SPECIFICATIONS

<u>Coupling nut retention force</u>	<u>100 lbs</u>
<u>Center contact Retention</u>	<u><math>\geq</math> 6 lbs</u>
<u>Engagement force</u>	<u><math>\leq</math> 2 in-lbs</u>
<u>Disengagement force</u>	<u><math>\geq</math> 2 in-lbs</u>
<u>Cable retention</u>	<u>20 - 70 lbs</u>
<u>Durability (matings)</u>	<u>500 cycles min.</u>

## ENVIRONMENTAL

<u>Temperature Range</u>	<u>-65<math>^{\circ}</math>C to +165<math>^{\circ}</math>C</u>
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## INTERFACE MATING DIMENSIONS



PLUG		
Letter	Millimeters	
	Minimum	Maximum
A	11.18	-
B	Flared To Meet Good Electrical Contact	
C	4.83	-
D	1.32	1.37
E	5.33	5.84
F	0.15	0.46
G	5.28	5.79
H	0.08	1.02
J	2.06	2.21
K	1.98	-
M	-	1.98
N	1.60	-
P	3.96	-
Q	-	0.64

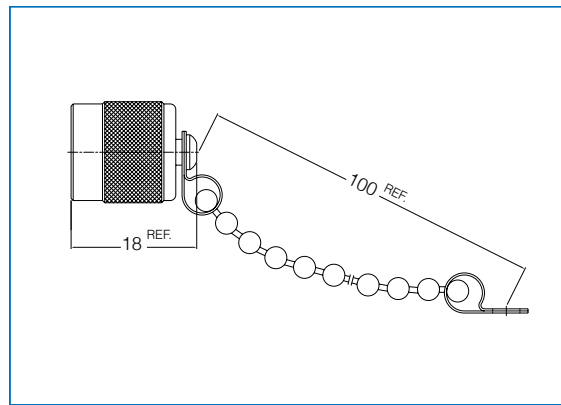
JACK		
Letter	Millimeters	
	Minimum	Maximum
A	9.60	9.70
B	8.79	9.04
C	8.31	8.46
D	8.10	8.15
E	-	4.72
F	1.73	2.24
G	8.31	8.51
H	4.75	-
J	4.72	5.23
K	-	0.15
L	4.95	-
M	2.06	2.21
N	-	6.50
P	4.78	5.28
R	10.52	-
S	0.38	0.76

**Note 1** : I.D. to meet VSWR and contact resistance when mated with 1.32/1.37 mm dia. pin.

**Male Cap with Chain**

T5M11A-TERN01

\* Chain Length : 100 mm



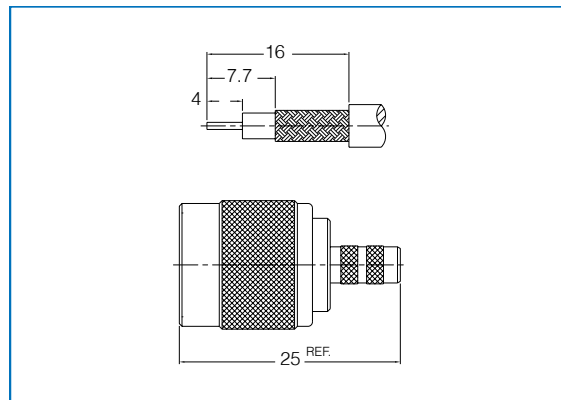
**Straight Plug, Crimp**

TYM11A-AXXN01

Cable group : 06, 07, 08, 09, 10, 11, 12,  
16, 22, 23, 26, 27

Impedance  $Y = 5 = 50 \text{ Ohm}$

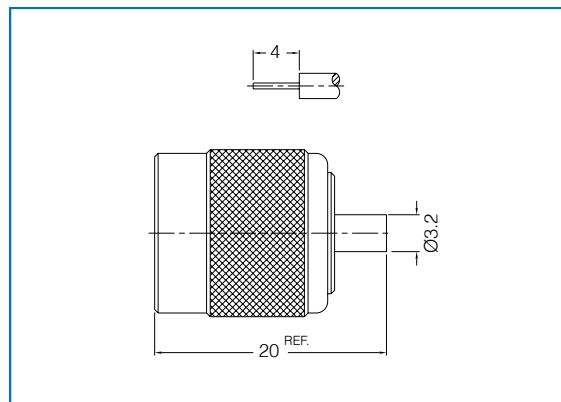
$Y = 7 = 75 \text{ Ohm}$



**Straight Plug, Solder**

T5M11B-AXXN01

Cable group : 28, 29, 33



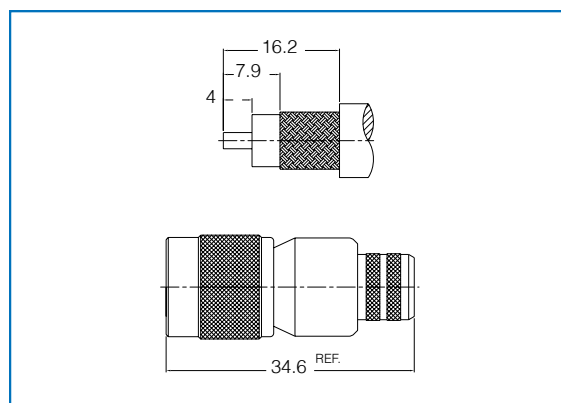
**Straight Plug, Crimp**

TYM11C-AXXN01

Cable group : 17, 18, 20

Impedance  $Y = 5 = 50 \text{ Ohm}$

$Y = 7 = 75 \text{ Ohm}$



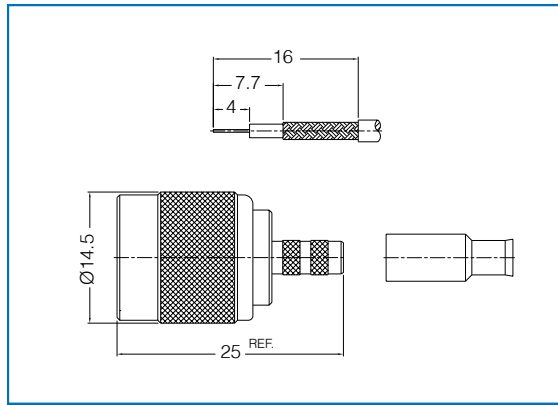
## Straight Plug, Crimp-with Delrin Sleeve

TYM11D-AXXN01

Cable group : [02](#), [03](#), [04](#), [05](#)

Impedance  $Y = 5 = 50 \text{ Ohm}$

$Y = 7 = 75 \text{ Ohm}$



Cable Groups

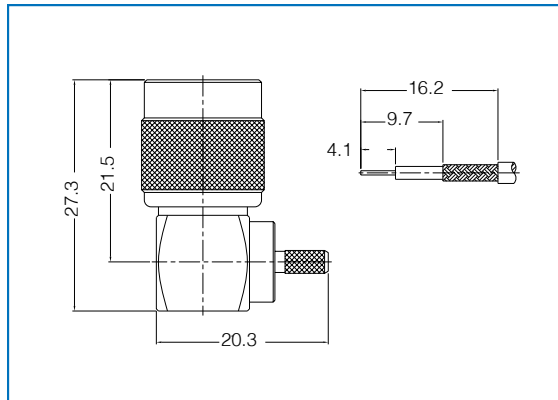
## Right Angle Plug, Crimp

TYM21A-AXXN01

Cable group : [02](#), [03](#), [04](#), [05](#), [06](#), [07](#), [08](#),  
[09](#), [10](#), [11](#), [12](#), [16](#), [22](#), [25](#), [26](#)

Impedance  $Y = 5 = 50 \text{ Ohm}$

$Y = 7 = 75 \text{ Ohm}$



- |  |                                |                                   |                            |                             |                            |
|--|--------------------------------|-----------------------------------|----------------------------|-----------------------------|----------------------------|
| A01 - 500 - RG-178, 196                  | A08 - 500 - LMR200             | A15 - 750 - RG-6                  | A22 - 750 - AT&T 734A      | A29 - 500 - 141SR, RG-402U  | A37 - 750 - FLEX 5         |
| A02 - 500 - RG-174, 188A, 316, LMR100    | A09 - 500 - RG-59U Plenum      | A16 - 500 - 8X, LMR240            | A23 - 750 - AT&T 735A      | A30 - 500 - 1.13mm OD micro | A38 - 500 - 3D-2V          |
| A03 - 750 - RG-179, 187                  | A10 - 750 - RG-59, 62          | A17 - 500 - LMR400, Belden 9913   | A24 - 500 - LMR800         | A31 - 500 - 1.32mm OD micro | A39 - 500 - 5D-2V          |
| A04 - 500 - RD-316U                      | A11 - 750 - Belden 1505A       | A18 - 500 - RG-8, 9A, 9, 213, 214 | A25 - 750 - Belden 1695A   | A32 - 500 - 1.37mm OD micro | A40 - 500 - 8D-2V          |
| A05 - 750 - RD-179U                      | A12 - 750 - Belden 8281        | A19 - 750 - RG6U, Quad            | A26 - 750 - Belden 8218    | A33 - 500 - 047SR cable     | A41 - 500 - 5D-FB, LMR300  |
| A06 - 500 - RG-58, 58A, 58C, 141, LMR195 | A13 - 750 - RG-59U Quad Shield | A20 - 750 - RG-11                 | A27 - 750 - BT-3002        | A34 - 750 - FLEX 2          | A42 - 500 - 1/4" Superflex |
| A07 - 500 - RG-55, 142, 223, 400         | A14 - 750 - RG-59U Plenum      | A21 - 750 - Belden 1694A          | A28 - 500 - 0885R, RG-405U | A35 - 750 - FLEX 3          | A43 - 500 - 1/2" Superflex |

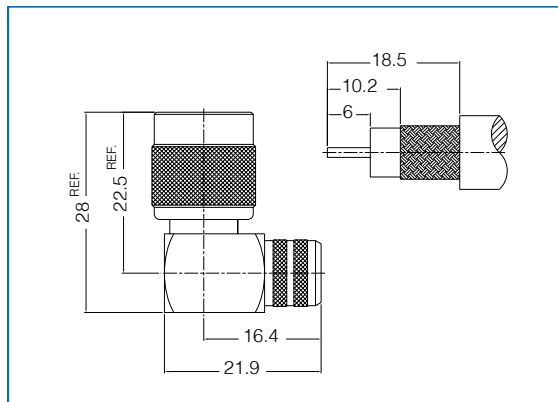
## Right Angle Plug, Crimp

TYM21C-AXXN01

Cable group : [17](#), [18](#), [20](#)

Impedance  $Y = 5 = 50 \text{ Ohm}$

$Y = 7 = 75 \text{ Ohm}$



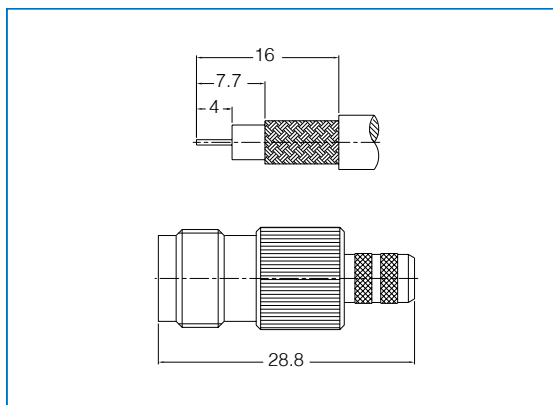
**Straight Jack, Crimp**

TYF11A-AXXN01

Cable group : 06, 07, 08, 09, 10, 11, 12, 16, 22, 23, 26, 27

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



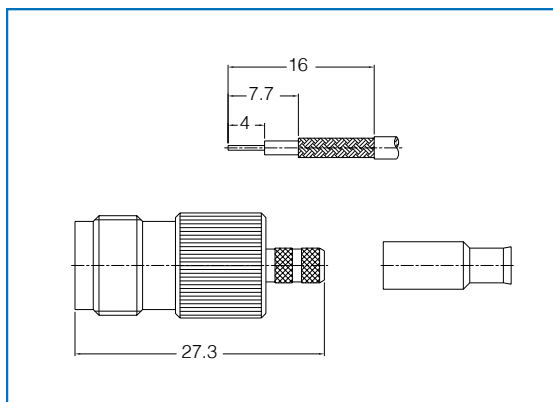
**Straight Jack, Crimp with Delrin Sleeve**

TYF11D-AXXN01

Cable group : 02, 03, 04, 05

Impedance Y = 5 = 50 Ohm

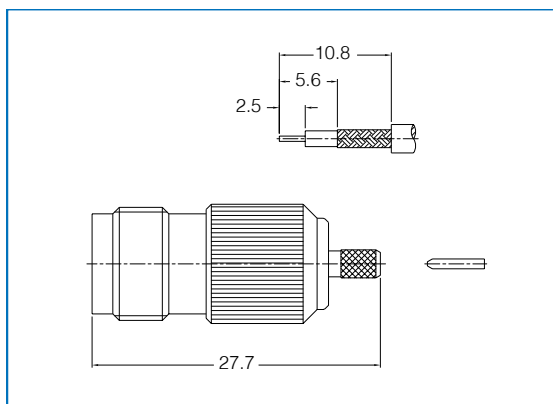
Y = 7 = 75 Ohm



**Straight Jack, Crimp-Pin in Pin**

T5F11B-AXXN01

Cable group : 01, 02, 03, 04, 05



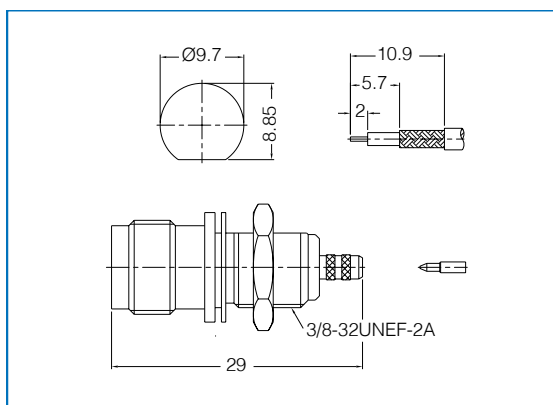
**Bulkhead Jack, Crimp-Front Mount**

TYF31A-AXXN01

Cable group : 02, 03, 04, 05

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm





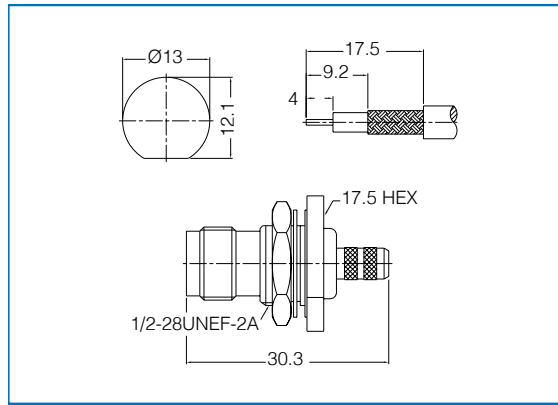
## Bulkhead Jack, Crimp

TYF31C-AXXN01

Cable group : [06](#), [07](#), [08](#), [09](#), [10](#), [11](#), [12](#),  
[16](#), [22](#), [23](#), [26](#), [27](#)

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



### Cable Groups

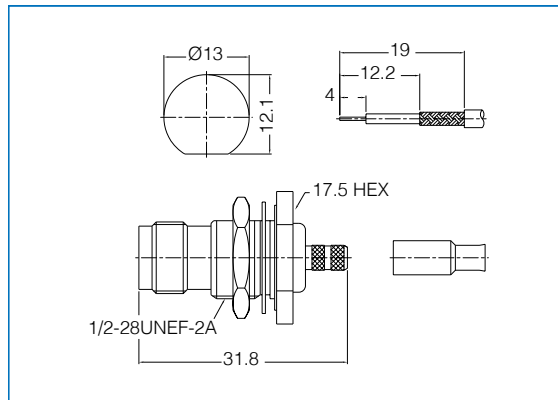
## Bulkhead Jack, Crimp with Delrin Sleeve

TYF31D-AXXN01

Cable group : [02](#), [03](#), [04](#), [05](#)

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm

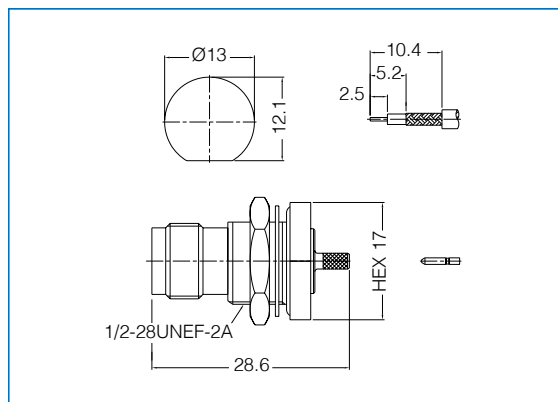


A01 - 500 - RG-178, 198	A08 - 500 - LMR200	A15 - 750 - RG-6	A22 - 750 - AT&T 734A	A29 - 500 - 141SR, RG-402U	A37 - 750 - FLEX 5
A02 - 500 - RG-174, 188A, 316, LMR100	A09 - 500 - RG-59U Plenum	A16 - 500 - 8X, LMR240	A23 - 750 - AT&T 735A	A30 - 500 - 1.13mm OD micro	A38 - 500 - 3D-2V
A03 - 750 - RG-179, 187	A10 - 750 - RG-59, 62	A17 - 500 - LMR400, Belden 9913	A24 - 500 - LMR800	A31 - 500 - 1.32mm OD micro	A39 - 500 - 5D-2V
A04 - 500 - RD-316U	A11 - 750 - Belden 1505A	A18 - 500 - RG-8, 9A, 9, 213, 214	A25 - 750 - Belden 1695A	A32 - 500 - 1.37mm OD micro	A40 - 500 - 8D-2V
A05 - 750 - RD-179U	A12 - 750 - Belden 8281	A19 - 750 - RG6U, Quad	A26 - 750 - Belden 8218	A33 - 500 - 047SR cable	A41 - 500 - 5D-FB, LMR300
A06 - 500 - RG-58, 58A, 58C, 141, LMR195	A13 - 750 - RG-59U Quad Shield	A20 - 750 - BT-3002	A27 - 750 - BT-3002	A34 - 750 - FLEX 2	A42 - 500 - 1/4" Superflex
A07 - 500 - RG-55, 142, 223, 400	A14 - 750 - RG-59U Plenum	A21 - 750 - Belden 1694A	A28 - 500 - 0885, 0885RF, RG-405U	A35 - 750 - FLEX 3	A43 - 500 - 1/2" Superflex

## Bulkhead Jack, Crimp-Pin in Pin

T5F31B-AXXN01

Cable group : [01](#), [02](#), [03](#), [04](#), [05](#)



**Twist-on Plug**

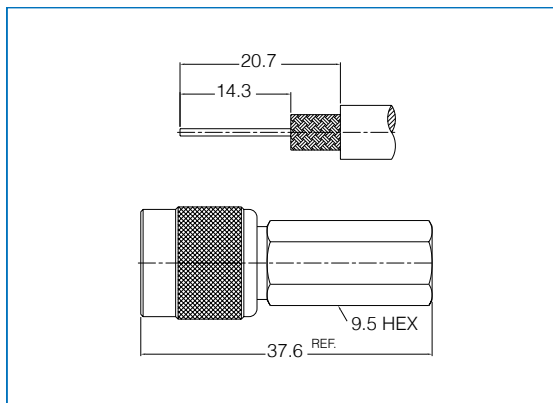
TYM12A-AXXN01

Cable group : 06, 10

\* Solid Center Conductor Only

Impedance    Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



**Twist-on Jack**

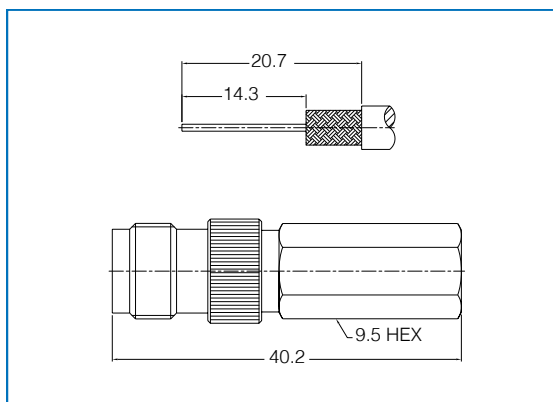
TYF13A-AXXN01

Cable group : 06, 10

\* Solid Center Conductor Only

Impedance    Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



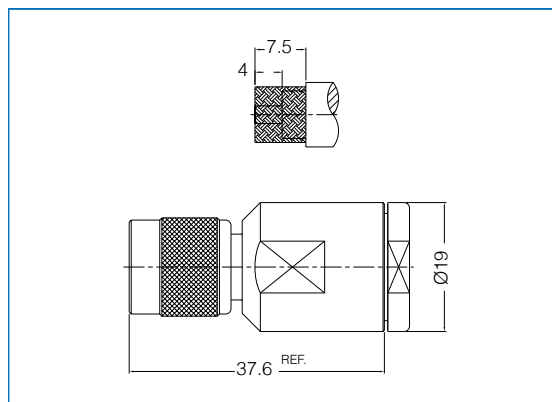
**Straight Plug, Clamp**

TYM14A-AXXN01

Cable group : 17, 18, 20

Impedance    Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



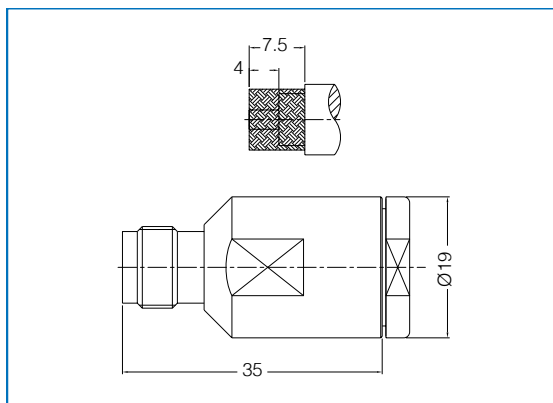
**Straight Jack, Clamp**

TYF14A-AXXN01

Cable group : 17, 18, 20

Impedance    Y = 5 = 50 Ohm

Y = 7 = 75 Ohm

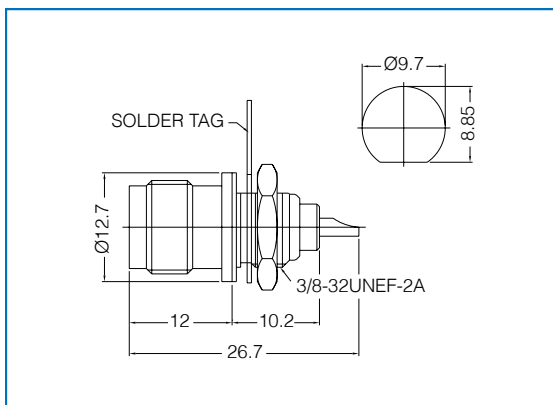


## Bulkhead Jack, Receptacle

TYF31A-RECNO1

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



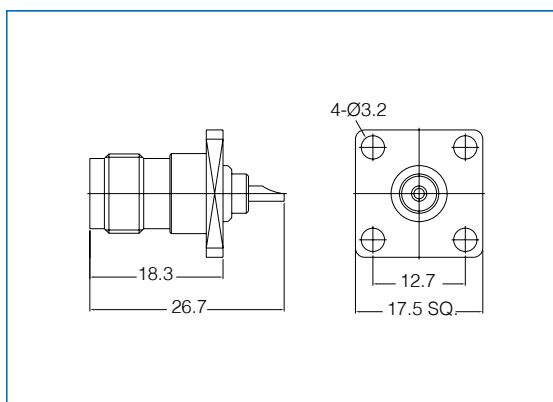
### Cable Groups

## Panel Jack, Receptacle 4 Hole Flange

TYF41A-4HNL01

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



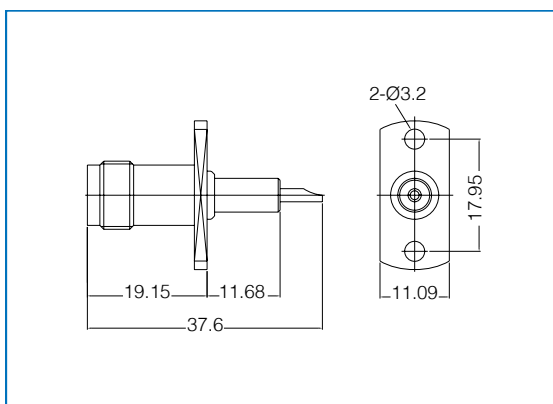
A01 - 500 - RG-178, 196  
 A02 - 500 - RG-174, 188A, 316, LMR100  
 A03 - 750 - RG-179, 187  
 A04 - 500 - RD-316U  
 A05 - 750 - RD-179U  
 A06 - 500 - RG-58, 58A, 58C, 141, LMR195  
 A07 - 500 - RG-55, 142, 223, 400  
 A08 - 500 - LMR200  
 A09 - 500 - RG-59U Plenum  
 A10 - 750 - RG-59, 62  
 A11 - 750 - Belden 1505A  
 A12 - 750 - Belden 8281  
 A13 - 750 - RG-59U Quad Shield  
 A14 - 750 - RG-59U Plenum

## Panel Jack, Receptacle 2 Hole Flange

TYF11A-2HNL01

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



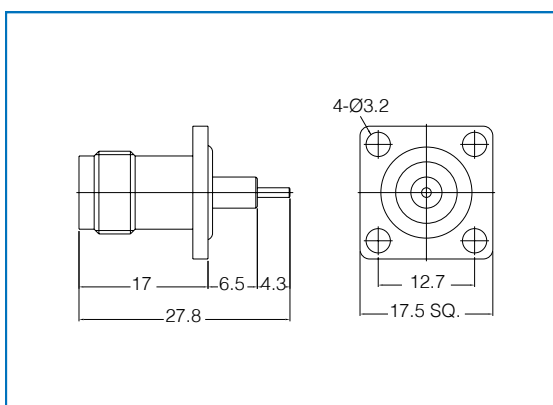
A15 - 750 - RG-6  
 A16 - 500 - 8X, LMR240  
 A17 - 500 - LMR400, Belden 9913  
 A18 - 500 - RG-8, 8A, 9, 213, 214  
 A19 - 750 - RG6U, Quad  
 A20 - 750 - RG-11  
 A21 - 750 - Belden 1694A  
 A22 - 750 - AT&T 734A  
 A23 - 750 - AT&T 735A  
 A24 - 500 - LMR800  
 A25 - 750 - Belden 1695A  
 A26 - 750 - Belden 8218  
 A27 - 750 - BT-3002  
 A28 - 500 - 0885R, RG-405U

## Panel Jack, with O-ring 4 Hole Flange

TYF42A-4HNL01

Impedance Y = 5 = 50 Ohm

Y = 7 = 75 Ohm

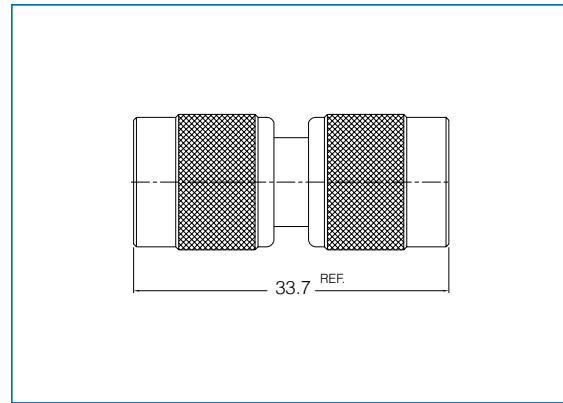


A29 - 500 - 141SR, RG-402U  
 A30 - 500 - 1.13mm OD micro  
 A31 - 500 - 1.32mm OD micro  
 A32 - 500 - 1.37mm OD micro  
 A33 - 500 - 047SR cable  
 A34 - 750 - FLEX 2  
 A35 - 750 - FLEX 3  
 A37 - 750 - FLEX 5  
 A38 - 500 - 30-2V  
 A39 - 500 - 50-2V  
 A40 - 500 - 80-2V  
 A41 - 500 - 50-FB, LMR300  
 A42 - 500 - 1/4" Superflex  
 A43 - 500 - 1/2" Superflex

**Adapter, Plug to Plug**

TYM11A-ADPN01

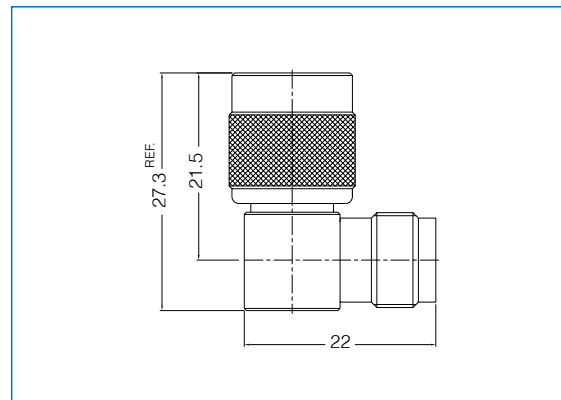
Impedance  $\underline{Y = 5 = 50 \text{ Ohm}}$   
 $\underline{Y = 7 = 75 \text{ Ohm}}$



**Right Angle Adapter, Plug to Jack**

TYA21A-ADPN01

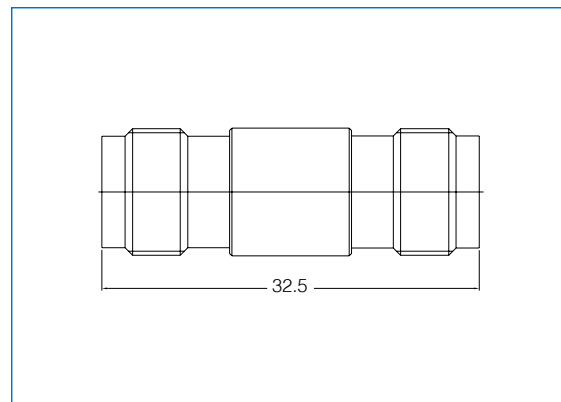
Impedance  $\underline{Y = 5 = 50 \text{ Ohm}}$   
 $\underline{Y = 7 = 75 \text{ Ohm}}$



**Adapter, Jack to Jack**

TYF11A-ADPN01

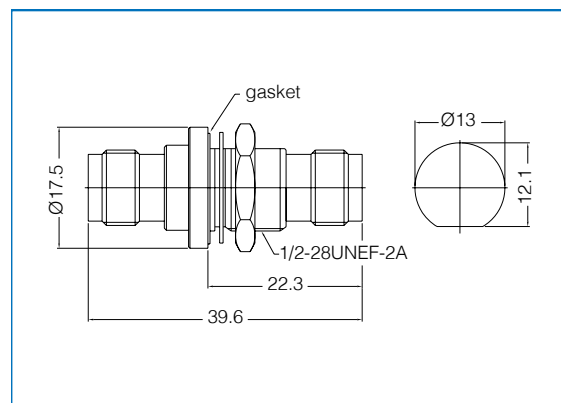
Impedance  $\underline{Y = 5 = 50 \text{ Ohm}}$   
 $\underline{Y = 7 = 75 \text{ Ohm}}$



**Bulkhead Adapter, Jack to Jack**

TYF31A-ADPN01

Impedance  $\underline{Y = 5 = 50 \text{ Ohm}}$   
 $\underline{Y = 7 = 75 \text{ Ohm}}$

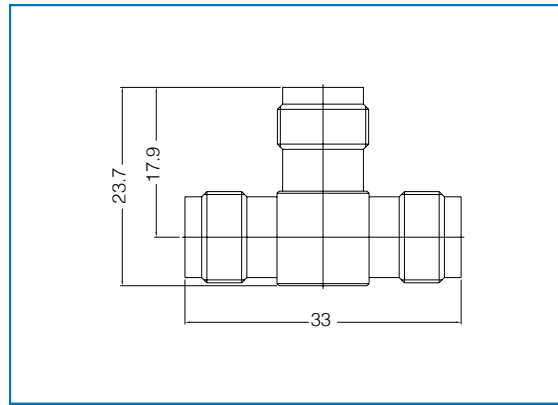


**“T” Adapter,  
Jack to Jack to Jack**

TYF51A-ADPN01

Impedance    Y = 5 = 50 Ohm

Y = 7 = 75 Ohm

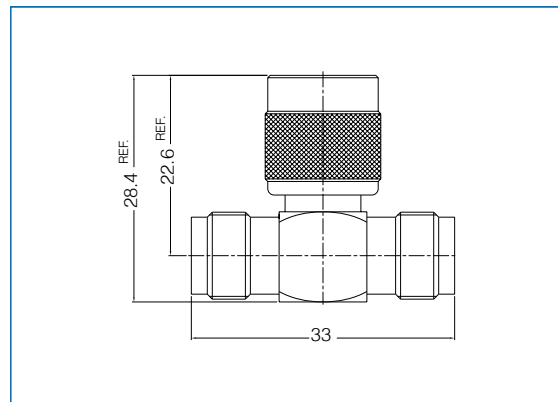


**“T” Adapter,  
Jack to Plug to Jack**

TYA51A-ADPN01

Impedance    Y = 5 = 50 Ohm

Y = 7 = 75 Ohm



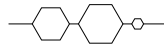




## Application Chart of Crimping Dies

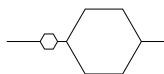


### Die Set No. 1317



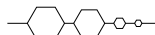
**Hex Sizes :** .213 / .255 / .068  
**Ferrule O.D. :** 7.5mm / 6.5mm  
**Contact O.D. :** 2.1mm  
**Cable Group :** RG-58, 59, 62, 223, LMR-195, LMR-200, LMR-240  
**For :** BNC, TNC, N, Mini-UHF

### Die Set No. 1319



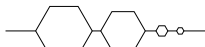
**Hex Sizes :** .10 / .429  
**Ferrule O.D. :** 12.4mm  
**Contact O.D. :** 3.0mm  
**Cable Group :** RG-8, 11, 213, 214  
**For :** N

### Die Set No. 1346



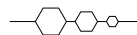
**FHex Sizes :** .213 / .178 / .068 / .042  
**ferrule O.D. :** 6.5mm / 5.3mm  
**Contact O.D. :** 2.1mm / 1.35mm  
**Cable Group :** RG-58, 174, Belden-1855A, Belden-8218, AT&T 735A, BT-3002  
**For :** BNC, True 75Ω BNC, TNC, N, SMA

### Die Set No. 1347



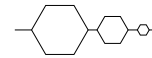
**Hex Sizes :** .324 / .255 / .068 / .042  
**Ferrule O.D. :** 9.5mm / 7.5mm  
**Contact O.D. :** 2.1mm / 1.35mm  
**Cable Group :** RG-6, 59, Belden-8241, Belden-8281, AT&T 734A, LMR-240  
**For :** BNC, True 75Ω BNC, TNC, N, SMA

### Die Set No. 1351



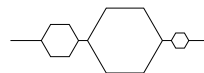
**Hex Sizes :** .178 / .128 / .068  
**Ferrule O.D. :** 5.3mm / 3.9mm  
**Contact O.D. :** 2.1mm  
**Cable Group :** RG-174, 188, 196, 316, 179, LMR-100  
**For :** BNC, TNC, SMA, SMB, SMC, MCX, MMCX

### Die Set No. 1352



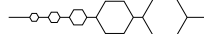
**Hex Sizes :** .324 / .178 / .068  
**Ferrule O.D. :** 9.5mm / 5.3mm  
**Contact O.D. :** 2.1mm  
**Cable Group :** RG-174, 179, 316, LMR-100, Belden-8281, RG-6, LMR-300  
**For :** BNC, TNC, N, SMA, SMB, SMC

### Die Set No. 1353



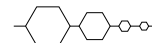
**Hex Sizes :** .213 / .429 / .10  
**Ferrule O.D. :** 6.5mm / 12.4mm  
**Contact O.D. :** 3.0mm  
**Cable Group :** RG-58, 8, 223, LMR-195, LMR-200  
**For :** N

### Die Set No. 1355



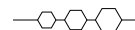
**Hex Sizes :** .052 / .068 / .10 / .213 / .255  
**Ferrule O.D. :** 7.5mm / 6.5mm  
**Contact O.D. :** 3.0mm / 2.1mm / 1.5mm  
**Cable Group :** RG-58, 59, 62, 223, LMR-195  
**For :** BNC, TNC, SMA, SMB, SMC, Mini-UHF, N

### Die Set No. 1376



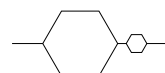
**Hex Sizes :** .255 / .178 / .068 / .052  
**Ferrule O.D. :** 7.5mm / 5.3mm  
**Contact O.D. :** 2.1mm / 1.5mm  
**Cable Group :** RG-59, 62, 223, 174, 179, 316, LMR-100  
**For :** BNC, TNC, N, SMA, SMB, SMC

### Die Set No. 1377



**Hex Sizes :** .105 / .128 / .151  
**Ferrule O.D. :** 4.4mm / 3.9mm  
**Contact O.D. :** 3.0mm  
**Cable Group :** RG-178, 316, 179, RD-179, RD-316, LMR-100  
**For :** SMA, SMB, SMC, MCX, MMCX

### Die Set No. 1380



**Hex Sizes :** .429 / .118  
**Ferrule O.D. :** 12.4mm  
**Contact O.D. :** 3.5mm  
**Cable Group :** Belden-9913, LMR-400  
**For :** BNC, TNC, N

**Reflection → Conversion Table**

VSWR	Rf	RL (dB)
1.010	0.005	46.06
1.020	0.0099	40.09
1.030	0.0148	36.61
1.040	0.0196	34.15
1.050	0.0244	32.26
1.060	0.0291	30.71
1.070	0.0338	29.42
1.080	0.0385	28.30
1.090	0.0431	27.32
1.100	0.0476	26.44
1.110	0.0521	25.66
1.120	0.0566	24.94
1.130	0.061	24.29
1.140	0.0654	23.69
1.150	0.0698	23.13
1.160	0.0741	22.61
1.170	0.0783	22.12
1.180	0.0826	21.66
1.190	0.0868	21.23
1.200	0.0909	20.83
1.210	0.095	20.44
1.220	0.0991	20.08
1.230	0.1031	19.73
1.240	0.1071	19.40
1.250	0.1111	19.08
1.260	0.115	18.78
1.270	0.1189	18.49
1.280	0.1228	18.22
1.290	0.1266	17.95
1.300	0.1304	17.69
1.310	0.1342	17.45
1.320	0.1379	17.21
1.330	0.1416	16.98
1.340	0.1453	16.75
1.350	0.1489	16.54
1.360	0.1525	16.33
1.370	0.1561	16.13
1.380	0.1597	15.94
1.390	0.1632	15.75

RL (dB)	Rf	VSWR
50.00	0.0032	1.006
49.00	0.0035	1.007
48.00	0.004	1.008
47.00	0.0045	1.009
46.00	0.005	1.010
45.00	0.0056	1.011
44.00	0.0063	1.013
43.00	0.0071	1.014
42.00	0.0079	1.016
41.00	0.0089	1.018
40.00	0.01	1.020
39.00	0.0112	1.023
38.00	0.0126	1.025
37.00	0.0141	1.029
36.00	0.0158	1.032
35.00	0.0178	1.036
34.00	0.02	1.041
33.00	0.0224	1.046
32.00	0.0251	1.052
31.00	0.0282	1.058
30.00	0.0316	1.065
29.00	0.0355	1.074
28.00	0.0398	1.083
27.00	0.0447	1.094
26.00	0.0501	1.106
25.00	0.0562	1.119
24.00	0.0631	1.135
23.00	0.0708	1.152
22.00	0.0794	1.173
21.00	0.0891	1.196
20.00	0.1	1.222
19.00	0.1122	1.253
18.00	0.1259	1.288
17.00	0.1413	1.329
16.00	0.1585	1.377
15.00	0.1778	1.433
14.00	0.1995	1.499
13.00	0.2239	1.577
12.00	0.2512	1.671

Rf	RL (dB)	VSWR
0.005	46.02	1.010
0.010	40.00	1.020
0.015	36.48	1.030
0.020	33.98	1.041
0.025	32.04	1.051
0.030	30.46	1.062
0.035	29.12	1.073
0.040	27.96	1.083
0.045	26.94	1.094
0.050	26.02	1.105
0.055	25.19	1.116
0.060	24.44	1.128
0.065	23.74	1.139
0.070	23.10	1.151
0.075	22.50	1.162
0.080	21.94	1.174
0.085	21.41	1.186
0.090	20.92	1.198
0.095	20.45	1.210
0.100	20.00	1.222
0.105	19.58	1.235
0.110	19.17	1.247
0.115	18.79	1.260
0.120	18.42	1.273
0.125	18.06	1.286
0.130	17.72	1.299
0.135	17.39	1.312
0.140	17.08	1.326
0.145	16.77	1.339
0.150	16.48	1.353
0.155	16.19	1.367
0.160	15.92	1.381
0.165	15.65	1.395
0.170	15.39	1.410
0.175	15.14	1.424
0.180	14.88	1.439
0.185	14.66	1.454
0.190	14.42	1.469
0.195	14.20	1.484

VSWR = Voltage Standing Wave Ratio    Rf = Reflection Coefficient    RL = Return Loss