

# Dimension Tables

## CMM 100/200 SERIES in male & female styles for LF contacts

CMM SERIES 100 & 200 Male	LF contacts number series 100	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	LF contacts number series 200	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	Length in mm	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
	Length in mm (Strap)	B	6,7	8,7	10,7	12,7	14,7	16,7	18,7	20,7	22,7	24,7	26,7	28,7	30,7	32,7	34,7	36,7	38,7	40,7	42,7	44,7	46,7	48,7	50,7	52,7
	Length in mm	C	7,4	9,4	11,4	13,4	15,4	17,4	19,4	21,4	23,4	25,4	27,4	29,4	31,4	33,4	35,4	37,4	39,4	41,4	43,4	45,4	47,4	49,4	51,4	53,4
Length C with Latches fitted			7,8	9,8	11,8	13,8	15,8	17,8	19,8	21,8	23,8	25,8	27,8	29,8	31,8	33,8	35,8	37,8	39,8	41,8	43,8	45,8	47,8	49,8	51,8	53,8

CMM SERIES 100 & 200 Female	LF contacts number series 100	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
	LF contacts number series 200	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	
	Length in mm	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
	Length in mm	B	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53

LF CONTACTS REFERENCE MARK NUMBER FOR CMM SERIES 200 Male & Female	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50

## CMM 220 SERIES in male & female styles for LF contacts

CMM SERIES 220 Male & Female	LF contacts number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	
	Distance between axis	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58
		B	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
	Length in mm	C	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
	LF contacts reference mark number	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
F		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
G		4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	

## CMM 220 SERIES in male & female styles for HF/HP contacts

CMM 220 Male & Female Special contacts only	Special contacts number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Distance between axis	A	4	8	12	16	20	24	28	32	36	40	44	48	52	56
		B	13	17	21	25	29	33	37	41	45	49	53	57	61	65
Length in mm	C	18	22	26	30	34	38	42	46	50	54	58	62	66	70	

## CMM 320 SERIES in male & female styles for LF contacts

CMM SERIES 320 Male & Female	LF contacts number	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120			
	Distance between axis	A	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78		
		B	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87		
	Length in mm	C	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81	83	85	87	89	91	93		
	LF contacts reference mark number	D	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		E	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
		F	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
		G	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80		
H		5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	77	79	81			
J	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120				

## CMM 340 SERIES in male & female styles for HF/HP contacts

CMM 340 Male & Female Special contacts only	Special contacts number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	
	Distance between axis	A	2,5	5	7,5	10	12,5	15	17,5	20	22,5	25	27,5	30	32,5	35	37,5	40	42,5	45	47,5	50	52,5	55	57,5	60	62,5	65	67,5	70	72,5	75	77,5
		B	12,5	15	17,5	20	22,5	25	27,5	30	32,5	35	37,5	40	42,5	45	47,5	50	52,5	55	57,5	60	62,5	65	67,5	70	72,5	75	77,5	80	82,5	85	87,5
Length in mm	C	18,5	21	23,5	26	28,5	31	33,5	36	38,5	41	43,5	46	48,5	51	53,5	56	58,5	61	63,5	66	68,5	71	73,5	76	78,5	81	83,5	86	88,5	91	93,5	

# CMM Specifications (with LF contacts)

## MATERIALS

INSULATOR: Special PPS (Polyphenylene Sulfide Fiberglass filled thermoplastic) UL 94-V0

- Radiation resistance
- No humidity absorption
- Oxygen free

Note : PPS characteristics are recognized for space applications

### P.C. LF CONTACTS :

#### Male:

Tail : copper alloy / Ni + Au flash 0,1 $\mu$   
Contact area : copper alloy / Ni + Au > 1 $\mu$

#### Female:

Body : copper alloy / Ni + Au 0,2  $\mu$   
Socket : beryllium copper / Ni + Au > 1,25 $\mu$

### CRIMP LF CONTACTS :

#### Male:

Body : copper alloy / Ni + Au > 1 $\mu$

#### Female:

Body : copper alloy / Ni + Au > 0,2  $\mu$   
Socket : beryllium copper / Ni + Au > 1,25 $\mu$

### FIXING HARDWARE:

- Jackscrew: Stainless steel.
- Latch : Beryllium copper/plated nickel (CMM 100/200 series only)

## ELECTRICAL

- |                                  |                                      |
|----------------------------------|--------------------------------------|
| • All contacts                   | 3 A max. @ 25°C<br>2.2 A max. @ 85°C |
| • Working voltage (sea level)    | Tested at 800 V DC                   |
| • Proof voltage                  | Tested at 1 200 V DC                 |
| • Contact resistance (initially) | max. 10 m $\Omega$                   |
| • Insulation resistance          | 1 000 M $\Omega$ min.                |

## MECHANICAL

- |  |                                   |
|--|-----------------------------------|
| • Mechanical operations                  | Up to 2500 cycles                 |
| • Contact insertion and withdrawal force | 2 N max. / 0.2 N min. per contact |
| • Contact retention in insulator         | 10 N min.                         |
| • Contact replacement in insulator       | 3 cycles (Crimp contacts only)    |

## ENVIRONMENTAL

- |                      |   |
|----------------------|---|
| • Temperature range  | From - 60°C to + 260°C<br><b>Reflow solder process compatible (+260°C)</b>  |
| • Vibration severity | 0.75 mm, 10 g RMS 6 hours long random with superimposed sinusoid. No intermittencies measured when using an H.S.L.I (High Speed Logic Interrupt) detector with a trip threshold of 2 ns.<br>MIL-DTL-55302F Test Condition III [147.1 m/s <sup>2</sup> (15 gn) peak] |
| • Shock severity     | 100 g for 6 ms  |
| • Solvent resistance | HcFc 141 bMGX (ATOCHEM) solvent   |

### Note :

The CMM micro-connectors are designed to meet or exceed the relevant electrical and environmental performances described in MIL-DTL-55302F & BS-9525-F0033 standards.

# HF / HP contacts specifications

## MATERIALS

• Spring loaded parts	Be/Cu gold plated
• Other metal parts	Copper alloy
• Insulator	PTFE (HF)
• Retaining clip	Be/Cu Ni plated

## MECHANICAL

• Mechanical operations	Up to 2500 cycles
• Insertion force	From 0.60 to 5 N per contact
• Withdrawal force	From 0.50 to 2 N per contact
• Secure overlapping	1.30 mm
• Contact replacement in insulator	50 cycles for HF / HP 30 series (5 cycles for HF / HP 22 series)

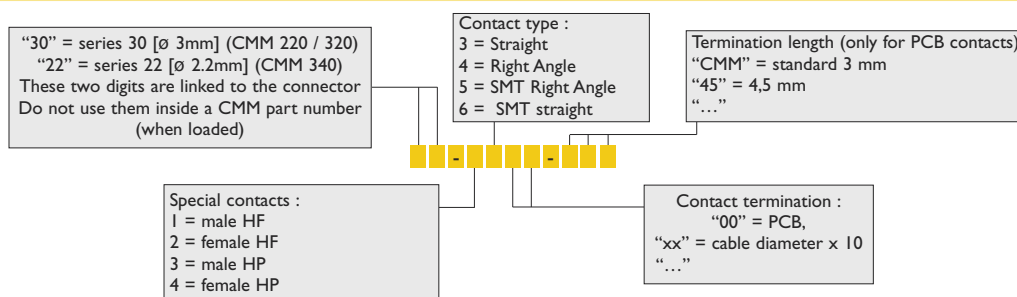
## ELECTRICAL

High Power (HP) Contact		High Frequency (HF) Contact	
<b>Intensity</b>	Series 30 : 20 A Series 22 : 10 A } depending on cable	<b>Impedance</b>	50Ω / 75Ω
<b>Contact resistance</b>	max. 6 mΩ	<b>Insulation resistance</b>	10 <sup>6</sup> MΩ / 250 V (RMS)
<b>Maximum voltage (sea level)</b>	1000 V (RMS)	<b>SWR (Stationary wave rate)</b>	< 1.05 + 0.04 F (GHz)
<b>Operating voltage (sea level)</b>	180 V AC/500 mA	<b>Frequency range</b>	Series 30 : 6 GHz Series 22 : 1,5 GHz } depending on cable
		<b>Insulation between 2 contacts</b>	-100 dB (depending on cable)

## ENVIRONMENTAL

• Temperature range	From -60°C to +260°C
• Salt spray test	96 hrs
• Humidity test	56 days @ 90% humidity

## HF / HP CONTACTS PART NUMBERING



### Important notice:

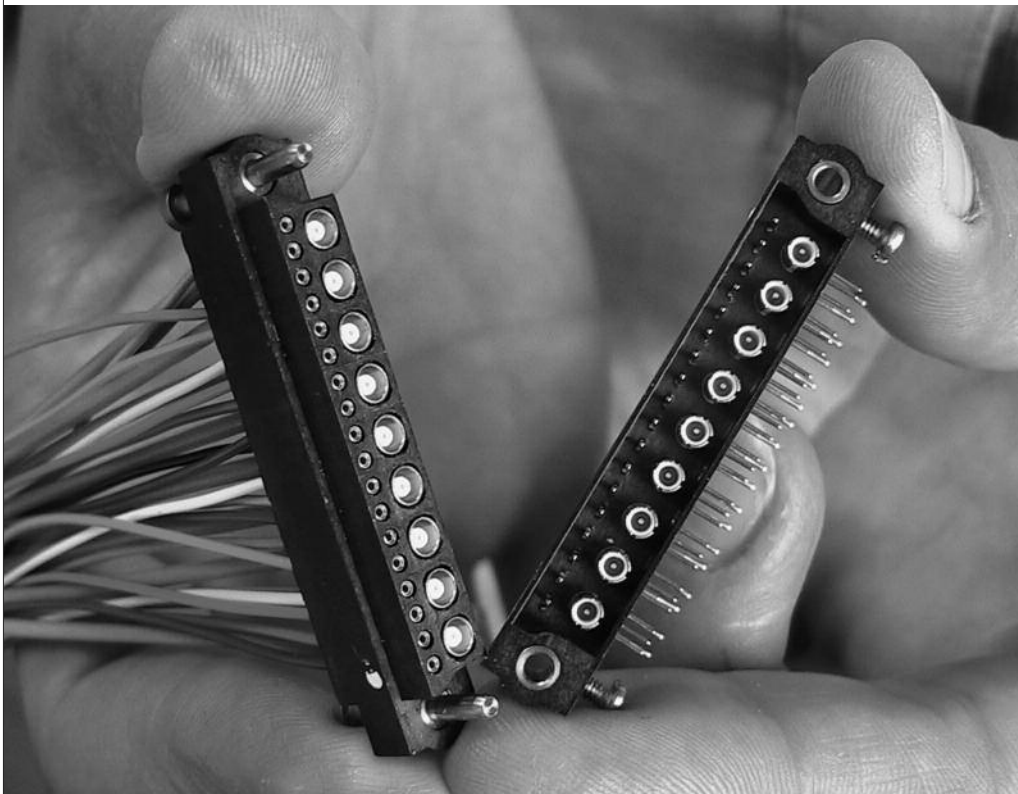
According to the routines test other than MIL our technical features for CMM Micro-connectors reach a higher result. Please contact [technic@nicomatic.fr](mailto:technic@nicomatic.fr) for more information.

For example:

- LF: up to 5A max. @ 25°C
- HF: up to 11 GHz
- HP: up to 30 A
- Mechanical operations: up to 5 000 cycles
- High temperature test: 1 000H at 250°C
- Application with LVDS signal @ 400 MHz, impedance 100 Ohm
- High speed: USB, 1 Gb/s Ethernet...

## HIGHLIGHT ON CMM CONNECTOR BENEFITS

- **Unlimited style of connector:**
  - Mixed-layout: High, Low frequency & High power in 1 connector
  - PCB solder, SMT, press fit, crimp contacts
  - Board to board, board to wire, wire to wire connections
  - Very small footprint: 2 mm pitch (saves up to 60% space & 50% weight over conventional connectors)
- Meets or exceeds the relevant electrical & environmental performances described in MIL-DTL-55302F & BS-9525-F0033 standards
- Excellent mechanical & environmental characteristics
- Built-in jackscrews for high vibrations
- Resistance to solvents, radiations & oxygen free
- Allows infrared, wave or vapour phase soldering
- High reliability contact design: up to 2 500 cycles
- RoHS & Whiskers free (all contacts are gold plated)
- Short lead time: 1 week delivery service
- 100% quality control
- Proven track record in defense, aerospace & railway as well as other high reliability or technology field applications
- Connector housing marking for full traceability
- Large range of accessories & tools



# LF : low frequency contacts

## PRESENTATION

Male						
Female						
	<b>Straight PCB Type Y</b>	<b>90° PCB Type V</b>	<b>Straight SMT Type T</b>	<b>90° SMT Type R</b>	<b>Crimp Type S - C</b>	<b>Straight PCB Type PF Press fit</b>

## INFORMATION TABLE

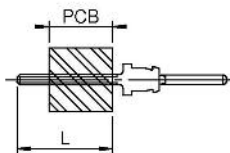
CMM RANGE		USE												
		STRAIGHT ON PCB				90° ON PCB		STRAIGHT SMT		90° SMT	CRIMP			
100/200	Male	<b>Y</b> L=3,0	<b>YL</b> L=4,5	<b>YM</b> L=5,1	<b>YX</b> L=9,1			<b>V</b> L=3,0	<b>VL</b> L=4,5	<b>T</b> L=2,25	<b>TL</b> L=3,35	<b>R</b> L=0,9	<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
	Female	<b>Y</b> L=3,0	<b>YL</b> L=4,5			<b>YC</b> L=1,2	<b>PF</b> Press fit	<b>V</b> L=3,0	<b>VL</b> L=4,5	<b>T</b> L=2,25	<b>TL</b> L=3,35	<b>R</b> L=0,9	<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
220	Male	<b>Y</b> L=3,0	<b>YL</b> L=4,5	<b>YM</b> L=5,1	<b>YX</b> L=9,1			<b>V</b> L=3,0	<b>VL</b> L=4,5	<b>T</b> L=2,25	<b>TL</b> L=3,35	<b>R</b> L=0,9	<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
	Female	<b>Y</b> L=3,0	<b>YL</b> L=4,5			<b>YC</b> L=1,2	<b>PF</b> Press fit	<b>V</b> L=3,0	<b>VL</b> L=4,5	<b>T</b> L=2,25	<b>TL</b> L=3,35	<b>R</b> L=0,9	<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
320	Male	<b>Y</b> L=3,0	<b>YL</b> L=4,5	<b>YM</b> L=5,1	<b>YX</b> L=9,1			<b>V</b> L=3,0	<b>VL</b> L=4,5			<b>R</b> L=0,9	<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
	Female	<b>Y</b> L=3,0	<b>YL</b> L=4,5				<b>PF</b> Press fit	<b>V</b> L=3,0	<b>VL</b> L=4,5				<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
340	Male	<b>Y</b> L=3,0	<b>YL</b> L=4,5	<b>YM</b> L=5,1	<b>YX</b> L=9,1			<b>V</b> L=3,0	<b>VL</b> L=4,5				<b>C</b> Gauge 22	<b>S</b> Gauge 24-28
	Female	<b>Y</b> L=3,0	<b>YL</b> L=4,5				<b>PF</b> Press fit	<b>V</b> L=3,0	<b>VL</b> L=4,5				<b>C</b> Gauge 22	<b>S</b> Gauge 24-28

L=6,50 / 8,00 / 10,50 / 12,00 / 14,50 / 16,00 mm upon request (only for straight on PCB male contacts)

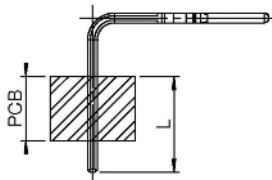
Standard contact

Any other type of contact upon request only

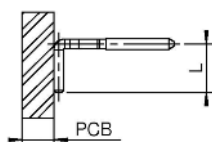
Straight on PCB



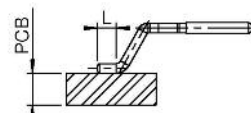
90° on PCB



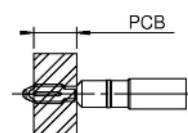
SMT straight on PCB



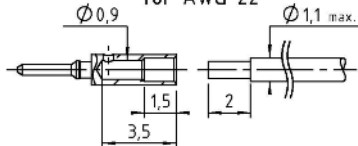
SMT 90° on PCB



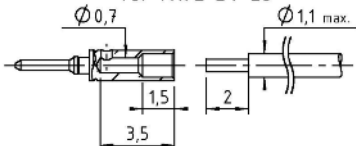
Pressfit Straight on PCB



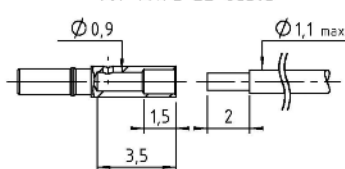
Ref : 12960  
Male crimp contact "C"  
for AWG 22



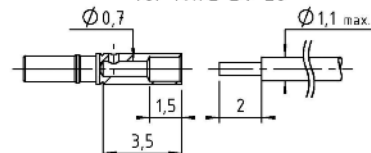
Ref : 12969  
Male crimp contact "S"  
for AWG 24-28



Ref : C13064-P  
Female crimp contact "C"  
for AWG 22 cable



Ref : C12468  
Female crimp contact "S"  
for AWG 24-28





# HP : high power contacts (series 30)

## PRESENTATION

Male									
Female									
	Straight PCB	90° PCB	Straight SMT	90° SMT	90° SMT Card edge	Straight Crimp	90° Crimp	Straight solder	90° solder
	Type D					Type E			

## INFORMATION TABLE

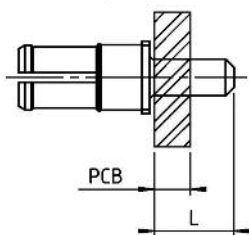
CMM RANGE		TYPICAL USE									
		TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY									
		TYPE D FOR SPECIAL CONTACTS ON PCB					TYPE E FOR SPECIAL CONTACTS ON CABLE				
		Straight on PCB	90° on PCB	Straight SMT	90° SMT	90° SMT Card edge	Straight Crimp	90° Crimp	Straight solder	90° solder	
100/200	Male										
	Female										
220	Male	30-3300-CMM L=3,0	30-3300-45 L=4,5	30-3400-CMM L=3,0	30-3400-45 L=4,5	30-3600	30-3500	30-3500-CMM no LF contact	30-3500-12	30-33XX	30-33XX
	Female	30-4300-CMM L=3,0	30-4300-45 L=4,5	30-4400-CMM L=3,0	30-4400-45 L=4,5	30-4600	30-4500			30-43XX	30-43XX
320	Male	30-3300-CMM L=3,0	30-3300-45 L=4,5	30-3400-CMM L=3,0	30-3400-45 L=4,5				30-3500-12	30-33XX	30-33XX
	Female	30-4300-12 L=3,0	30-4300-14 L=4,5	30-4400-CMM L=3,0	30-4400-45 L=4,5					30-43XX	30-43XX
340	Male										
	Female										

Standard contact  
Any other type of contact upon request only

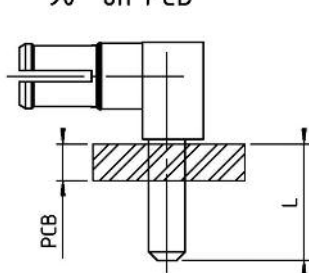
XX = 05, 08...  
Eg. 08 for 8A

Please refer  
to page 94

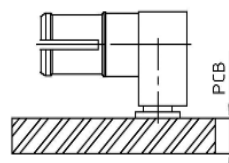
Straight on PCB



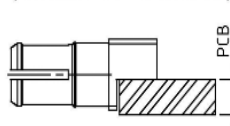
90° on PCB



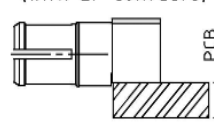
90° SMT



90° SMT Card edge  
(without LF contacts)



90° SMT Card edge  
(with LF contacts)



# HF : high frequency contacts (series 22)

## PRESENTATION

Male								
Female								
	<b>Straight PCB</b>	<b>90° PCB</b>	<b>Straight SMT</b>	<b>90° SMT</b>	<b>Straight Crimp</b>	<b>90° Crimp</b>	<b>Straight solder</b>	<b>90° solder</b>
	<b>Type D</b>				<b>Type E</b>			

## INFORMATION TABLE

CMM RANGE		TYPICAL USE							
		TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY							
		TYPE D FOR SPECIAL CONTACTS ON PCB				TYPE E FOR SPECIAL CONTACTS ON CABLE			
		Straight on PCB	90° on PCB	Straight SMT	90° SMT	Straight Crimp	90° Crimp	Straight solder	90° solder
100/200	Male								
	Female								
220	Male								
	Female								
320	Male								
	Female								
340	Male	22-1300-12 L=3,0	22-1300-14 L=4,5	22-1400-12* 22-1400-22** L=3,0	22-1400-14* 22-1400-24** L=4,5			22-1312-Z5	22-1320-Z2
	Female	22-2300-12 L=3,0	22-2300-14 L=4,5	22-2400-12* 22-2400-22** L=3,0	22-2400-14* 22-2400-24** L=4,5			22-2312-Z5	22-2320-Z2

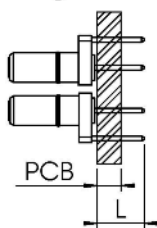
Standard contact  
Any other type of contact upon request only

12 = cable Ø 1,2

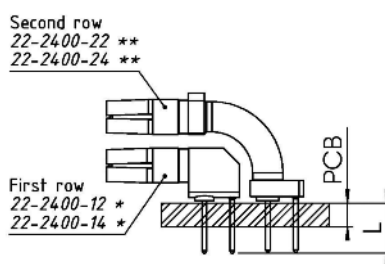
20 = cable Ø 2,0

\* First row : 22-1400-12 / 22-1400-14 / 22-2400-12 / 22-2400-14  
\*\* Second row : 22-1400-22 / 22-1400-24 / 22-2400-22 / 22-2400-24

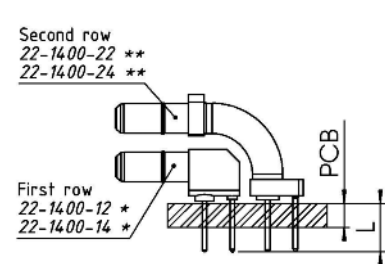
Straight on PCB



90° on PCB



90° on PCB



When a two-row connector mixes a 22-2400-12 and a 22-2400-22 contact, the P/N of the HF contact changes to 2400-02.

When a two-row connector mixes a 22-2400-14 and a 22-2400-24 contact, the P/N of the HF contact changes to 2400-04.

When a two-row connector mixes a 22-1400-12 and a 22-1400-22 contact, the P/N of the HF contact changes to 1400-02.

When a two-row connector mixes a 22-1400-14 and a 22-1400-24 contact, the P/N of the HF contact changes to 1400-04.



# HP : high power contacts (series 22)

## PRESENTATION

Male								
Female								
	<b>Straight PCB</b>	<b>90° PCB</b>	<b>Straight SMT</b>	<b>90° SMT</b>	<b>Straight Crimp</b>	<b>90° Crimp</b>	<b>Straight solder</b>	<b>90° solder</b>
	<b>Type D</b>				<b>Type E</b>			

## INFORMATION TABLE

CMM RANGE	TYPICAL USE							
	TYPE OF CONTACTS TO BE USED IN THE CMM CONNECTOR WITH CAVITIES FOR HF/HP CONTACTS ONLY							
	TYPE D FOR SPECIAL CONTACTS ON PCB				TYPE E FOR SPECIAL CONTACTS ON CABLE			
	Straight on PCB	90° on PCB	Straight SMT	90° SMT	Straight Crimp	90° Crimp	Straight solder	90° solder
100/200	Male							
	Female							
220	Male							
	Female							
320	Male							
	Female							
340	Male	22-3300-12 L=3,0	22-3300-14 L=4,5	22-3400-12* 22-3400-22** L=3,0	22-3400-14* 22-3400-24** L=4,5		22-33XX	22-33XX
	Female	22-4300-12 L=3,0	22-4300-14 L=4,5	22-4400-12* 22-4400-22** L=3,0	22-4400-14* 22-4400-24** L=4,5		22-43XX	22-43XX

Standard contact  
Any other type of contact upon request only

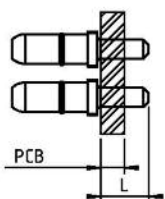
XX = 05, 08, 10  
10 = 10A

Please refer  
to page 102

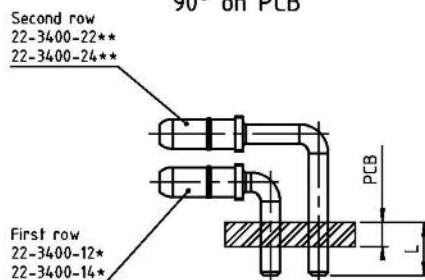
\* First row : 22-3400-12 / 22-3400-14 / 22-4400-12 / 22-4400-14

\*\* Second row : 22-3400-22 / 22-3400-24 / 22-4400-22 / 22-4400-24

Straight on PCB



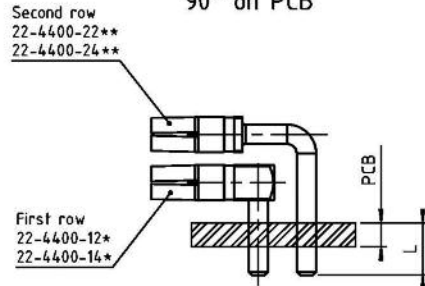
90° on PCB



When a two-row connector mixes a 22-3400-12 and a 22-3400-22 contact, the P/N of the HF contact changes to 3400-02.

When a two-row connector mixes a 22-3400-14 and a 22-3400-24 contact, the P/N of the HF contact changes to 3400-04.

90° on PCB

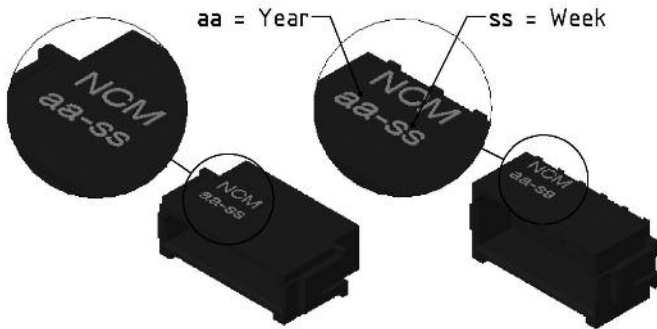


When a two-row connector mixes a 22-4400-12 and a 22-4400-22 contact, the P/N of the HF contact changes to 4400-02.

When a two-row connector mixes a 22-4400-14 and a 22-4400-24 contact, the P/N of the HF contact changes to 4400-04.

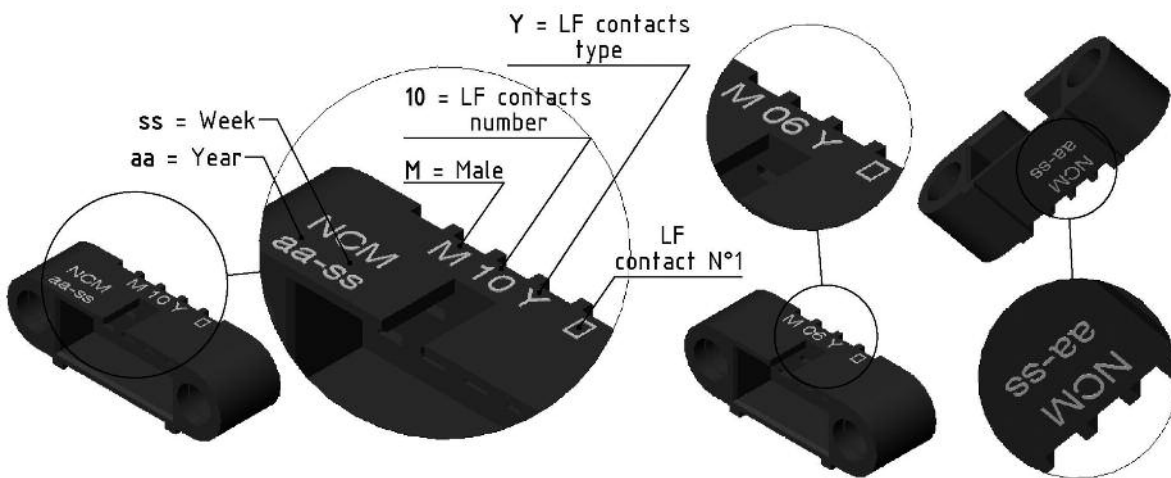
# Male housing marking

## CMM 100/200



Marking : NCM (Nicomatic) + date code (Lot number)

## CMM 220



**Marking 1 :** NCM (Nicomatic) + date code (Lot number)  
(LF contacts only) Connector P/N  
LF contact number I

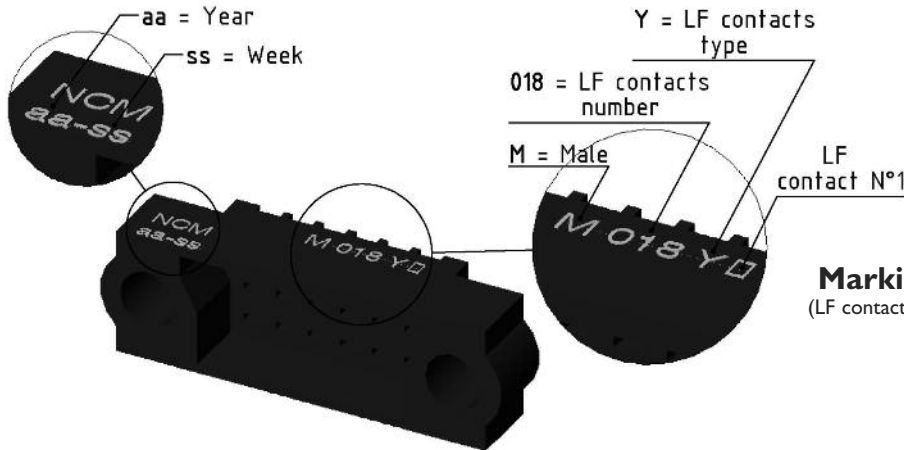
Marking on two faces if the number of LF contacts is < to 10.

**Marking 2 :** NCM (Nicomatic) + date code (Lot number) : CMM 220 mixed layout (LF + HF/HP)  
(as for CMM 100/200)

CMM 220 with HF/HP contacts  
CMM 220 with 04 LF contacts

Marking LF contacts type : Y-YL-V-VL-R-T-S-C

## CMM 320/340



**Marking 1 :** NCM (Nicomatic)  
(LF contacts only) / date code (Lot number)  
Connector P/N  
LF contact number I

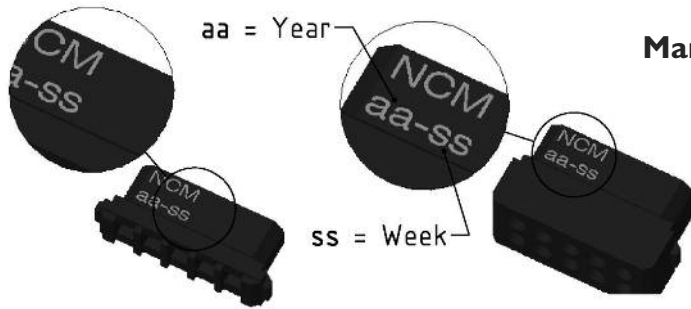
**Marking 2 :** NCM (Nicomatic) / date code (Lot number) : CMM 320 mixed layout  
(as for CMM 100/200)

CMM 320 with HF/HP contacts  
CMM 340

Marking LF contacts type : Y-YL-V-VL-S-C

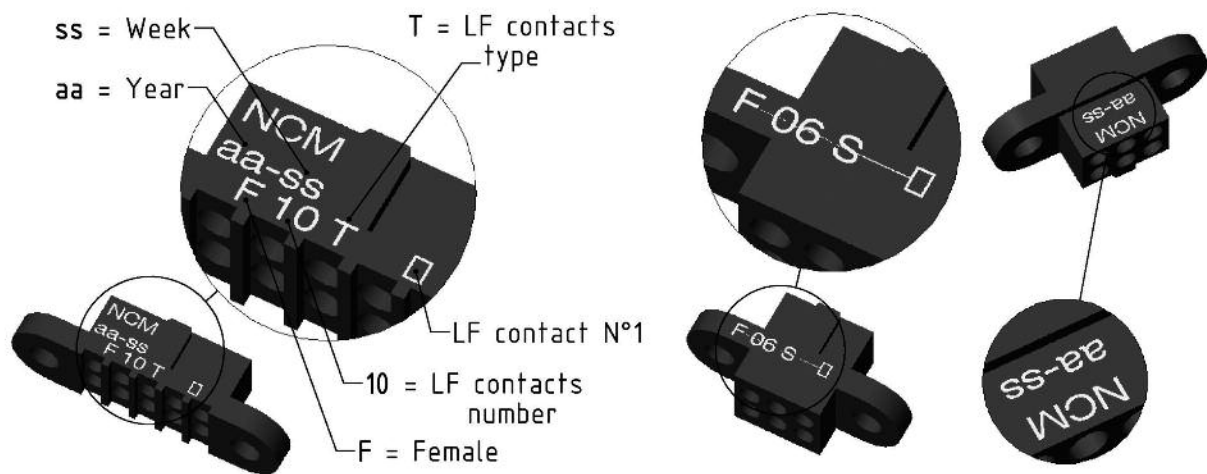
# Female housing marking

## CMM 100/200



Marking : NCM (Nicomatic) + date code (Lot number)

## CMM 220



**Marking 1** : NCM (Nicomatic) + date code (Lot number)  
(LF contacts only) Connector P/N  
LF contact number I

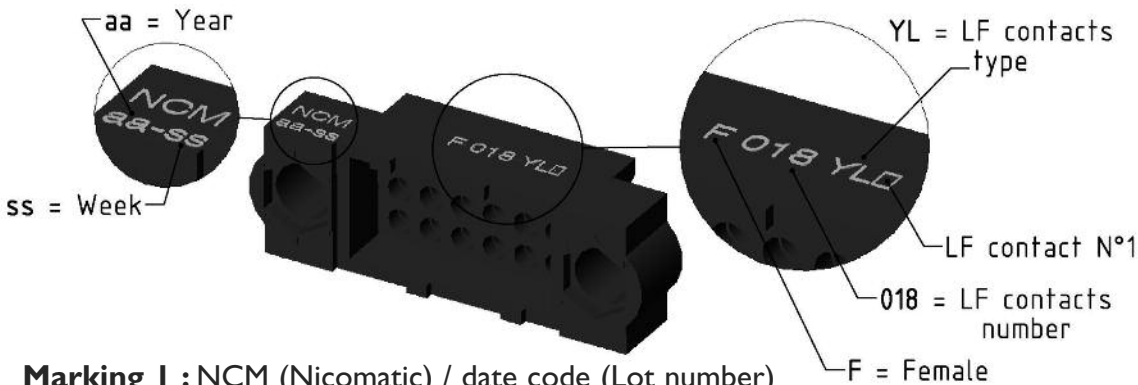
Marking on two faces if the number of LF contacts is < to 10.

**Marking 2** : NCM (Nicomatic) + date code (Lot number) : CMM 220 mixed layout (LF + HF/HP)  
(as for CMM 100/200)

CMM 220 with HF/HP contacts  
CMM 220 with 04 LF contacts

Marking LF contacts type : Y-YL-V-VL-R-T-S-C-PF

## CMM 320/340



**Marking 1** : NCM (Nicomatic) / date code (Lot number)  
(LF contacts only) Connector P/N  
LF contact number I

**Marking 2** : NCM (Nicomatic) / date code (Lot number) : CMM 320 mixed layout HF/HP contacts  
(as for CMM 100/200)

CMM 320 with HF/HP contacts  
CMM 340

Marking LF contacts type : Y-YL-V-VL-S-C-PF

# Nicomatic CMM part

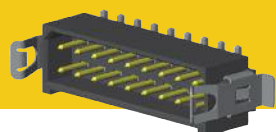
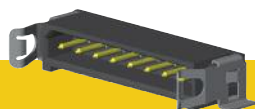
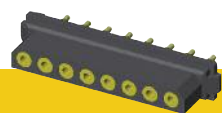
Code with Low Frequency contacts only					Additional code for mixed-layout connector (HF/HP)		
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	Number of HF/HP contacts pin 1 side (LF contact number 1)	Number of HF/HP contacts opposite to LF contact number 1	HF/HP Contact Type
			n n n		y y	z z	
1 row	10	1 male 2 female	Refer to table on page 7	02 to 25 (nn)	With Latch page 22 Without Latch	No HF / HP contacts	
	2 rows	20	1 male 2 female	Refer to table on page 7	04 to 50 (nn)	With Latch page 22 Without Latch	
2 rows		22	1 male 2 female	Refer to table on page 7	04 to 60 (nn)	Refer to pages 43 to 46	Depends upon the number of LF contacts If use with shifted central key, please refer to page 38 HF / HP : 15 contacts max. Type of HF/HP contact : please refer to pages 8-9
	3 rows	32	1 male 2 female	Refer to table on page 7	006 to 120 (nnn)	Refer to pages 69 to 74	Depends upon the number of LF contacts HF / HP : 20 contacts max. Type of HF/HP contact : please refer to pages 8-9
3 rows		34	1 male 2 female	Refer to table on page 7	Refer to the series 320 (nnn)	Refer to pages 69 to 74	Depends upon the number of LF contacts HF / HP : 64 contacts max. Type of HF/HP contact : please refer to pages 10-11



**Note :**

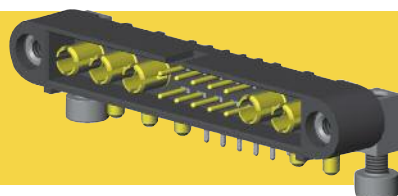
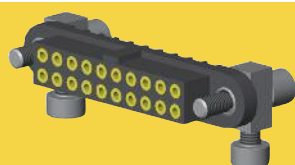
For any configuration outside of this part numbering system, please contact us.

# numbering system



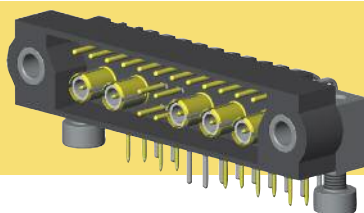
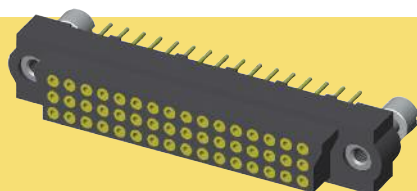
## CMM 100/200 Series

p. 17 to 25



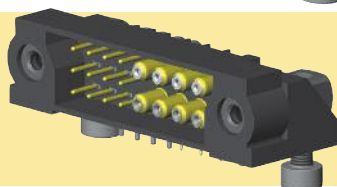
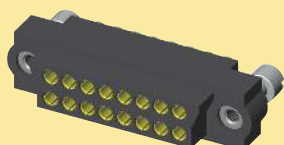
## CMM 220 Series

p. 27 to 46



## CMM 320 Series

p. 47 to 59



## CMM 340 Series

p. 60 to 74

## High Frequency and High Power contacts

(HF)

(HP)

p. 75 to 102

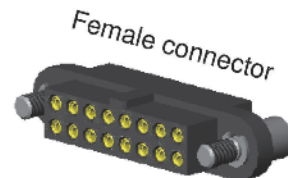
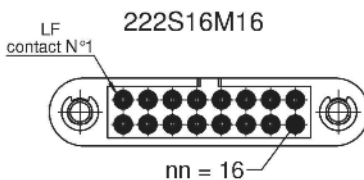
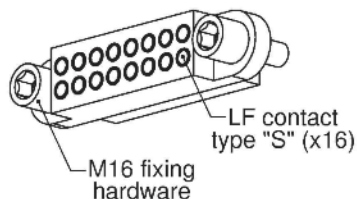
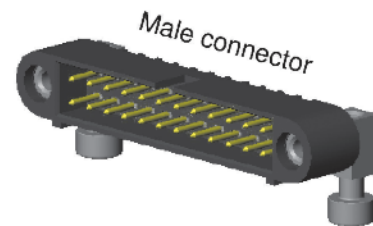
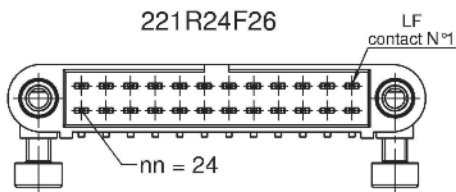
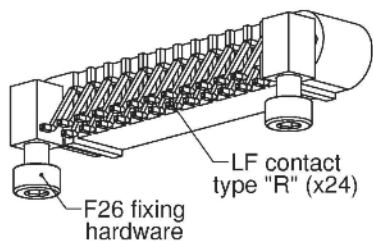
## Tools and accessories

p. 103 to 112

## Cable instructions & assembly

p. 113 to 122

# CMM 220 with LF contacts

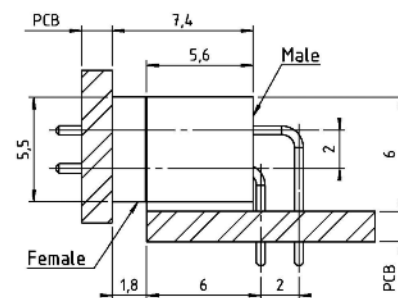
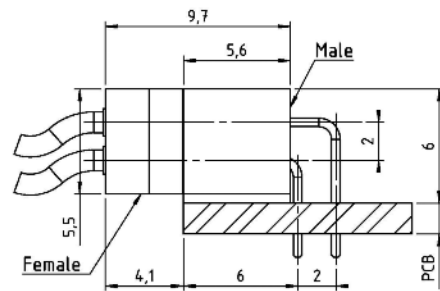
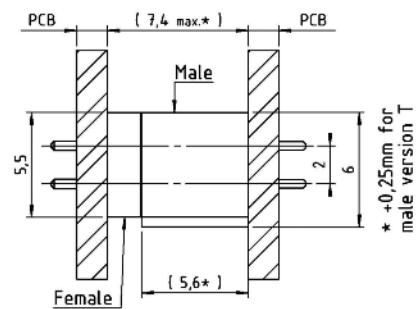
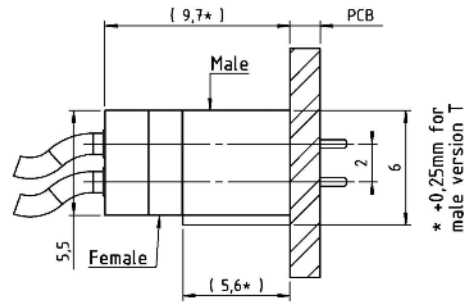
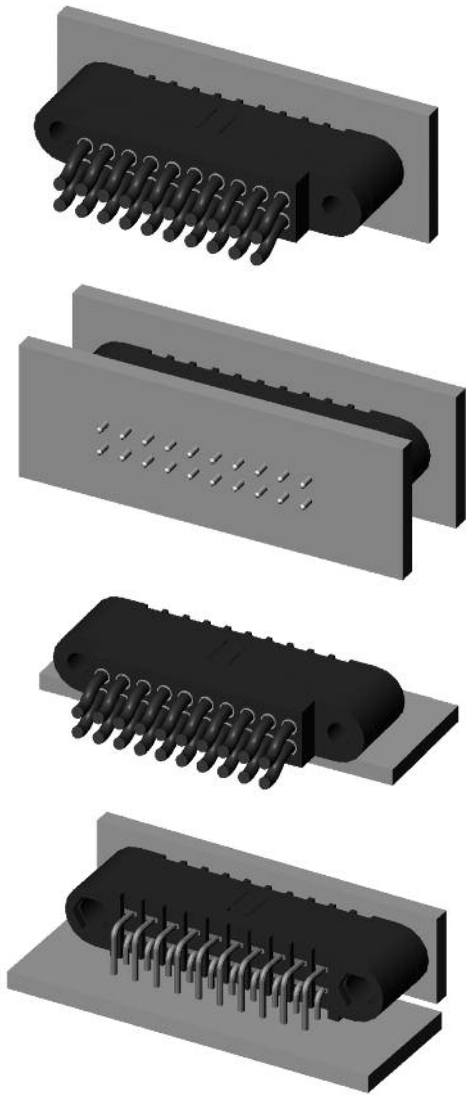


## PART NUMBERING REMINDER

Code with Low Frequency contacts only					
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	
■	■	■	n n	■	
2 rows	22	1 male	Refer to table on page 7	04 to 60	Refer to pages 43 to 46
		2 female			

# CMM 220 Configuration

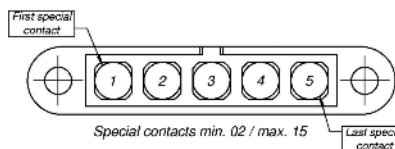
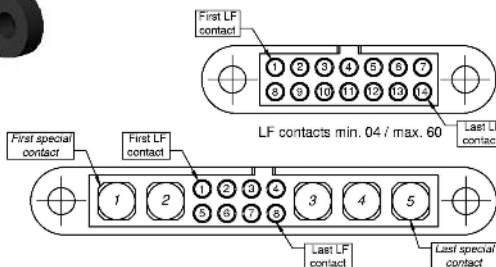
## CONNECTOR SPACING



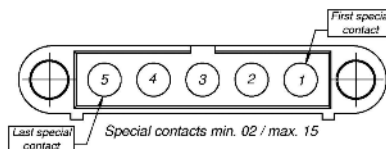
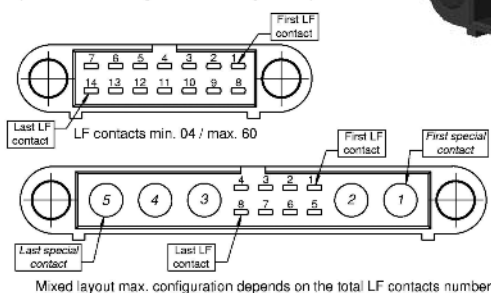
## CONTACTS POSITIONS



Female connectors  
( shown looking onto mating face )

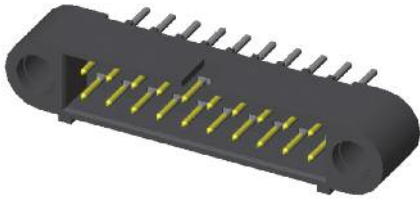


Male connectors  
( shown looking onto mating face )



# CMM 220 male

## STRAIGHT PCB



nn min = 04 nn max = 60

### Part numbering :

Type :Y-YL

2 2 | n n

See Fixing on page 43, 44  
"Fxx" without fixing

nn = number of LF contacts

Type	L
Y	3
YL	4,5

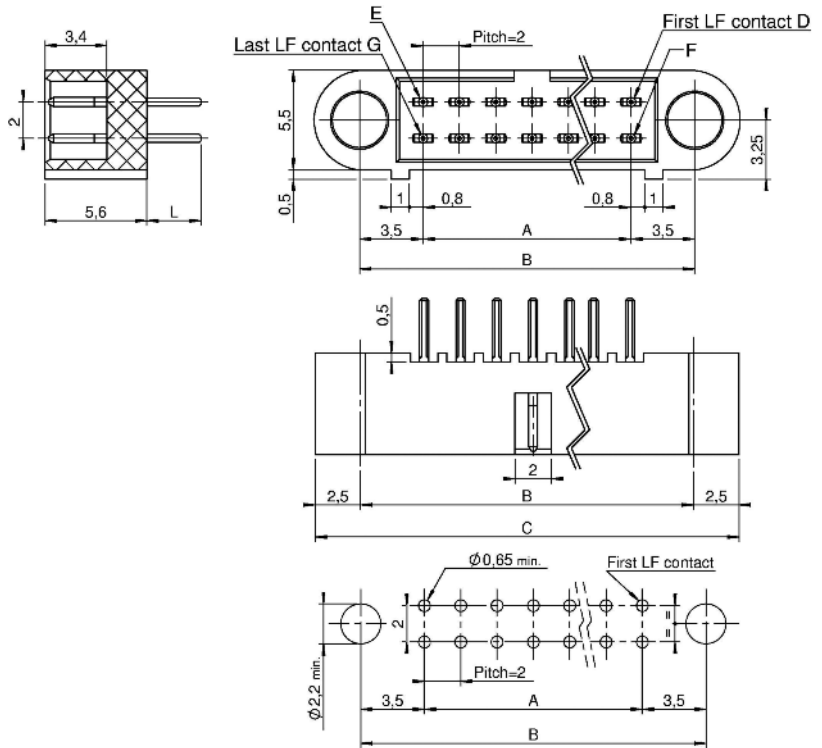
### Calculation :

$$A = nn - 2$$

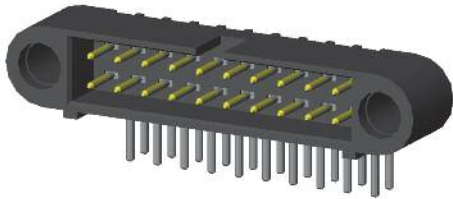
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



## 90° PCB



nn min = 04 nn max = 60

### Part numbering :

Type :V-VL

2 2 | n n

See Fixing on page 43, 44  
"Fxx" without fixing

nn = number of LF contacts

Type	L
V	3
VL	4,5

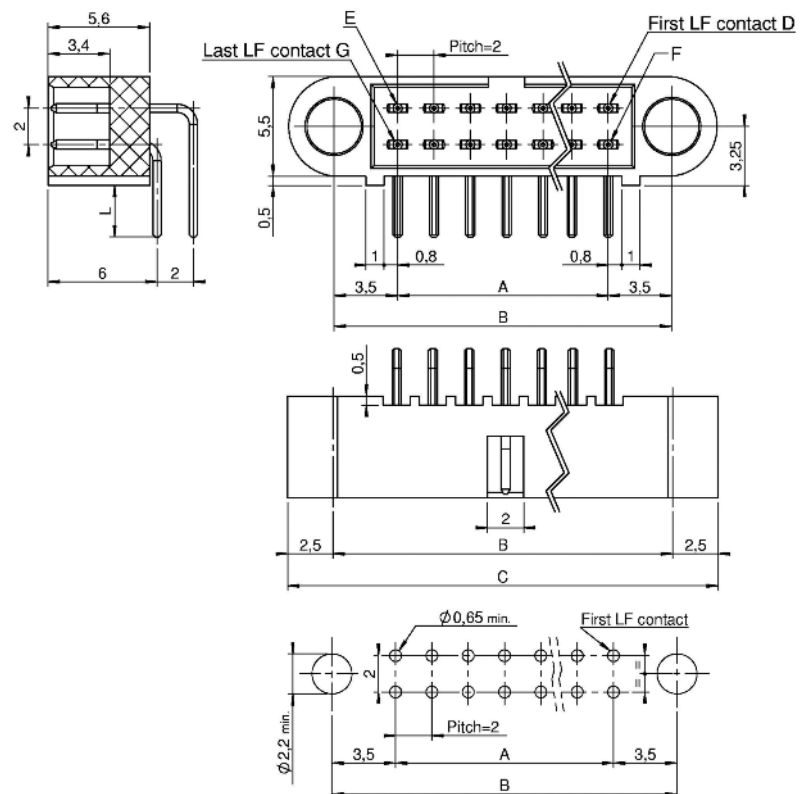
### Calculation :

$$A = nn - 2$$

$$B = A + 7$$

$$C = A + 12$$

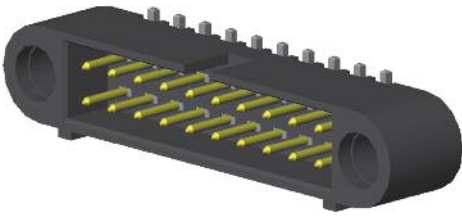
Refer to dimension table on cover page





# CMM 220 male

## STRAIGHT SMT



nn min = 04 nn max = 60

### Part numbering :

Type : T-TL

2 2 | n n

See Fixing on page 43, 44  
"Fxx" without fixing

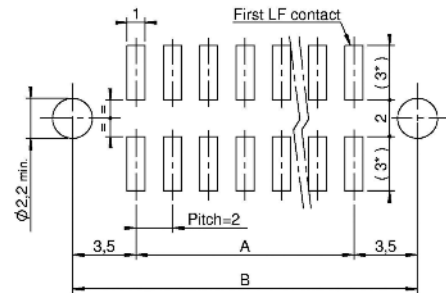
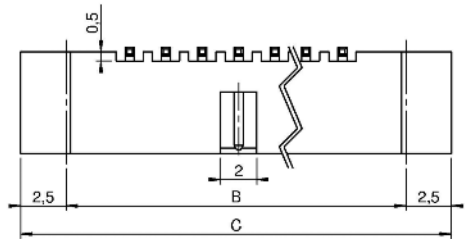
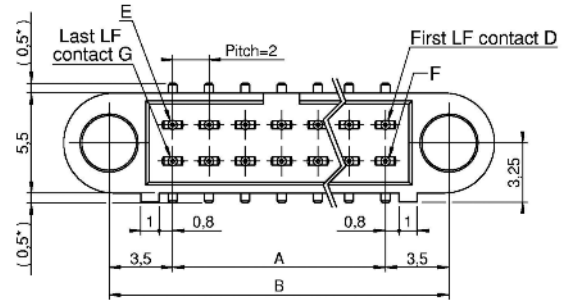
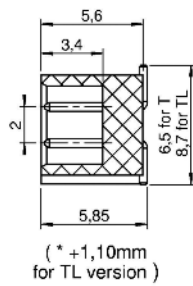
nn = number of LF contacts

**Optional:** Packaging in reel available upon request

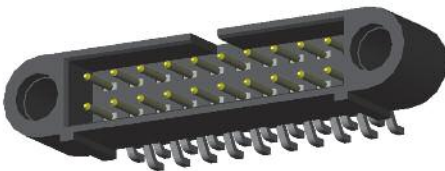
### Calculation :

<b>A</b> = nn - 2
<b>B</b> = A + 7
<b>C</b> = A + 12

Refer to dimension table on cover page



## 90° SMT



nn min = 04 nn max = 60

### Part numbering :

2 2 | R n n

See Fixing on page 43, 44  
"Fxx" without fixing

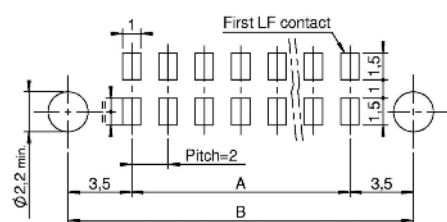
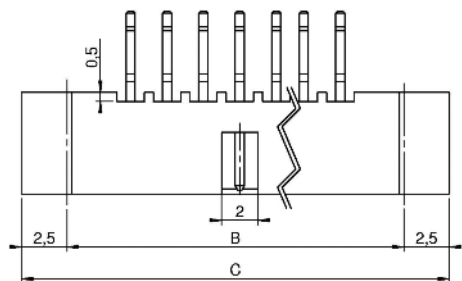
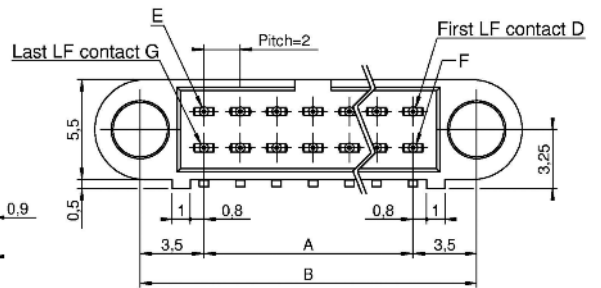
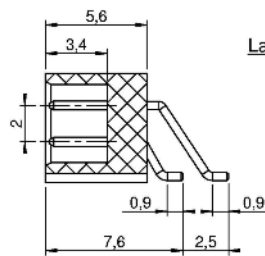
nn = number of LF contacts

**Optional:** Packaging in reel available upon request

### Calculation :

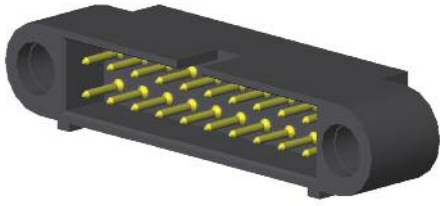
<b>A</b> = nn - 2
<b>B</b> = A + 7
<b>C</b> = A + 12

Refer to dimension table on cover page



# CMM 220 male

## CRIMP



nn min = 04 nn max = 60

### Part numbering :

Type : S-C

2 2 | l | n n

See Fixing on page 43, 44  
"Fxx" without fixing

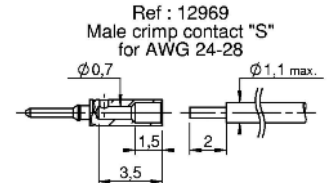
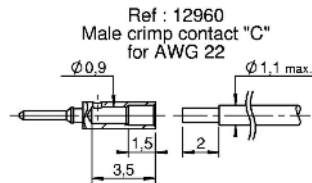
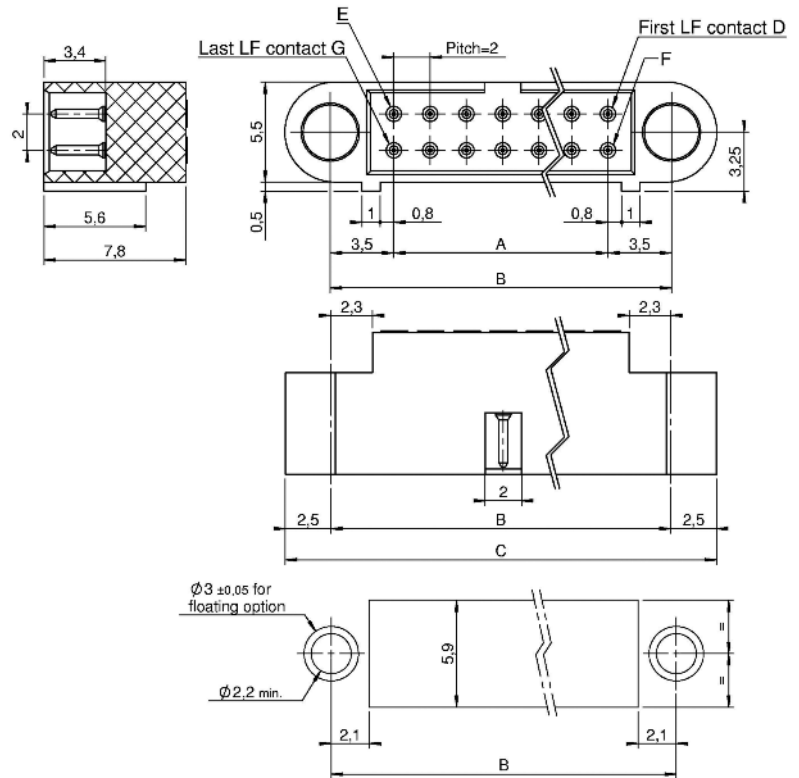
nn = number of LF contacts

Type	Gauge
S	24-28
C	22

### Calculation :

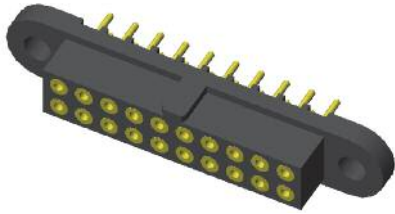
<b>A</b> = nn - 2
<b>B</b> = A + 7
<b>C</b> = A + 12

Refer to dimension table on cover page



# CMM 220 female

## STRAIGHT PCB



nn min = 04 nn max = 60

### Part numbering :

Type :Y-YL

2 2 2 n n

See Fixing on page 45-46  
"Mxx" without fixing

nn = number of LF contacts

Type	L
Y	3
YL	4,5

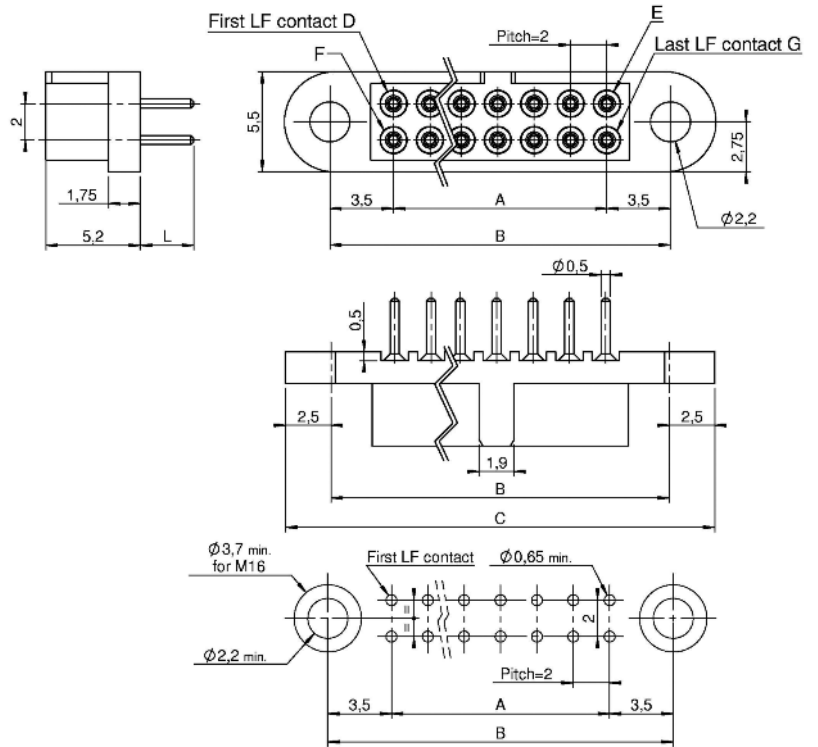
### Calculation :

$$A = nn - 2$$

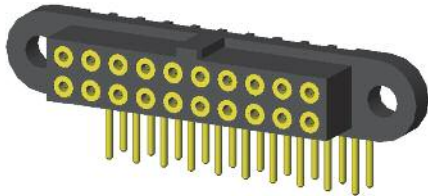
$$B = A + 7$$

$$C = A + 12$$

Refer to dimension table on cover page



## 90° PCB



nn min = 04 nn max = 60

### Part numbering :

Type :V-VL

2 2 2 n n

See Fixing on page 45  
"Mxx" without fixing

nn = number of LF contacts

Type	L
V	3
VL	4,5

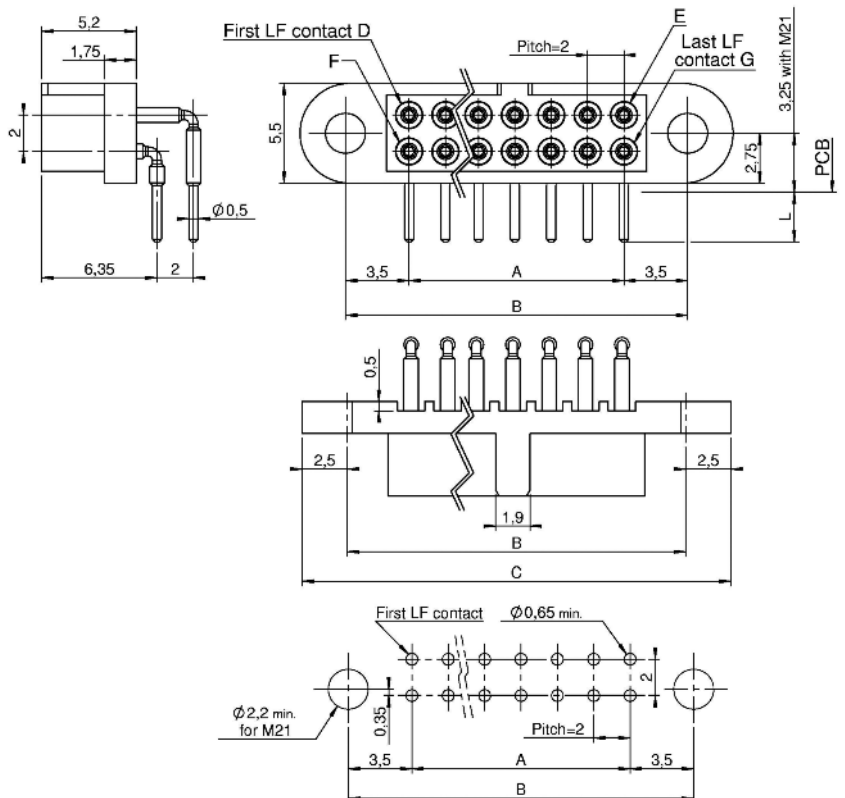
### Calculation :

$$A = nn - 2$$

$$B = A + 7$$

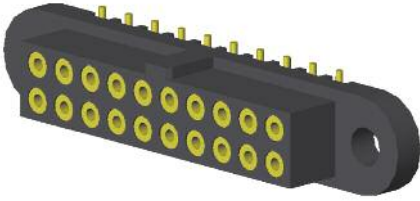
$$C = A + 12$$

Refer to dimension table on cover page



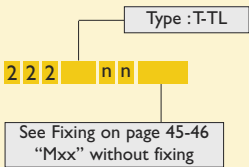
# CMM 220 female

## STRAIGHT SMT



nn min = 04 nn max = 60

### Part numbering :



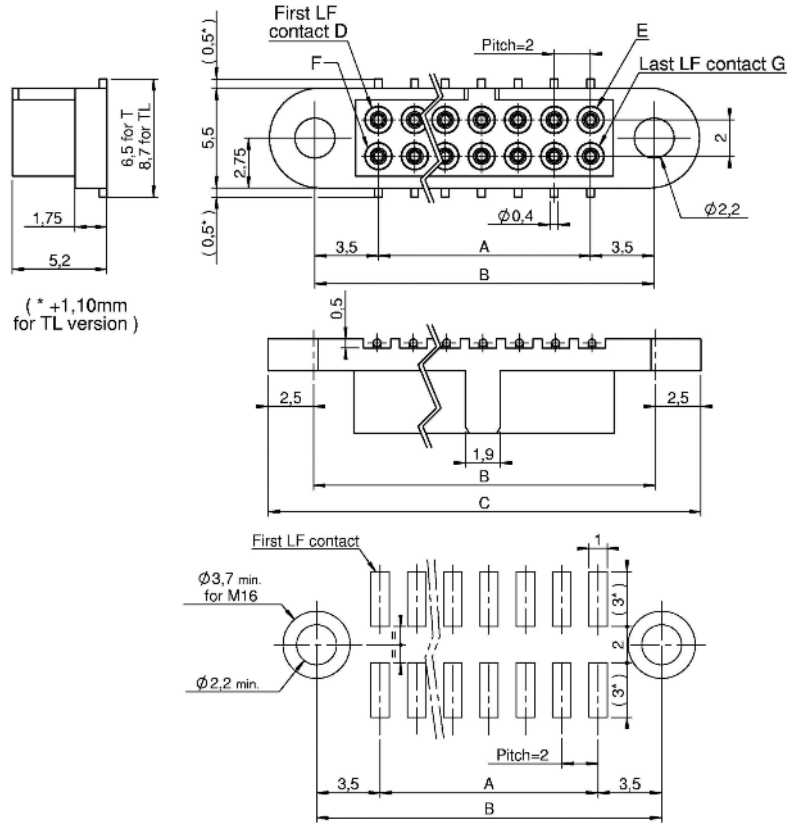
nn = number of LF contacts

Optional: Packaging in reel available upon request

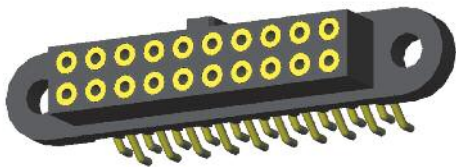
### Calculation :

<b>A</b>	= nn - 2
<b>B</b>	= A + 7
<b>C</b>	= A + 12

Refer to dimension table on cover page

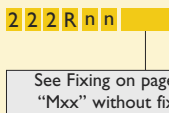


## 90° SMT



nn min = 04 nn max = 60

### Part numbering :



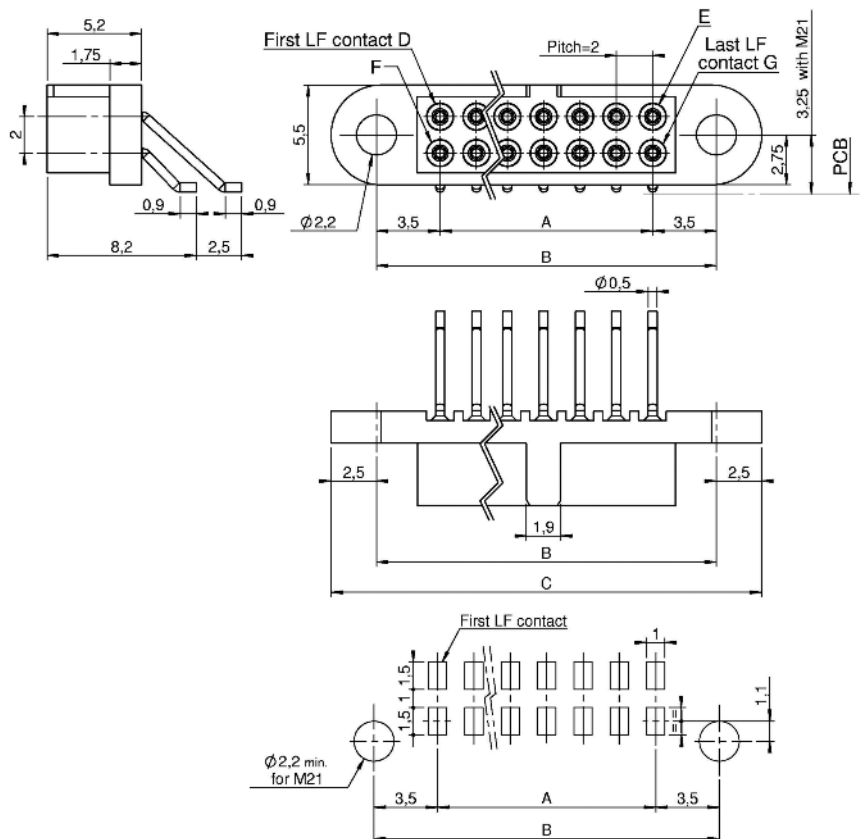
nn = number of LF contacts

Optional: Packaging in reel available upon request

### Calculation :

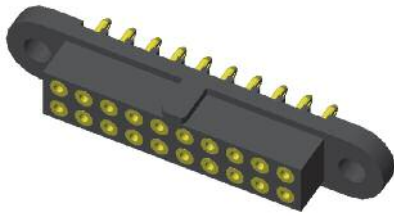
<b>A</b>	= nn - 2
<b>B</b>	= A + 7
<b>C</b>	= A + 12

Refer to dimension table on cover page



# CMM 220 female

## STRAIGHT PRESS FIT



nn min = 04 nn max = 60

### Part numbering :

2 2 2 PF n n

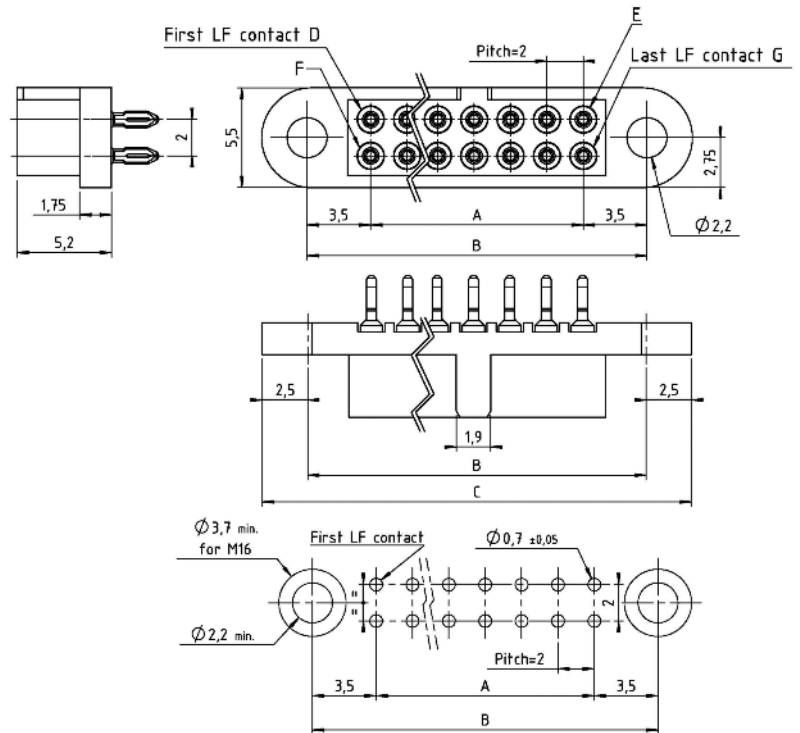
See Fixing on page 45-46  
"Mxx" without fixing

nn = number of LF contacts

### Calculation :

A = nn - 2
B = A + 7
C = A + 12

Refer to dimension table on cover page



## CRIMP



nn min = 04 nn max = 60

### Part numbering :

2 2 2 n n

Type : S-C

See Fixing on page 45-46  
"Mxx" without fixing

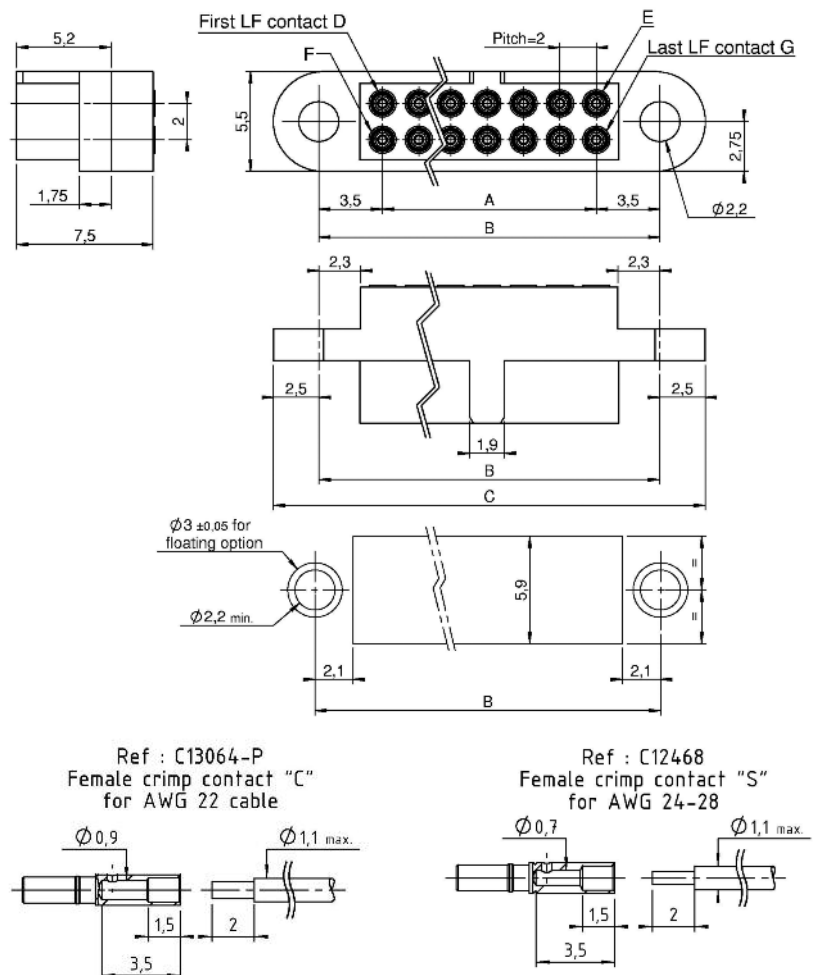
nn = number of LF contacts

Type	Gauge
S	24-28
C	22

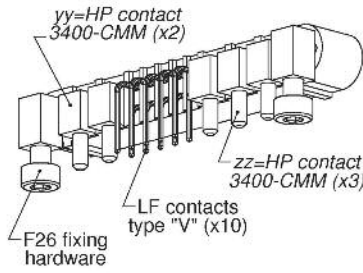
### Calculation :

A = nn - 2
B = A + 7
C = A + 12

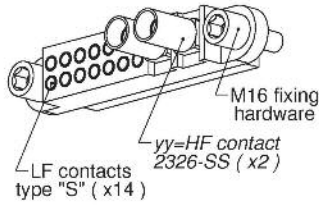
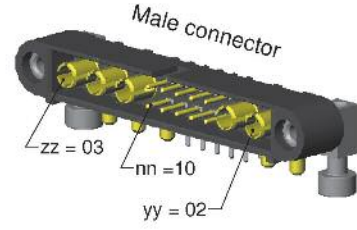
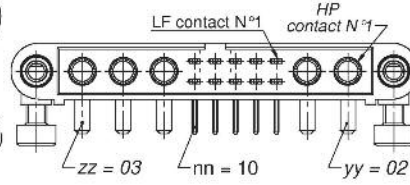
Refer to dimension table on cover page



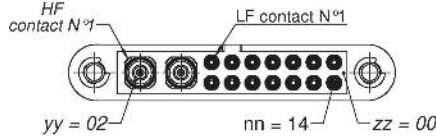
# CMM 220 mixed-layout



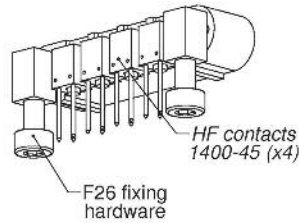
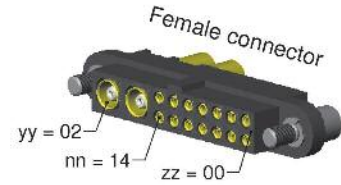
221V10F26-0203-3400CMM



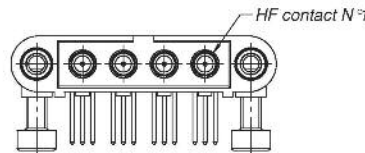
222S14M16-0200-2326SS



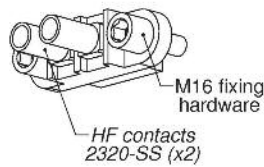
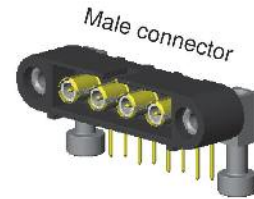
( HF contacts are supplied -not fitted- under P/N 30-2326-SS )



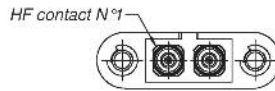
221D00F26-0004-140045



"D" stated in P/N for connectors on PCB with only special contacts.

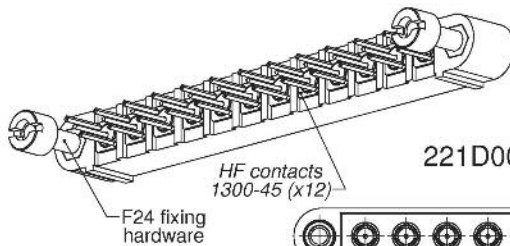


222E00M16-0002-2320SS

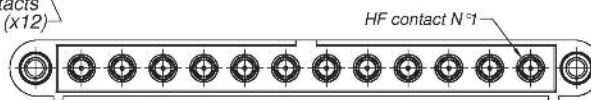


( HF contacts are supplied -not fitted- under P/N 30-2320-SS )

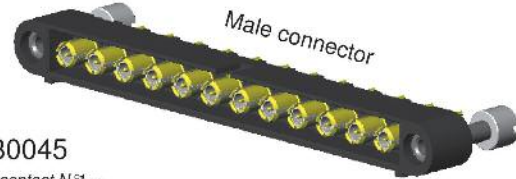
"E" stated in P/N for connectors on cable with only special contacts.



221D00F24-0012-130045



"D" stated in P/N for connectors on PCB with only special contacts.



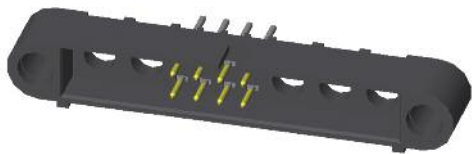
## PART NUMBERING REMINDER

Code with Low Frequency contacts only					Additional code for mixed-layout connector (HF/HP)		
Series	Gender	Termination Style	Number of LF contacts	Fixing Hardware	Number of HF/HP contacts pin I side (LF contact number I)	Number of HF/HP contacts opposite to LF contact number I	HF/HP Contact Type
22	1 male 2 female	Refer to table on page 7	nn	zz - yy	zz - yy	zz - yy	HP/HP 30 please refer to pages 75 to 94
2 rows			04 to 60	Refer to pages 43 to 46	Depends upon the number of LF contacts If use with shifted central key, please refer to page 42 HF / HP : 15 contacts max. Type of HF/HP contact : please refer to pages 8-9		

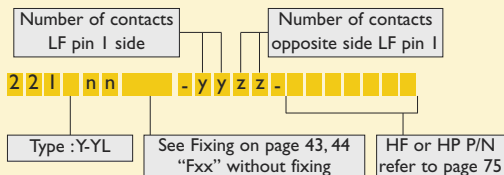
# CMM 220

## Male mixed-layout

### STRAIGHT PCB



#### Part numbering :

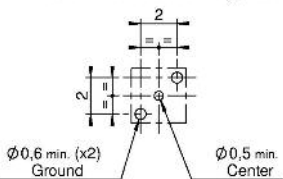


nn = number of LF contacts

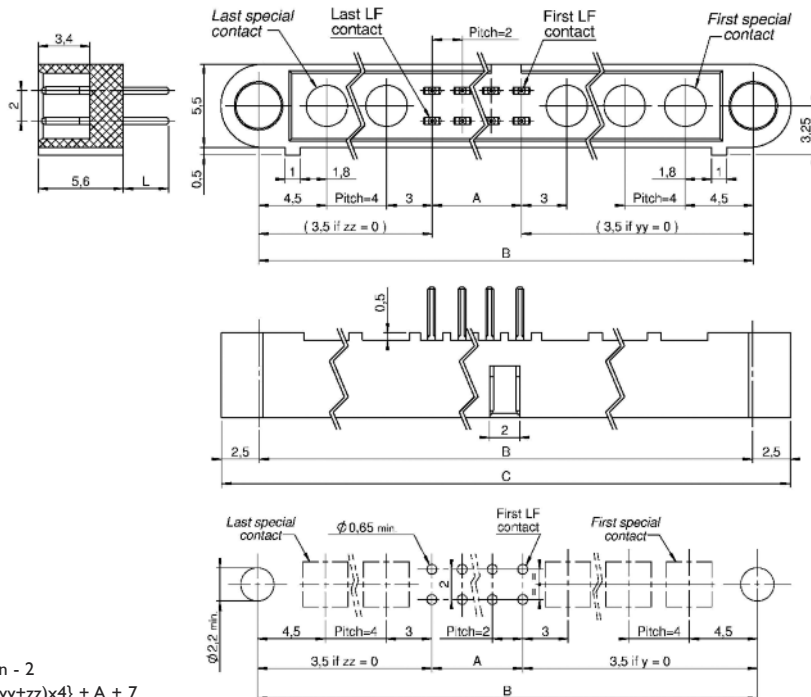
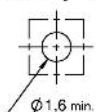
Type	L
Y	3
YL	4,5

#### Pattern for special contact :

HF 30-1300-xx PCB lay-out



HP 30-3300-xx PCB lay-out



$$A = nn - 2$$

$$B = \{(yy+zz) \times 4\} + A + 7$$

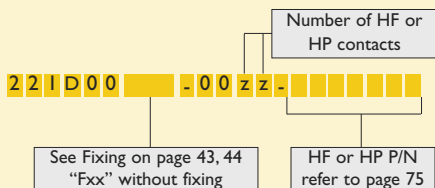
$$B_{max.} = 65 \text{ mm}$$

$$C = B + 5$$

### STRAIGHT PCB FOR HP/HF CONTACTS ONLY

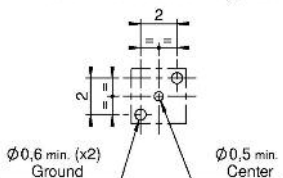


#### Part numbering :

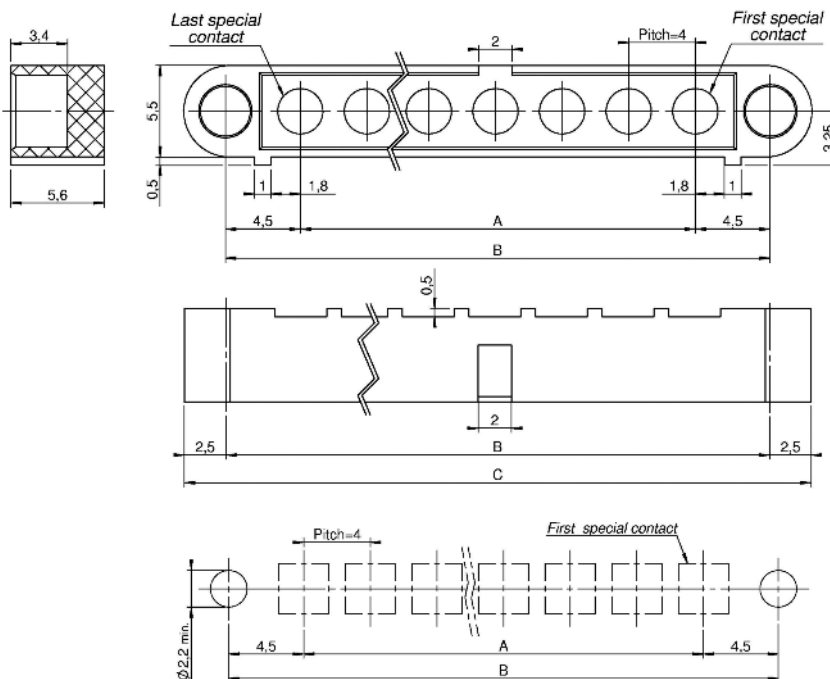
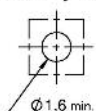


#### Pattern for special contact :

HF 30-1300-xx PCB lay-out



HP 30-3300-xx PCB lay-out



$$A = (zz \times 4) - 4$$

$$B = A + 9$$

$$C = B + 5$$

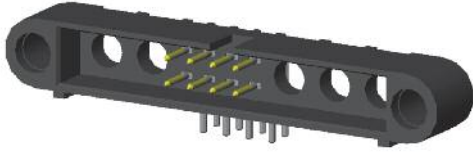
Special contacts min. : 02  
max. : 15

Refer to dimension table on cover page

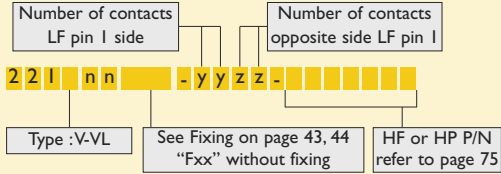
# CMM 220

## Male mixed-layout

### 90° PCB



#### Part numbering :

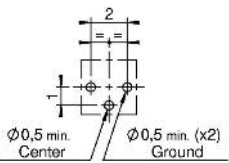


nn = number of LF contacts

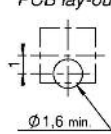
Type	L
V	3
VL	4,5

#### Pattern for special contact :

HF 30-1400-xx PCB lay-out



HP 30-3400-xx PCB lay-out

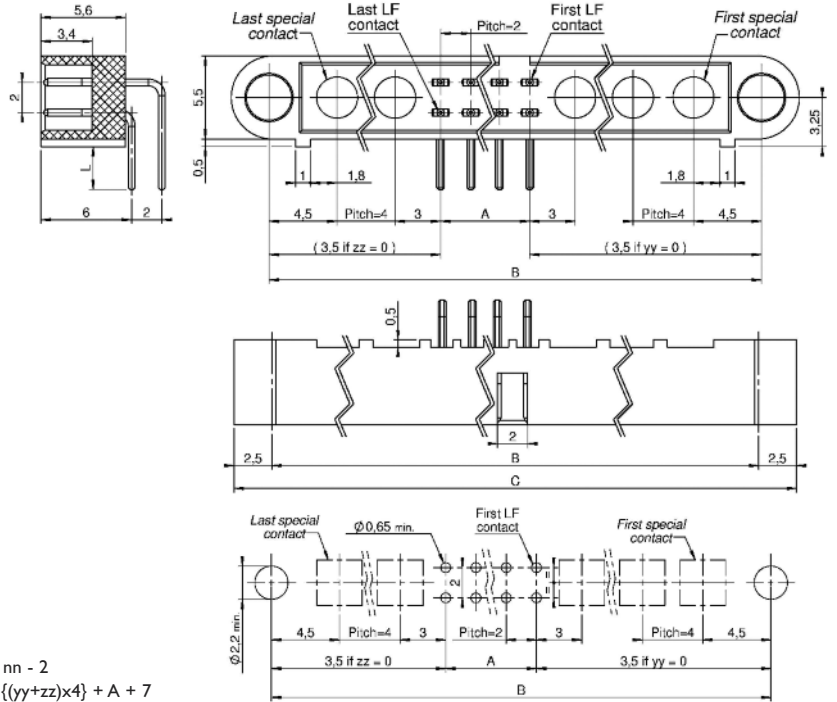


$$A = nn - 2$$

$$B = \{(yy+zz) \times 4\} + A + 7$$

$$B_{max} = 65 \text{ mm}$$

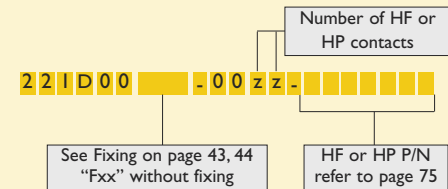
$$C = B + 5$$



### 90° PCB FOR HP/HF CONTACTS ONLY

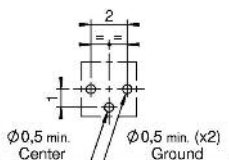


#### Part numbering :

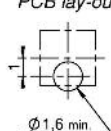


#### Pattern for special contact :

HF 30-1400-xx PCB lay-out



HP 30-3400-xx PCB lay-out

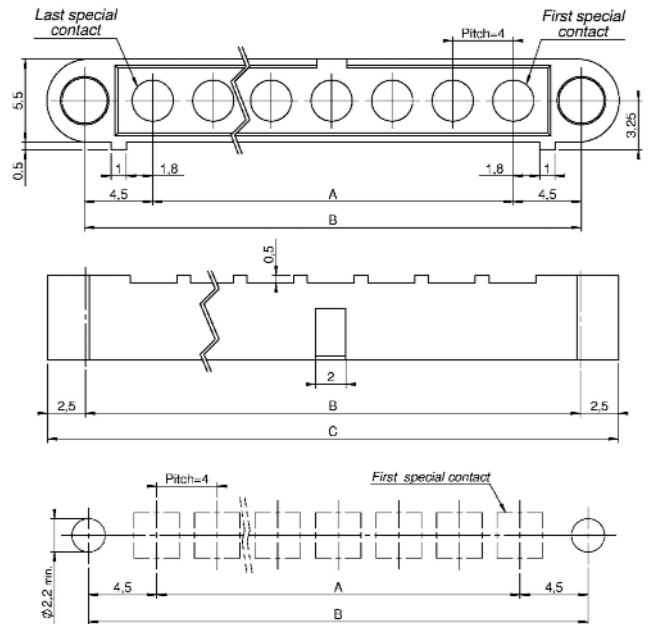


$$A = (zz \times 4) - 4$$

$$B = A + 9$$

$$C = B + 5$$

Refer to sizes information table on cover page



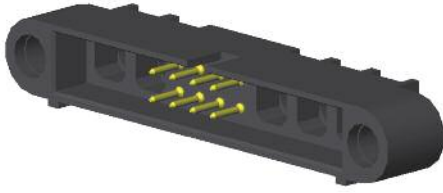
Special contacts min. : 02  
max. : 15



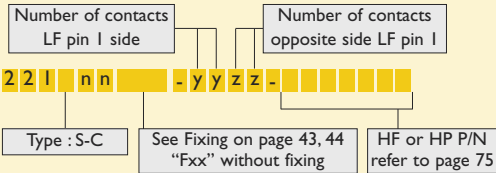
# CMM 220

## Male mixed-layout

### CRIMP

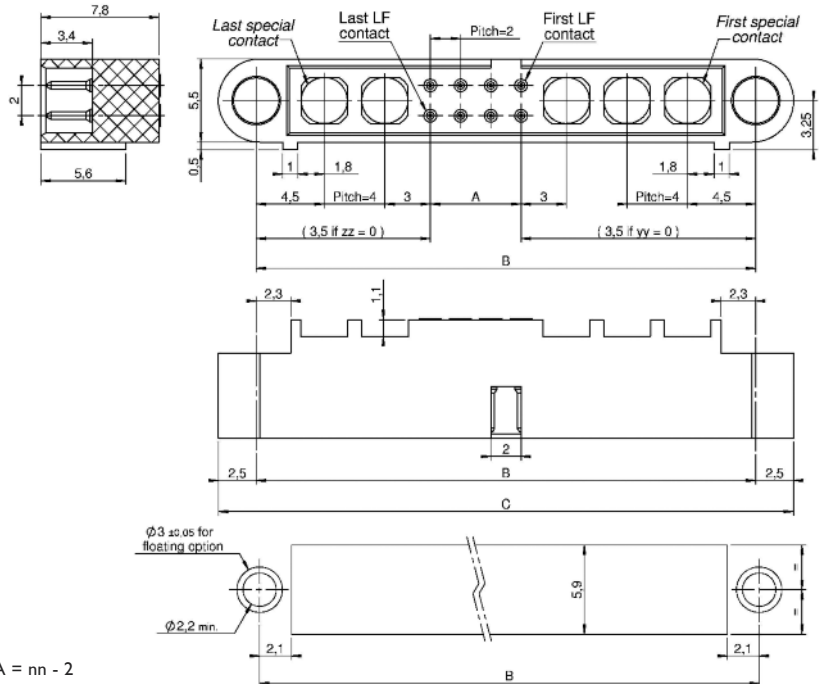
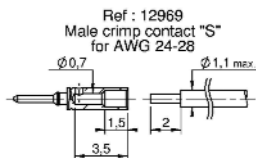
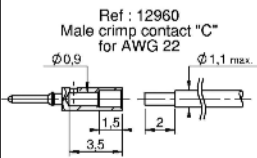


#### Part numbering :



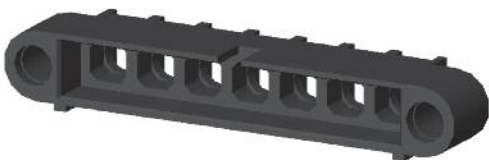
nn = number of LF contacts

Type	Gauge
S	24-28
C	22

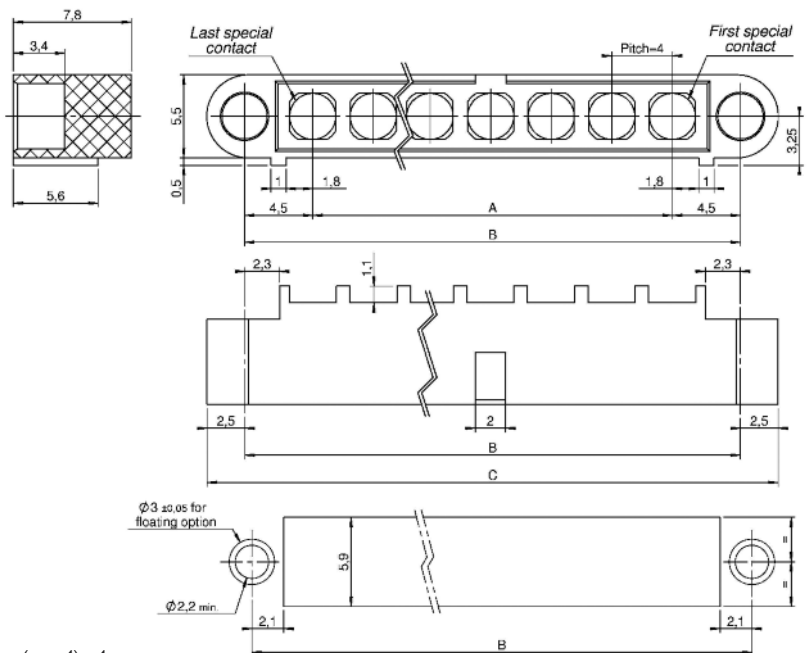
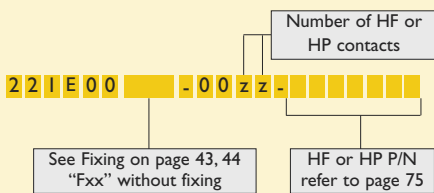


$A = nn - 2$   
 $B = \{(yy+zz) \times 4\} + A + 7$   
 $B_{max} = 65 \text{ mm}$   
 $C = B + 5$

### CRIMP FOR HP/HF CONTACTS ONLY



#### Part numbering :



$A = (zz \times 4) - 4$   
 $B = A + 9$   
 $C = B + 5$

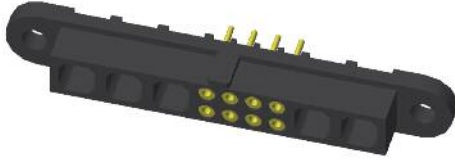
Special contacts min. : 02  
max. : 15

Refer to dimension table on cover page

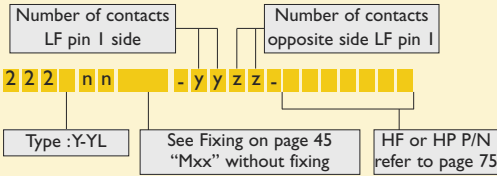
# CMM 220

## Female mixed-layout

### STRAIGHT PCB



#### Part numbering :

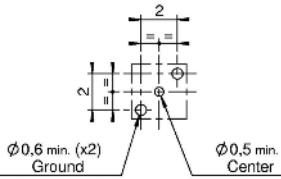


nn = number of LF contacts

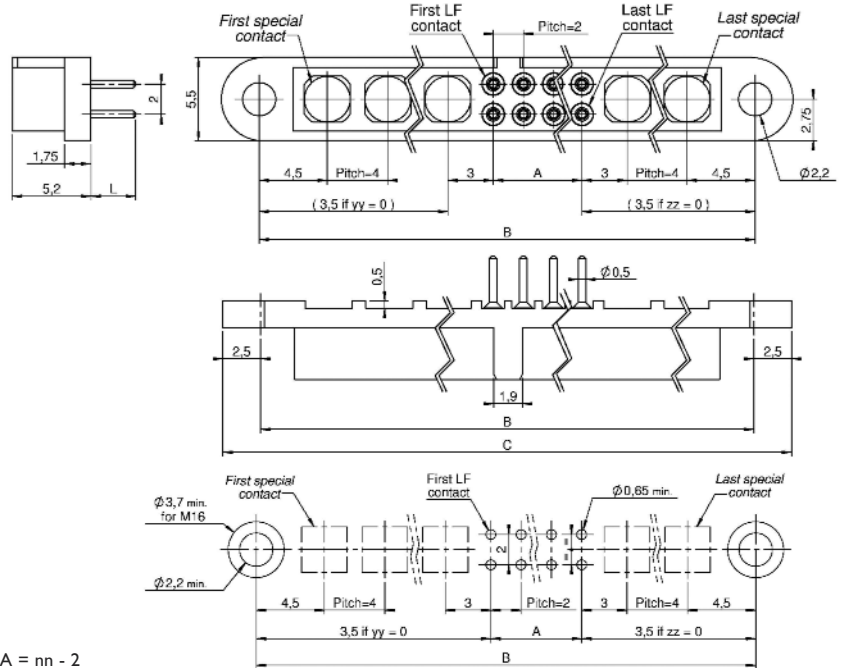
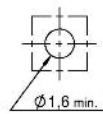
Type	L
Y	3
YL	4,5

#### Pattern for special contact :

HF 30-2300-xx PCB lay-out



HP 30-4300-xx PCB lay-out



$$A = nn - 2$$

$$B = ((yy+zz) \times 4) + A + 7$$

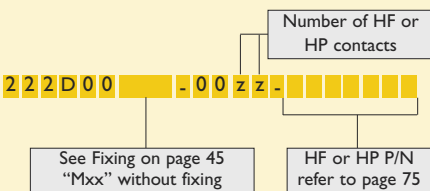
$$B_{max} = 65 \text{ mm}$$

$$C = B + 5$$

### STRAIGHT PCB FOR HP/HF CONTACTS ONLY

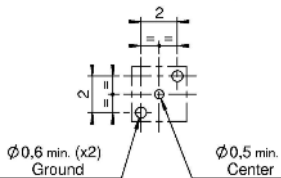


#### Part numbering :

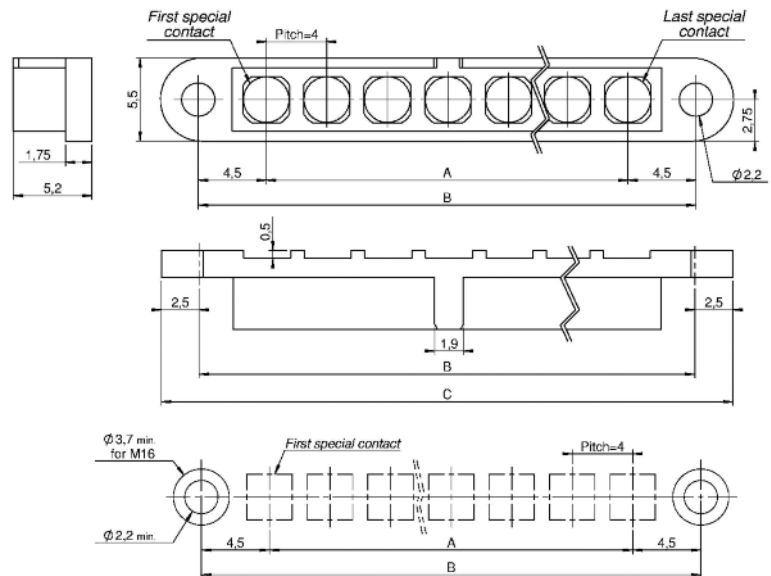
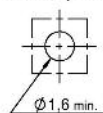


#### Pattern for special contact :

HF 30-2300-xx PCB lay-out



HP 30-4300-xx PCB lay-out



Special contacts min.: 02  
max.: 15

$$A = (zz \times 4) - 4$$

$$B = A + 9$$

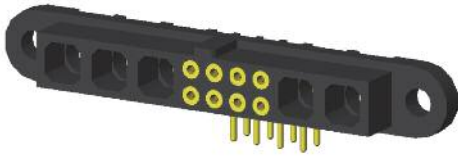
$$C = B + 5$$

Refer to dimension table on cover page

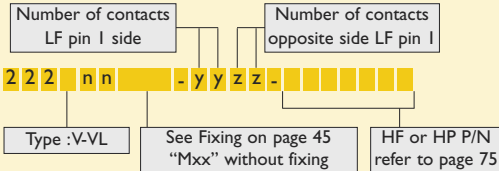
# CMM 220

## Female mixed-layout

### 90° PCB



#### Part numbering :

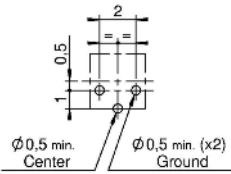


nn = number of LF contacts

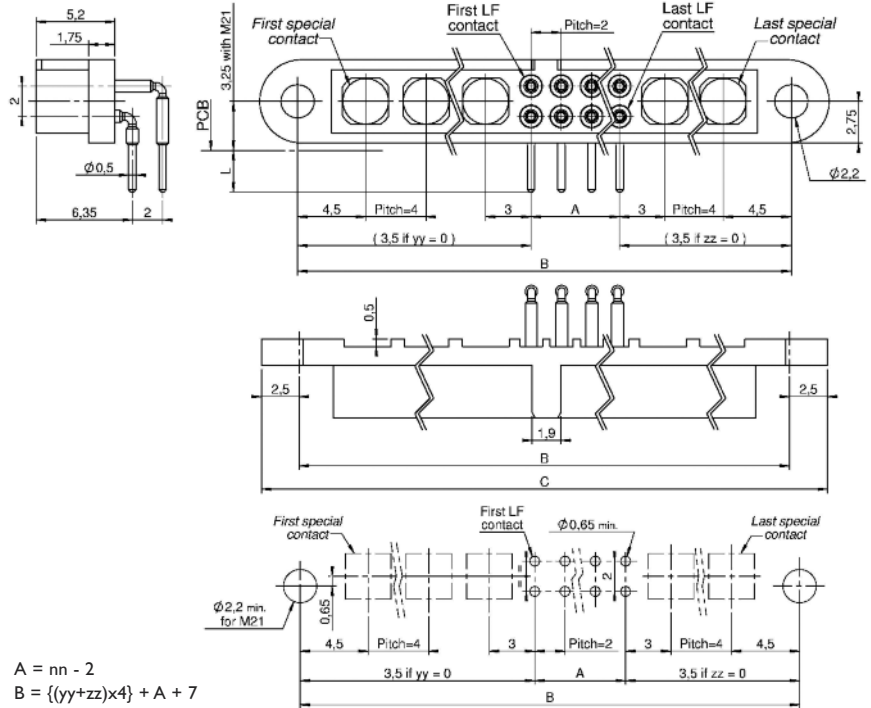
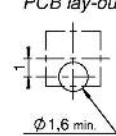
Type	L
V	3
VL	4,5

#### Pattern for special contact :

HF 30-2400-xx PCB lay-out



HP 30-4400-xx PCB lay-out

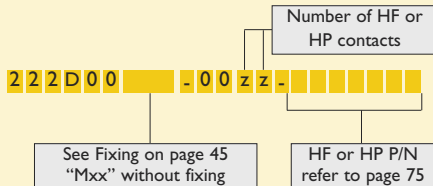


$A = nn - 2$   
 $B = \{(yy+zz) \times 4\} + A + 7$   
 $B_{max} = 65 \text{ mm}$   
 $C = B + 5$

### 90° PCB FOR HP/HF CONTACTS ONLY

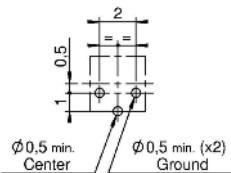


#### Part numbering :

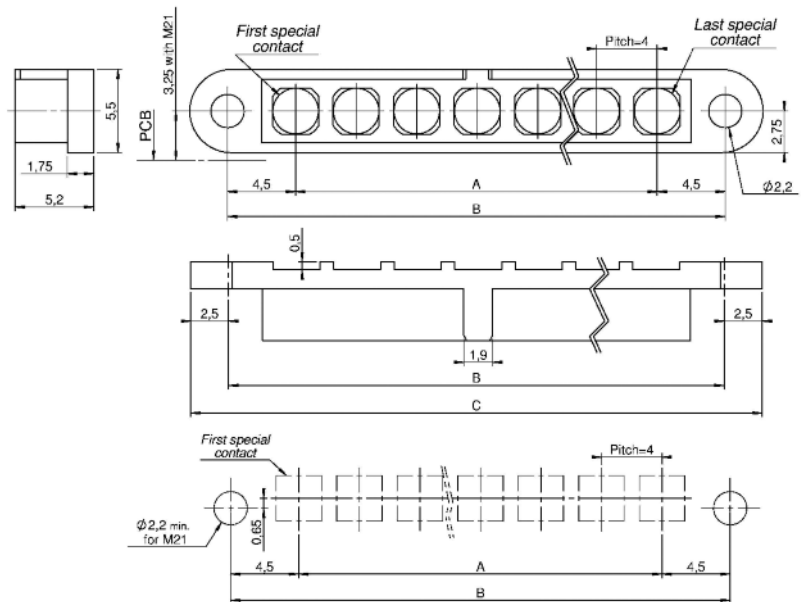
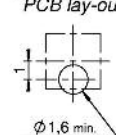


#### Pattern for special contact :

HF 30-2400-xx PCB lay-out



HP 30-4400-xx PCB lay-out



$A = (zz \times 4) - 4$   
 $B = A + 9$   
 $C = B + 5$

Special contacts min. : 02  
max. : 15

Refer to dimension table on cover page

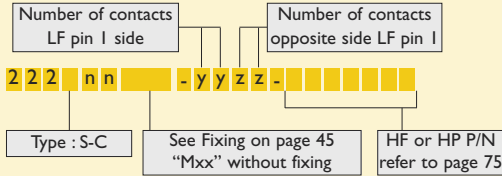
# CMM 220

## Female mixed-layout

### CRIMP

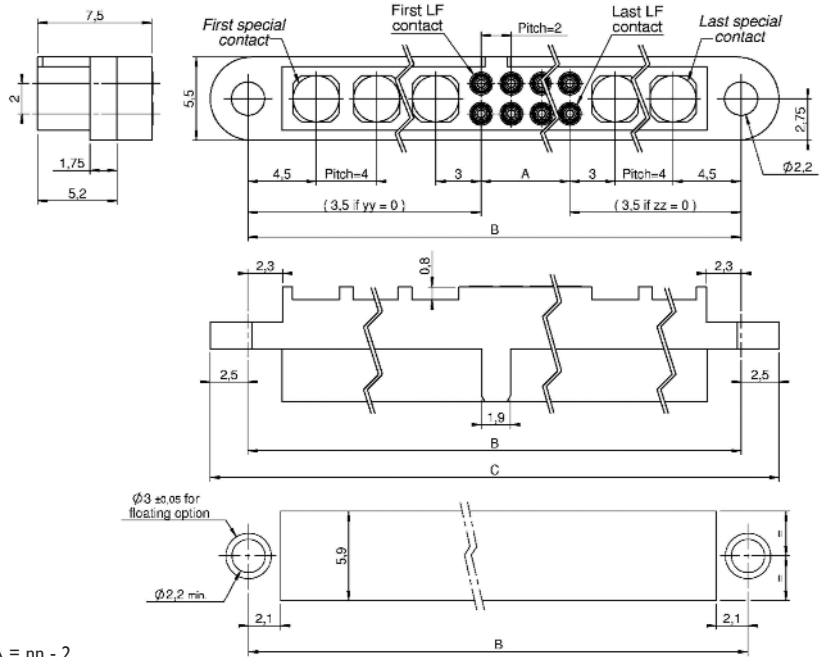
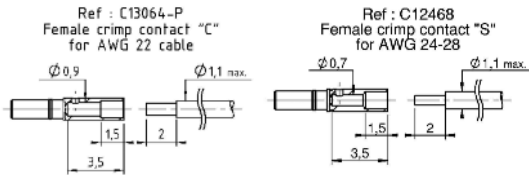


#### Part numbering :



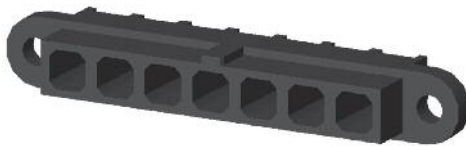
nn = number of LF contacts

Type	Gauge
S	24-28
C	22

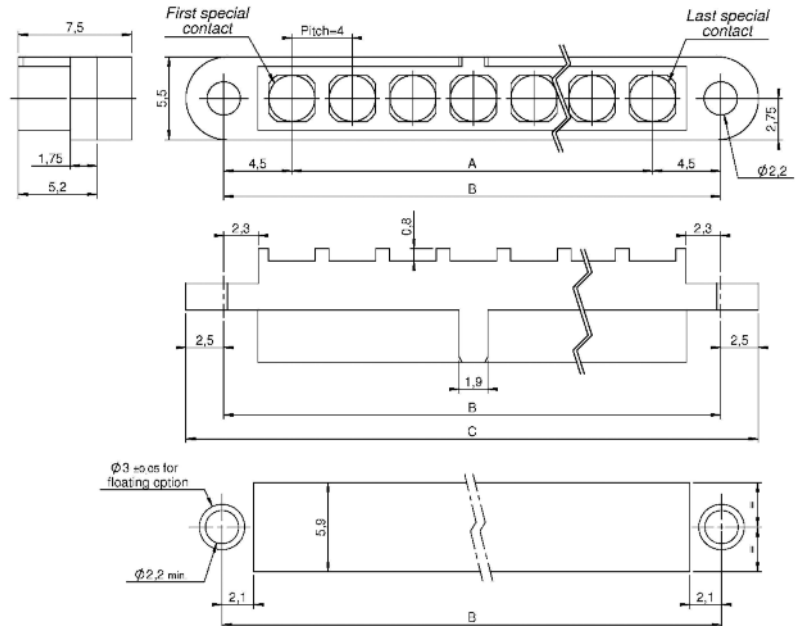
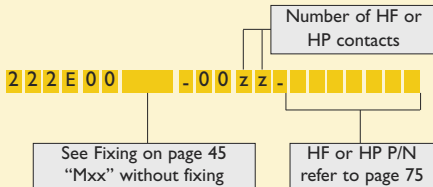


$A = nn - 2$   
 $B = ((yy+zz) \times 4) + A + 7$   
 $B_{max} = 65 \text{ mm}$   
 $C = B + 5$

### CRIMP FOR HP/HF CONTACTS ONLY



#### Part numbering :



$A = (zz \times 4) - 4$   
 $B = A + 9$   
 $C = B + 5$

Special contacts min. : 02  
max. : 15


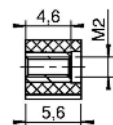

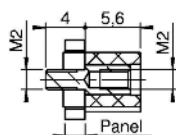

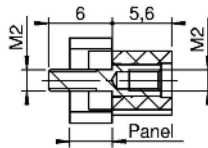
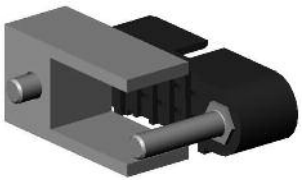
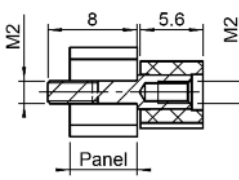
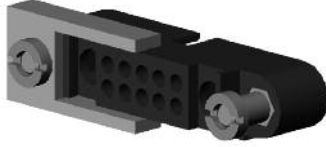
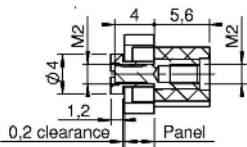
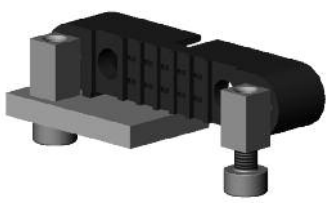
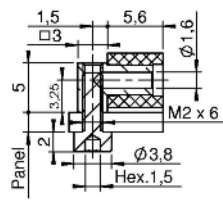
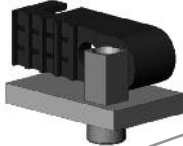
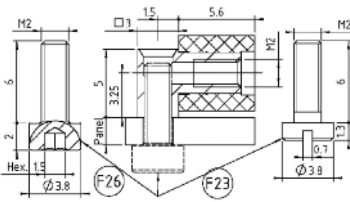

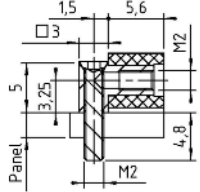
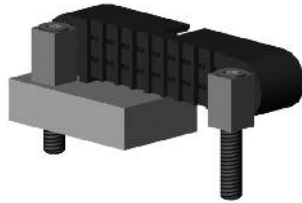
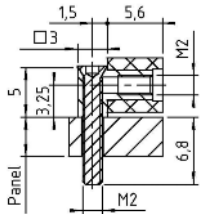
Refer to dimension table on cover page





# Fixing for CMM 220 male


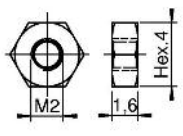

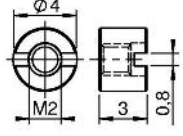

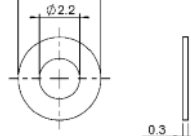
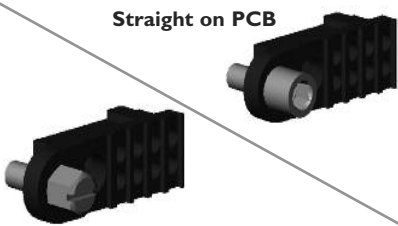
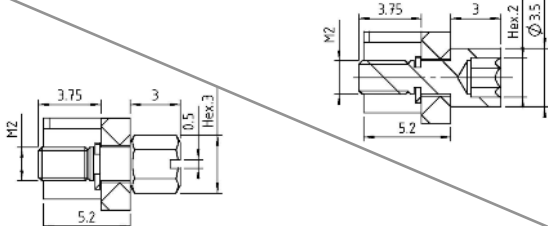

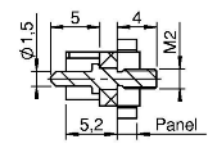

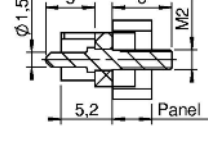

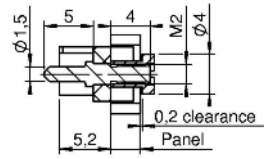
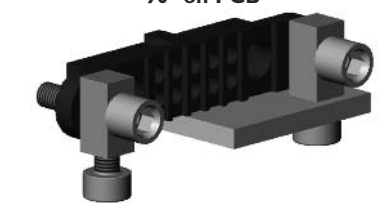
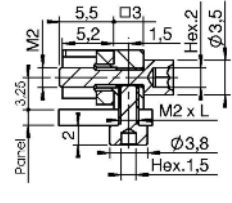

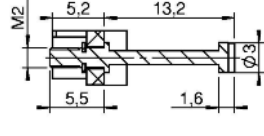
## FIXING HARDWARE FOR CMM 220 MALE

REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
F21	Straight on PCB 		<b>F21 :</b> CMM male : <b>Y-YL-TS-C</b> (D-E : straight)
F22	Straight on PCB 0,8 min / 2 max 		<b>F22 :</b> CMM male : <b>Y-TS-C</b> (D-E : straight) <b>F22H :</b> CMM male : <b>Y-T</b> (D : straight)
F22H			
F24	Straight on PCB 1,5 min / 4 max 		<b>F24 :</b> CMM male : <b>YL-TS-C</b> (D-E : straight) <b>F24H :</b> CMM male : <b>YL-T</b> (D : straight)
F24H			
F24L	Straight on PCB 6 max 		<b>F24L :</b> CMM male : <b>T-TL</b> (D-E : straight)
<b>F2xx</b> xx = (PCB thickness + 0,2 mm) x 10 Example : for 3 mm PCB, the reference is <b>F232</b> (3 + 0,2) x 10 = 32 <b>xx = 32</b>	Straight on PCB with floating option 		<b>F2xx :</b> CMM male : <b>S-C</b> (E : straight)
F25	90° on PCB 		<b>F25 :</b> CMM male : <b>V-VL-R-S-C-E</b> (D : 90°)
F26	90° on PCB 		<b>F26/F23 :</b> CMM male : <b>V-VL-R-S-C-E</b> (D : 90°)
F23			
F30	90° on PCB 2,5 max. 		<b>F30 &amp; F30H :</b> CMM male : <b>V-R-C-S-E</b> (D : 90°)
F30H			
F31	90° on PCB 4,5 max. 		<b>F31 &amp; F31H :</b> CMM male : <b>VL-R-C-S-E</b> (D : 90°)
F31H			

Please refer to the CMM Catalogue Guidelines for any other fixing not listed here.

# Fixing for CMM 220 female

## FIXING HARDWARE FOR CMM 220 FEMALE

HEXAGONAL NUT		STANDARD NUT		"W" CODE FOR ADDITIONAL WASHER	
					
REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS		RECOMMENDATION	
<b>M16</b>	<b>Straight on PCB</b> 			<b>M16/M11</b> : CMM Female : <b>Y-YL-TS-C-E</b> (D : straight)	
<b>M11</b>					
<b>M12</b>	<b>Straight on PCB 0,8 min / 2 max</b> 			<b>M12</b> : CMM female : <b>Y-TS-C</b> (D-E : straight)  <b>M12H</b> : CMM female : <b>Y-T</b> (D : straight)	
<b>M12H</b>					
<b>M12L</b>	<b>Straight on PCB 1,5 min / 4 max</b> 			<b>M12L</b> : CMM female : <b>Y-TS-C</b> (D-E : straight)  <b>M12LH</b> : CMM female : <b>YL-T</b> (D : straight)	
<b>M12LH</b>					
<b>M1xx</b> xx = (PCB thickness + 0,2 mm) x 10 Example : for 3 mm PCB, the reference is <b>M132</b> (3 + 0,2) x 10 = 32 xx = 32	<b>Straight on PCB with floating option</b> 			<b>M1xx</b> : CMM female : <b>S-C</b> (E : straight)	
<b>M21</b> for PCB 1,6 mm (L = 4 mm)	<b>90° on PCB</b> 			<b>M21</b> : CMM Female : <b>V-R-S-C-E</b> (D : 90°)  <b>M21L</b> : CMM Female : <b>VL-R-S-C-E</b> (D : 90°)	
<b>M21L</b> for PCB 3,2 mm (L = 5 mm)					
<b>M18</b>	<b>Cover option</b> 			<b>M18</b> : CMM female : <b>S-C</b> (E : straight)	

Please refer to the CMM Catalogue Guidelines for any other fixing not listed here.



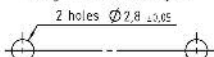
# Other fixing hardware for CMM 220

## FIXING HARDWARE FOR CMM 220 FEMALE/MALE

REFERENCE	ASSEMBLY ON PCB	OVERALL DIMENSIONS	RECOMMENDATION
M46	Straight on PCB 1,5 min. / 2,5 max. 		<b>M46</b> : CMM female : <b>Y-TS-C</b> (D-E : straight)
M46H			
M47	Straight on PCB 1,5 min. / 4 max. 		<b>M47</b> : CMM female : <b>YL-TS-C</b> (D-E : straight)
M47H			
M48 for PCB 1,6 mm (L = 3 mm)	90° on PCB 		<b>M48 / M48M / M48L</b> : CMM female : <b>V-VL-R-S-C-E</b> (D : 90°)
M48M for PCB 2 mm (L = 4 mm)			
M48L for PCB 3,2 mm (L = 5 mm)			
M49	Straight on PCB 		<b>M49</b> : CMM female : <b>Y-TS-C</b> (D-E : straight)
M49H			
F60	Straight on PCB 		<b>F60</b> : CMM male : <b>Y-YL-TS-C-E</b> (D : straight)
F61	Straight on PCB 		<b>F61</b> : CMM male : <b>Y-YL-TS-C-E</b> (D : straight)
F62	Racking 		<b>F62</b> : CMM male : <b>Y-TS-C</b> (D-E : straight)
F62H			
F63 for PCB 1,6 mm	90° on PCB 		<b>F63</b> : CMM male : <b>V-R-S-C-E</b> (D : 90°)
F63L for PCB 3,2 mm			

M46 M46H M47 M47H

fixing hardware PCB layout



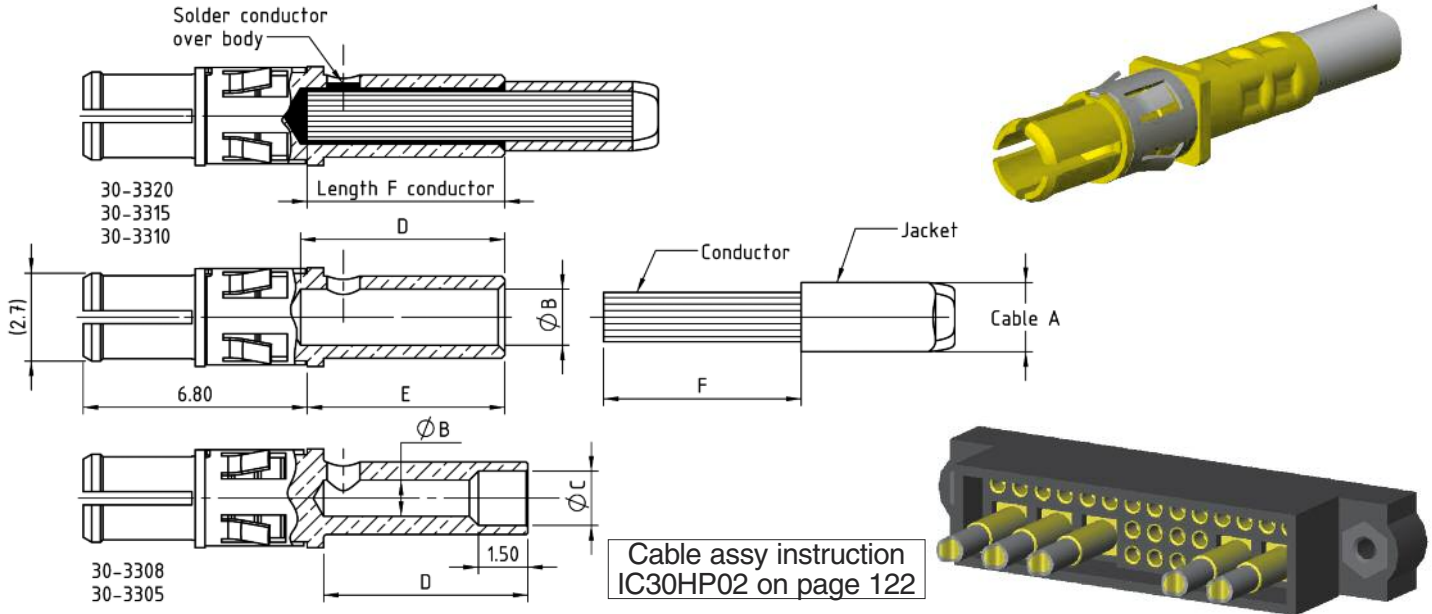
Distance between



While screwing the fixing nut, maintain the insert with screwdriver

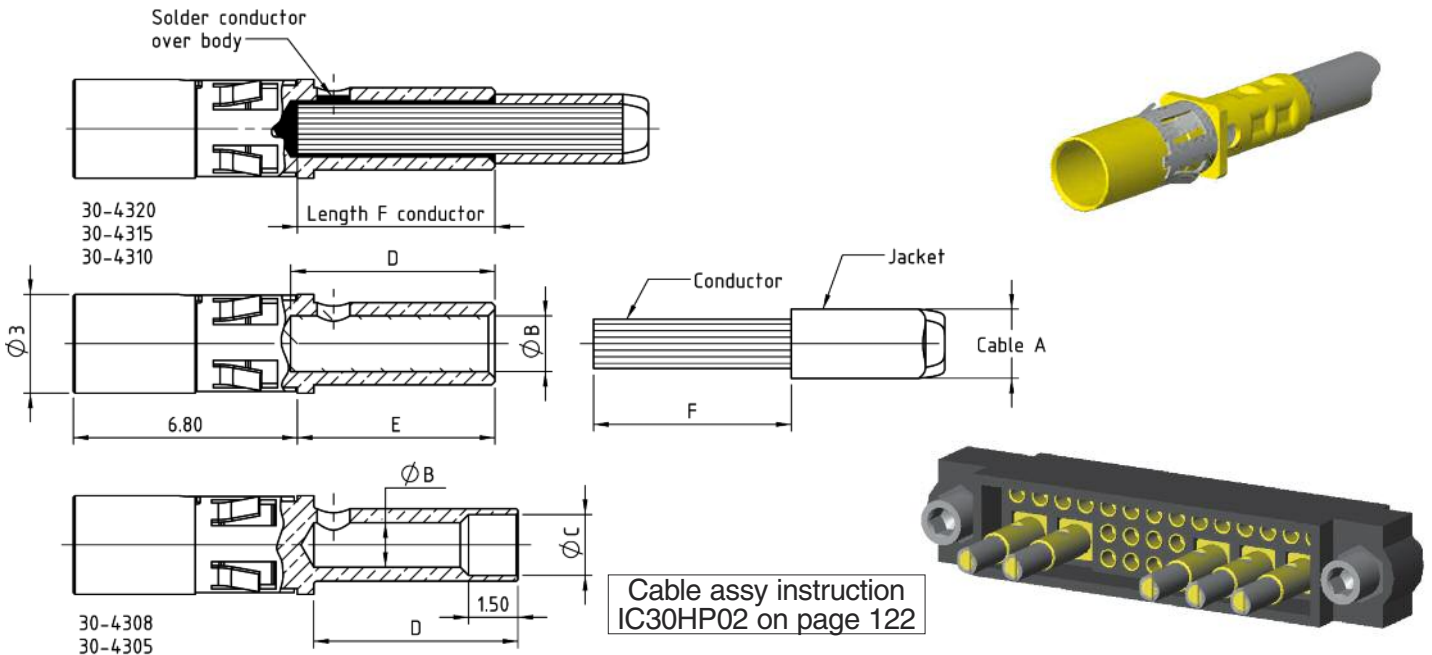
# HP : High Power contact series 30

## MALE STRAIGHT ON CABLE P/N 30-33xx (solder or crimp)



Loaded	Unloaded	Ampere	Cable A				ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimp by HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16	AWG 14								
3305	30-3305	5A	X				1,1 mm	1,65 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
3308	30-3308	8A		X			1,35 mm	1,85 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
3310	30-3310	10A	X	X	X		1,7 mm		6,2 mm	6 mm	6 mm	OK		OK
3315	30-3315	15A				X	2 mm		6,2 mm	6 mm	6 mm	OK		OK
3320	30-3320	20A				X	2,6 mm		5,5 mm	6 mm	5,3 mm	OK		OK

## FEMALE STRAIGHT ON CABLE P/N 30-43xx (solder or crimp)



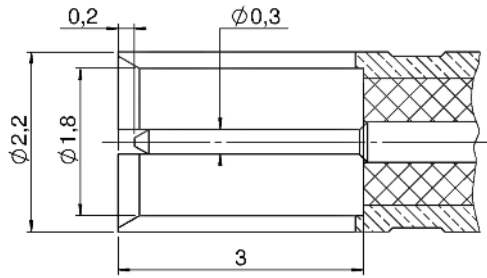
Loaded	Unloaded	Ampere	Cable A				ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimp by HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16	AWG 14								
4305	30-4305	5A	X				1,1 mm	1,65 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
4308	30-4308	8A		X			1,35 mm	1,85 mm	6,2 mm	6,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
4310	30-4310	10A	X	X	X		1,7 mm		6,2 mm	6 mm	6 mm	OK		OK
4315	30-4315	15A				X	2 mm		6,2 mm	6 mm	6 mm	OK		OK
4320	30-4320	20A				X	2,6 mm		5,5 mm	6 mm	5,3 mm	OK		OK

# HF : High Frequency contacts series 22

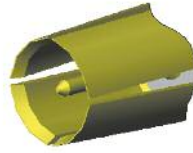
# HP : High Power contacts series 22

FOR CMM 340

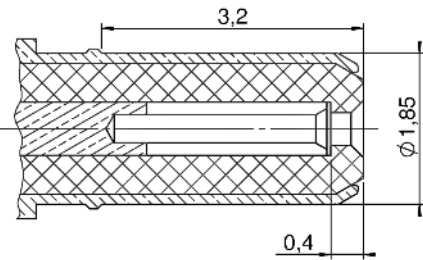
## INSERTION



HF female contact insertion



The special contact gender is determined by the body and not by the central contact



HF male contact insertion



## PART NUMBERING FOR PCB HF & HP SPECIAL CONTACTS

These two digits are linked to the connector. Do not use them inside a CMM part number when loaded. All dash signs also disappear

Contact type:  
3 = straight  
4 = right angle  
5 = SMT 90°  
6 = SMT straight

Termination length  
"12" = 1st row 3mm  
"22" = 2nd row 3mm  
"14" = 1st row 4.5mm  
"24" = 2nd row 4.5mm  
"..."

22-00-00

Coaxmatic 22™  
1 = male coax  
2 = female coax  
3 = high power male  
4 = high power female

## PART NUMBERING FOR HF & HP SPECIAL CONTACTS ON-CABLE

These two digits are linked to the connector. Do not use them inside a CMM part number when loaded. All dash signs also disappear

For HF contacts only Inner contact  
Z = solder  
S = crimp

For HF contacts only shield  
Z = solder  
S = crimp

Contact type:  
3 = straight  
"..."

Use these 2 digits only with 1.2mm dia. cables mounted on a HF straight contact  
Crimp shield type: 01 = refer to page 92 02 = refer to page 92

22-3-Z-75

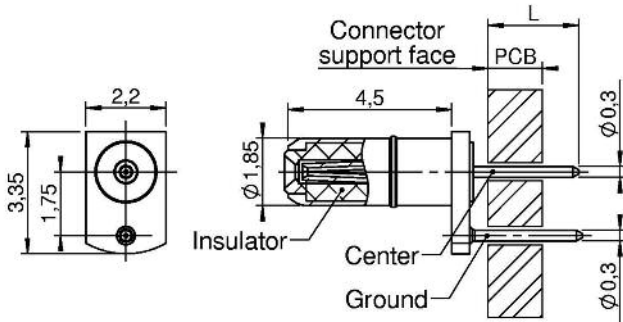
Special contacts :  
1 = male HF  
2 = female HF  
3 = male HP  
4 = female HP

Use these 2 digits only with 75 Ohm cables

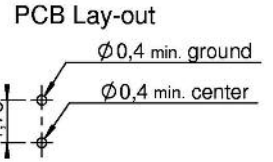
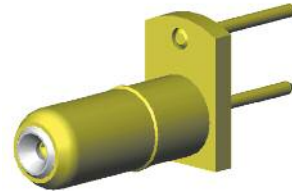
Contact termination:  
10 = for HP 10A  
12 = for HF cable 1.2mm  
20 = for HF cable 2mm

# HF : High Frequency contacts series 22

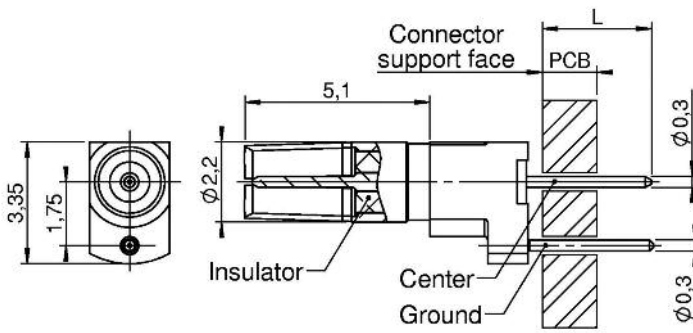
## MALE STRAIGHT ON PCB P/N 22-1300-xx



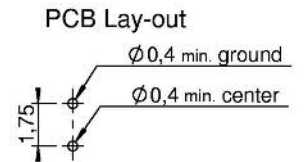
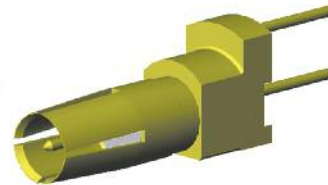
Loaded	Length L
I30012	3 mm
I30014	4,5 mm



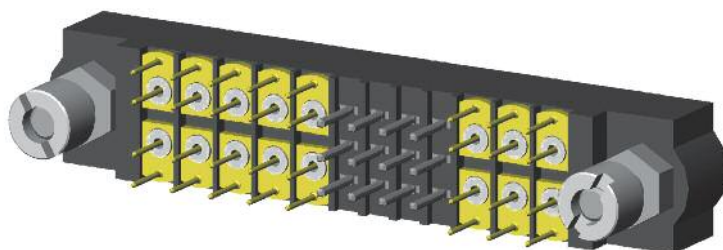
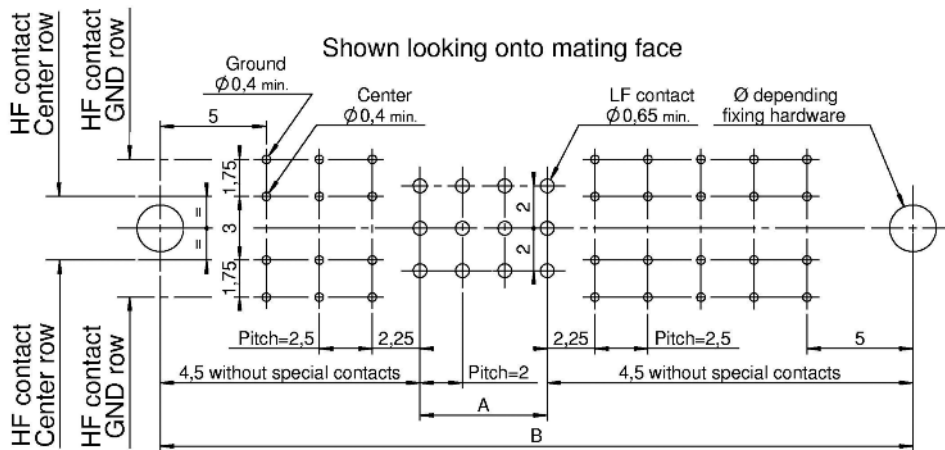
## FEMALE STRAIGHT ON PCB P/N 22-2300-xx



Loaded	Length L
230012	3 mm
230014	4,5 mm



## PCB LAYOUT 22-1300-xx & 22-2300-xx



$$A = \left\lceil \frac{(nnx2)}{3} \right\rceil - 2$$

if yy and zz ≠ 0 :

$$B = \left\lceil \left( \frac{(yy)+(zz)}{2} \right) - 2 \right\rceil \times 2,5 + 14,5 + A$$

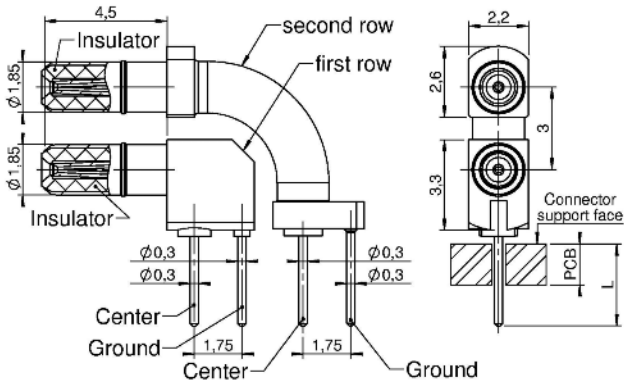
if yy or zz = 0 :

$$B = \left\lceil \left( \frac{(yy)=(zz)}{2} \right) - 1 \right\rceil \times 2,5 + 11,75 + A$$

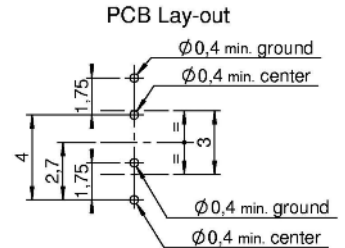
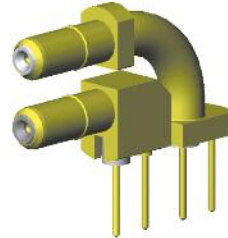
B max. = 87

# HF : High Frequency contacts series 22

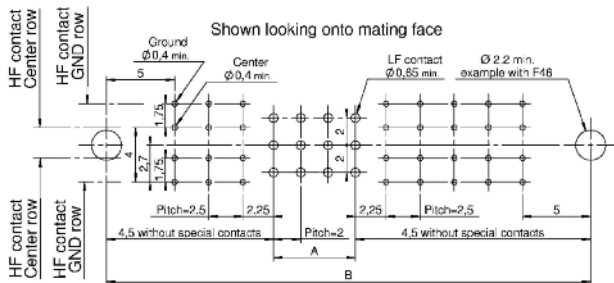
## MALE 90° PCB P/N 22-1400-xx



	Loaded		Loaded	Length L
First row	140012	it mounted in same connector	140002	3 mm
Second row	140022			
First row	140014	it mounted in same connector	140004	4,5 mm
Second row	140024			



## PCB LAYOUT 22-1400-xx



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

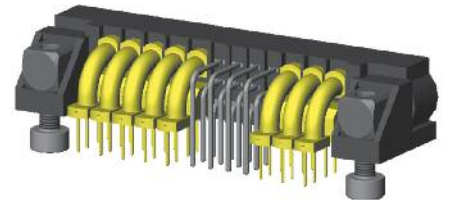
if yy or zz ≠ 0 :

$$B = \left\{ \frac{(yy) + (zz)}{2} - 2 \right\} \times 2,5 + 14,5 + A$$

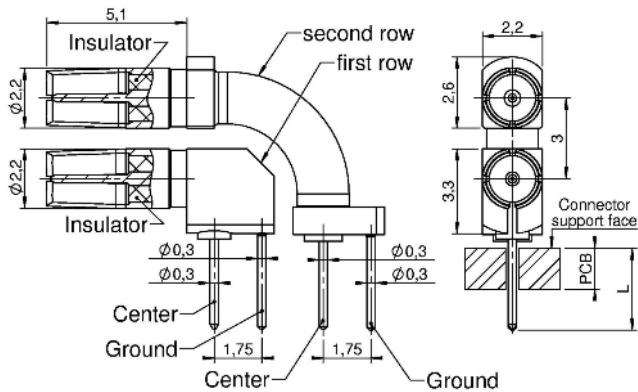
if yy or zz = 0 :

$$B = \left\{ \frac{(yy) \text{ or } (zz)}{2} - 1 \right\} \times 2,5 + 11,75 + A$$

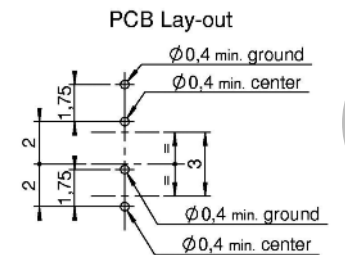
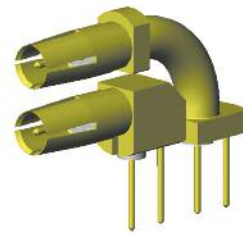
B max. = 87



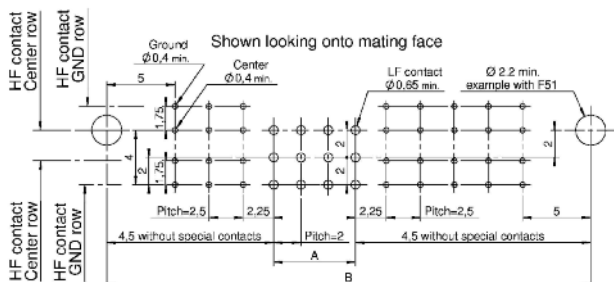
## FEMALE 90° PCB P/N 22-2400-xx



	Loaded		Loaded	Length L
First row	240012	it mounted in same connector	240002	3 mm
Second row	240022			
First row	240014	it mounted in same connector	240004	4,5 mm
Second row	240024			



## PCB LAYOUT 22-2400-xx



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

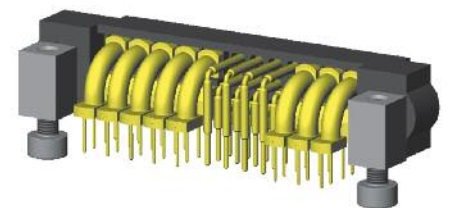
if yy and zz ≠ 0 :

$$B = \left\{ \frac{(yy) + (zz)}{2} - 2 \right\} \times 2,5 + 14,5 + A$$

if yy or zz = 0 :

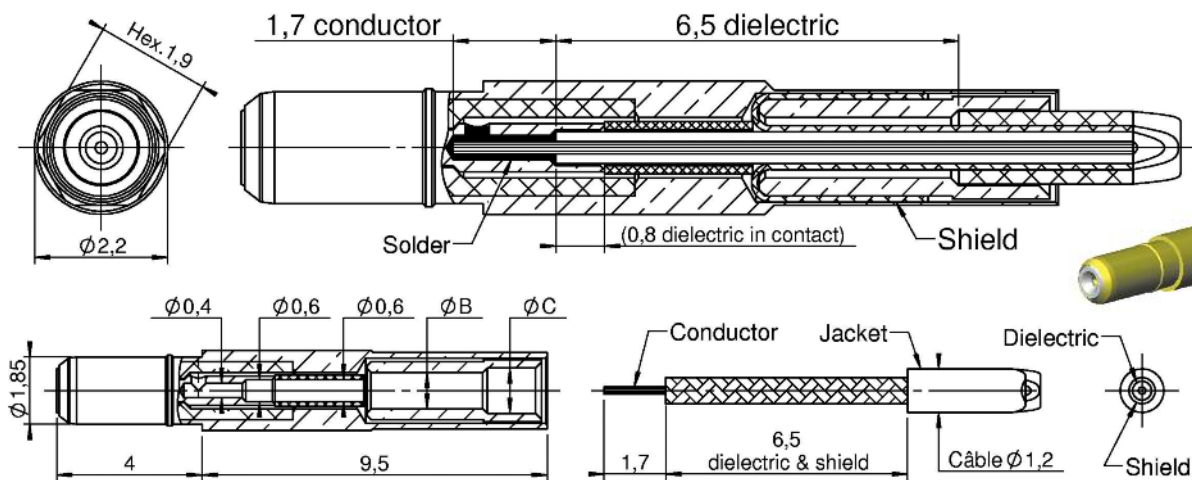
$$B = \left\{ \frac{(yy) \text{ or } (zz)}{2} - 1 \right\} \times 2,5 + 11,75 + A$$

B max. = 87



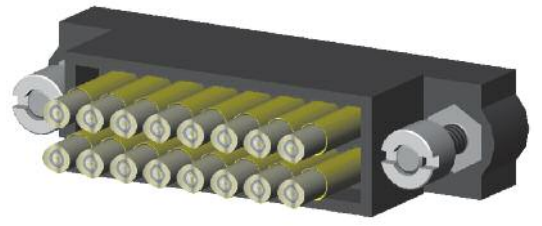
# HF : High Frequency contacts series 22

## MALE STRAIGHT TO CRIMP ON CABLE Ø 1.2 P/N 22-1312-ZS-xx

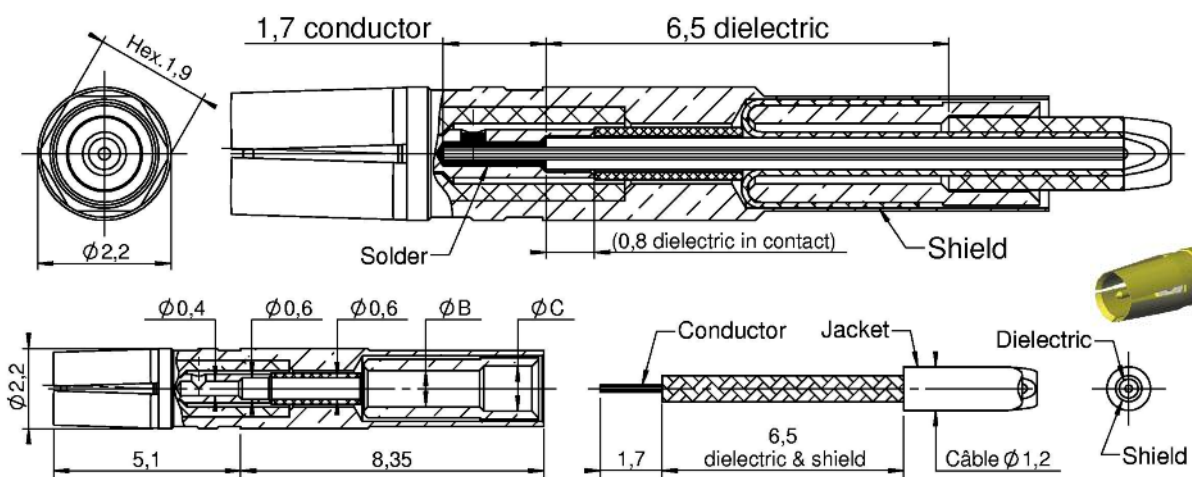


Cable assy instruction IC22HF01 on page 116

Loaded	Unloaded	ØB	ØC	
I312ZS01	22-1312-ZS-01	1 mm	1,25 mm	For cable type NEXANS 50VMTX
I312ZS02	22-1312-ZS-02	0,85 mm	1,15 mm	For cable type AXON SM50

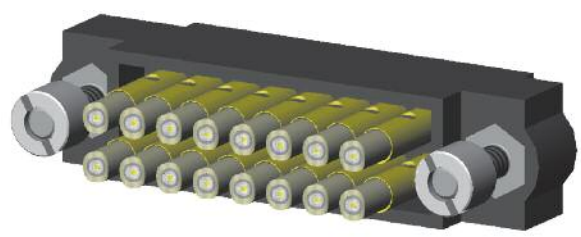


## FEMALE STRAIGHT TO CRIMP ON CABLE Ø 1.2 P/N 22-2312-ZS-xx



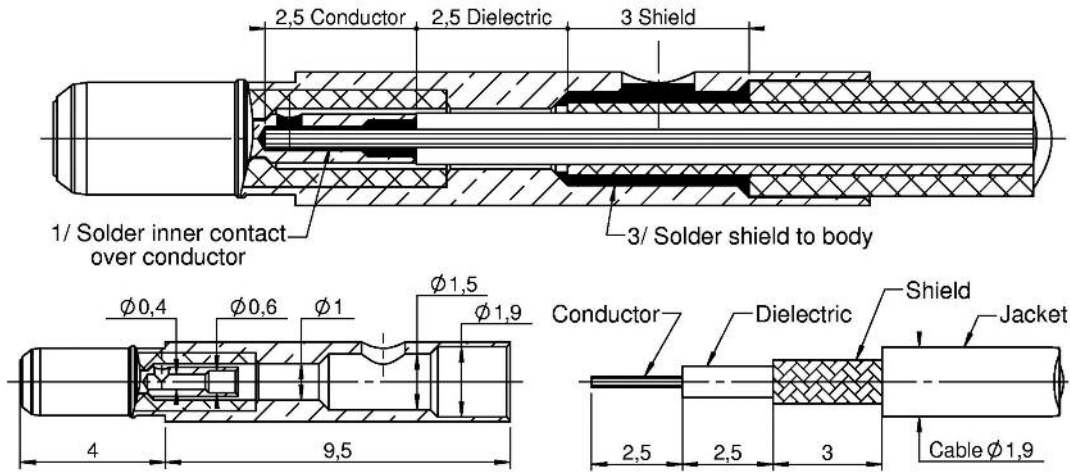
Cable assy instruction IC22HF02 on page 117

Loaded	Unloaded	ØB	ØC	
2312ZS01	22-2312-ZS-01	1 mm	1,25 mm	For cable type NEXANS 50VMTX
2312ZS02	22-2312-ZS-02	0,85 mm	1,15 mm	For cable type AXON SM50



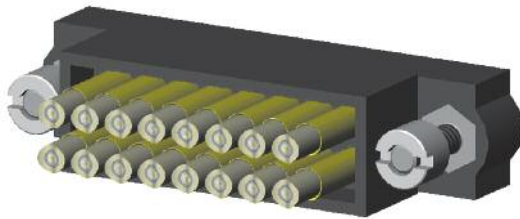
# HF : High Frequency contacts series 22

## MALE STRAIGHT ON CABLE P/N 22-1320-ZZ



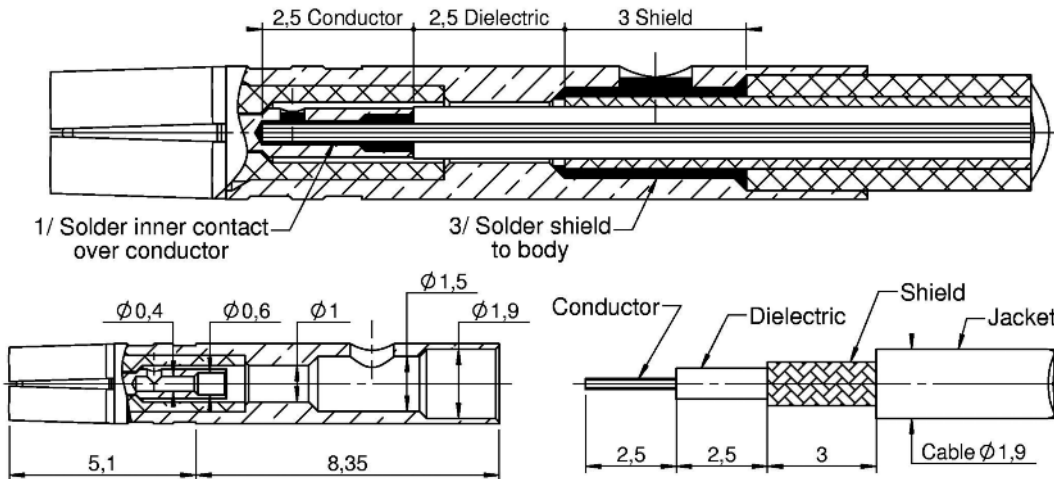
1/ Solder inner contact over conductor  
3/ Solder shield to body

1/ Solder inner contact over conductor.  
2/ Push cable with inner contact in body.  
3/ Solder shield to body.



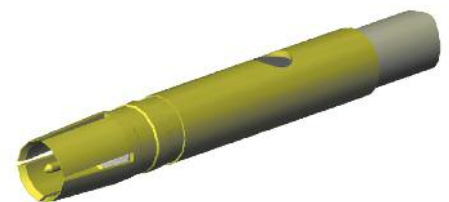
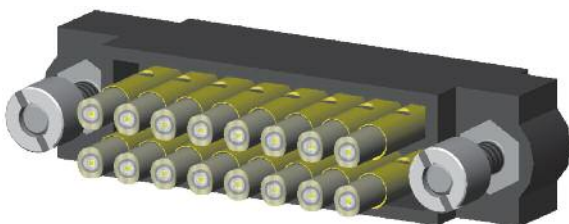
Loaded	Unloaded
1320ZZ	22-1320-ZZ

## FEMALE STRAIGHT ON CABLE P/N 22-2320-ZZ



1/ Solder inner contact over conductor  
3/ Solder shield to body

1/ Solder inner contact over conductor.  
2/ Push cable with inner contact in body.  
3/ Solder shield to body.

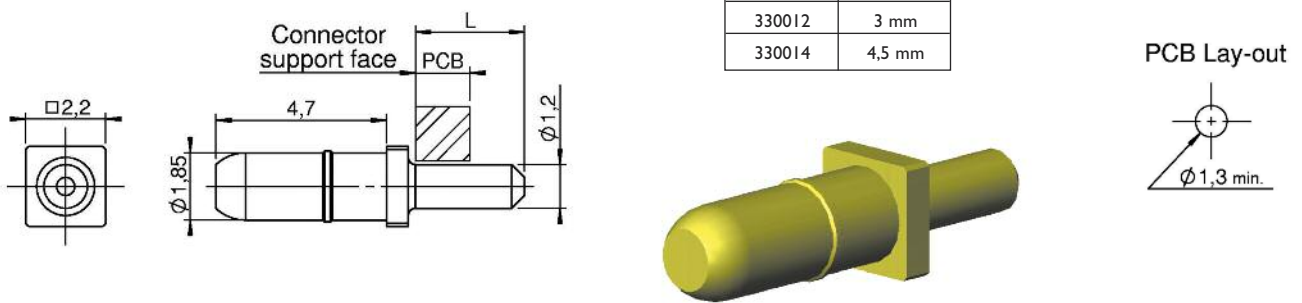


Loaded	Unloaded
2320ZZ	22-2320-ZZ

# HP : High power contacts series 22

## MALE STRAIGHT ON PCB P/N 22-3300-xx

Loaded	Length L
330012	3 mm
330014	4,5 mm

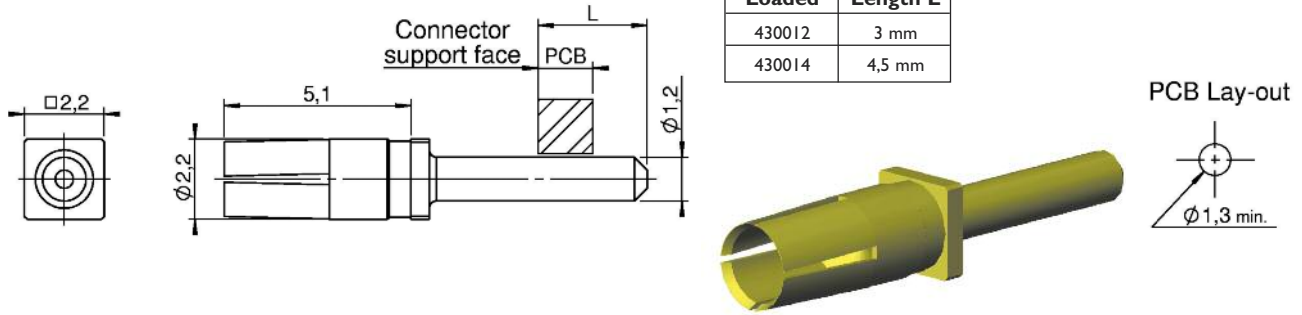


Connector support face PCB L  $\phi 1,2$  4,7  $\phi 1,85$   $\square 2,2$

PCB Lay-out  $\phi 1,3 \text{ min.}$

## FEMALE STRAIGHT ON PCB P/N 22-4300-xx

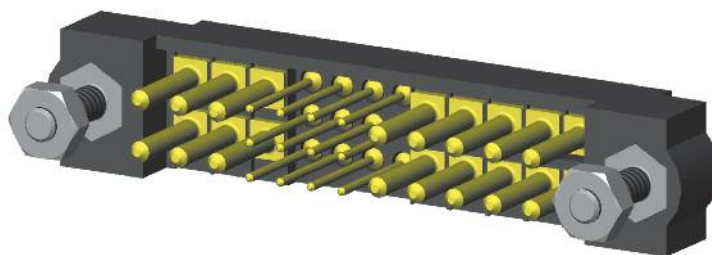
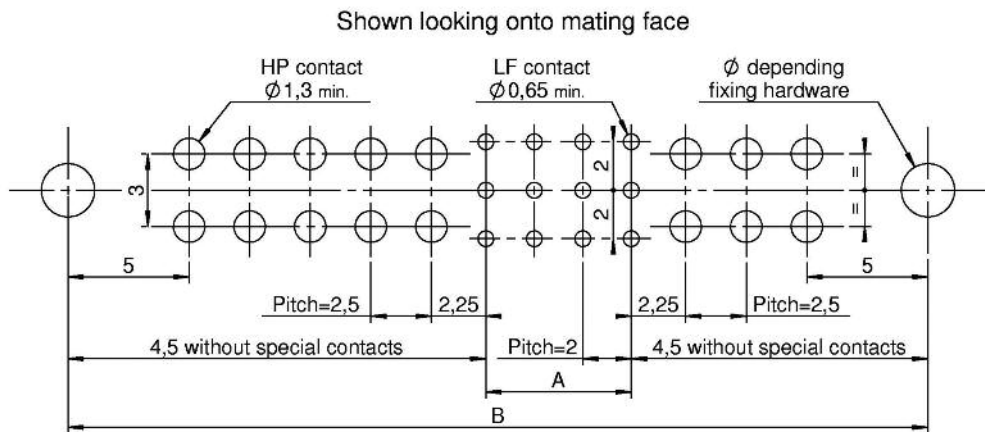
Loaded	Length L
430012	3 mm
430014	4,5 mm



Connector support face PCB L  $\phi 1,2$  5,1  $\phi 2,2$   $\square 2,2$

PCB Lay-out  $\phi 1,3 \text{ min.}$

## PCB LAYOUT 22-3300-xx & 22-4300-xx



$$A = \left\{ \frac{(nn \times 2)}{3} \right\} - 2$$

if yy and zz  $\neq 0$  :

$$B = \left\{ \left( \frac{(yy) + (zz)}{2} \right) - 2 \right\} \times 2,5 + 14,5 + A$$

if yy or zz = 0 :

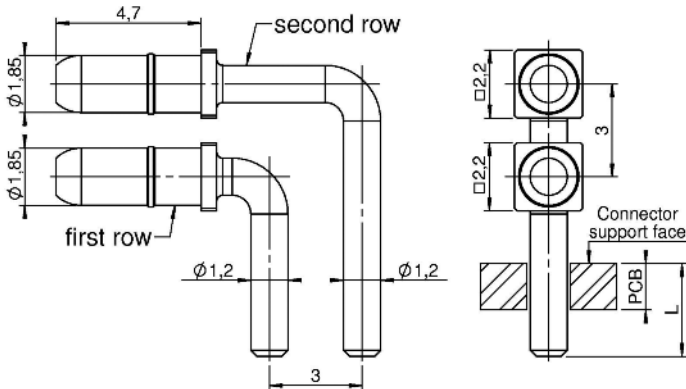
$$B = \left\{ \left( \frac{(yy) + (zz)}{2} \right) - 1 \right\} \times 2,5 + 11,75 + A$$

B max. = 87

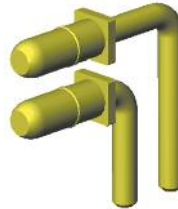


# HP : High power contacts series 22

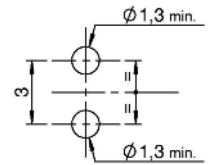
## MALE 90° PCB P/N 22-3400-xx



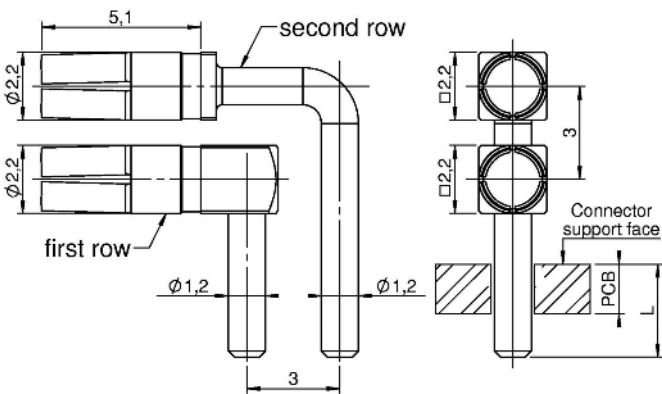
	Loaded		Loaded	Length L
First row	340012	it mounted in same connector	340002	3 mm
Second row	340022			
First row	340014	it mounted in same connector	340004	4,5 mm
Second row	340024			



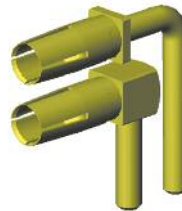
PCB Lay-out



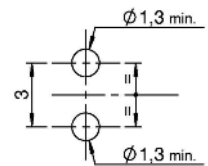
## FEMALE 90° PCB P/N 22-4400-xx



	Loaded		Loaded	Length L
First row	440012	it mounted in same connector	440002	3 mm
Second row	440022			
First row	440014	it mounted in same connector	440004	4,5 mm
Second row	440024			

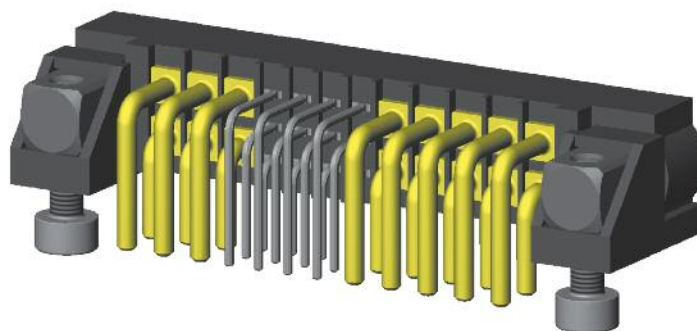
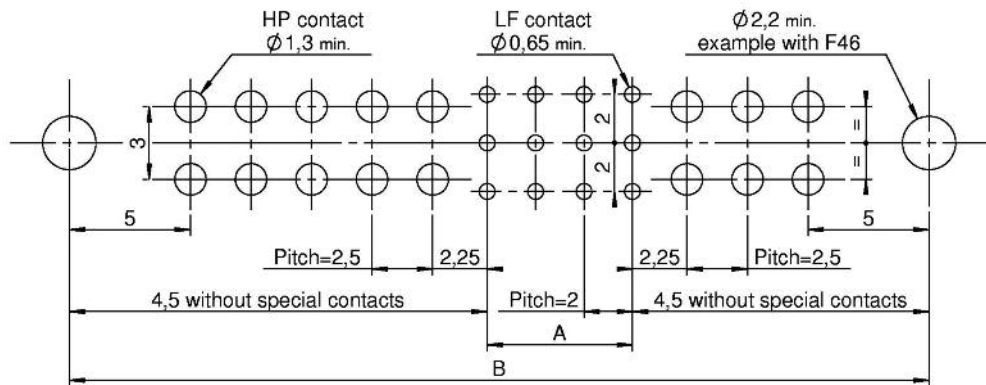


PCB Lay-out



## PCB LAYOUT 22-3400-xx & 22-4400-xx

Shown looking onto mating face



$$A = \left\lfloor \frac{(n \times x) - 2}{3} \right\rfloor$$

if yy and zz ≠ 0 :

$$B = \left\lfloor \left( \frac{(yy) + (zz)}{2} \right) - 2 \right\rfloor \times 2,5 + 14,5 + A$$

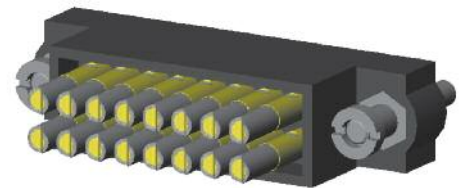
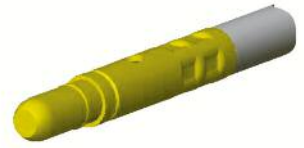
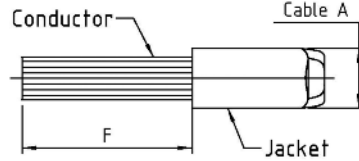
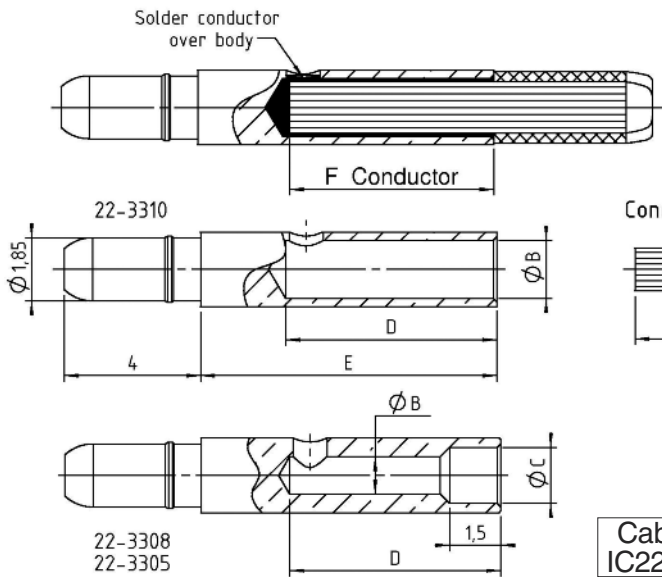
if yy or zz = 0 :

$$B = \left\lfloor \left( \frac{(yy) \text{ or } (zz)}{2} \right) - 1 \right\rfloor \times 2,5 + 11,75 + A$$

B max. = 87

# HP : High power contacts series 22

## MALE STRAIGHT ON CABLE P/N 22-33XX (solder & crimp)

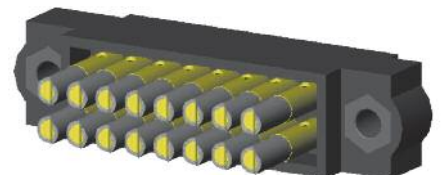
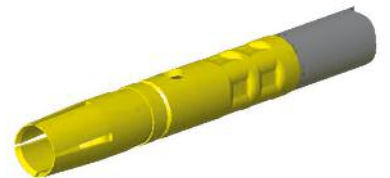
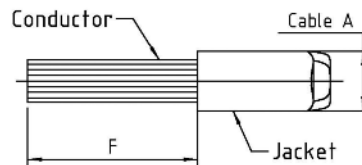
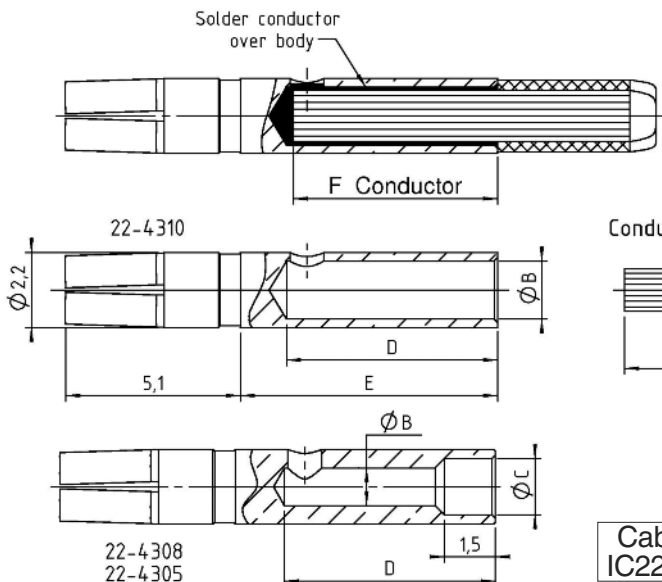


Cable assy instruction IC22HP02 on page 121

Loaded	Unloaded	Ampere	Cable A			ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimpsy HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16								
3305	22-3305	5A	X			1,1 mm	1,65 mm	6,2 mm	8,8 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
3308	22-3308	8A		X		1,35 mm	1,85 mm	6,2 mm	8,8 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
3310	22-3310	10A	X	X	X	1,7 mm		6,2 mm	8,8 mm	6 mm	OK	Hex. 1,9 mm/C14923*	OK

\* only for AWG 16

## FEMALE STRAIGHT ON CABLE P/N 22-43XX (solder & crimp)



Cable assy instruction IC22HP02 on page 121

Loaded	Unloaded	Ampere	Cable A			ØB	ØC	Length D hole	Length E body	Length F conductor	Solder	Crimpsy HX3 Hexagone size/Dies	Crimp by AF8
			AWG 20	AWG 18	AWG 16								
4305	22-4305	5A	X			1,1 mm	1,65 mm	6,2 mm	7,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
4308	22-4308	8A		X		1,35 mm	1,85 mm	6,2 mm	7,7 mm	4,5 mm	OK	Hex. 1,9 mm/C14923	OK
4310	22-4310	10A	X	X	X	1,7 mm		6,2 mm	7,7 mm	6 mm	OK	Hex. 1,9 mm/C14923*	OK

\* only for AWG 16

# Tools

## DANIELS MH800 TOOL AND POSITIONER P/N K1131 & K1692

Tools reference	Barrel
DANIELS MH800 only	MH800
Positioner K1692 only	C12929
Positioner K1131 only	K1131
DANIELS MH800 & K1131	C12237
DANIELS MH800 & K1692	C14925



Crimp barrel accommodation for LF contacts					
Hand crimp tool reference	Positioner	Contacts type	Contacts reference	Wire size (AWG)	Crimp tool setting
DANIELS MH800	K1692	Male C	I2960	22	6
DANIELS MH800	K1692	Male S	I2969	24	7
DANIELS MH800	K1692	Male S	I2969	26 & 28	6
DANIELS MH800	K1692	Female C	C13064-P	22	6
DANIELS MH800	K1692	Female S	C12468	24	7
DANIELS MH800	K1692	Female S	C12468	26 & 28	6

Crimp barrel accommodation for central contact HF30 series			
Hand crimp tool reference	Positioner	Conductor	Crimp tool setting
DANIELS MH800	K1131	Ø 0,30	2 & 3
DANIELS MH800	K1131	Ø 0,50	3 & 4

## DANIELS AF8 TOOL P/N 16459

Tools reference	Reference Nicomatic
DANIELS AF8 only	16459
DANIELS AF8 + C16460	C16462
DANIELS AF8 + C16461	C16463



Crimp barrel accommodation for crimping HP contact		
Hand crimp tool reference	Positioner	HP contact serie
DANIELS AF8	C16460	30
DANIELS AF8	C16461	22



# Tools

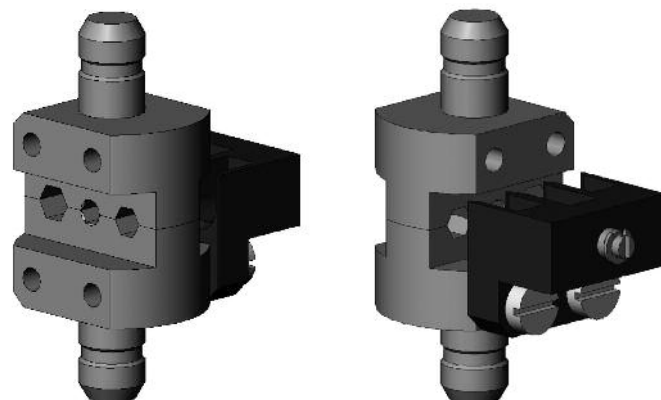
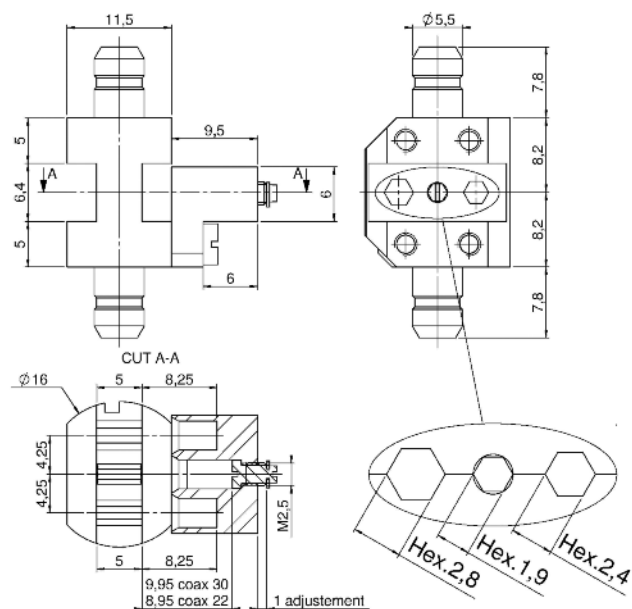
## DANIELS HX3 TOOL P/N 13858

Tools reference	Reference Nicomatic
DANIELS HX3 only	I3858
DANIELS HX3 & C13847	C12238
DANIELS HX3 & C14680	C14770

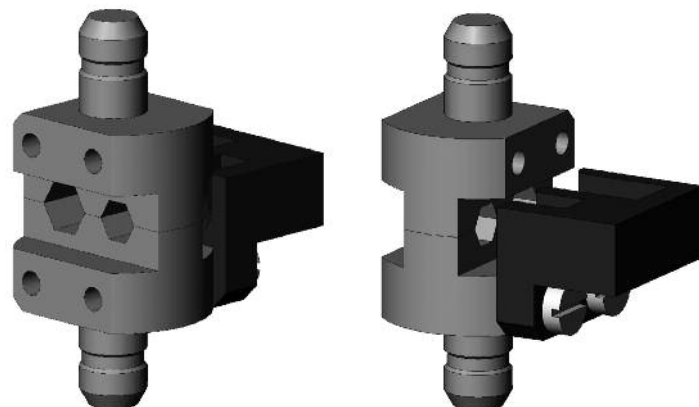
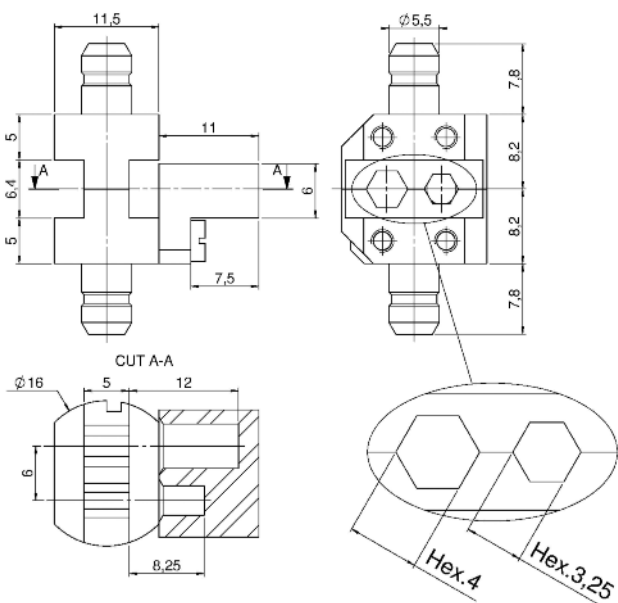


Crimp barrel accomodation for crimping coaxial contact shield		
Hand crimp tool reference	Dies	Hexagonal imprint
DANIELS HX3	C13847	Hex. 1,9 / Hex. 2,4 / Hex. 2,8
DANIELS HX3	C14680	Hex. 3,25 / Hex. 4

## CRIMP DIE C13847 FOR DANIELS HX3 TOOL (HF CONTACT)

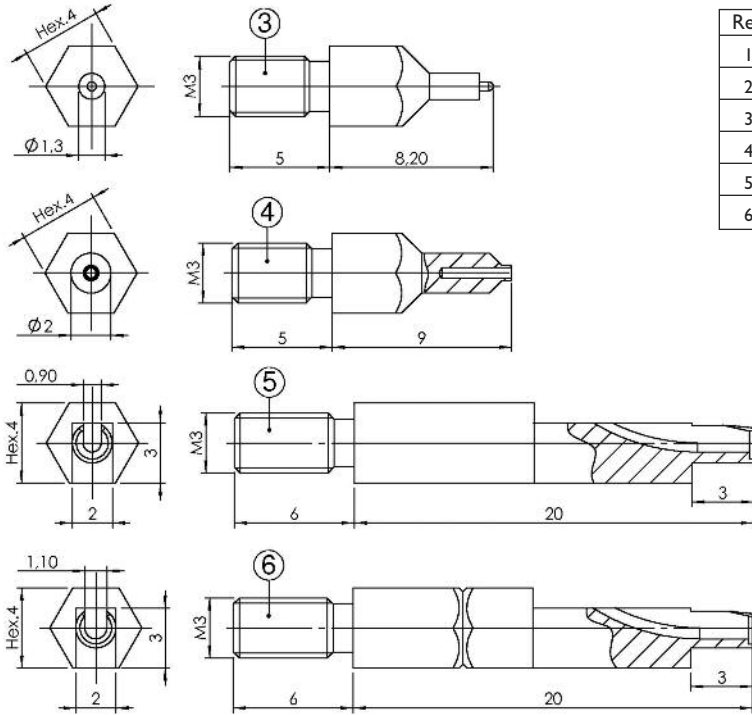


## CRIMP DIE C14680 FOR DANIELS HX3 TOOL (HF CONTACT)

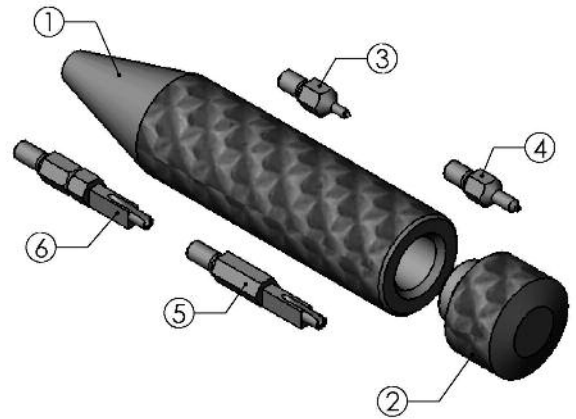


# Tools

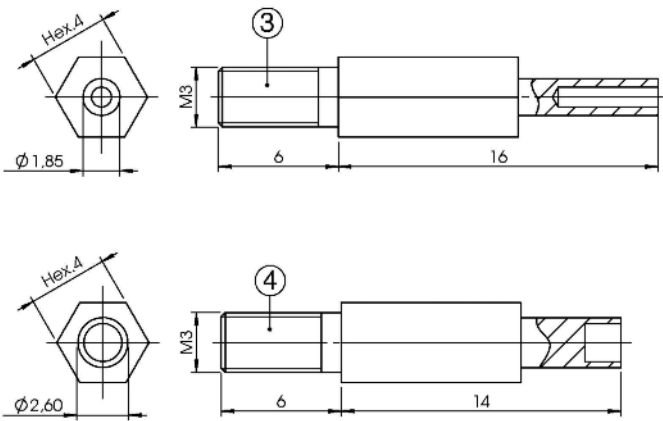
## LF CONTACTS INSERTION & WITHDRAWAL TOOL P/N C12935



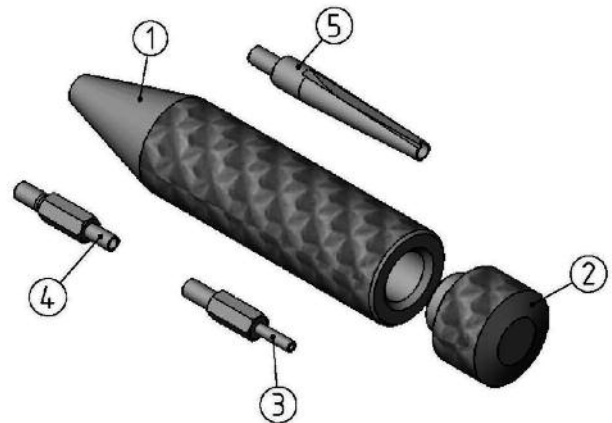
Rep	Reference	Assembly C12935
1	13241	Body
2	13240	Plug
3	13170	Female contact extraction tip
4	13242	Male contact extraction tip
5	13171	24-28 AWG insertion tip
6	13712	22 AWG insertion tip



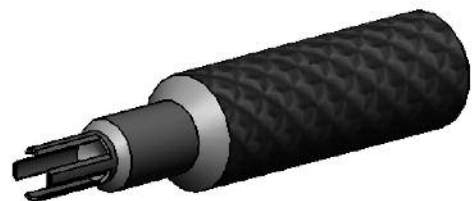
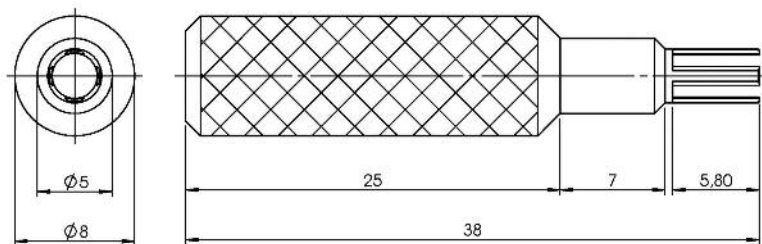
## HF / HP SERIES 22 CONTACTS REMOVAL P/N C13997



Rep	Reference	Assembly C13997
1	13241	Body
2	13240	Plug
3	13995	Female contact extraction tip
4	13996	Male contact extraction tip
5	16139	Male & female contact insertion tool

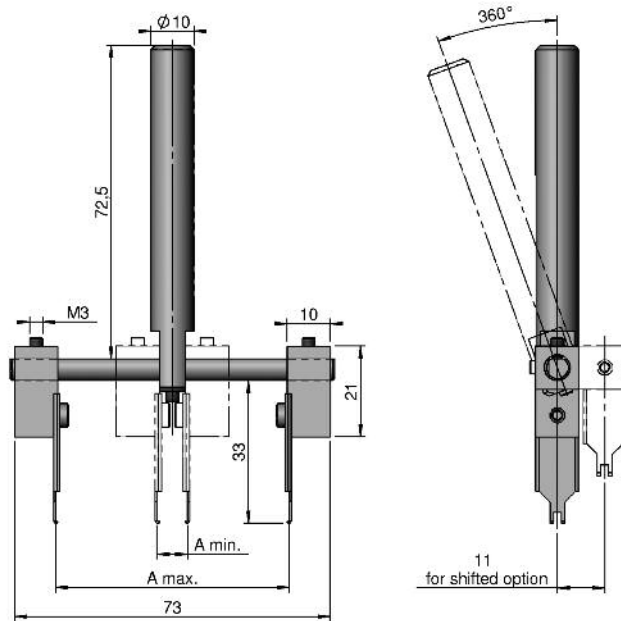
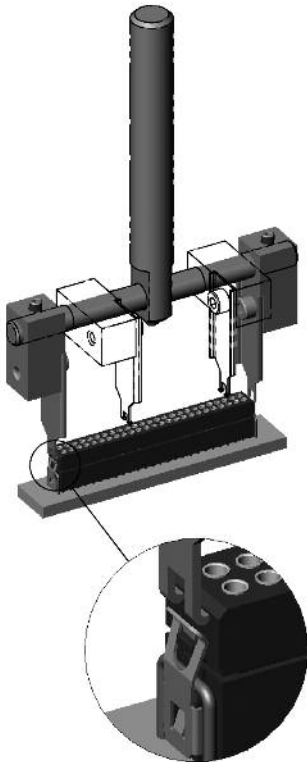


## HF / HP SERIES 30 CONTACTS REMOVAL P/N 12368



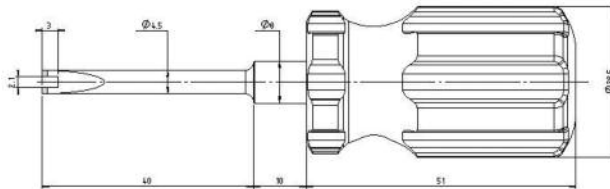
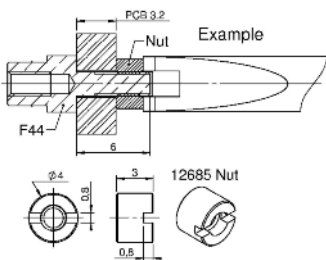
# Tools

## LATCH SEPARATION TOOL P/N C14790



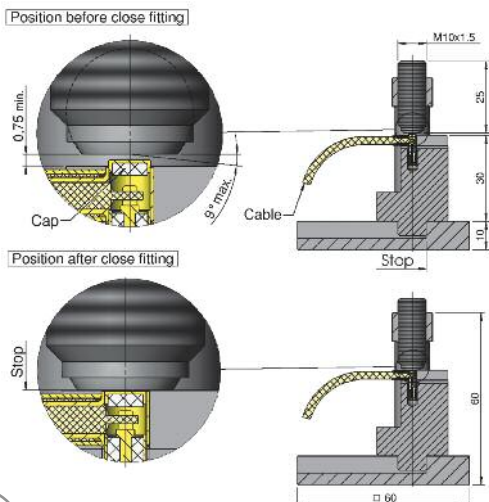
Series	A max.		A min.	
	A max.	LF contacts	A min.	LF contacts
CMM 100	53	25	7	2
CMM 200	53	50	7	4

## SCREWDRIVER P/N C14743 FOR NUT P/N 12685



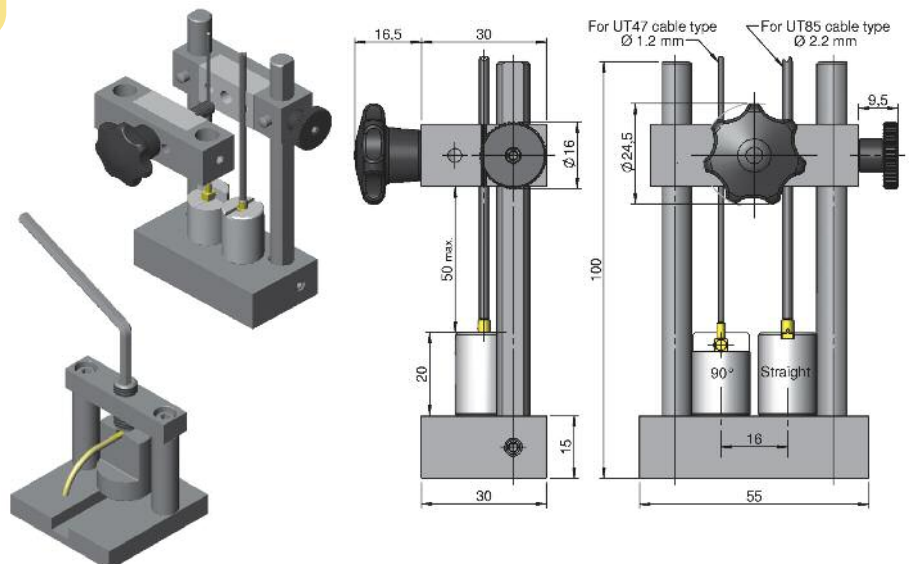
Optional: dynamometric screwdriver specifically designed for low torques (includes bits & adjusting key).

## MOUNTING OF C14772 BACK CAPS



Hex. 5mm Tool not delivered

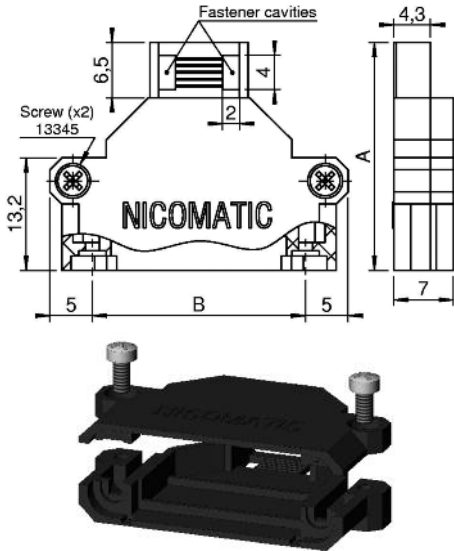
## SUCOFLEX SOLDER TOOL P/N C14777



# Accessories

## STRAIGHT COVER FOR CMM SERIES 220 (male & female) P/N CMM-C2-XX (other upon request)

Material : high temp. thermoplastic (-55°C to +200°C)



Length B in mm  
(distance between fixing hardware axes)

CMM - C2 -

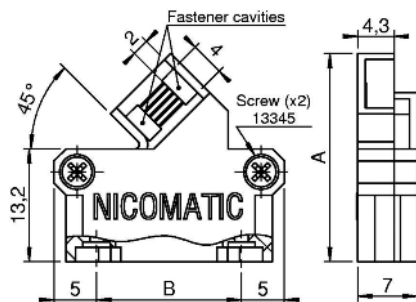
CMM 220 series

Reference	Length B	Length A	Screw (x2)
CMM-C2-11	11 mm	23,7 mm	Included
CMM-C2-15	15 mm	23,7 mm	
CMM-C2-17	17 mm	17,2 mm	
CMM-C2-25	25 mm	26,7 mm	
CMM-C2-27	27 mm	26,7 mm	
CMM-C2-31	31 mm	29,7 mm	
CMM-C2-39	39 mm	29,7 mm	
CMM-C2-45	45 mm	33,7 mm	
CMM-C2-47	47 mm	33,7 mm	
CMM-C2-49	49 mm	33,7 mm	
CMM-C2-53	53 mm	33,7 mm	
CMM-C2-55	55 mm	33,7 mm	

Note: F28 and M18 fixings are not included with the cover

## 45° COVER FOR CMM SERIES 220 (male & female) P/N CMM-C2-XX-45 (upon request)

Material : high temp. thermoplastic (-55°C to +200°C)



Length B in mm  
(distance between fixing hardware axes)

CMM - C2 - - 4 5

CMM 220 series

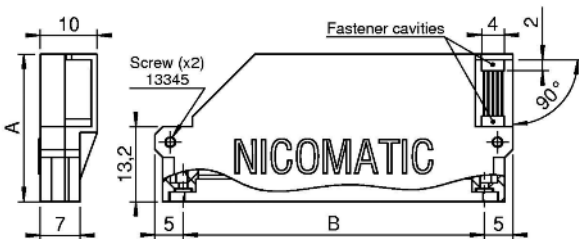
45 for exit 45°

Reference	Length B	Length A	Screw (x2)
CMM-C2-17-45	17 mm	24,4 mm	Included

CMM220 male F28 fixing not included with cover  
CMM220 female M18 fixing not included with cover

## 90° COVER FOR CMM SERIES 220 (male & female) P/N CMM-C2-XX-90 (upon request)

Material : high temp. thermoplastic (-55°C to +200°C)



Length B in mm  
(distance between fixing hardware axes)

CMM - C2 - - 9 0

CMM 220 series

90 for exit 90°

Reference	Length B	Length A	Screw (x2)
CMM-C2-53-90	53 mm	26 mm	Included

CMM220 male F28 fixing not included with cover  
CMM220 female M18 fixing not included with cover

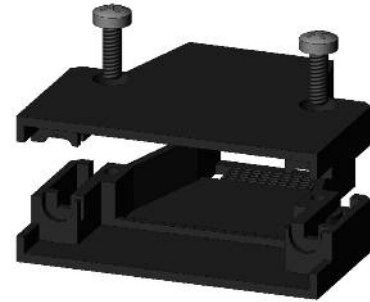
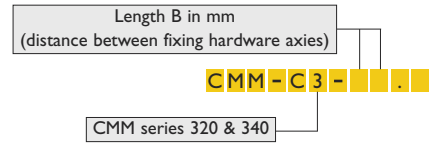
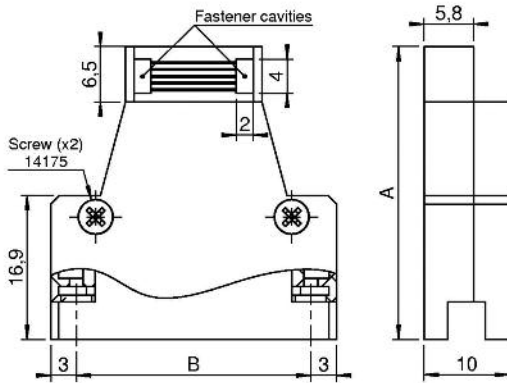


Note: Aluminium covers are available upon request. Contact us

# Accessories

## COVERS STRAIGHT FOR CMM SERIES 320 & 340 (male & female) P/N CMM-C3-XX.X

Material : high temp. thermoplastic (-55°C to +200°C)



Reference	Length B	Length A	Screw (x2)
CMM-C3-27.5	27,5 mm	34,4 mm	Included
CMM-C3-45.0	45,0 mm	34,4 mm	

For CMM320/340 male & female  
M45 or F57 fixing not included with cover

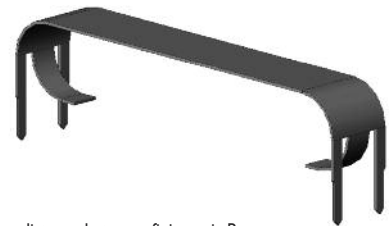
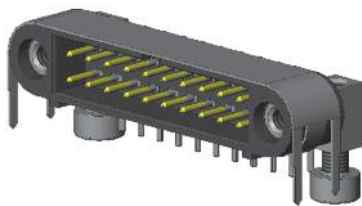
Other upon request

## SHIELDING FOR CMM SERIES 220 (male straight on PCB) P/N 12997-XX (upon request)



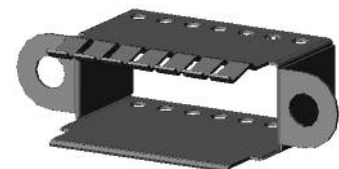
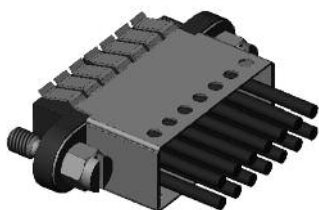
XX = distance between fixing axis B

## SHIELDING FOR CMM SERIES 220 (male 90° on PCB) P/N 12998-XX (upon request)



XX = distance between fixing axis B

## SHIELDING FOR CMM SERIES 220 (female on cable) P/N C13024-XX (upon request)



XX = distance between fixing axis B



# Accessories

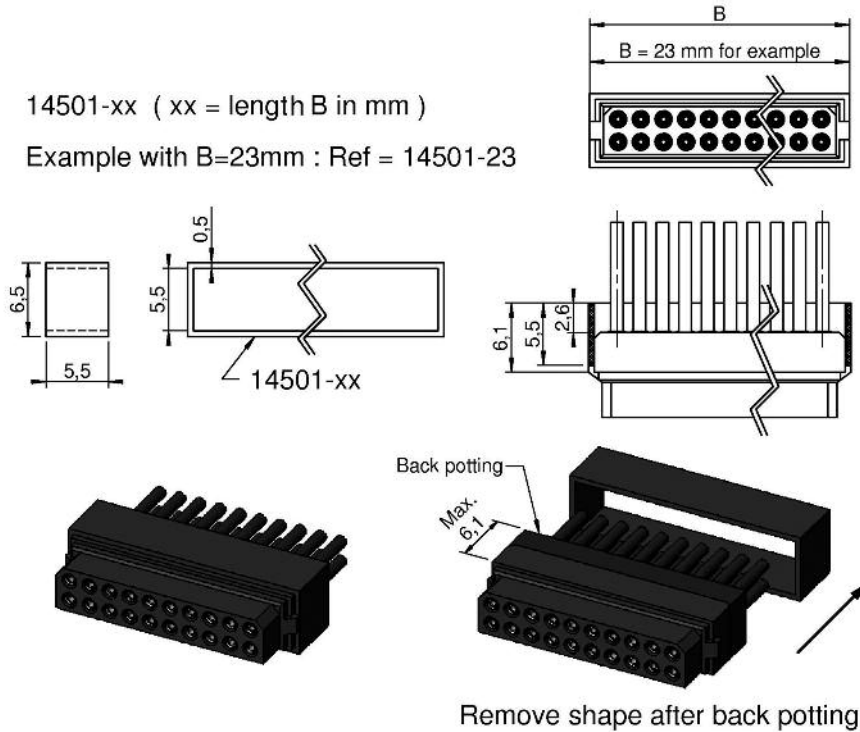
## BACKPOTTING SHAPE FOR CMM SERIES 200 (female) P/N 14501-XX

Material : thermoplastic 100°C max.

Reference	Length B
14501-07	min. 7 mm
14501-09	9 mm
14501-11	11 mm
14501-13	13 mm
14501-15	15 mm
14501-17	17 mm
14501-19	19 mm
14501-21	21 mm
14501-23	23 mm
14501-25	25 mm
14501-27	27 mm
14501-29	29 mm
14501-31	31 mm
14501-33	33 mm
14501-35	35 mm
14501-37	37 mm
14501-39	39 mm
14501-41	41 mm
14501-43	43 mm
14501-45	45 mm
14501-47	47 mm
14501-49	49 mm
14501-51	51 mm
14501-53	max. 53 mm

14501-xx ( xx = length B in mm )

Example with B=23mm : Ref = 14501-23



Remove shape after back potting

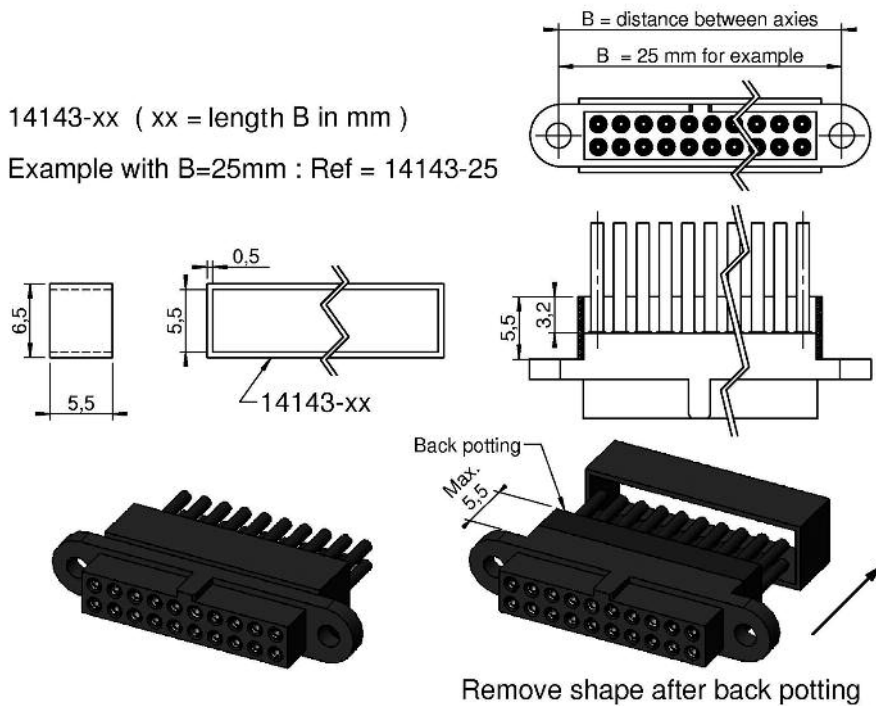
## BACKPOTTING SHAPE FOR CMM SERIES 220 (male & female) P/N 14143-XX

Material : thermoplastic 100°C max.

Reference	Length B
14143-09	min. 9 mm
14143-11	11 mm
14143-13	13 mm
14143-15	15 mm
14143-17	17 mm
14143-19	19 mm
14143-21	21 mm
14143-23	23 mm
14143-25	25 mm
14143-27	27 mm
14143-29	29 mm
14143-31	31 mm
14143-33	33 mm
14143-35	35 mm
14143-37	37 mm
14143-39	39 mm
14143-41	41 mm
14143-43	43 mm
14143-45	45 mm
14143-47	47 mm
14143-49	49 mm
14143-51	51 mm
14143-53	53 mm
14143-55	55 mm
14143-57	57 mm
14143-59	59 mm
14143-61	61 mm
14143-63	63 mm
14143-65	max. 65 mm

14143-xx ( xx = length B in mm )

Example with B=25mm : Ref = 14143-25



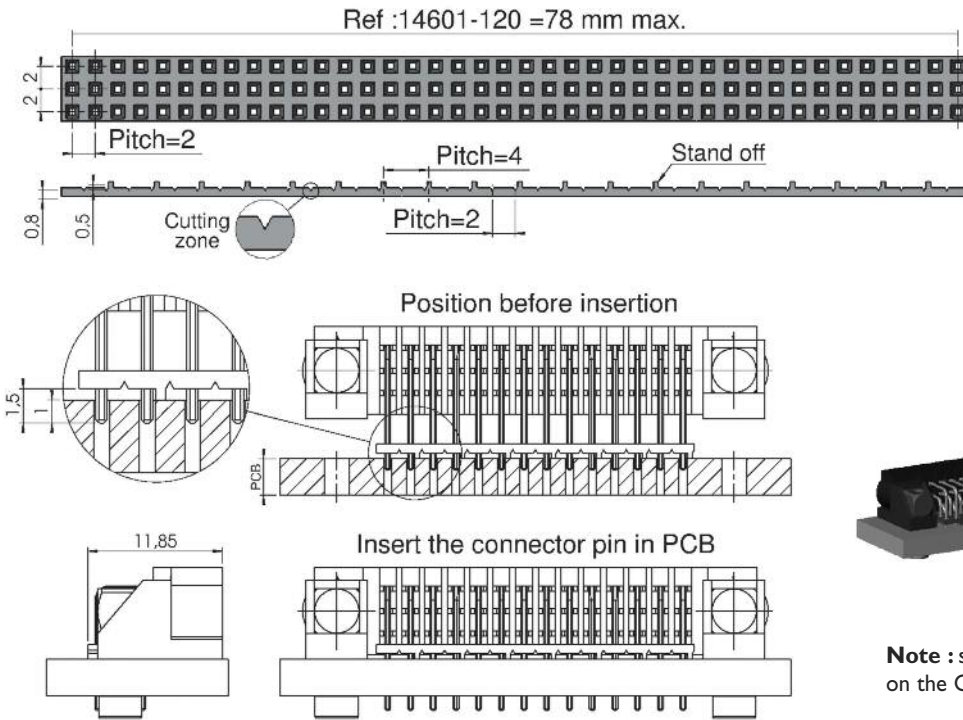
Remove shape after back potting

Note: Special housing with integrated backpotting available upon request.

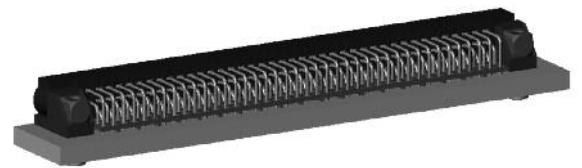
# Accessories

## CONTACTS ALIGNMENT PLATE P/N 14601-120

Material : high temperature thermoplastic (-55°C to +200°C)



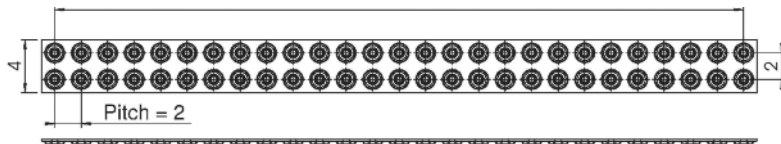
Divisible



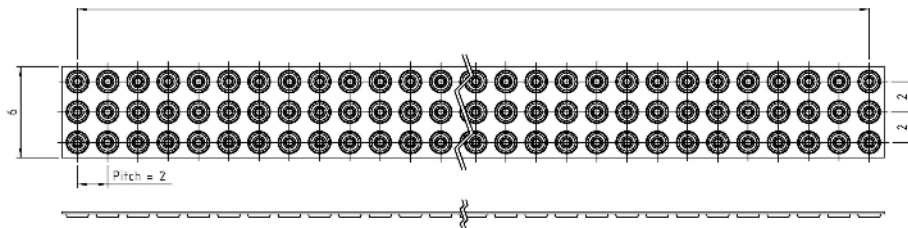
**Note :** systematically delivered and mounted on the CMM 320 series "right angle" (V and VL types)

## SILICON INTERFACIAL SEAL (for male connector except S-C types)

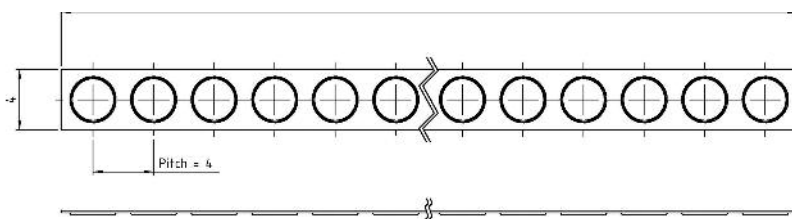
LF 220 series P/N 14599-54 = 52 mm max.



LF 320 series P/N 14980-120 = 78 mm max.



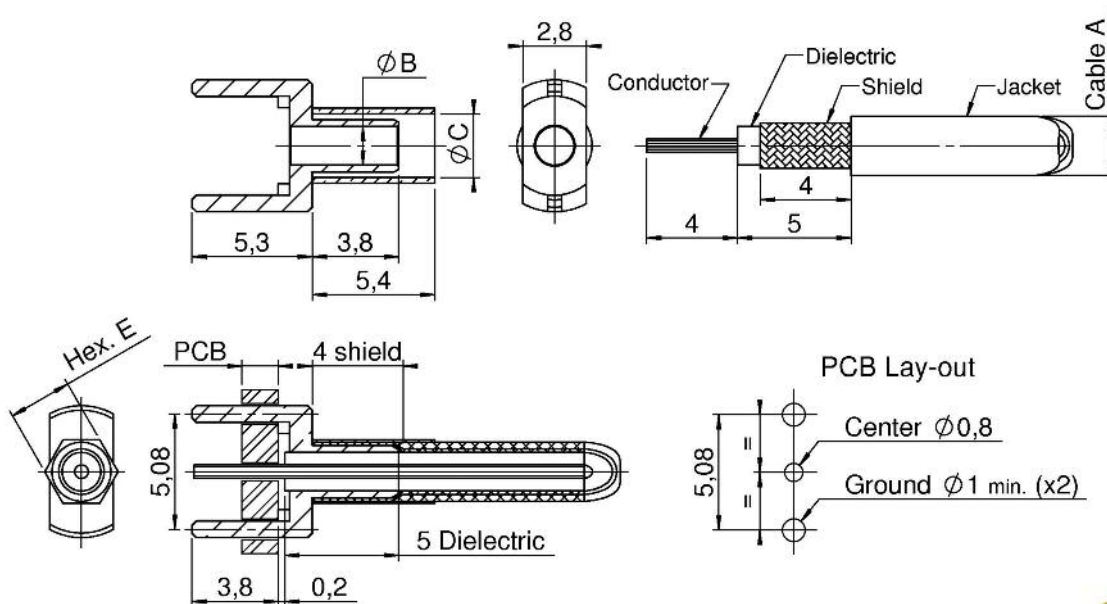
Special contacts 220 series P/N 16053-15 = 60,2 mm max.



Mix-layout on request

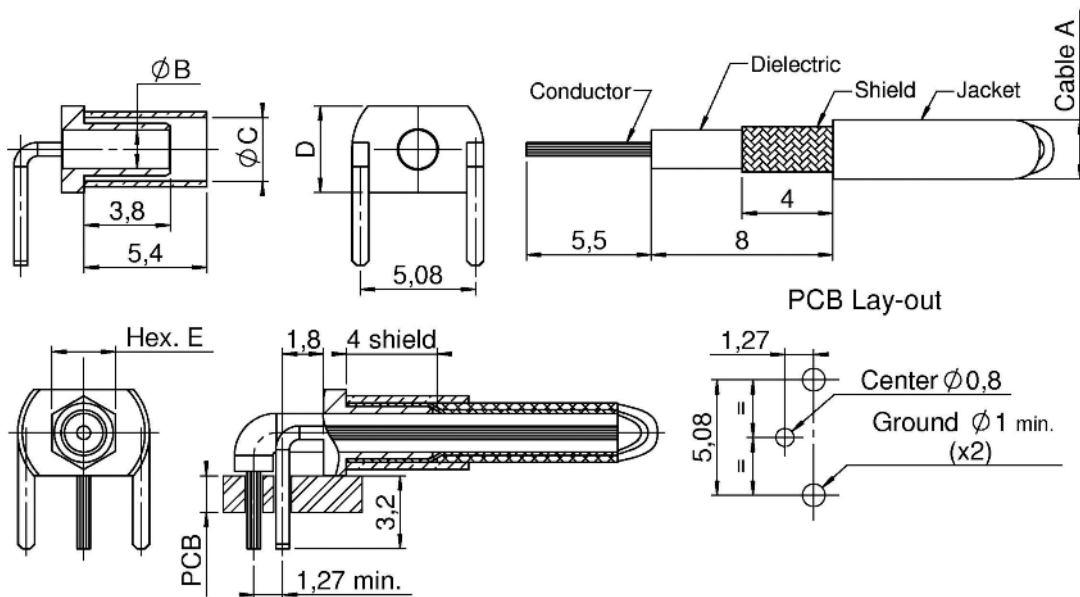
# Accessories

## COAX CABLE CRIMP TERMINATION (straight for cables Ø 2 and Ø 2,7)



	CI4759	CI4760
Cable A	Ø 2	Ø 2,7
Ø B	1 mm	1,7 mm
Ø C	2,2 mm	2,8 mm
Hex. E	2,4 on flat	2,8 on flat

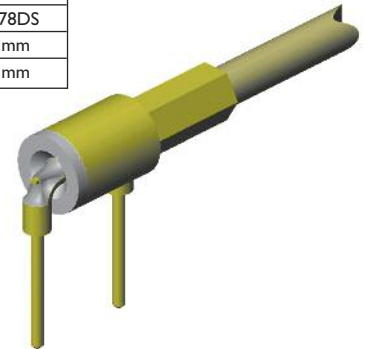
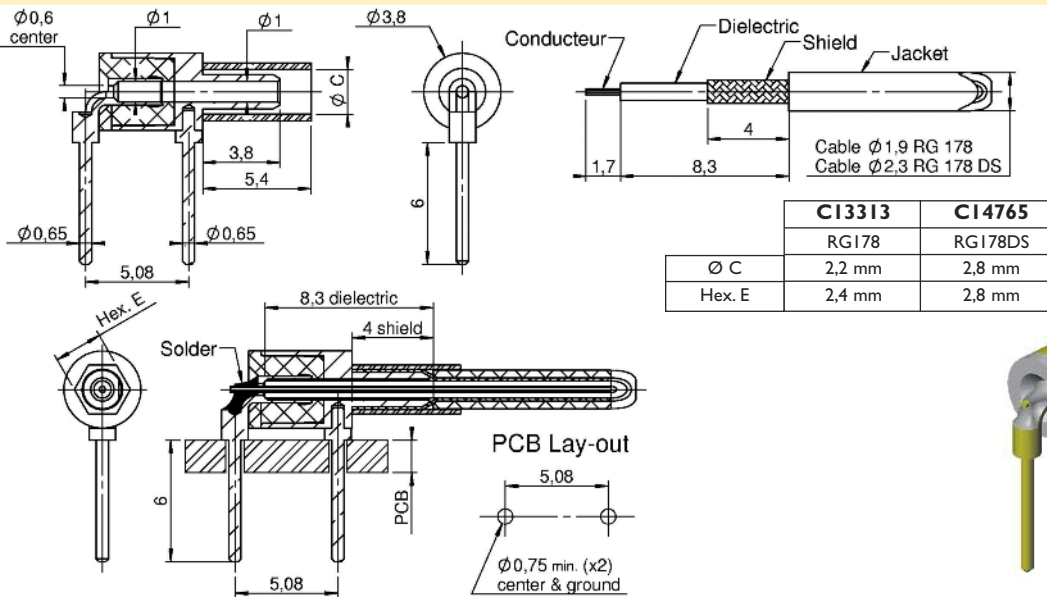
## COAX CABLE CRIMP TERMINATION (90° for cables Ø 2 and Ø 2,7)



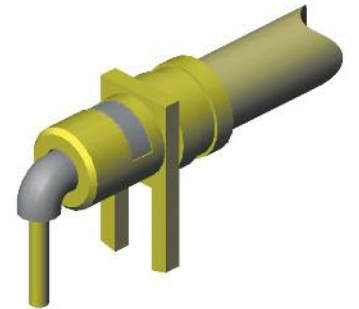
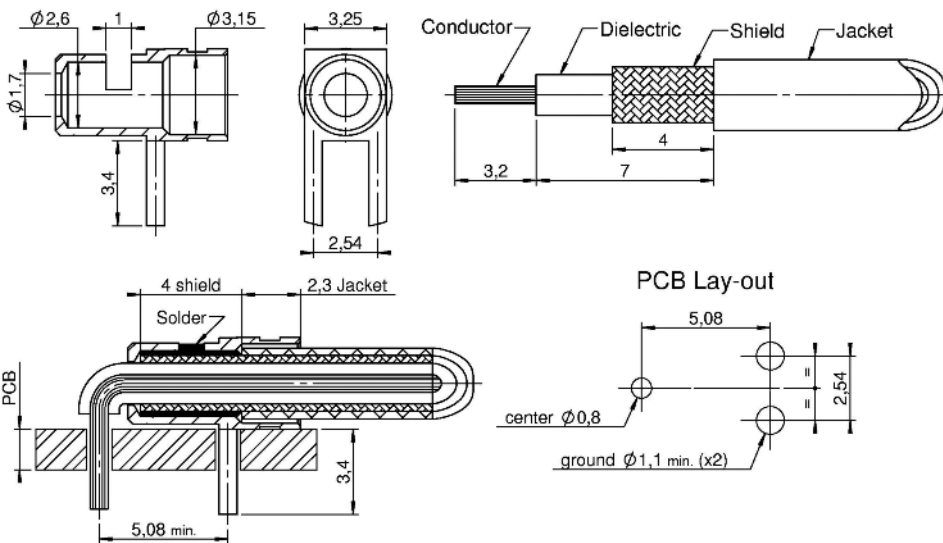
	CI4761	CI4762
Cable A	Ø 2	Ø 2,7
Ø B	1 mm	1,7 mm
Ø C	2,2 mm	2,8 mm
Length D	3,4 mm	3,8 mm
Hex. E	2,4 on flat	2,8 on flat

# Accessories

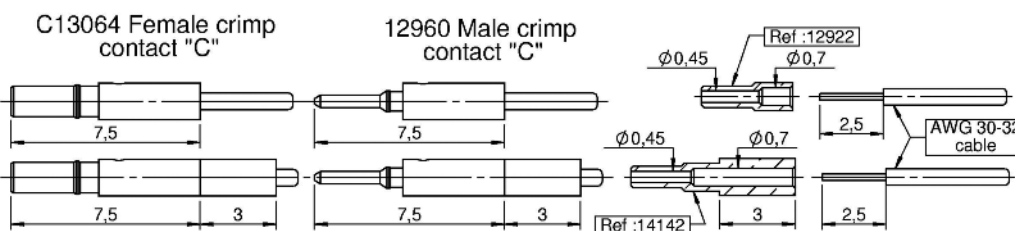
## COAX CABLE CRIMP TERMINATION P/N C13313 for RG 178 and P/N C14765 for RG 178 DS



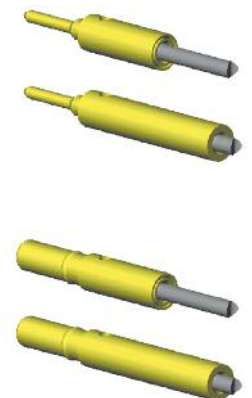
## COAX CABLE CRIMP TERMINATION P/N C12780 for cables RG 316



## CRIMP GAUGE REDUCER for awg 30-32 for LF contacts P/N 12922 & 14142

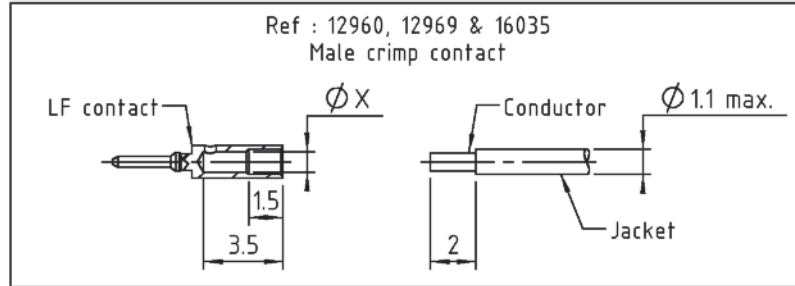
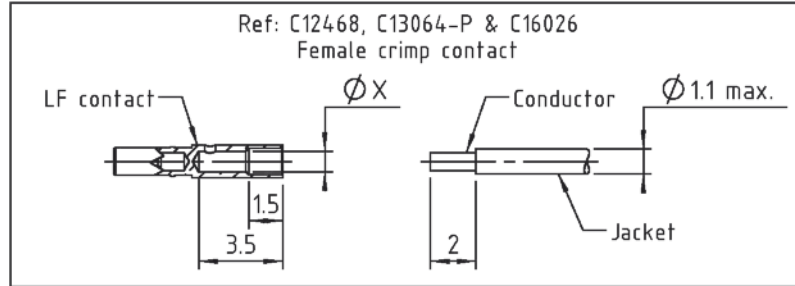


Gender	Contact "C"	Reducer	Tool	Positioner	Position 1st crimp	Position 2nd crimp
Male	12960	12922	MH800	K1692	Contact + reducer + cable position "4"	
Female	C13064-P					
Male	12960	14142	MH800	K1692	Reducer + cable position "8"	(Reducer & cable) + contact position "4"
Female	C13064-P					



# Cable instructions (ICLF01)

Diameter X	
Reference	X
12969	0.7
16035	
C12468	
C16026	0.9
12960	
C13064-P	

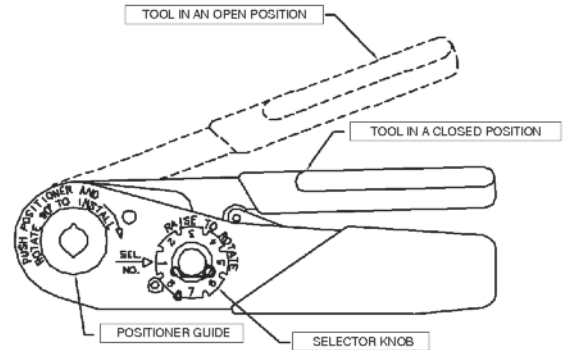
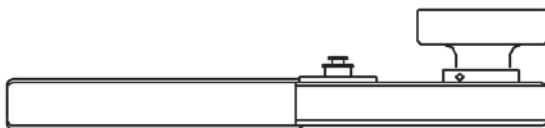


Crimp barrel accommodation					
Contact		Wire size (AWG)	Tool		
Reference	Type		Hand crimp tool reference	Positioner	Crimp tool setting
12960	Male C	22	DANIELS MH800	K1692	6
12969	Male S	24			7
16035					6
12969	Male S	26 & 28			6
16035					6
C13064-P	Female C	22			6
C12468	Female S	24			7
C16026					6
C12468	Female S	26 & 28			6
C16026					6

1 - Set the Hand crimp tool according to Crimp barrel accommodation table above

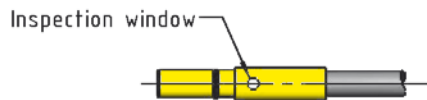
- 1.1 - Select the crimp tool setting with the selector knob.
- 1.2 - Put the Positioner K1692 in the positioner guide.

Put the positionner K1692 in the positionner guide



2 - Check the wire stripping

- 2.1 - Insert the Wire in the contact
- 2.2 - The conductor must be visible through the inspection window of the contact



3 - Insert the contact and Wire assembly in the crimp guide of the hand crimp tool

- 3.1 - In the crimp guide, the contact and Wire assembly must be in the end stop position
- 3.2 - During the crimping, keep the wire in position
- 3.3 - Just one crimping operation is allowed per contact and wire assembly

4 - Visually check the crimping

- 4.1 - The crimping must not deform the inspection window
- 4.2 - The contact must not have visible fractures or cracks
- 4.3 - The contact barrel must not be deformed or bent

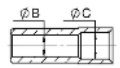
5 - Check the contact is firmly crimped, by pulling gently

- 5.1 - For that purpose two (2) fingers are enough : pinch the wire and pull smoothly along the axis of the crimped contact.

# Cable instructions

HF CONTACTS						CONNECTION MODE		
Supplier	P/N	Ø Cable	Series	Gender	Ref. contact	Central contact	Shield	Impedance
Nexans (Axon *)	50VMTX (SM 50 *)	1,2 mm	HF30	Male	30-1312-ZS-01	Solder	Crimped Hex. 1,9 mm	50 Ohm
					(30-1312-ZS-02 *)			
				30-1412-ZS				
				30-2312-ZS-01				
			HF22	Female	(30-2312-ZS-02 *)			
					30-2412-ZS			
				Male	22-1312-ZS-01			
					(22-1312-ZS-02 *)			
	Female	22-2312-ZS-01						
		(22-2312-ZS-02 *)						
	75VMTX (SM 75 *)	1,2 mm	HF30	Male	30-1312-ZS-75-01	Solder	Crimped Hex. 1,9 mm	75 Ohm
					(30-1312-ZS-75-02 *)			
				30-1412-ZS-75				
				30-2312-ZS-75-01				
			HF22	Female	(30-2312-ZS-75-02 *)			
					30-2412-ZS-75			
Male				22-1312-ZS-75-01				
				(22-1312-ZS-75-02 *)				
Female	22-2312-ZS-75-01							
	(22-2312-ZS-75-02 *)							
Axon RG 178 DT	P500955	2,3 mm	HF30	Male	30-1320-DS	On choice	Crimped Hex. 2,8 mm	50 Ohm
					30-1420-DS	Solder		
				Female	30-2320-DS	On choice		
					30-2420-DS	Solder		
Axon PTFE Cellular	P 812817	2,3 mm	HF30	Male	30-1324-DS	On choice	Crimped Hex. 2,8 mm	50 Ohm
					30-1424-DS	Solder		
				Female	30-2324-DS	On choice		
					30-2424-DS	Solder		
	P 804298 B	2,4 mm	HF30	Male	30-1324-DS-75	On choice	Crimped Hex. 2,8 mm	75 Ohm
					30-1424-DS-75	Solder		
				Female	30-2324-DS-75	On choice		
					30-2424-DS-75	Solder		
Axon RG 316 DT	P0530912	2,7 mm	HF30	Male	30-1326-DS	On choice	Crimped Hex. 3,25 mm	50 Ohm
					30-1426-DS	Solder		
				Female	30-2326-DS	On choice		
					30-2426-DS	Solder		
Axon RG 179 DT	P530268	3 mm	HF30	Male	30-1326-DS-75	On choice	Crimped Hex. 3,25 mm	75 Ohm
					30-1426-DS-75	Solder		
				Female	30-2326-DS-75	On choice		
					30-2426-DS-75	Solder		

DT = DS (Double Shield)

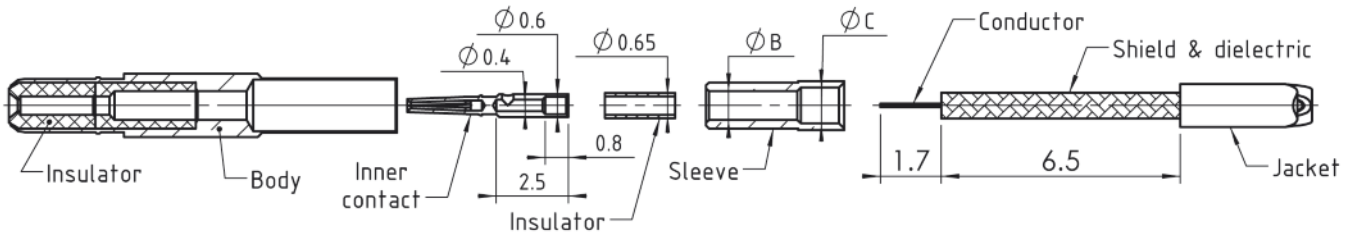
	ØB	ØC	Sleeve
P/N terminal -01 for 50VMTX cable type	1 mm	1,25 mm	
P/N terminal -02 for SM 50 cable type	0,85 mm	1,15 mm	

# Cable instructions

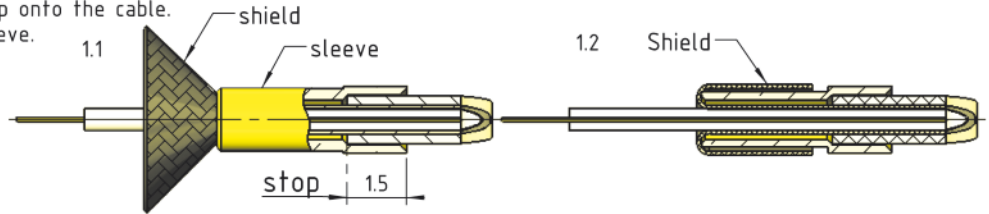
	NORMES			HF CONTACTS			CONNECTION MODE		
	MIL-C-17	NF C93-550	Ø Cable	Series	Gender	Ref. contact	Central contact	Shield	Impedance
COAX CABLE	RG 178	KX 21 A	2 mm	HF30	Male	30-1320-SS	Crimped	Crimped Hex. 2,4 mm	50 Ohm
						30-1320-ZS	Solder		
					30-1420-ZS	Solder			
					30-2320-SS	Crimped			
				Female	30-2320-ZS	Crimped			
					30-2420-ZS	Solder			
				HF22	Male	22-1320-ZZ	Solder		
					Female	22-2320-ZZ	Solder		
	RG 316	KX 22 A	2,7 mm	HF30	Male	30-1326-SS	Crimped	Crimped Hex. 2,8 mm	50 Ohm
						30-1326-ZS	Solder		
						30-1426-ZS	Solder		
					Female	30-2326-SS	Crimped		
						30-2326-ZS	Solder		
						30-2426-ZS	Solder		
	RG 174	KX 3 B	2,7 mm	HF30	Male	30-1326-SS	Crimped	Crimped Hex. 2,8 mm	50 Ohm
						30-1326-ZS	Solder		
30-1426-ZS						Solder			
Female					30-2326-SS	Crimped			
					30-2326-ZS	Solder			
					30-2426-ZS	Solder			
RG 179		2,7 mm	HF30	Male	30-1326-SS-75	Crimped	Crimped Hex. 2,8 mm	75 Ohm	
					30-1326-ZS-75	Solder			
					30-1426-ZS-75	Solder			
				Female	30-2326-SS-75	Crimped			
					30-2326-ZS-75	Solder			
					30-2426-ZS-75	Solder			

	HF CONTACTS					CONNECTION MODE			
	Supplier	P/N	Ø Cable	Series	Gender	Ref. contact HF	Central contact	Shield	Impedance
SEMI-RIGID		UT47	1,2 mm	HF30	Male	30-1347-ZZ	Solder	Solder	50 Ohm
						30-1447-ZZ			
					Female	30-2347-ZZ			
						30-2447-ZZ			
	(Axon *)	UT85 (QFX 86 SPCW *)	2,2 mm	HF30	Male	30-1385-ZZ	Solder	Solder	50 Ohm
						30-1485-ZZ			
Female					30-2385-ZZ				
					30-2485-ZZ				

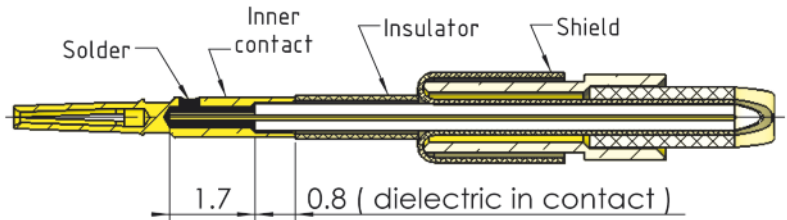
# Cable instructions (IC22HF01)



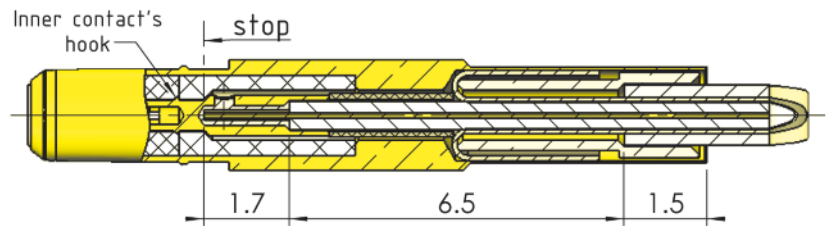
- 1/ 1.1 - Thread the sleeve until stop onto the cable.  
 1.2 - Place the shield on the sleeve.



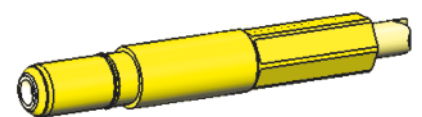
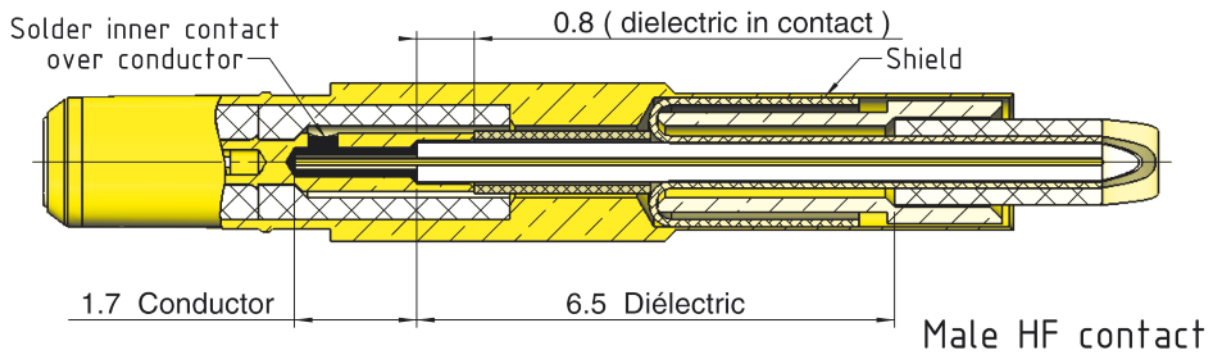
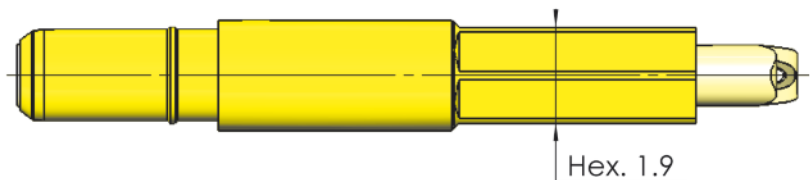
- 2/ - Thread the insulator.  
 - Solder the inner contact on the conductor.



- 3/ - Thread to the body.  
 - Beware that the inner contact's hook goes entirely through the body's insulator

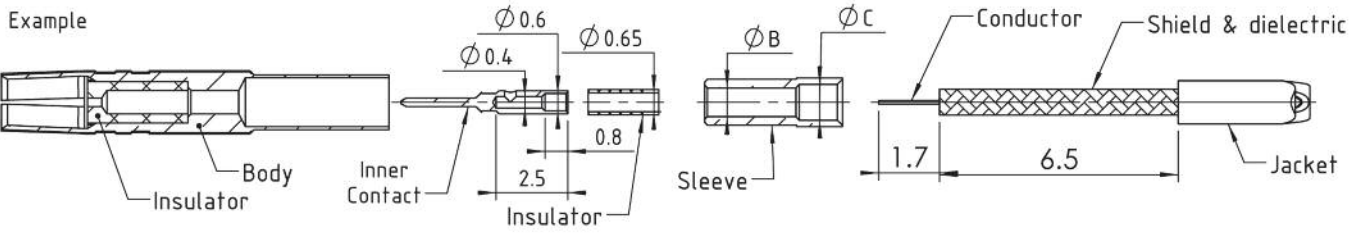


- 4/ CRIMP :  
 - Tool : DANIELS HX3  
 - Die : C13847  
 - Position : 8.95 coax 22  
 - Hexagone : 1.9mm / plats

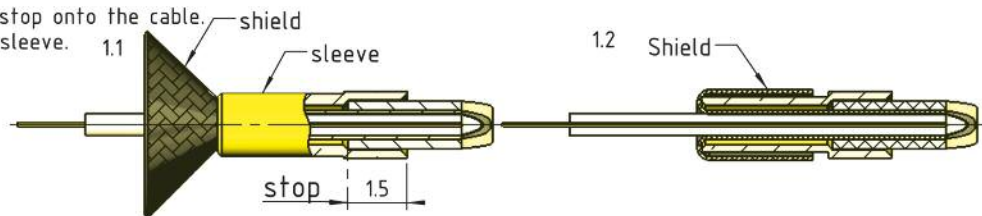




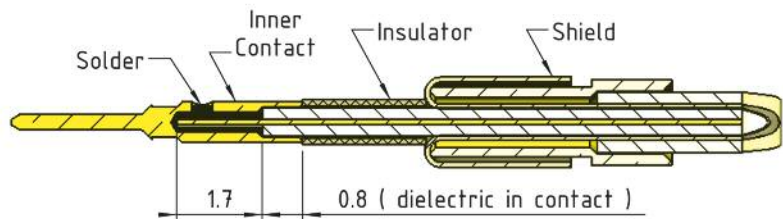
# Cable instructions (IC22HF02)



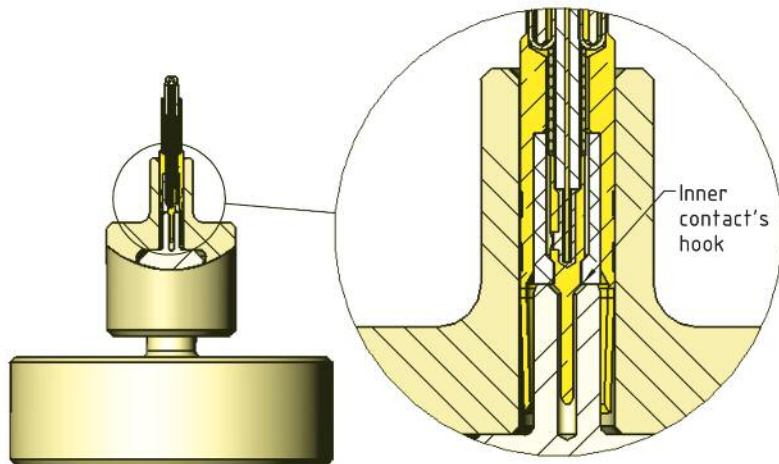
- 1/ 1.1 - Thread the sleeve until stop onto the cable.  
 1.2 - Place the shield on the sleeve.



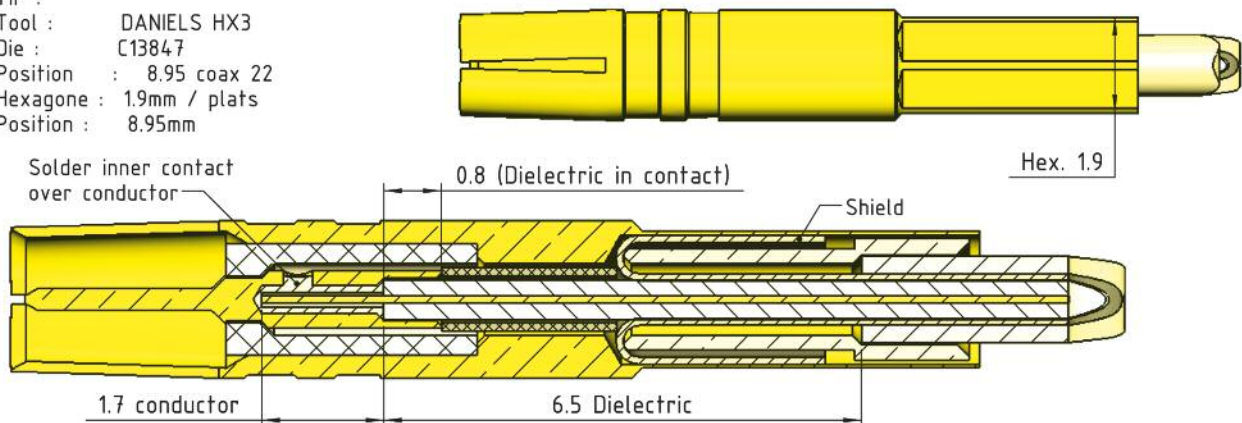
- 2/ - Thread the insulator.  
 - Solder the inner contact on the conductor.



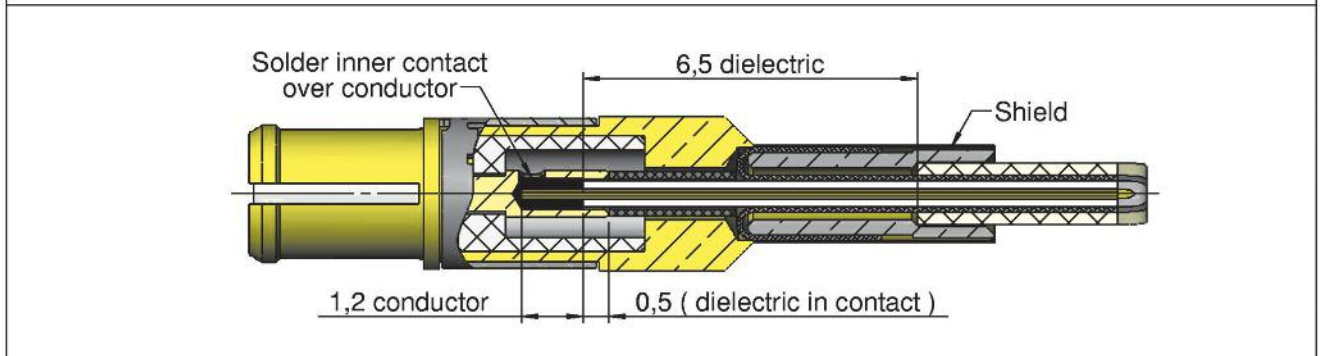
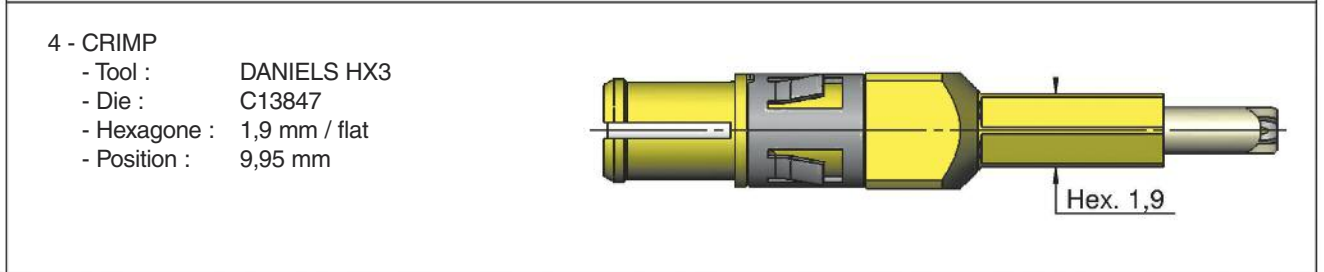
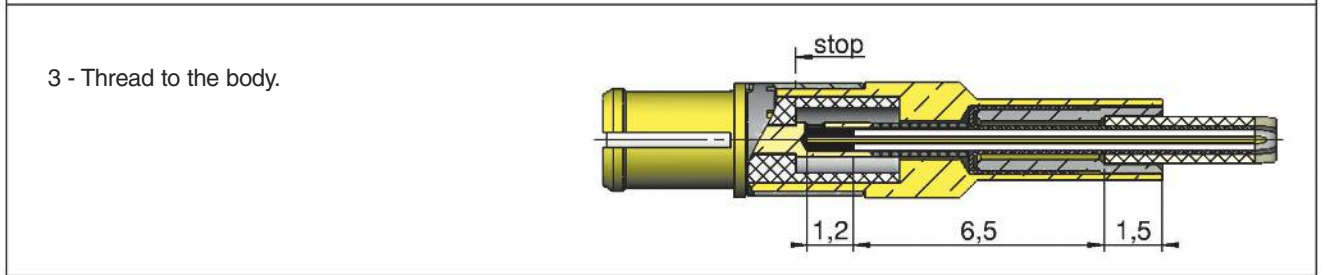
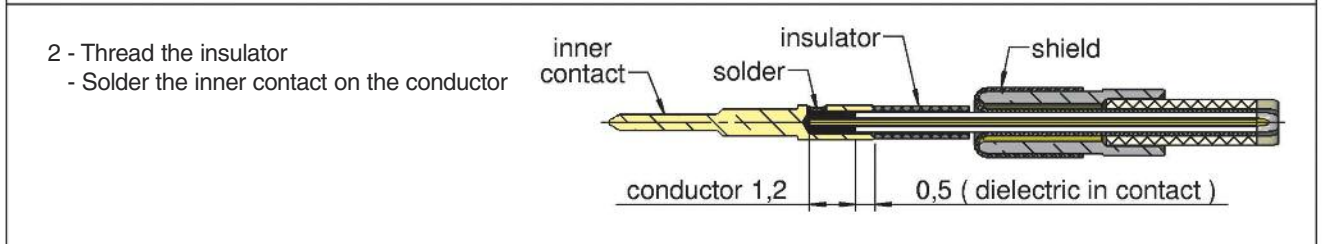
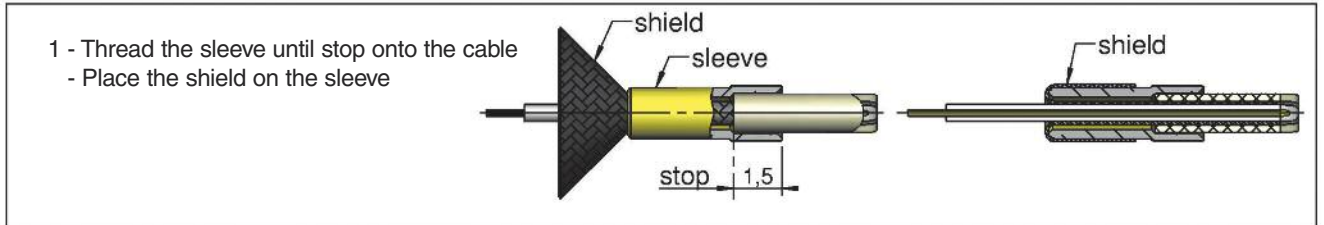
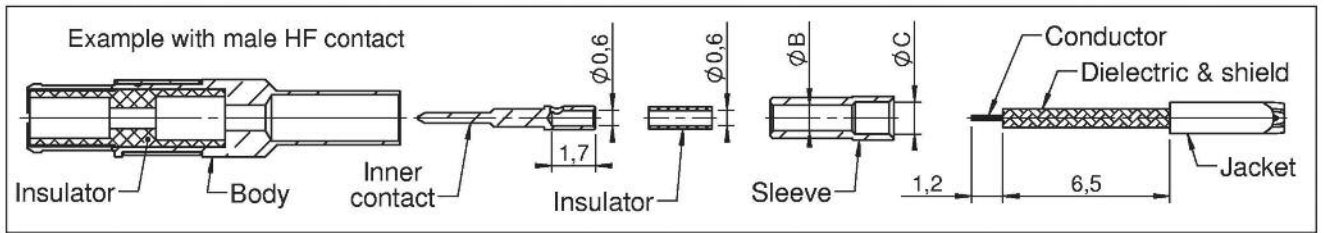
- 3/ - Put the contact body in the tool C16447.  
 - Thread to the body.  
 - Beware that the inner contact's hook goes entirely through the body's insulator.



- 4/ CRIMP :
- Tool : DANIELS HX3
  - Die : C13847
  - Position : 8.95 coax 22
  - Hexagone : 1.9mm / plats
  - Position : 8.95mm



# Cable instructions (IC30HF01)

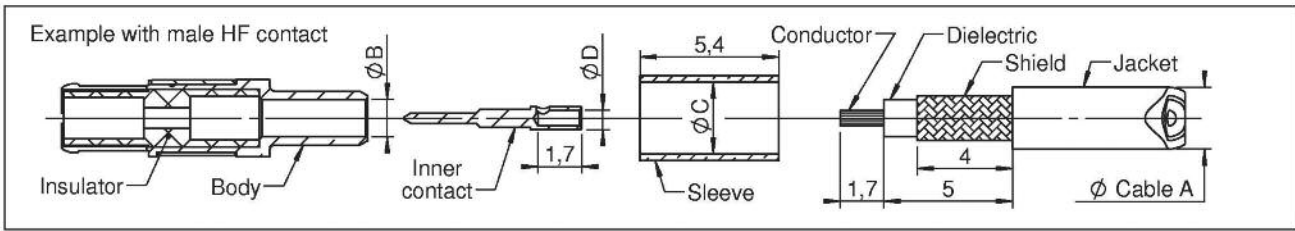


Female HF contact

	ØB	ØC	Sleeve
P/N terminal -01	1	1,25	
P/N terminal -02	0,85	1,15	

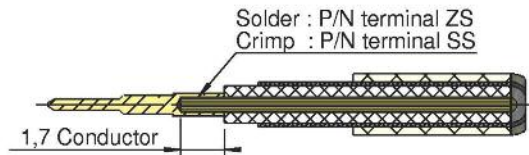
Male HF contact

# Cable instructions (IC30HF02)

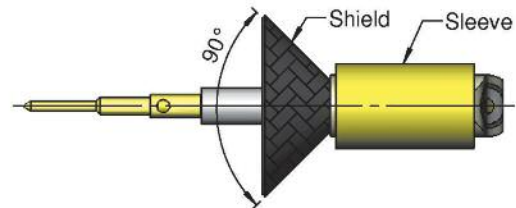


	Cable ØA	Body ØB	Sleeve ØC	Contact ØD	Central crimp DANIELS MH800		Hexagonal imprint E sleeve crimp DANIELS HX3 tool				
					Positioner K1131		Die C13847			Die C14680	
					Conductor Ø 0,3	Conductor Ø 0,5	Hex.1,9	Hex.2,4	Hex.2,8	Hex.3,25	Hex.4
30-x320-SS	2 mm	1 mm	2,2 mm	0,5 mm	Position 2 / 3	Position 3 / 4		x			
30-x320-DS	2,3 mm	1 mm	2,8 mm	0,5 mm					x		
30-x324-SS	2,4 mm	1,5 mm	2,8 mm	0,6 mm					x		
30-x326-SS	2,7 mm	1,7 mm	2,8 mm	0,6 mm					x		
30-x326-DS	3 mm	1,7 mm	3,25 mm	0,6 mm						x	

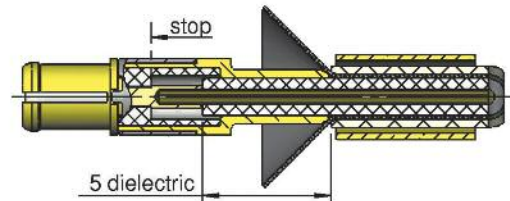
1 - Mount the inner contact on the conductor and solder or crimp.  
(crimping with DANIELS MH800 positioner K1131)



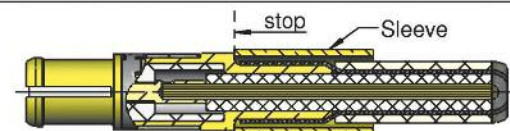
2 - Thread the sleeve onto the cable and bent the shield at 90°.



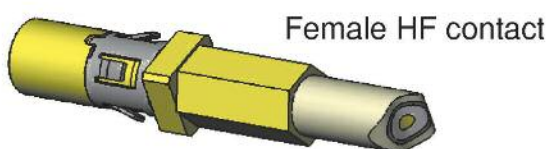
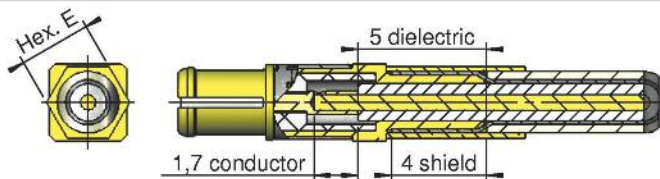
3 - Push until stop inside the body.



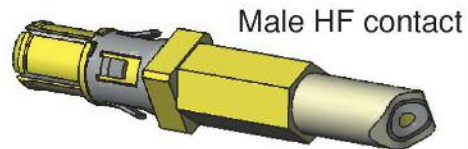
4 - Thread the sleeve until stop on the body so as to bent the shield.



5 - Crimp the sleeve



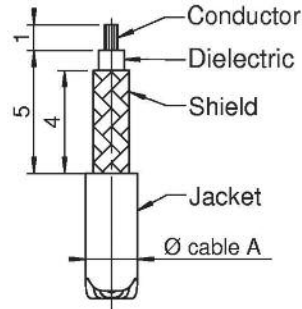
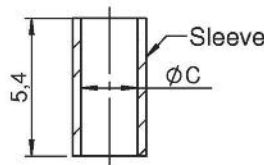
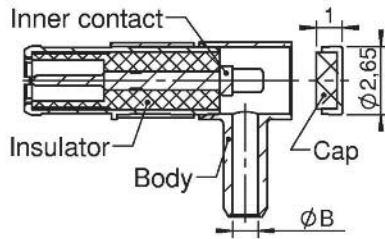
Female HF contact



Male HF contact

# Cable instructions (IC30HF03)

## Example with male HF contact



1 - Thread the sleeve on cable and bent the shield at 90°

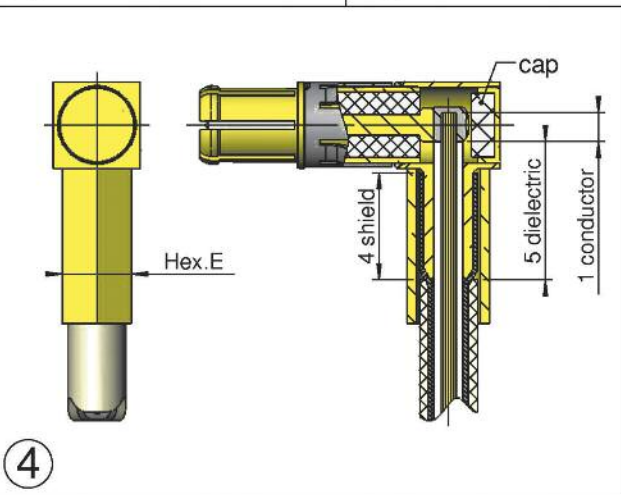
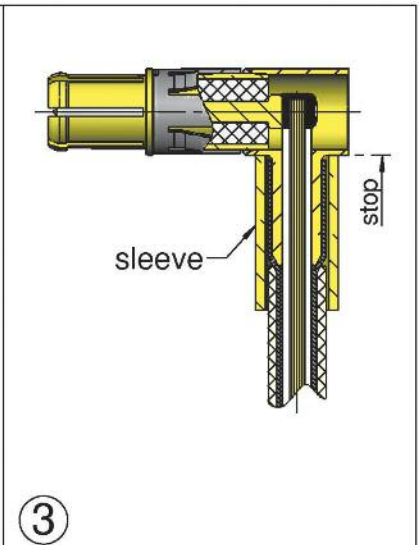
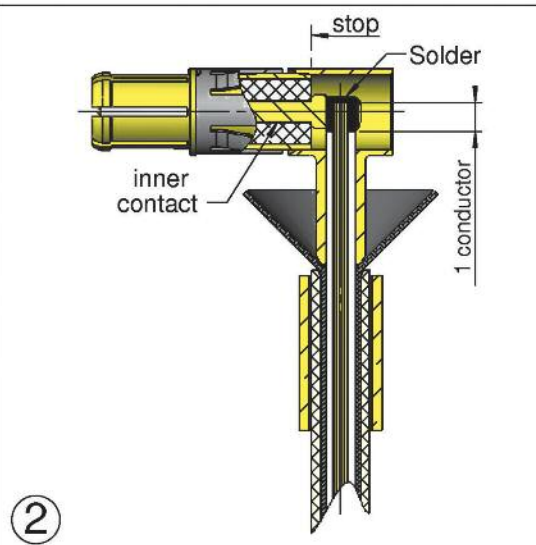
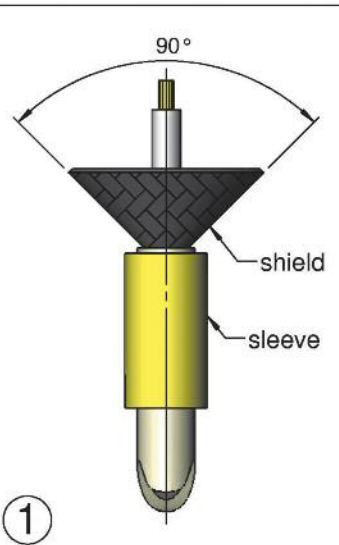
2 - Place the inner contact until stop in the body. Insert the cable and solder the conductor onto the inner contact

3 - Thread the sleeve until stop on the body so as to bent the shield

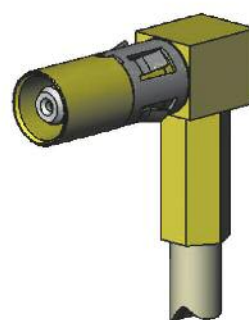
4 - Crimp the sleeve with DANIELS HX3 tool and mount the back cap with tool P/N C14772

Hexagonal imprint E sleeve crimp DANIELS HX3 tool

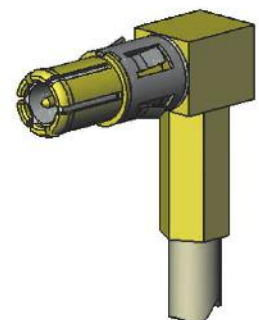
	Cable ØA	Body ØB	Sleeve ØC	Contact	Die CI3847		Die CI4680	
					Hex.1,9	Hex.2,4	Hex.2,8	Hex.3,25
30-x412-ZS	1,2 mm	0,7 mm	1,3 mm	solder	x			
30-x420-ZS	2 mm	1 mm	2,2 mm	solder		x		
30-x420-DS	2,3 mm	1 mm	2,8 mm	solder			x	
30-x424-ZS	2,4 mm	1,5 mm	2,8 mm	solder			x	
30-x426-ZS	2,7 mm	1,7 mm	2,8 mm	solder			x	
30-x426-DS	3 mm	1,7 mm	3,25 mm	solder				x



Female HF contact

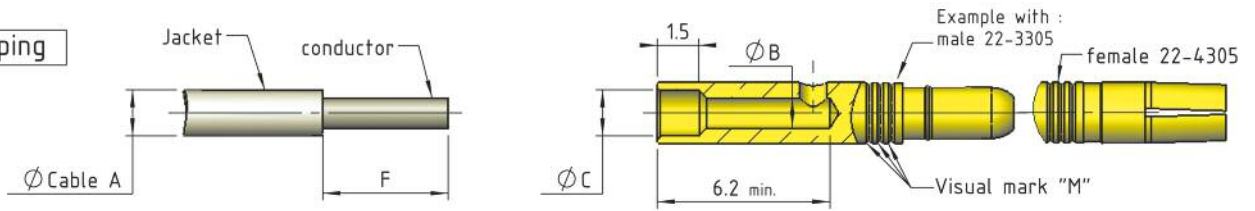


Male HF contact



# Cable instructions (IC22HP02)

## Stripping



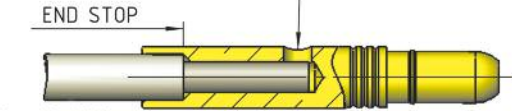
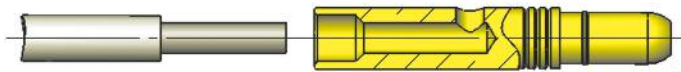
Loaded	Unloaded	Cable A			ØB	ØC	Length F conductor	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector		
		AWG20	AWG18	AWG16							AWG20	AWG18	AWG16
3305	22-3305	X		NA	1.1 mm	1.65 mm	4.5 mm	x3		16459 / C16461	4		NA
3308	22-3308	NA	X	NA	1.35 mm	1.85 mm	4.5 mm	x2	OK	16459 / C16461	NA	5	NA
3310	22-3310		X		1.7 mm	NA	6 mm	x1		16459 / C16461	4	5	6

Loaded	Unloaded	Cable A			ØB	ØC	Length F conductor	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector		
		AWG20	AWG18	AWG16							AWG20	AWG18	AWG16
4305	22-4305	X		NA	1.1 mm	1.65 mm	4.5 mm	x3		16459 / C16461	4		NA
4308	22-4308	NA	X	NA	1.35 mm	1.85 mm	4.5 mm	x2	OK	16459 / C16461	NA	5	NA
4310	22-4310		X		1.7 mm	NA	6 mm	x1		16459 / C16461	4	5	6

NA : Not Applicable

The conductor must be visible through the inspection window of the contact

1 - Insert the cable into the contact



END STOP only for 22-X310



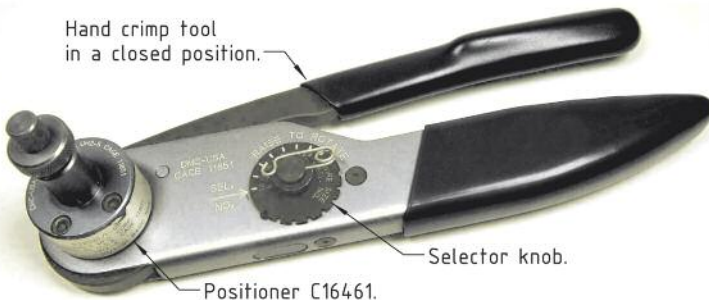
2 - Set the hand crimp tool according to crimp barrel accommodation table above.

- 2.1 - Select the number selector with the selector knob (see crimp tool setting).
- 2.2 - Put the positioner C16461 on the hand crimp tool 16459.

3 - Insert the contact and wire assembly in the crimp guide of the hand crimp tool.

- 3.1 - In the crimp guide, the contact and wire assembly must be in the ends stop position.
- 3.2 - During crimping, keep the wire in position.
- 3.3 - Just one crimping operation is allowed per contact and wire assembly.

Hand crimp tool in a closed position.



Selector knob.

Positioner C16461.

4 - Visually check crimping

- 4.1 - Crimping must not deform the inspection window.
- 4.2 - Contact must not have visible fractures or cracks.
- 4.3 - Contact barrel must not be deformed or bent.
- 4.4 - Crimping must not deform the end of the contact.

Inspection window

End of the contact



Hand crimp tool in an open position.

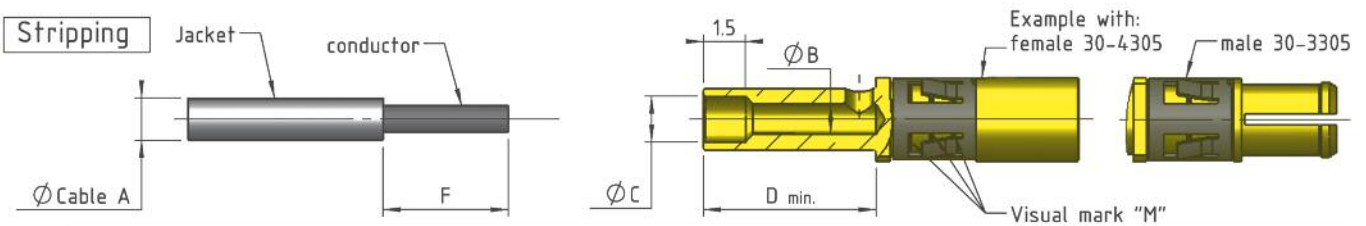
Crimp guide.



5 - Check it is firmly crimped by pulling gently

- 5.1 - For that purpose two (2) fingers are enough : pinch the wire and pull smoothly along the axis of the crimped contact

# Cable instructions (IC30HP02)



Loaded	Unloaded	Cable A					ØB	ØC	Length F conductor	Length D hole	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector				
		AWG20	AWG18	AWG16	AWG14	AWG12								AWG20	AWG18	AWG16	AWG14	AWG12
3305	30-3305	X				NA	1.1 mm	1.65 mm	4.5 mm	6.2 mm	x3	OK	16459 / C16460	3	NA			
3308	30-3308	NA	X			NA	1.35 mm	1.85 mm	6 mm		x2					NA	4	NA
3310	30-3310		X			NA	1.7 mm	NA	6 mm	x1				4	4	5	NA	
3315	30-3315				X	NA	2 mm	NA	5.3 mm	NA	OK	16459 / C16460	NA			6	NA	
3320	30-3320				NA	X	2.6 mm	NA					5.5 mm					NA

Loaded	Unloaded	Cable A					ØB	ØC	Length F conductor	Length D hole	M	Solder	Crimp by AF8 Tool / Positioner	Crimp tool setting - Number selector				
		AWG20	AWG18	AWG16	AWG14	AWG12								AWG20	AWG18	AWG16	AWG14	AWG12
4305	30-4305	X				NA	1.1 mm	1.65 mm	4.5 mm	6.2 mm	x3	OK	16459 / C16460	3	NA			
4308	30-4308	NA	X			NA	1.35 mm	1.85 mm	6 mm		x2					NA	4	NA
4310	30-4310		X			NA	1.7 mm	NA	6 mm	x1				4	4	5	NA	
4315	30-4315				X	NA	2 mm	NA	5.3 mm	NA	OK	16459 / C16460	NA			6	NA	
4320	30-4320				NA	X	2.6 mm	NA					5.5 mm					NA

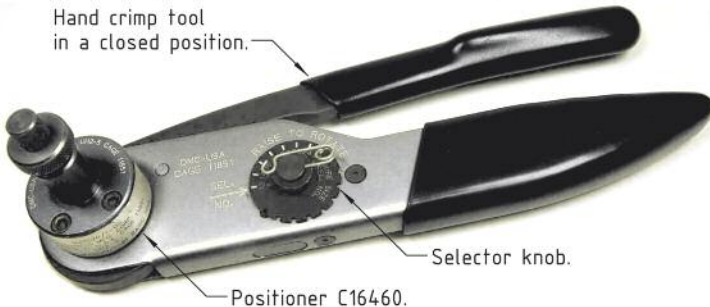
NA : Not Applicable

1 - Insert the cable into the contact



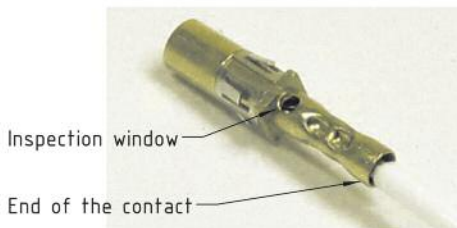
2 - Set the hand crimp tool according to crimp barrel accommodation table above.

2.1 - Select the selector number with the selector knob (see crimp tool setting).  
2.2 - Put the positioner C16460 on the hand crimp tool 16459.



4 - visually check crimping

- 4.1 - Crimping must not deform the inspection window.
- 4.2 - Contact must not have visible fractures or cracks.
- 4.3 - Contact barrel must not be deformed or bent.
- 4.4 - Crimping must not deform the end of the contact



5 - Check it is firmly crimped by pulling gently

For that purpose two (2) fingers are enough : pinch the wire and pull smoothly along the axis of the crimped contact



3 - Insert the contact and wire assembly in the crimp guide of the hand crimp tool.

- 3.1 - In the crimp guide, the contact and wire assembly must be in the end stop position.
- 3.2 - During crimping, keep the wire in position.
- 3.3 - Just one crimping operation is allowed per contact and wire assembly.

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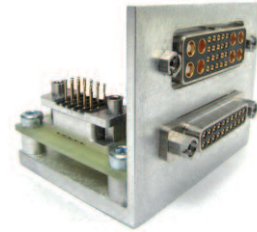
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# Manufacturer and designer of innovative interconnect solutions



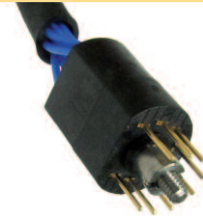
## MICRO-D MIX™ DMM SERIES MICRO-CONNECTORS

2mm pitch high density robust metal shielded micro connector  
Self cabling connector  
Simple and easy to design-in  
New alternative under MIL-DTL-83513G or MIL-DTL-55302F test routine  
Very flexible custom design (fixing hardware, contacts...)



## OMM SERIES MICRO-CIRCULAR CONNECTORS

High density of contacts in smallest circular connector shape  
Space saving feature  
Security of connection  
Light weight  
Lockable captive fixing hardware



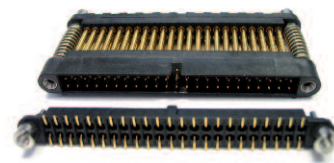
## MICROFLEX HARNESS SOLUTION

Low weight: save up to -30% vs. bulky cable  
Smaller space-factor  
2 in 1 technology with CMM & CRIMP FLEX  
Avionic & aerospace MIL comply  
High quality of crimp (gaz tie)  
High productivity: 2 to 30 contacts in 1 crimp



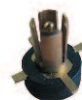
## 4D-FLOATING CONNECTORS

4D tolerance absorption: 4D = 3 axial movements + 1 rotation  
High efficiency "Bone design" (round shape and 4 spring-lips contact)  
Complies with MIL-DTL-55302F  
Auto alignment feature  
Adaptable to customer requests



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