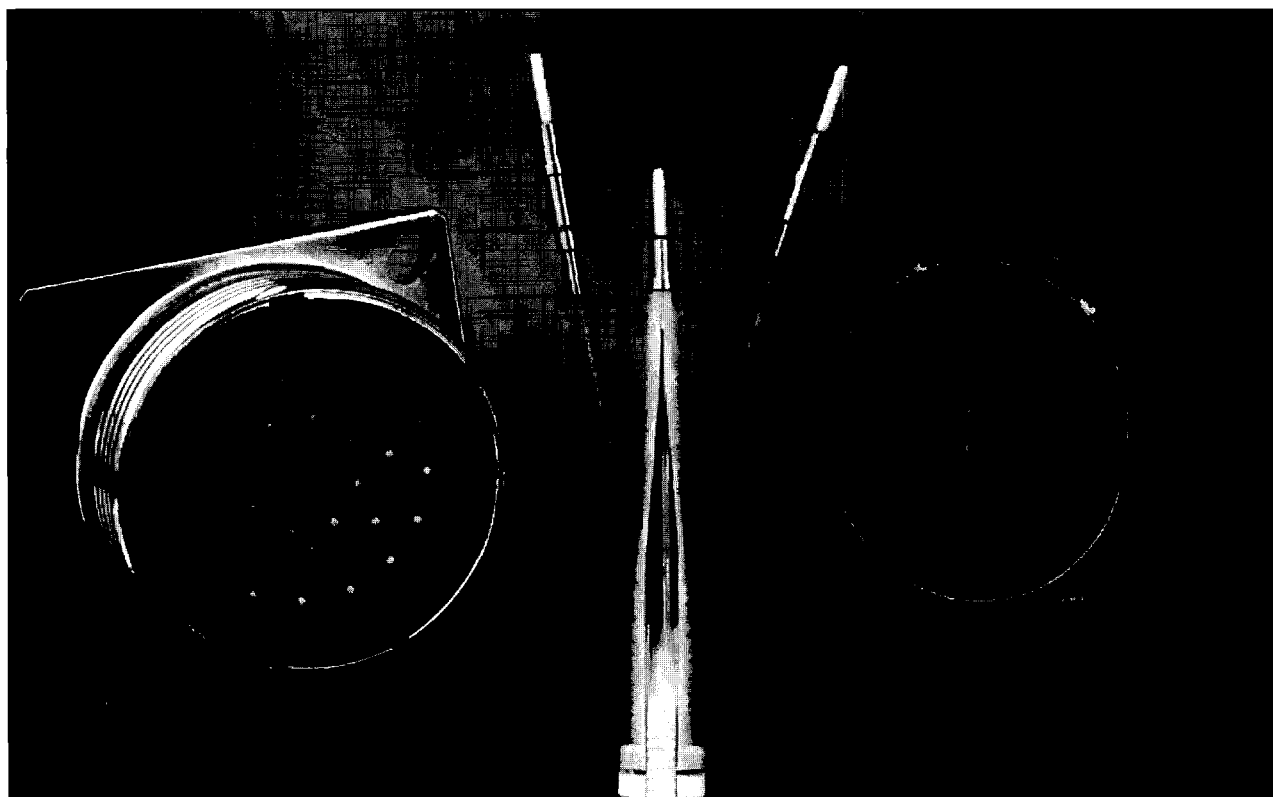


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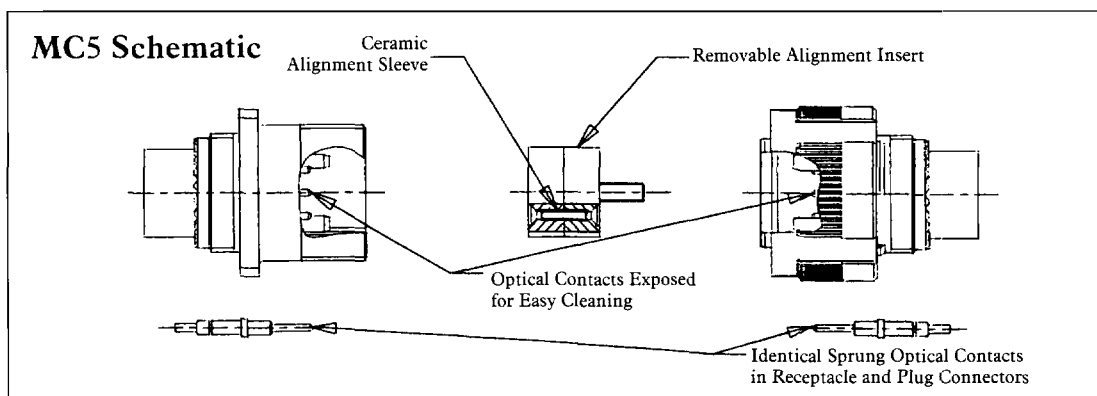
MC5 Range



High Density Fibre Optic Multiway Connectors

★CMPDS00011★

A S T E P A H E A D I N T E C H N O L O G Y



The MC5 High Density range is the very latest advance in high performance multi-channel fibre optic connectors, capable of sustained performance over a wide range of environmental conditions. The MC5 uses the most recent developments in ceramic ferrules and lightweight MIL-C-38999 connector shell materials, combined with purpose designed inserts to ensure the optical performance meets the requirements of high reliability optical systems. Compact sprung loaded precision optical contacts are individually insertable/removable for ease of assembly. The front removable alignment insert feature (which can be specified in either Receptacle or Plug at time of ordering) allows simple cleaning of contacts. The MC5 range is suitable for use with most singlemode and multimode optical fibres with core diameters from 5 to 200 μ m. Up to 30 optical channels can be accommodated.

Features

- Compact precision Zirconia ceramic ferrules and alignment sleeves ensure superior, repeatable optical performance with PC (physical contact) polishing techniques
- Purpose designed Inserts, and insert to insert keying assist precision alignment
- Individually rear insertable/removable optical contacts enable easy assembly
- Easily removable alignment sleeve insert facilitates simple cleaning and maintenance
- Colour band indicates full mate condition
- Identical optical contacts are spring loaded in both plug and receptacle to maintain physical contact even under severe shock or vibration conditions (rigid contact option available for Receptacle)
- Simple termination process and tooling
- Composite lightweight, high strength, corrosion resistant connector shells
- MIL C 38999 III anti-vibration coupling mechanism, and tri-start thread

Applications

- Airframe fit
- Ships, Submarines, Land Vehicles, Rail Transportation
- Deployable Systems
- Industrial Control Systems

Optical Performance

Insertion loss: 0.25dB typical (fibre and polishing process dependent)

Return loss: -40dB typical (fibre and polishing process dependent)

Repeatability: Typically better than 0.1dB (with 50/125 μ m fibre)

Environmental Specification

(further detail available on request) (figures stated are those of specific tests, and may not represent the limits of performance)

Temperature Shock/cycling: -65° to +150°C
28 cycles (1 hr soak)

High temperature endurance: +150°C, 760 hrs

Low temperature endurance: -65°C, 500 hrs
(fibre and cable dependent)

Vibration: Sinusoidal; 5-3000Hz, 40g, 10 hrs
Random; 25-2000Hz, 5g2/Hz
(50gms), 16 hrs

Bump: 4000 bumps, 40g

Mechanical endurance: >500 mating cycles

Materials

Ferrules/Alignment sleeves: Zirconia

Seals: Fluorosilicone

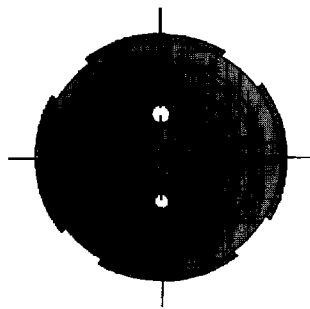
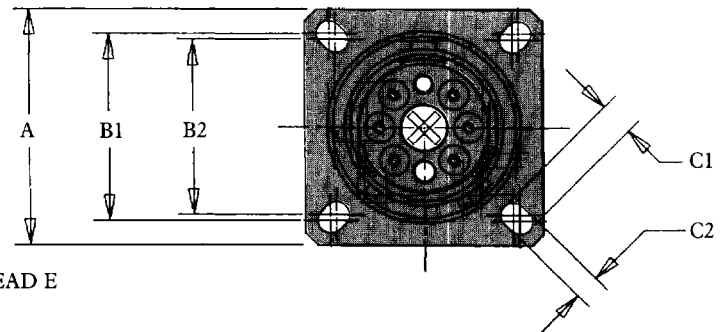
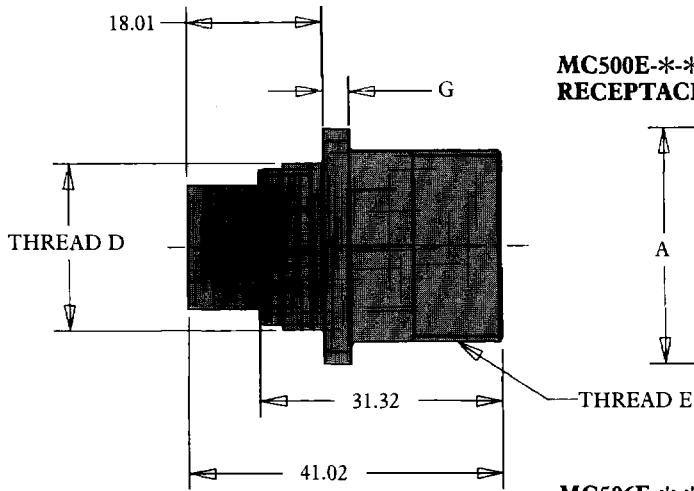
Shell materials: Composite (Qualified to MIL-C-38999)

Dimensional Specifications

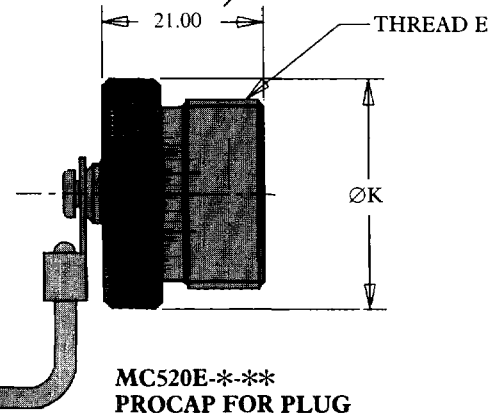
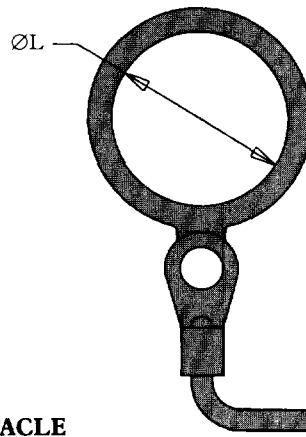
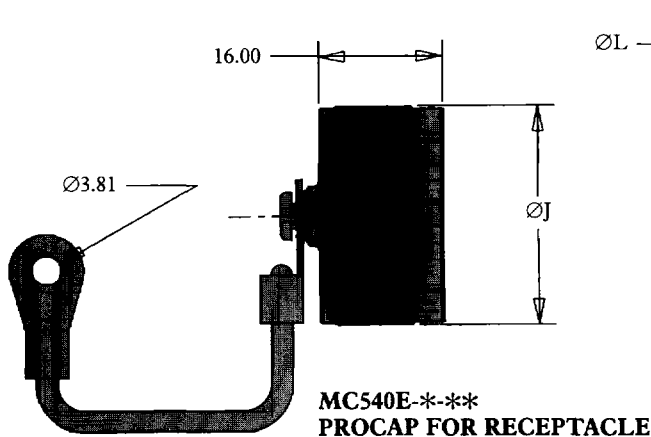
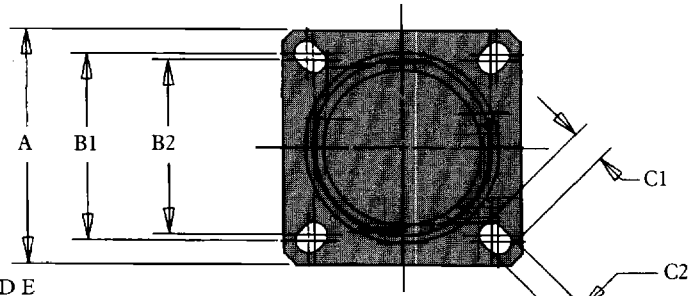
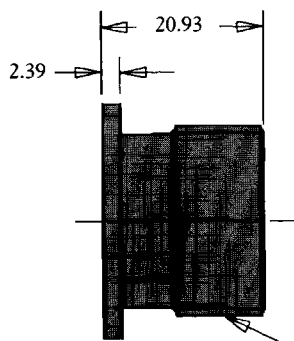
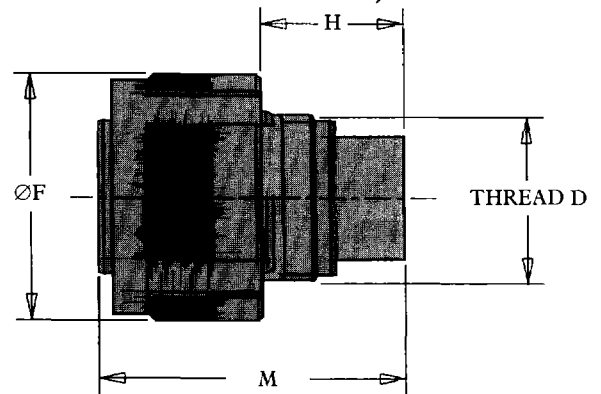
All Dimensions in millimetres (unless otherwise stated)

(To complete part number for ordering see back page

"How to Order")



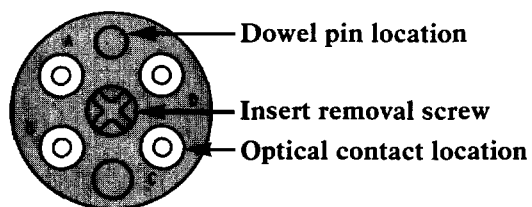
MC506E-***-***
PLUG



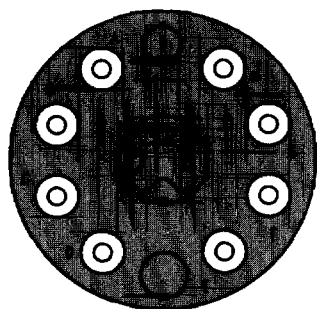
SIZE/ARRGT	A	B1	B2	C1	C2	THREAD D	THREAD E TRI-START DIM INS	ØF	G	H	M	ØJ	ØK	ØL
SIZE 13 - 4	28.63	23.01	20.62	4.98	3.30	M18 x 1.0	0.8750"	29.34	3.40	19.86	40.86	25.88	27.33	19.81
SIZE 15 - 6	31.01	24.61	23.01	4.45	3.30	M22 x 1.0	1.0000"	32.46	3.40	19.86	40.86	29.05	30.50	23.11
SIZE 17 - 8	33.32	26.97	24.61	4.98	3.30	M25 x 1.0	1.1875"	35.66	3.40	19.86	40.86	33.81	33.74	26.29
SIZE 19 - 10	36.53	29.36	26.97	4.98	3.30	M28 x 1.0	1.2500"	38.46	3.40	19.63	40.86	35.40	36.92	29.46
SIZE 21 - 18	39.73	31.75	29.36	4.98	3.30	M31 x 1.0	1.3750"	41.66	4.22	19.63	40.86	38.58	40.03	32.64
SIZE 23 - 23	42.93	34.93	31.75	6.20	3.96	M34 x 1.0	1.5000"	44.86	4.22	19.63	40.86	41.75	43.12	35.81
SIZE 25 - 30	46.02	38.10	34.93	6.20	3.96	M37 x 1.0	1.6250"	47.98	4.22	19.15	40.37	44.93	46.35	38.99

MC5 PLANFORMS

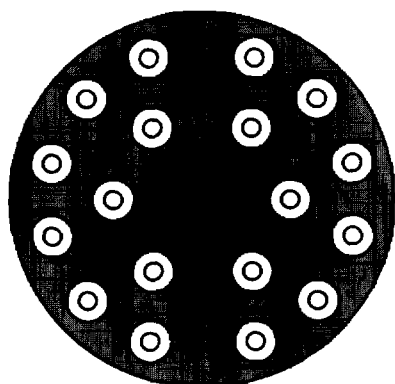
Shown in socket insert configuration



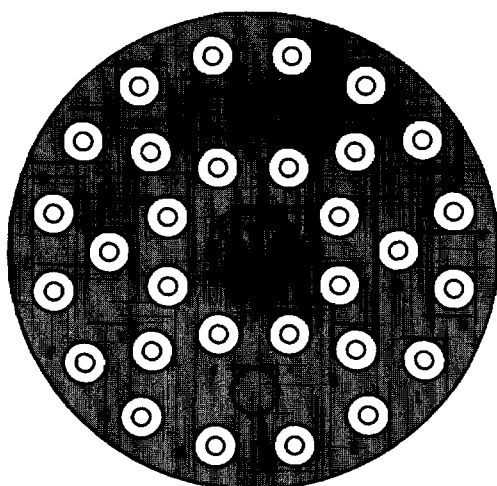
4 WAY SIZE 13



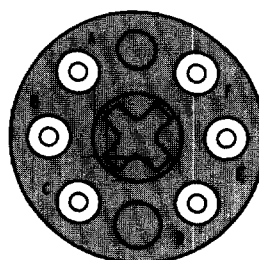
8 WAY SIZE 17



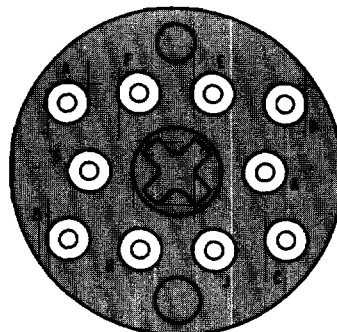
18 WAY SIZE 21



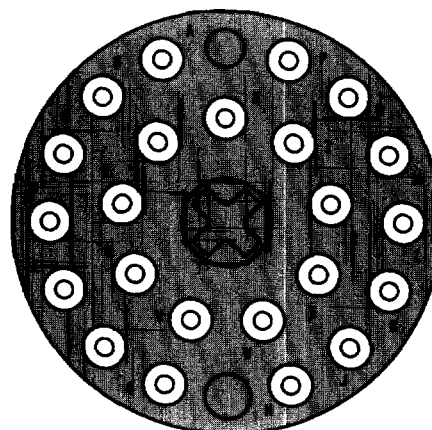
30 WAY SIZE 25



6 WAY SIZE 15



10 WAY SIZE 19

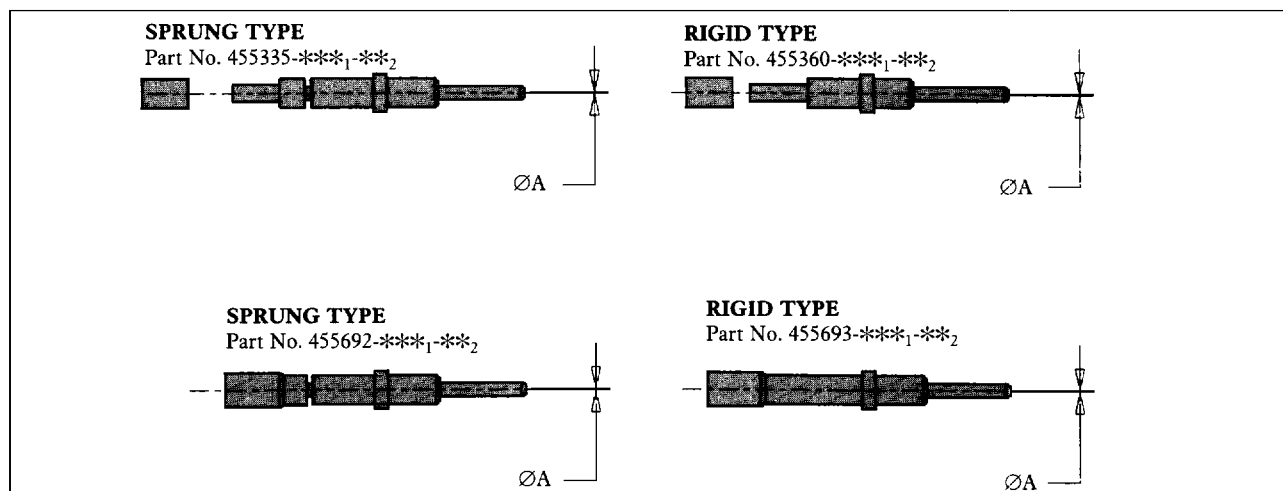


23 WAY SIZE 23

Enlarged view

MC5 Optical Contacts (ordered separately)

Optical contacts are supplied with a profile formed optical end face and are available for multimode or singlemode fibres. Contacts are available in either sprung or rigid versions, depending upon application. (Rigid contacts should be used in bulkhead receptacles only.) Options are as follows:



***1 = Optical Hole Ø "A" (fibre size) (see Table 1)

***2 = Cable Type (see Table 2)

Note: for type OO (***2) the cable crimp sleeve is not supplied ie for terminating buffered fibre

Table 1 (***1)

RIGID CONTACT		SPRUNG CONTACT	
Part No. (Multimode)	Part No. (Singlemode)	Part No. (Multimode)	Part No. (Singlemode)
455***-***1-***2	455***-***1-***2	455***-***1-***2	455***-***1-***2
455360-175-***2	455619-126-***2	455335-175-***2	455618-126-***2
455360-172-***2	455619-127-***2	455335-172-***2	455618-127-***2
455360-159-***2	455819-126-***2	455335-159-***2	455818-126-***2
455360-127-***2	455819-127-***2	455335-127-***2	455818-127-***2
455360-128-***2		455335-128-***2	
455693-127-***2		455692-127-***2	
455693-128-***2		455692-128-***2	

Note: For alternative fibre sizes, consult Technical Sales

Table 2 (***2)

Contact Type		Cable Type	Crimp Sleeve	Crimp Dies (See Note)	
Rigid	Sprung			Part No.	A/F
455360-***1-00	455335-***1-00	Plain Buffer 900µm	-	455478	1.25/1.35
455619-***1-00	455618-***1-00	Plain Buffer 900µm	-	455478	1.25/1.35
455693-***1-10	455692-***1-10	Ø2.5 OD Tight Jacket Cable	-	455478	2.52/2.62
455819-***1-10	455818-***1-10	Ø2.5 OD Tight Jacket Cable	-	455478	2.52/2.62
455360-***1-01	455335-***1-01	Ø2.1 OD Tight Jacket Cable	455330-01	455478	2.27/2.37
455360-***1-02	455335-***1-02	Ø1.8 OD Tight Jacket Cable	455330-02	455478	2.27/2.37

Note: Crimp dies are used with Deutsch crimp tool 451716 (Erma 29020)

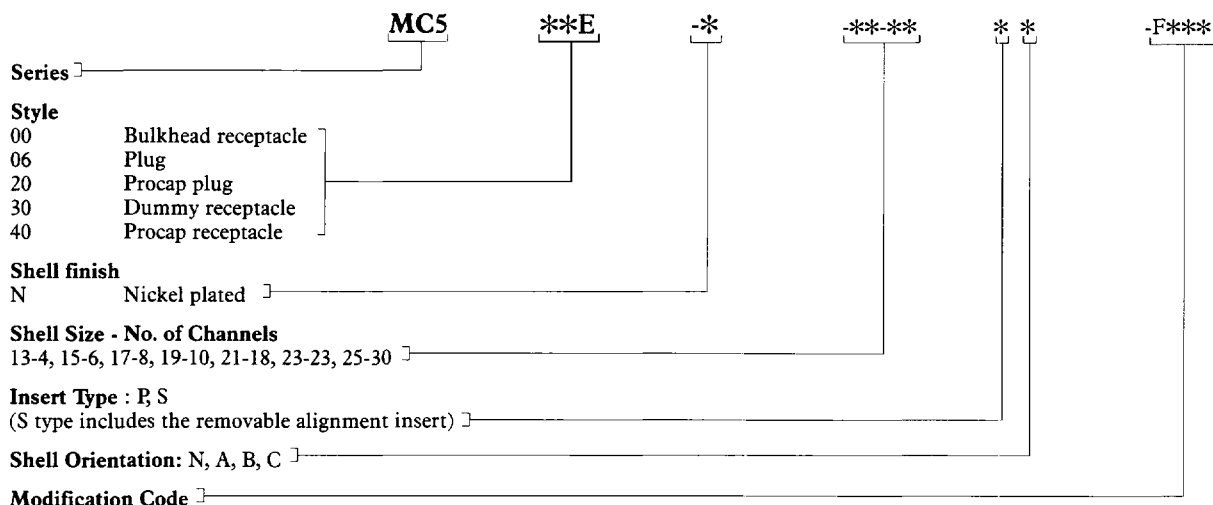
MC5 Backshells for Multiway Cables (ordered separately)

Cable Type/Description	Cable Ø O/D mm
Multiway cable, with 900µm buffered fibre and peripheral strain relief	3.5
	4.5
	5.0
	5.5
	6.0
	7.0
Multiway cable, various constructions - eg central strain relief	*

* Backshells are available for a range of multiway cables.

* Consult Technical Sales

How to Order



Example Part Numbers

Connector MC500E-N-19-10SN

Procap MC540E-N-19

Dummy Receptacle MC50E-N-19

MC5 ESSENTIAL TERMINATION TOOLING

Part No.	Description and Use	Notes		
	PC Polishing Tools and Materials			
455367	Polishing Dolly			
455801	Rubber Polishing Pads (2 off required)	For profile formed polishing		
454483	1 off DM Diamond Medium Disc	Used on all ferrule polishing		
455170	10 off AFSD Final Polish Disc	For ultra fine polished finish		
455574	{20 off Strips 30µm Al. Ox. Lapping Film	To remove fibre sprig and epoxy		
	{20 off Strips 9µm Al. Ox. Lapping Film	To remove fibre sprig and epoxy		
	Connector Assembly Tooling			
453936	Multicure Heater (24 ports)	Epoxy curing		
455820-2	Bushes 24 off (Multicure heater)	Epoxy curing		
451716	Crimp Tool Body 29020	Used with crimp dies		
		A/F mm	Cable OD mm	Type of cable
455478	Crimp Dies for MC5	1.25/1.35	.900	Buffered fibre
		2.27/2.37	1.8	Tight jacket/strength members
		2.27/2.37	2.1	Tight jacket/strength members
		2.52/2.62	2.5	Tight jacket/strength members
453228	Fibre Cleaving Tool			
454355-355	Stripping Tool (No-Nik)	For stripping fibre buffer		
454355	Stripping Tool (Hozan)	For stripping outer sheath		
M15570-16	Contact Insertion/Extraction Tool	1 off supplied with each connector		
	Consumable Materials			
454257-2	Epoxy Kit Type 353ND (2 gram sachet)	Temperature curing		
453855	Epoxy Kit Epoxy-Patch (0151 clear)	Air or temperature curing		
454297	Syringe and Needle Kit	6 off each kit		
455178	Loctite Type 932 (50ml)	Used for backshells		
454167	Omnifit 230L (Contact Adhesive)	For Kevlar retention		
454712	Adhesive Type S1125 (2 x 10g kit)	For backshell potting		
454299	Scalpel Kit			

Note: * Additional tooling may be required specific to cable types (refer to Technical Sales)

* For comprehensive tooling and consumable listing refer to Technical Sales

Deutsch Limited reserves the right to alter specifications without notice

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