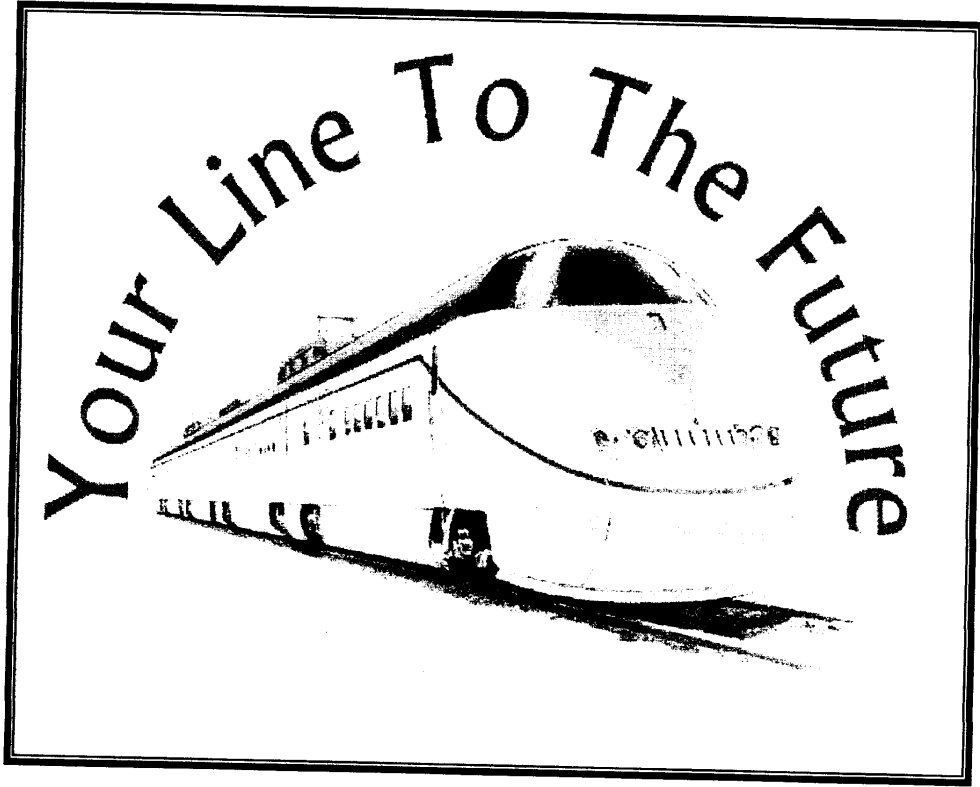


290 Lines



**Product Introduction &
Standard Parts Catalogue
For**

ALSTOM

Transport

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AB Connectors Limited



ABCIR Series

Circular Multi-pin, Bayonet Lock
Electrical Connectors

Product Introduction for

ALSTOM Transport

ABCIR Bayonet Coupling Connector

Introduction

The ABCIR Bayonet Coupling Connector series is based on the MS series of connectors conforming to the MIL-C-5015 specification. They are interchangeable with all corresponding MS types and feature identical panel mounting dimensions.

Designed to operate within a temperature range of -55°C to $+125^{\circ}\text{C}$, the connector also meets the electrical, mechanical and environmental requirements of BS9522 F0032 and VG 95234.

The ABCIR connector series incorporates a 3 pin bayonet lock coupling mechanism. The coupling is achieved by stainless steel bayonet pins or roller bearings riding along three cam tracks machined into the receptacle shell. Coupling integrity is guaranteed by firstly having three stainless steel pins at the critical wear points of the receptacle shell cam track and secondly, by positive lock indicators in the form of an audible 'click' and coloured dots which align when the connectors are fully mated.

The ABCIR connectors are available in 13 shell sizes from 10sl to 49 with arrangements having between 1 and 85 contacts. High current versions are also available on request.

The 'F80' Low Fire Hazard/Low Halogen mouldings ensure the ABCIR connectors meet the relevant requirements found in the French NF F 16-101 and BS6853 specifications.

Contacts are available in sizes 20(10), 16s(15s), 16(15), 12(25), 8(100), 4(160) and 0(500) for AWG (metric) cables and crimp or solder versions.

Contact arrangement angular orientation is available for occasions where like connectors are in close proximity and cross mating has to be avoided.

Protection against water ingress is provided by the use of a dynamic sealing ring under the coupling nut and by grommet wire sealing at the rear of the connector.

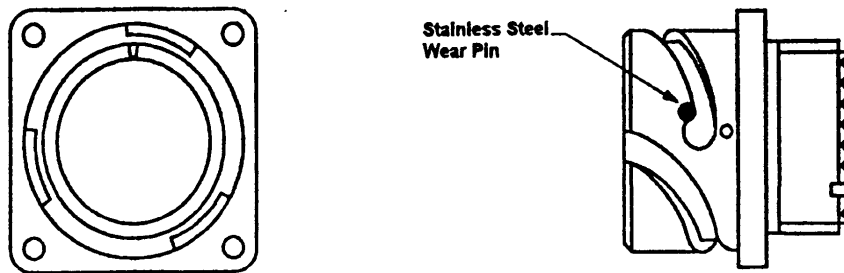
High reliability and anti-vibration characteristics are guaranteed by the dynamic sealing gasket and the stainless steel pins at the critical wear points.

A nylon follower ensures that the grommet does not rotate during accessory assembly, therefore preventing wire damage.

In summary, the ABCIR bayonet coupling connector offers several advantages to the user.

- * -Rapid mating and de-mating. 120° rotation of the coupling nut.
- * -Vibration resistant - loosening of the coupling nut by vibration or shock is prevented.
- * -Unaffected by contaminants such as dust, sand, mud etc.
- * -Audible click and visual alignment of coloured dots provides for added security when coupling.
- * -Water proof connector assemblies
- * -Low fire hazard/low halogen mouldings ensuring the connectors meet the latest

Receptacle Connector



Plug Connector



Standard Data

A typical connector consists of:

Materials

Shell : Aluminium alloy
Insulator : Low fire hazard/low halogen rubber
Grommet : Low fire hazard/low halogen rubber
Contacts : Copper alloy
Accessory : Aluminium alloy

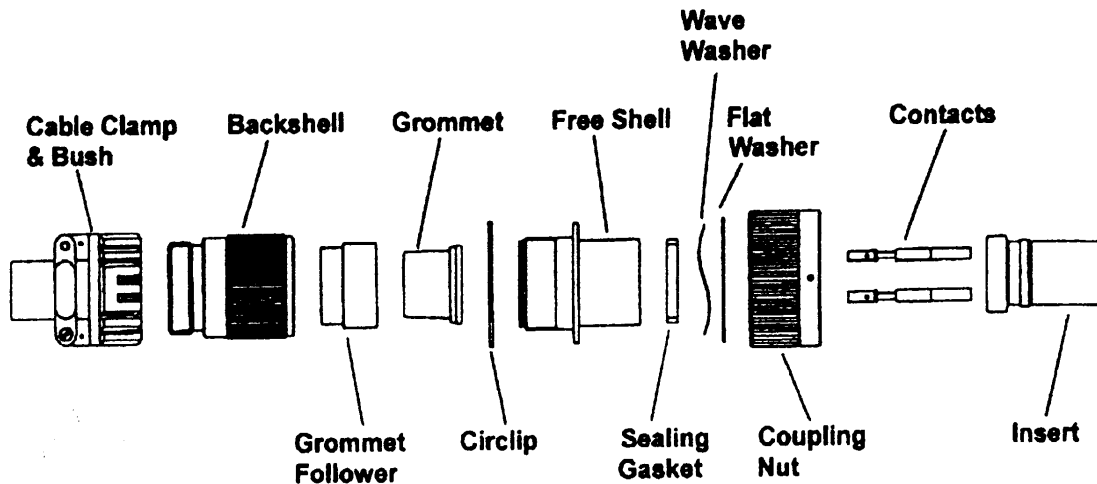
Plating Finishes

Shell : Olive drab chromate over cadmium
Contacts : Gold over nickel or hard silver over nickel
Accessory : Olive drab chromate over cadmium

Environmental ratings

Shock : 75g
Vibration : 5 to 5000 Hz long endurance, 30 hour test at 10g
Acceleration : 50g
Humid severity : H6 (6 cycles acc. 56 days)

Connector Description and Terminology



Exploded view of a typical ABCIR Plug connector with grounding.

Description consists of the following parts:

Free shell - holds the insert.

Insert - bonded into the free shell (non-removeable) and retains the contact.

Contacts - crimped onto the conductor.

Sealing gasket - square section gasket seals the free shell to receptacle interface when the connectors are mated.

Wave washer - ensures RFI grounding when connectors are mated.

Flat washer - presents a flat surface for the wave washer.

Coupling nut - provides cam force when mating and unmating connectors. Front removeable.

Circlip - retains the coupling nut.

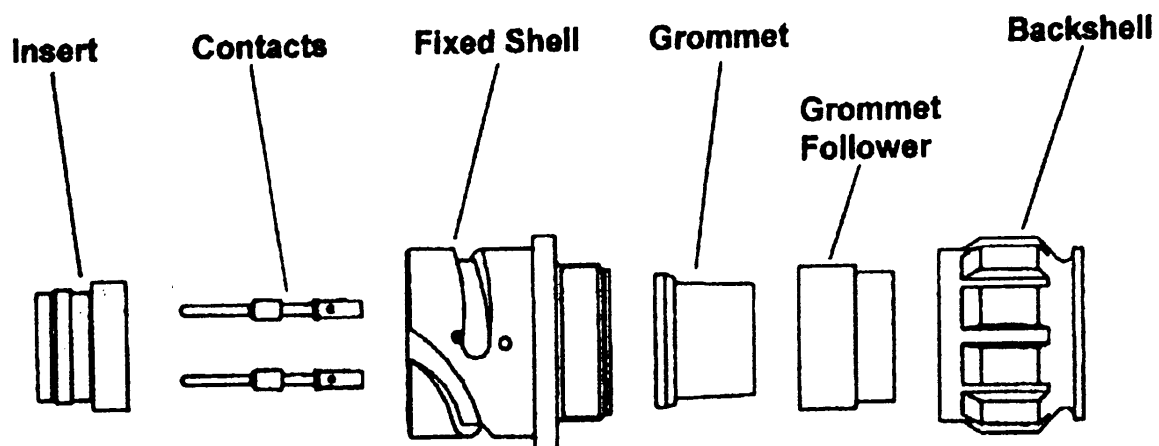
Grommet - resilient rubber seal for individual wire terminations.

Grommet follower - nylon cone which compresses the grommet to seal individual conductors and prevent cable rotation during backshell assembly.

Backshell - accessory which screws onto the rear of the plug or receptacle shell and provides an interface for other accessories. The backshell contains the wire terminations and holds the grommet and follower in position. A wide variety of backshells is available.

Cable clamp - accessory which screws onto the backshell to provide cable jacket strain relief for individual conductor bundles.

Connector Description and Terminology



Exploded view of a typical Receptacle connector.

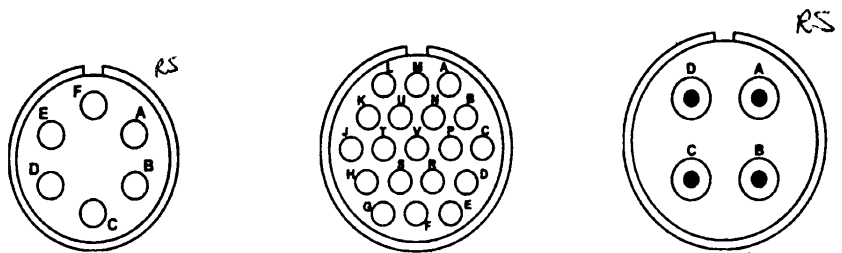
Description consists of the following parts:

- | | |
|--------------------------|---|
| Receptacle (fixed) shell | - the fixed half of a connector pair. Holds the insert. Coupling ramps provide cam action for coupling and un-coupling. Stainless steel pins at the top of the ramps ensure positive locking and long service life. |
| Insert | - bonded into the fixed shell (non-removeable). Retains the contacts. |
| Contacts | - crimped onto the conductor. |
| Grommet | - resilient rubber seal for individual conductor terminations. |
| Grommet follower | - nylon cone compresses the grommet to seal individual conductors and prevent cable rotation during backshell assembly. |
| Backshell | - accessory which screws onto the rear of the plug or receptacle shell and provides an interface for other accessories. The backshell contains the wire terminations and holds the grommet and follower in position. A wide variety of backshells is available. |

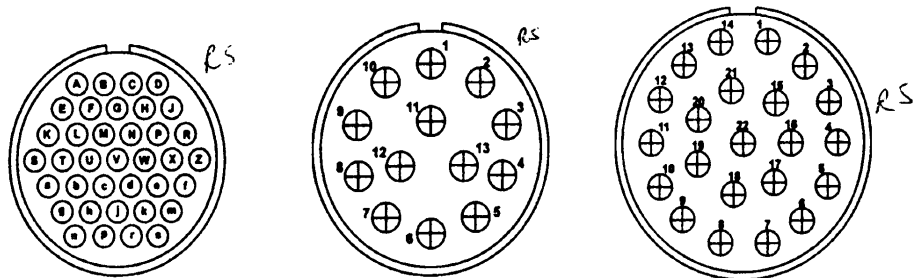
ALSTOM Transport

Standard Parts Catalogue

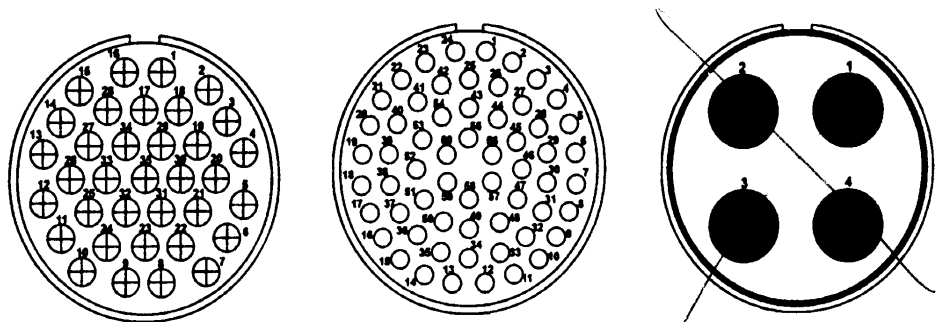
ALSTOM Transport Standard Contact Arrangements



Shell Size	18	22	24
Contact Arrangement	18-12	22-14	24-22
No. Contacts x Size AWG (Metric)	6 #16 (15)	19 #16 (15)	4 #8 (100)
Service Rating	A	A	D



Shell Size	28	32	36
Contact Arrangement	28-21	32-A13	36-A22
No. Contacts x Size AWG (Metric)	37 #16 (15)	13 #12 (25)	22 #12 (25)
Service Rating	A	D	D



Shell Size	40	40	40
Contact Arrangement	40-A35	40-A60	40-E4
No. Contacts x Size AWG (Metric)	35 #12 (25)	60 #16 (15)	4 #0 (500)
Service Rating	D	A	E

ALSTOM Transport Standard Contact Arrangements

Insert Arrangement Service Rating

Service Rating	Operating Voltage DC (at sea level)	Operating Voltage AC (at sea level)
A	700 V	500 V
D	1250 V	900 V
E	1750 V	1260 V

Dielectric Strength (Standard Sea level Conditions)

Service Rating	Test Voltage AC RMS
A	2000 V
D	2800 V
E	3500 V

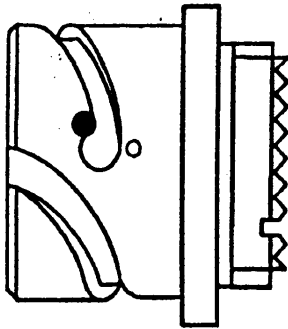
The connectors do not exhibit any sign of breakdown when the above test voltages are applied for one minute between the two closest contacts and between the shell and closest contact.

Contact Ratings

Contact size	Maximum current	Rated current
16	22 A	13 A
12	41 A	23 A
8	73 A	46 A
0	245 A	150 A

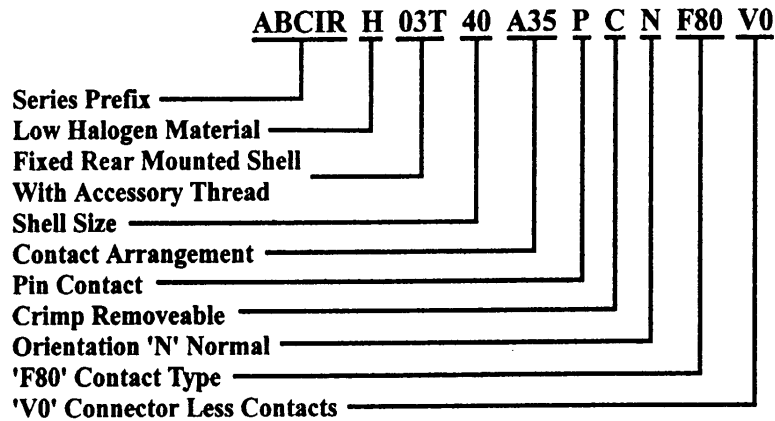
Part Number Cross Reference, ALSTOM Transport Preferred Range

Fixed Connector (receptacle), Rear Mounting with Accessory Thread. Through Mounting Holes. Pin Contacts (supplied separately).

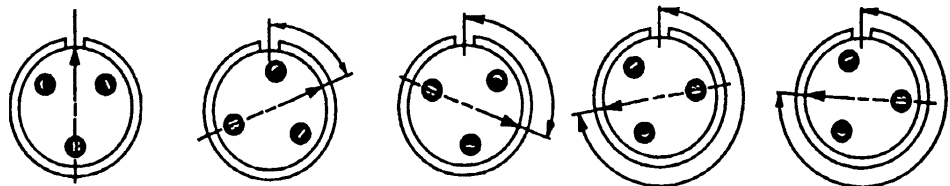


ALSTOM Part Number	AB Connectors Part Number
A1511397	ABCIRH03T40A60PCNF80V0
A1511398	ABCIRH03T2821PCNF80V0
A1511399	ABCIRH03T2214PCNF80V0
A1511400	ABCIRH03T1812PCNF80V0
A1511401	ABCIRH03T40A35PCNF80V0
A1511402	ABCIRH03T36A22PCNF80V0
A1511403	ABCIRH03T32A13PCNF80V0
A1511404	ABCIRH03T2422PCNF80V0
A1511431	ABCIRH03T40E4PCNF80V0
A1511432	ABCIRH03T40E4SCNF80V0
A1511446	ABCIRH03T40E4PCWF80V0
A1511447	ABCIRH03T2214SCNF80V0
A1511449	ABCIRH03T2821PCYF80V0
A1511451	ABCIRH03T2821PCZF80V0
A1511453	ABCIRH03T2821PCWF80V0

AB Connectors Part Number Explanation



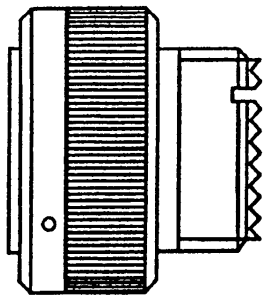
Alternative Angular Insert Orientations. (View on Mating Face of Pin Insert)



Contact Arrangement	Normal - N Yellow	W Blue	X Green	Y Purple	Z White
28-21	0	80	110	250	280
40-E4	0	45	110	-	-

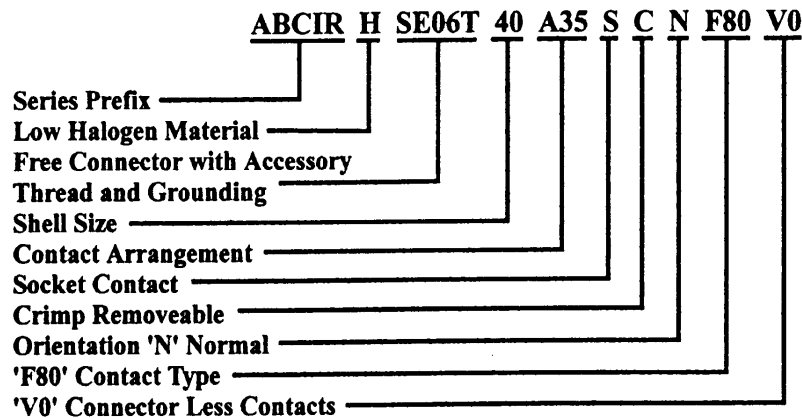
Part Number Cross Reference, ALSTOM Transport Preferred Range.

Free Connector (plug), with Accessory Thread and Grounding.
Socket Contacts (supplied separately).

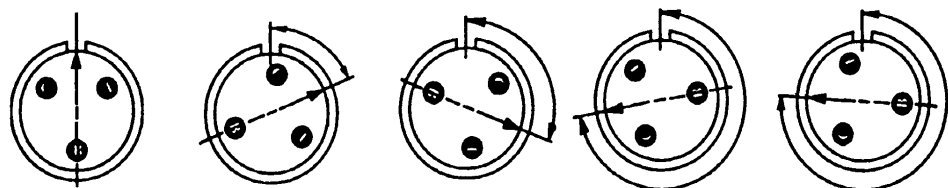


ALSTOM Part Number	AB Connectors Part Number
A1511405	ABCIRHSE06T40A60SCNF80V0
A1511406	ABCIRHSE06T2821SCNF80V0
A1511407	ABCIRHSE06T2214SCNF80V0
A1511408	ABCIRHSE06T1812SCNF80V0
A1511409	ABCIRHSE06T40A35SCNF80V0
A1511410	ABCIRHSE06T36A22SCNF80V0
A1511411	ABCIRHSE06T32A13SCNF80V0
A1511412	ABCIRHSE06T2422SCNF80V0
A1511429	ABCIRHSE06T40E4SCNF80V0
A1511430	ABCIRHSE06T40E4PCNF80V0
A1511445	ABCIRHSE06T40E4SCWF80V0
A1511448	ABCIRHSE06T2821SCYF80V0
A1511450	ABCIRHSE06T2821SCZF80V0
A1511452	ABCIRHSE06T2821SCWF80V0

AB Connectors Part Number Explanation



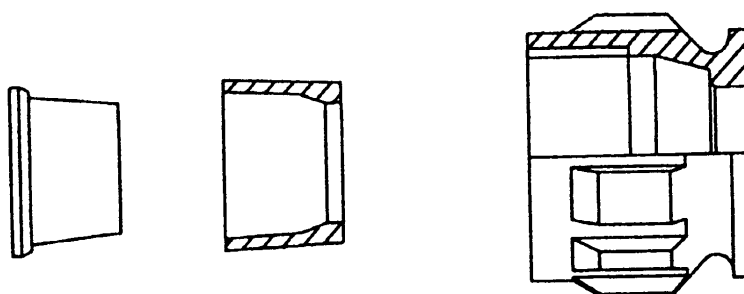
Alternative Angular Insert Orientations. (View on Mating Face of Pin Insert)



Contact Arrangement	Normal - N Yellow	W Blue	X Green	Y Purple	Z White
28-21	0	80	110	250	280
40-E4	0	45	110	-	-

Part Number Cross Reference, ALSTOM Transport Preferred Range

**Grommet Nut - Non-Locking Accessory Type 'EV'.
Includes Grommet & Follower.**



Grommet

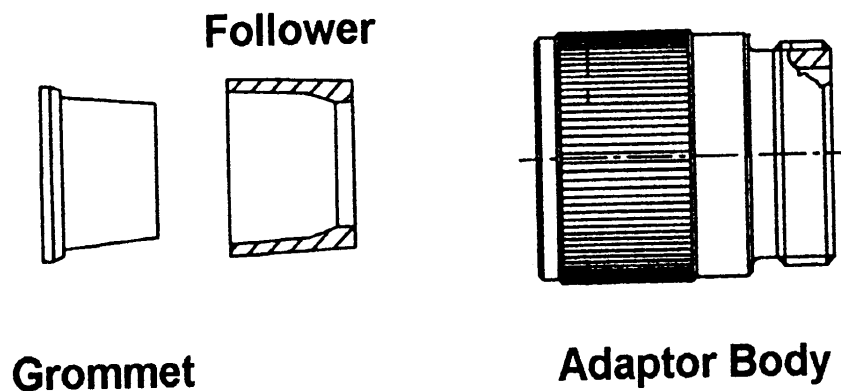
Follower

Grommet Nut

ALSTOM Part Number	AB Connectors Part Number
A1511301	ABBH40A60EVF80
A1511302	ABBH2821EVF80
A1511303	ABBH2214EVF80
A1511304	ABBH1812EVF80
A1511305	ABBH40A35EVF80
A1511306	ABBH36A22EVF80
A1511307	ABBH32A13EVF80
A1511308	ABBH2422EVF80
A1511433	ABBH40E4EVF80

Part Number Cross Reference, ALSTOM Transport Preferred Range.

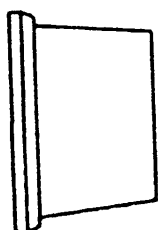
Conduit Cable Adaptor - Non-Locking Accessory Type 'R'.
Includes Grommet & Follower.



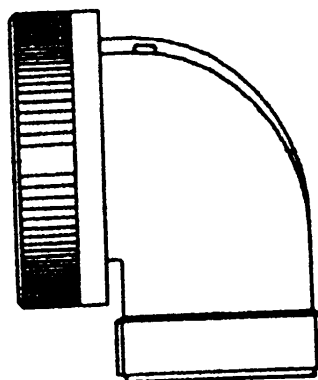
ALSTOM Part Number	AB Connectors Part Number
A1511309	ABBH40A60CCAF80
A1511310	ABBH2821CCAF80
A1511311	ABBH2214CCAF80
A1511312	ABBH1812CCAF80
A1511313	ABBH40A35CCAF80
A1511314	ABBH36A22CCAF80
A1511315	ABBH32A13CCAF80
A1511316	ABBH2422CCAF80
A1511434	ABBH40E4CCAF80

Part Number Cross Reference, ALSTOM Transport Preferred Range.

**90° Threaded Outlet - Locking Accessory Type 'FT'.
Includes Grommet.**



Grommet

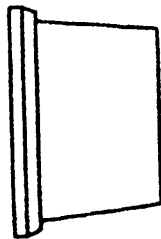


**90° Adaptor Body
With Rotating Coupler
For Positional Locking**

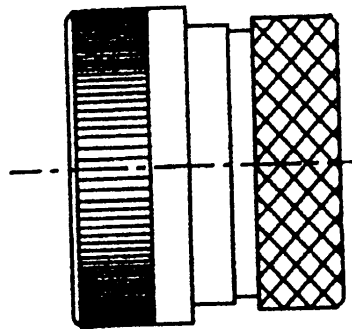
ALSTOM Part Number	AB Connectors Part Number
A1511317	ABBH40A60FTF80
A1511318	ABBH2821FTF80
A1511319	ABBH2214FTF80
A1511320	ABBH1812FTF80
A1511321	ABBH40A35FTF80
A1511322	ABBH36A22FTF80
A1511323	ABBH32A13FTF80
A1511324	ABBH2422FTF80

Part Number Cross Reference, ALSTOM Transport Preferred Range.

RFI Shielded Adaptor - Locking Accessory Type 'GM'.
Includes Grommet.



Grommet

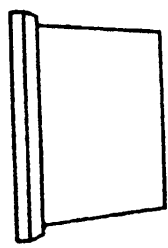


Adaptor Body

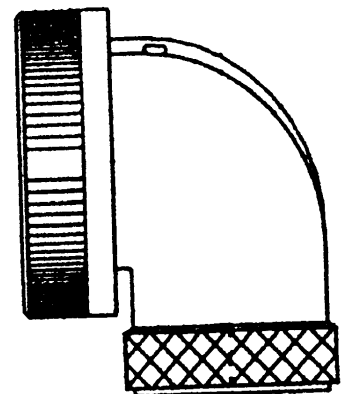
ALSTOM Part Number	AB Connectors Part Number
A1511325	ABBH40A60LHSAF80
A1511326	ABBH2821LHSAF80
A1511327	ABBH2214LHSAF80
A1511328	ABBH1812LHSAF80
A1511329	ABBH40A35LHSAF80
A1511330	ABBH36A22LHSAF80
A1511331	ABBH32A13LHSAF80
A1511332	ABBH2422LHSAF80

Part Number Cross Reference, ALSTOM Transport Preferred Range.

90° RFI Shielded Outlet - Locking Accessory Type 'FM'.
Includes Grommet.



Grommet



**90 Adaptor Body
With Rotating Coupler
For Positional Locking**

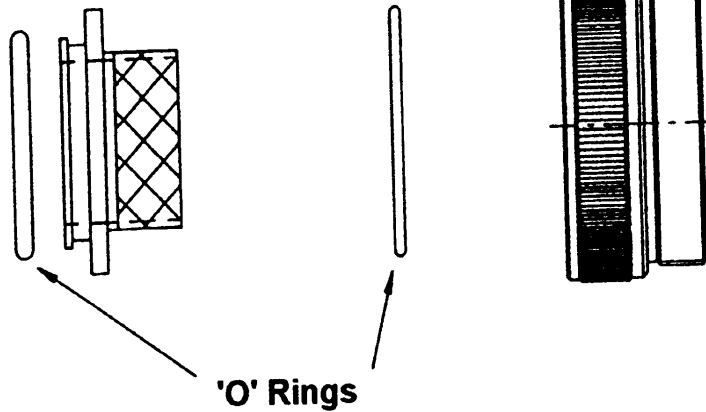
ALSTOM Part Number	AB Connectors Part Number
A1511333	ABBH40A60FMF8
A1511334	ABBH2821FMF80
A1511335	ABBH2214FMF80
A1511336	ABBH1812FMF80
A1511337	ABBH40A35FMF8
A1511338	ABBH36A22FMF8
A1511339	ABBH32A13FMF8
A1511340	ABBH2422FMF80

Part Number Cross Reference, ALSTOM Transport Preferred Range.

Non-Locking Conduit Adaptor with Braid Screen Trap.

Braid Screen Trap

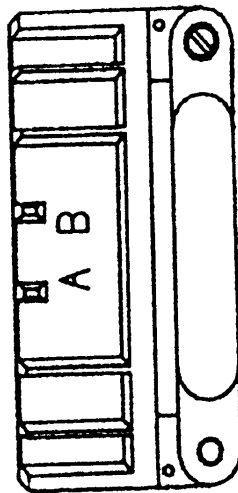
Conduit Adaptor



ALSTOM Part Number	AB Connectors Part Number
A1511341	ABB40CRA
A1511342	ABB28CRA
A1511343	ABB22CRA
A1511344	ABB18CRA
A1511345	ABB36CRA
A1511346	ABB32CRA

Part Number Cross Reference, ALSTOM Transport Preferred Range.

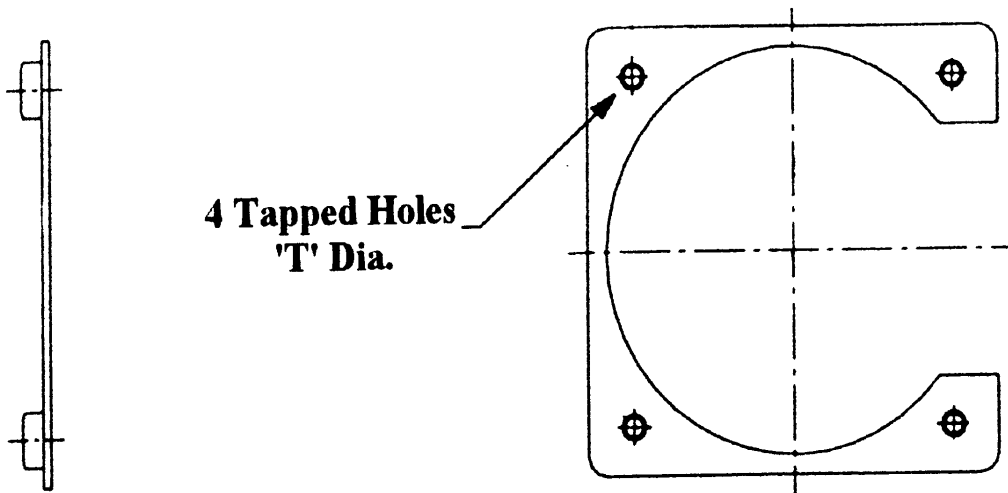
Cable Clamp.



ALSTOM Part Number	AB Connectors Part Number
A1511348	CMSP3057A40
A1511349	CMSP3057A24/28
A1511350	CMSP3057A20/22
A1511351	CMSP3057A18
A1511352	CMSP3057A36
A1511353	CMSP3057A32

Part Number Cross Reference, ALSTOM Transport Preferred Range.

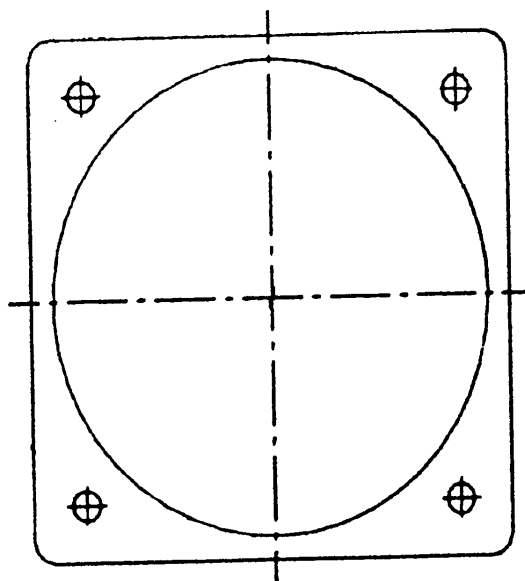
Mounting Bracket.



ALSTOM Part Number	AB Connectors	'T' Dia.
A1511355	ABB40NP	M4 x 0.7
A1511356	ABB28NP	M3 x 0.5
A1511357	ABB22NP	M3 x 0.5
A1511358	ABB18NP	M3 x 0.5
A1511359	ABB36NP	M4 x 0.7
A1511360	ABB32NP	M4 x 0.7
A1511361	ABB24NP	M3 x 0.5

Part Number Cross Reference, ALSTOM Transport Preferred Range.

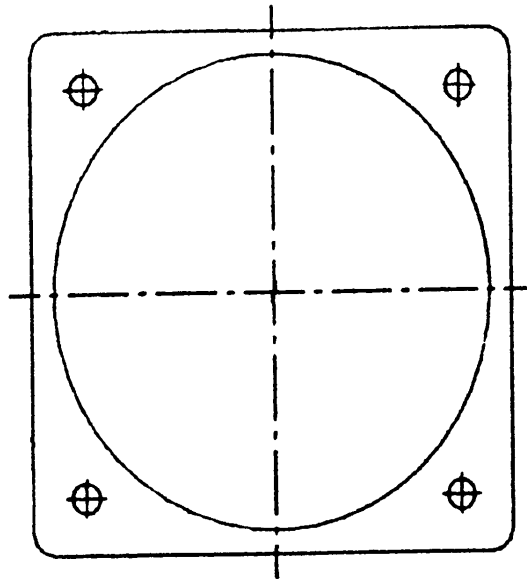
Panel Sealing Gasket For Rear Mounted Receptacle (Sealing Only).



ALSTOM Part Number	AB Connectors Part Number
A1511362	SB40FPG
A1511363	SB28FPG
A1511364	SB22FPG
A1511365	SB18FPG
A1511366	SB36FPG
A1511367	SB32FPG
A1511368	SB24FPG

Part Number Cross Reference, ALSTOM Transport Preferred Range.

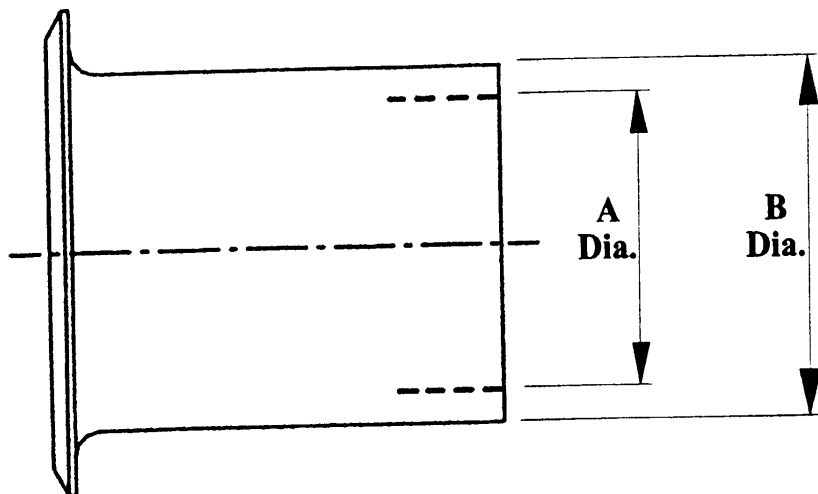
Panel Sealing Gasket For Rear Mounted Receptacle (Screening & Sealing).



ALSTOM Part Number	AB Connectors Part Number
A1511369	SB40FPGS
A1511370	SB28FPGS
A1511371	SB22FPGS
A1511372	SB18FPGS
A1511373	SB36FPGS
A1511374	SB32FPGS
A1511375	SB24FPGS

Part Number Cross Reference, ALSTOM Transport Preferred Range.

Low Halogen Outlet Bushing.

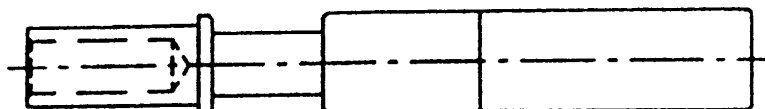


ALSTOM Part Number	AB Connectors Part Number	Dia. A Min.	Dia. B Max.
A1511376	SBMSH5541	5.59	7.62
A1511377	SBMSH5542	7.74	10.98
A1511378	SBMSH5543	10.92	14.15
A1511379	SBMSH5544	14.09	15.75
A1511380	SBMSH5545	15.7	18.93
A1511381	SBMSH5546	15.7	18.93
A1511382	SBMSH5547	18.87	23.68
A1511383	SBMSH5548	18.87	23.68
A1511384	SBMSH5549	23.62	31.63
A1511385	SBMSH55410	31.57	34.8
A1511386	SBMSH55411	34.74	41.17

All dimensions shown are in mm.

Part Number Cross Reference, ALSTOM Transport Preferred Range.

F80 Style Crimp Contacts - Sockets.



Gold Plating

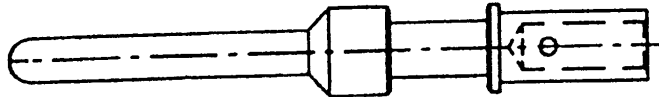
ALSTOM Part Number	AB Connectors Part Number	Conductor CSA mm ²
A1511427	ABB16KSKF80P3	1.0 - 1.5
A1511428	ABB1216KSKF80P3	1.0 - 1.5
A1511458	ABB1620KSKF80P3	0.5

Silver Plating

ALSTOM Part Number	AB Connectors Part Number	Conductor CSA mm ²
A1511419	ABB16KSKF80	1.0 - 1.5
A1511420	ABB1216KSKF80	1.0 - 1.5
A1511421	ABB12KSKF80	2.5
A1511422	ABB1210KSKF80	4
A1511423	ABB10060KSKF80	6
A1511424	ABBK100KSKF80	10
A1511435	ABB500/160KSKF80	16
A1511437	ABB500/250KSKF80	25
A1511439	ABB500/350KSKF80	35

Part Number Cross Reference, ALSTOM Transport Preferred Range.

F80 Style Crimp Contacts - Pins.



Gold Plating

ALSTOM Part Number	AB Connectors Part Number	Conductor CSA mm ²
A1511425	ABB16KPKF80P3	1.0 - 1.5
A1511426	ABB1216KPKF80P3	1.0 - 1.5
A1511457	ABB1620KPKF80P3	0.5

*ABB 1620 KPKF80
310 500
8 KPKF80*

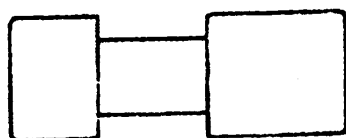
Silver Plating

ALSTOM Part Number	AB Connectors Part Number	Conductor CSA mm ²
A1511413	ABB16KPKF80	1.0 - 1.5
A1511414	ABB1216KPKF80	1.0 - 1.5
A1511415	ABB12KPKF80	2.5
A1511416	ABB1210KPKF80	4
A1511417	ABB10060KPKF80	6
A1511418	ABB100KPKF80	10
A1511436	ABB500/160KPKF80	16
A1511438	ABB500/250KPKF80	25
A1511440	ABB500/350KPKF80	35

Part Number Cross Reference, ALSTOM Transport Preferred Range.

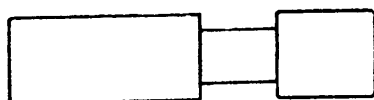
Dummy Contacts and Grommet Filler Plugs.

Dummy Pin



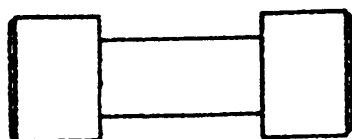
ALSTOM Part Number	AB Connectors Part Number / Colour
A1511387	ABB16KDPF80 / BROWN
A1511388	ABB12KDPF80 / ORANGE
A1511441	ABB500KDPF80 / WHITE

Dummy Socket



ALSTOM Part Number	AB Connectors Part Number / Colour
A1511389	ABB16KDSF80 / BROWN
A1511390	ABB12KDSF80 / ORANGE
A1511442	ABB500KDSF80 / WHITE

Grommet Filler Plug

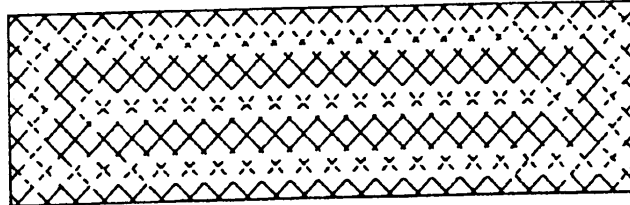


ALSTOM Part Number	AB Connectors Part Number / Colour
A1511391	ABB16KFP / BLUE
A1511392	ABB12KFPF80 / ORANGE
A1511393	ABB8KFPF80 / VIOLET
A1511443	ABB500KFPF80 / WHITE

Part Number Cross Reference, ALSTOM Transport Preferred Range.

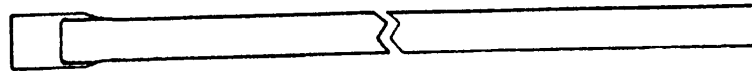
RFI Braid Sock, Bandit Strap & Knitmesh Braid.

RFI Braid Sock.



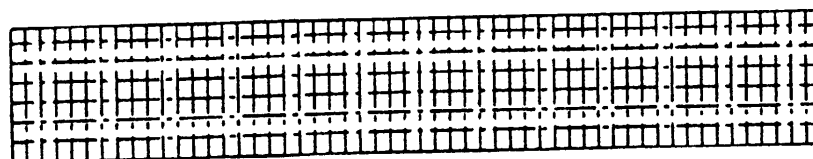
ALSTOM Part Number	AB Connectors Part Number / Length	
A1511394	ABBMBS035015 / 150 mm	Up to shell size 32
A1511459	ABBMBS050015 / 150 mm	Shell size 36 & 40

Bandit Strap



ALSTOM Part Number	AB Connectors Part Number	
A1511396	ABB600052	Up to shell size 32
A1511460	ABB600090	Shell size 36 & 40

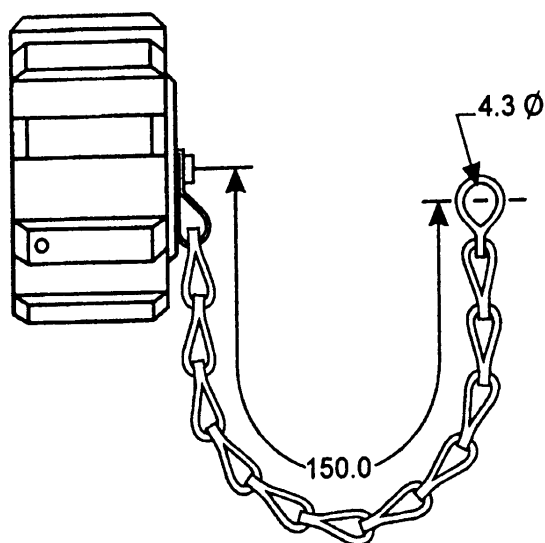
Knitmesh Braid.



ALSTOM Part Number	AB Connectors Part Number / Length
A1511395	ABBMKM1050 / 500 mm

Part Number Cross Reference, ALSTOM Transport Preferred Range.

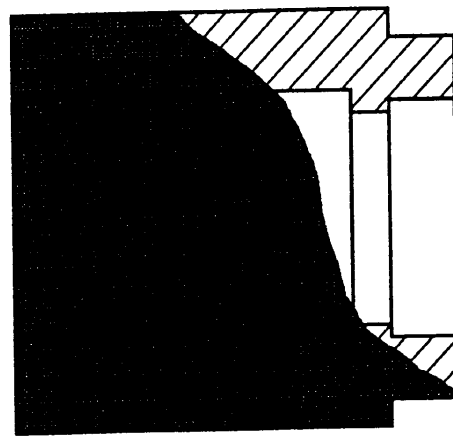
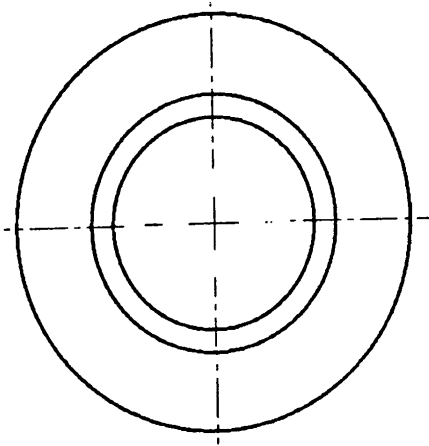
Coarse Ribbed Protective Cap with Chain for Fixed Connector.



ALSTOM Part Number	AB Connectors Part Number
A1511444	ABB22XPCAK

Part Number Cross Reference, ALSTOM Transport Preferred Range.

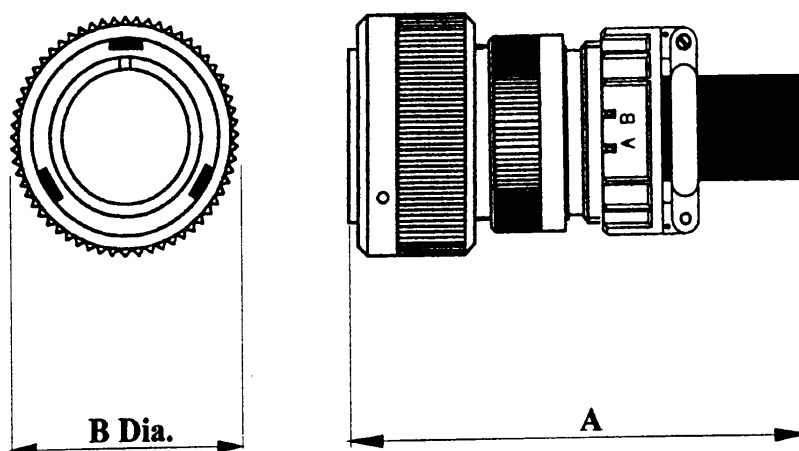
Grommet Reducer



ALSTOM Part Number	AB Connectors Part Number	Contact Size	Cable c.s.a. mm ²
A1511454	ABB500160GRF80	500	16,0
A1511455	ABB500250GRF80	500	25,0
A1511456	ABB500350GRF80	500	35,0

ALSTOM Transport Preferred Range.

Connector Assembly Dimensional Information



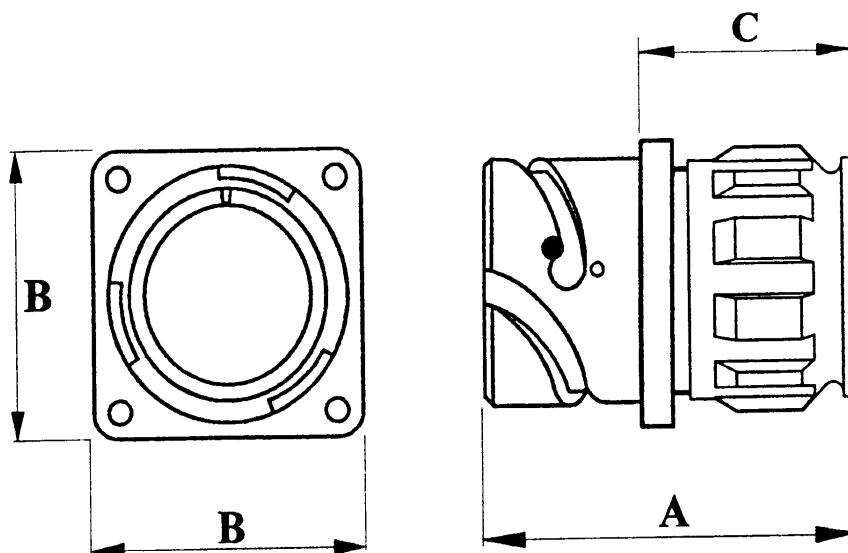
Space Required In Front Of Panel (Minimum)

Free Connector Assembly + 21 mm

This figure allows for de-mating of connector pair, but does not allow for cable dressing.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + Grommet Nut

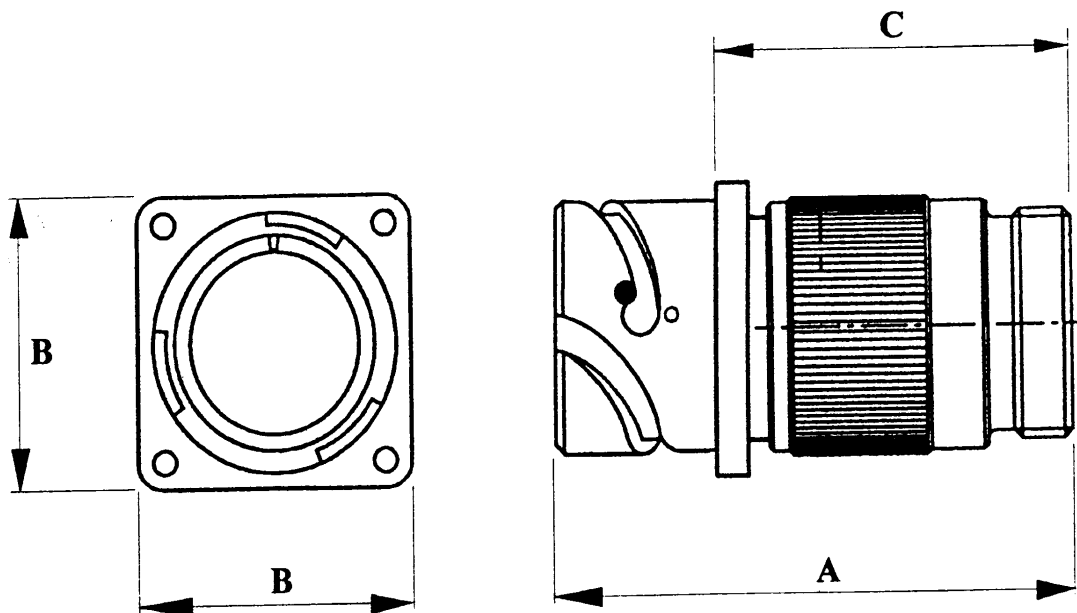


Shell Size	Dim A	Dim B	Dim C
18	59.93	35.3	36.48
22	59.93	41.3	36.48
24	59.93	44.8	36.48
28	59.93	51.1	35.48
32	59.93	57.3	35.48
36	59.93	63.8	35.48
40	60.04	70.2	35.59

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + Conduit Cable Adaptor.

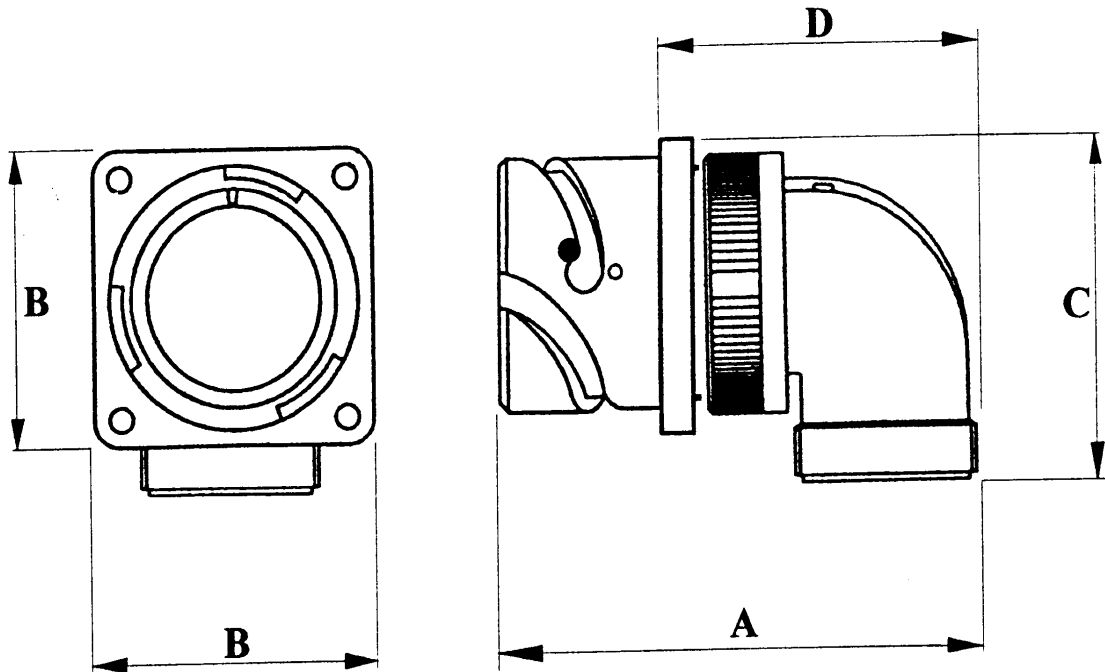


Shell Size	Dim A	Dim B	Dim C
18	71.66	35.3	48.21
22	71.66	41.3	48.21
24	74.71	44.8	51.26
28	75.51	51.1	51.06
32	74.45	57.3	50
36	74.45	63.8	50
40	75.51	70.2	51.06

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + 90° Threaded Outlet.

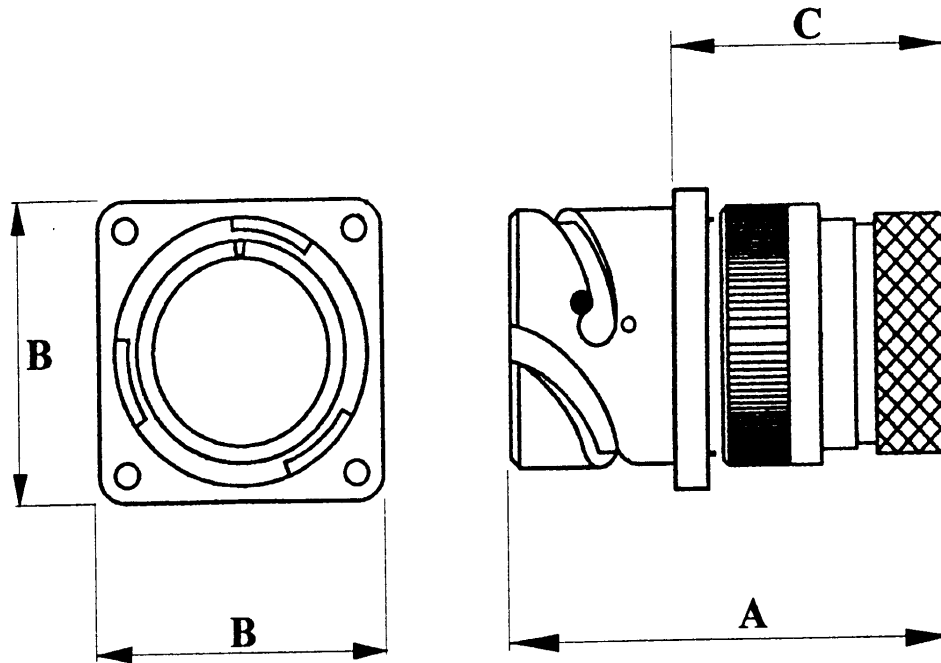


Shell Size	Dim A	Dim B	Dim C	Dim D
18	77.8	35.3	52.65	54.35
22	83.1	41.3	55.65	59.65
24	91.2	44.8	62.4	67.75
28	91.2	51.1	65.55	66.75
32	100.3	57.3	73.65	75.85
36	106.3	63.8	81.9	81.9
40	112.6	70.2	89.7	88.15

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + RFI Shielded Adaptor.

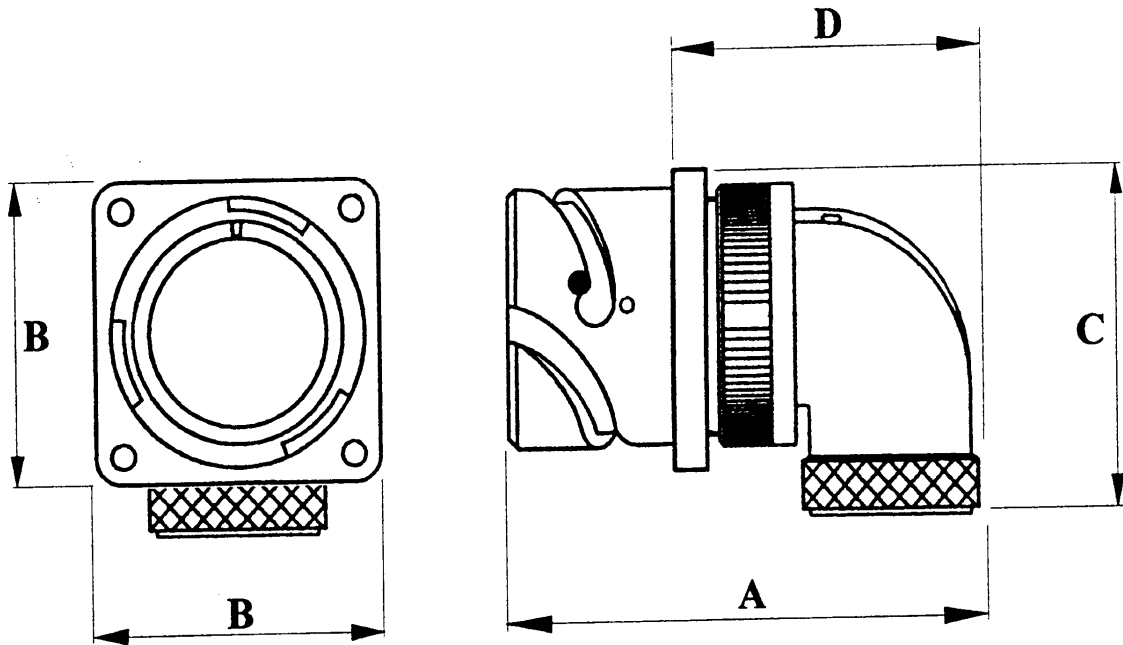


Shell Size	Dim A	Dim B	Dim C
18	70.44	35.3	46.99
22	73.93	41.3	50.48
24	73.93	44.8	50.48
28	72.94	51.1	48.49
32	72.64	57.3	48.19
36	73.64	63.8	49.19
40	73.64	70.2	49.19

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + 90° Outlet RFI Shielded.

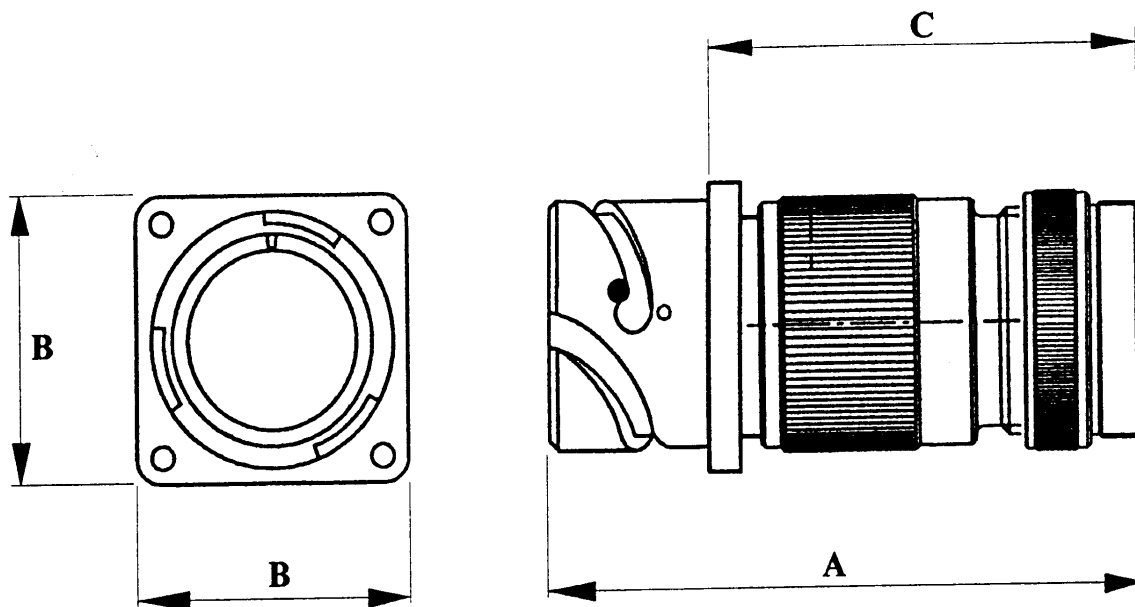


Shell Size	Dim A	Dim B	Dim C	Dim D
18	77.85	35.3	52.65	54.4
22	83.2	41.3	55.65	59.75
24	91.2	44.8	62.4	67.75
28	90.4	51.1	65.55	65.95
32	100.35	57.3	73.65	75.9
36	106.35	63.8	81.9	75.9
40	112.6	70.2	89.7	88.15

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + Conduit Adaptor & Adaptor With Braid Screen Trap.



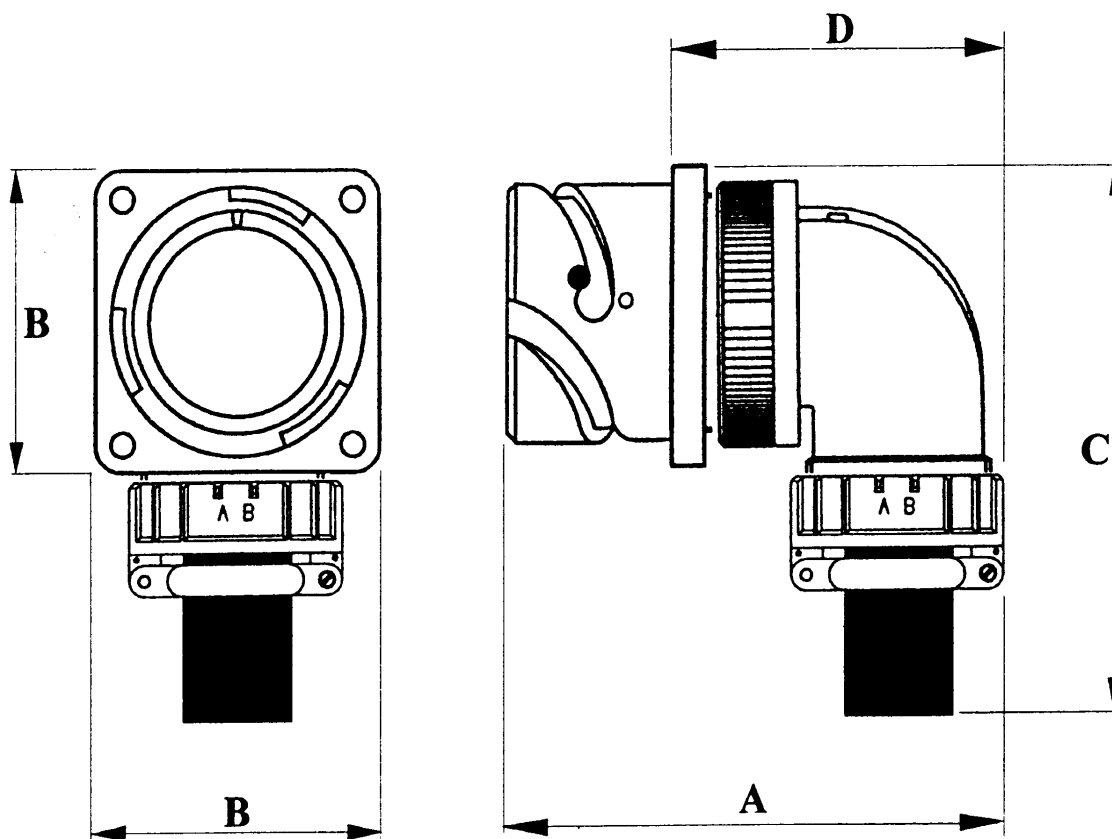
Shell Size	Dim A	Dim B	Dim C
18	94.67	35.3	71.22
22	94.67	41.3	71.22
24	97.72	44.8	74.27
28	98.52	51.1	74.07
32	97.61	57.3	73.16
36	98.63	63.8	74.18
40	99.47	70.2	75.02

All dimensions are mm maximum.

ALSTOM Transport Preferred Range.

Dimensions of Connector/Backshell Assembly.

Fixed Connector + 90° Threaded Outlet & Cable Clamp With Bushing.

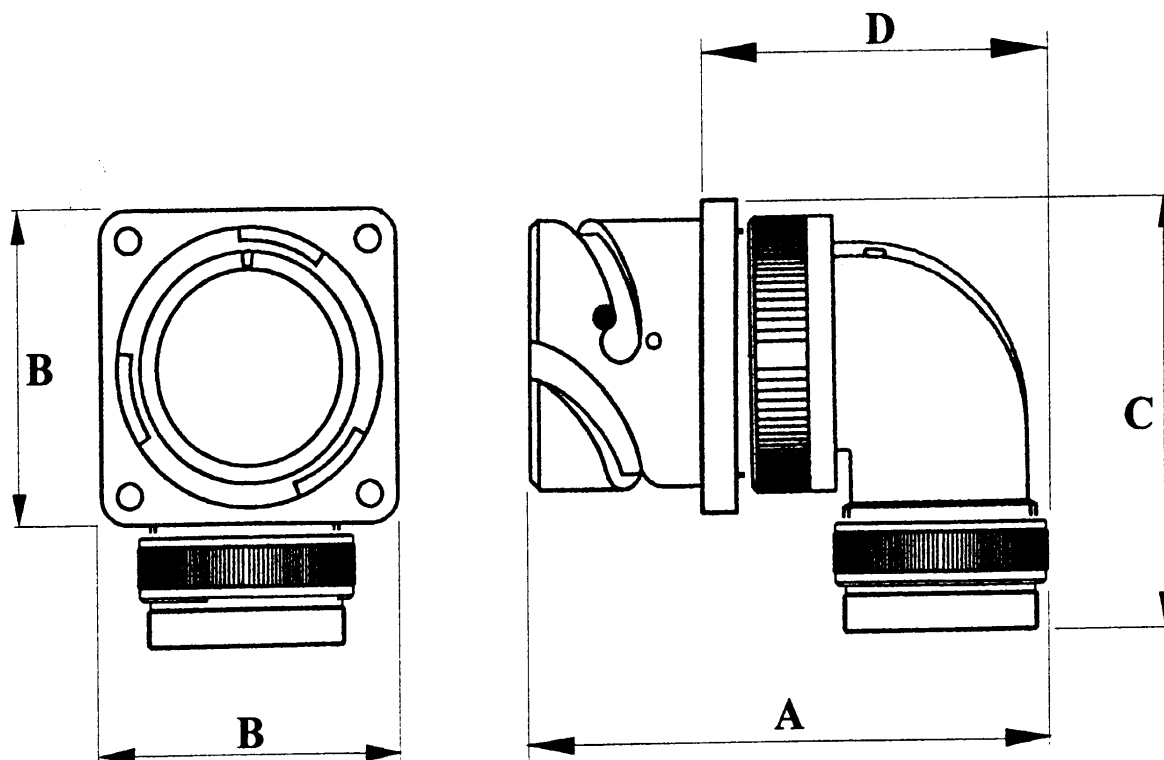


Shell Size	Dim A	Dim B	Dim C	Dim D
18	81.6	35.3	117.65	58.15
22	86.8	41.3	120.65	63.35
24	94.6	44.8	122.4	71.15
28	94.6	51.1	125.55	70.15
32	103.9	57.3	138.65	79.45
36	109.9	63.8	141.9	85.45
40	116.5	70.2	135.1	92.05

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Fixed Connector + 90° Threaded Outlet & Adaptor With Braid Screen Trap.

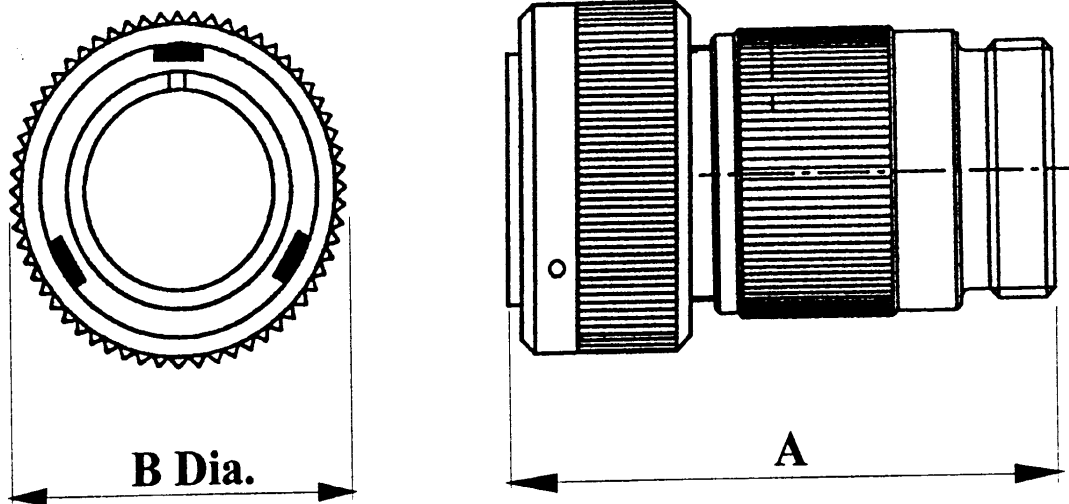


Shell Size	Dim A	Dim B	Dim C	Dim D
18	79.65	35.3	75.66	56.2
22	85.73	41.3	78.66	62.28
24	94.7	44.8	85.41	71.25
28	93.9	51.1	88.56	69.45
32	102.88	57.3	96.81	78.43
36	108.85	63.8	106.08	84.4
40	115.55	70.2	113.66	91.1

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + Conduit Cable Adaptor.



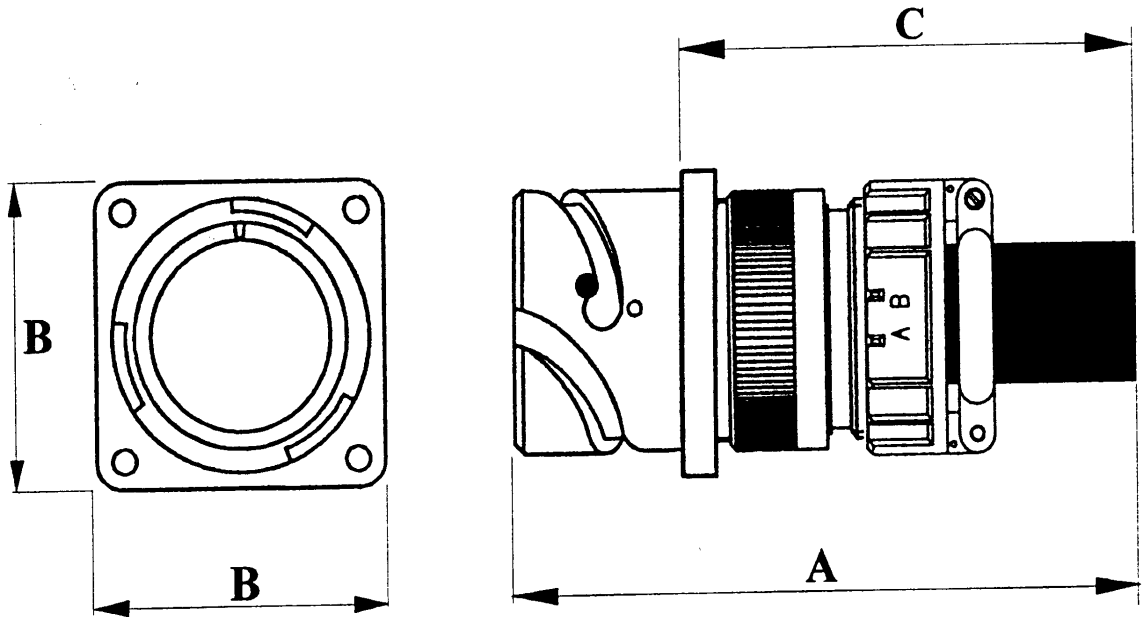
Shell Size	Dim A	Dim B Dia.
18	71.66	37.3
22	71.66	44.2
24	74.71	47.7
28	75.51	54.5
32	74.45	61.4
36	74.45	68
40	75.51	74

All dimensions are mm maximum.

ALSTOM Transport Preferred Range.

Dimensions of Connector/Backshell Assembly.

Fixed Connector + Armoured Cable Adaptor, Clamp & Bushing.

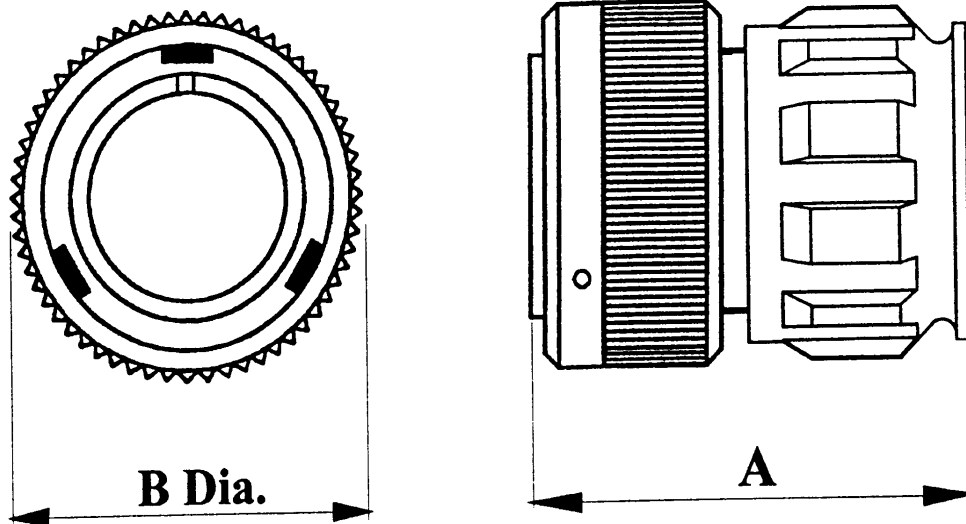


Shell Size	Dim A	Dim B	Dim C
18	130	35.3	106.55
22	125.5	41.3	102.05
24	112.6	44.8	89.15
28	112.6	51.1	88.15
32	111.5	57.3	87.05
36	111.5	63.8	87.05
40	108.8	70.2	84.35

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + Grommet Nut

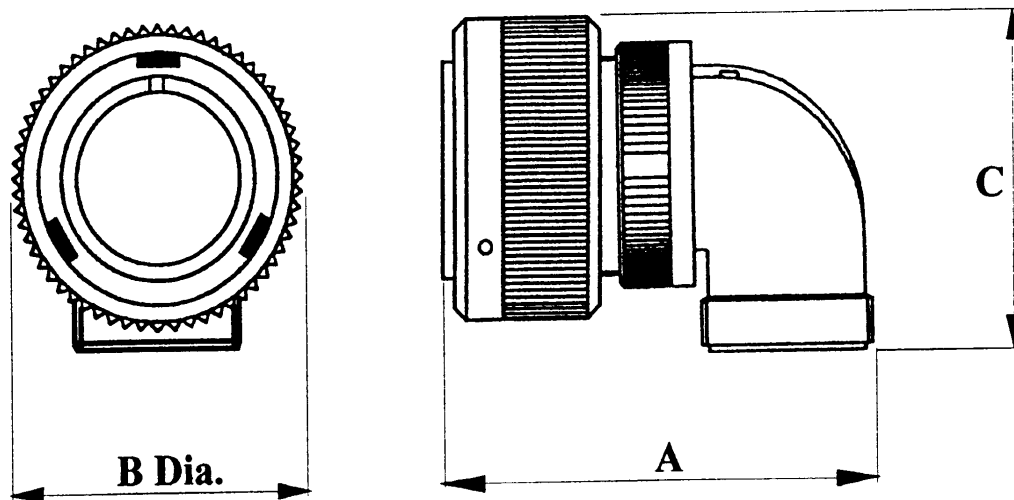


Shell Size	Dim A	Dim B Dia.
18	59.93	37.3
22	59.93	44.2
24	59.93	47.7
28	59.93	54.5
32	59.93	61.4
36	59.93	68
40	60.04	74

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + 90° Threaded Outlet.

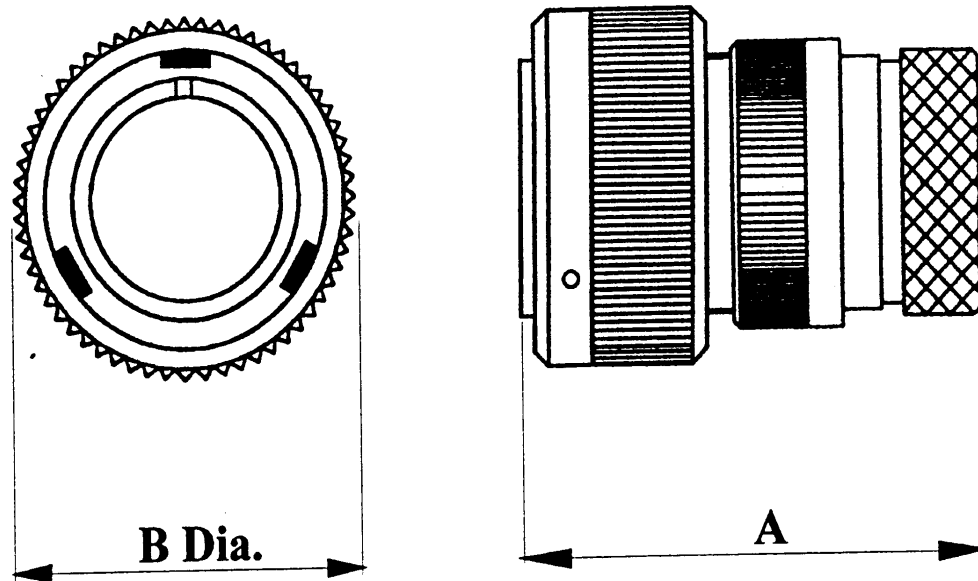


Shell Size	Dim A	Dim B Dia.	Dim C
18	77.8	37.3	53.65
22	83.1	44.2	57.1
24	91.2	47.7	63.85
28	91.2	54.5	67.25
32	100.3	61.4	75.7
36	106.3	68	84
40	112.6	74	91.6

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + RFI Shielded Adaptor.

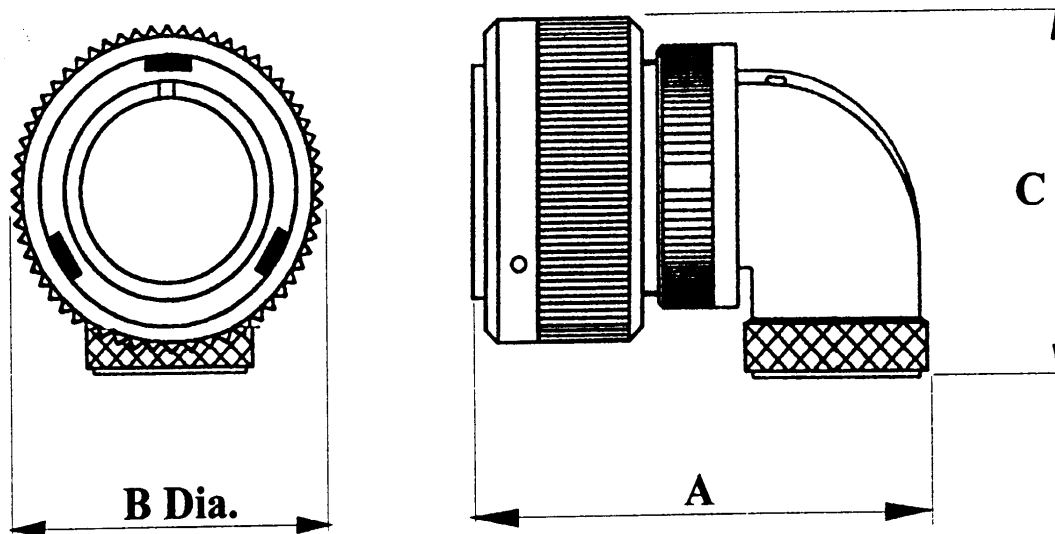


Shell Size	Dim A	Dim B Dia.
18	70.44	37.3
22	73.93	44.2
24	73.93	47.7
28	72.94	54.5
32	72.64	61.4
36	73.64	68
40	73.64	74

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + 90° Outlet RFI Shielded.

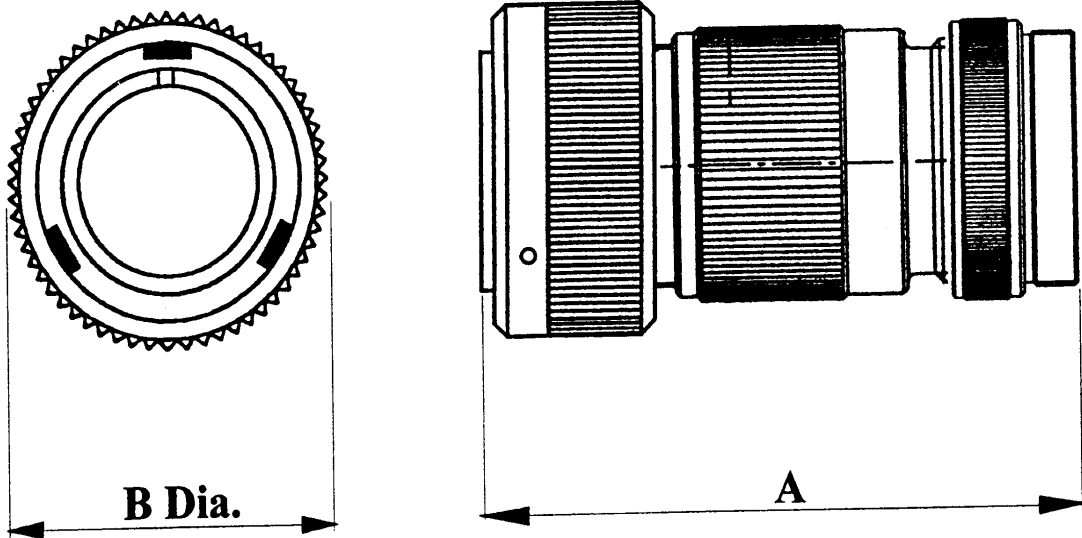


Shell Size	Dim A	Dim B Dia.	Dim C
18	77.85	37.3	53.65
22	83.2	44.2	57.1
24	91.2	47.7	63.85
28	90.4	54.5	67.25
32	100.35	61.4	75.7
36	106.35	68	84
40	112.6	74	91.6

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + Conduit Adaptor & Adaptor With Braid Screen Trap.

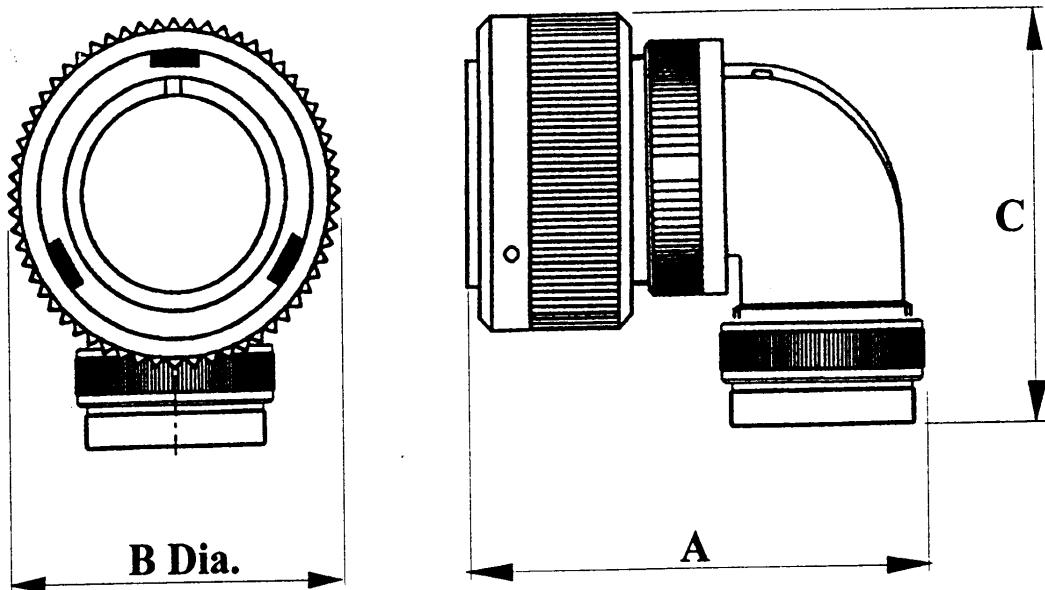


Shell Size	Dim A	Dim B Dia.
18	94.67	37.3
22	94.67	44.2
24	97.72	47.7
28	98.52	54.5
32	97.61	61.4
36	98.63	68
40	99.47	74

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + 90° Threaded Outlet & Adaptor With Braid Screen Trap.

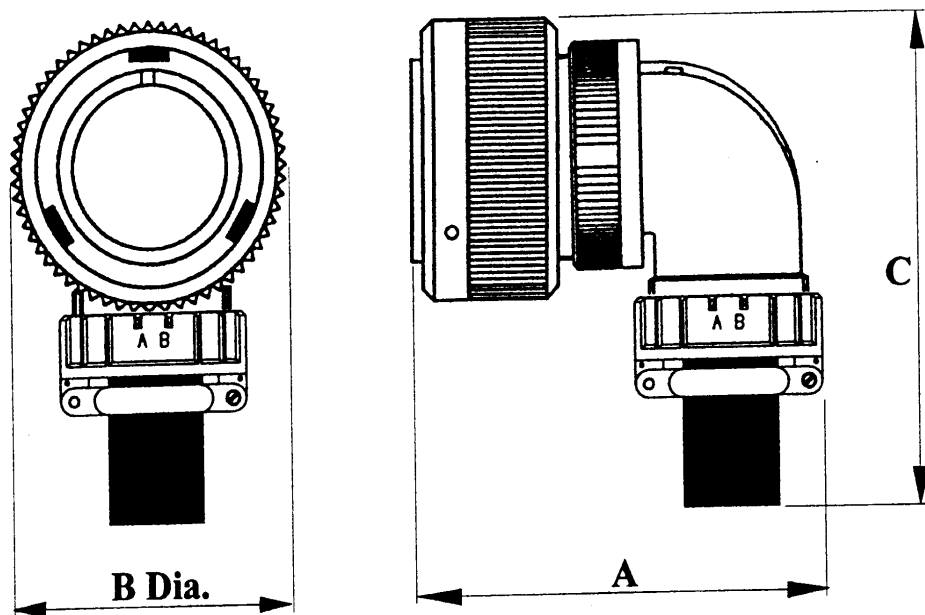


Shell Size	Dim A	Dim B Dia.	Dim C
18	79.65	37.3	76.66
22	85.82	44.2	80.11
24	94.7	47.7	86.86
28	93.9	54.5	90.26
32	102.87	61.4	98.86
36	108.85	68	108.18
40	115.55	74	115.56

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + 90° Threaded Outlet & Cable Clamp With Bushing.

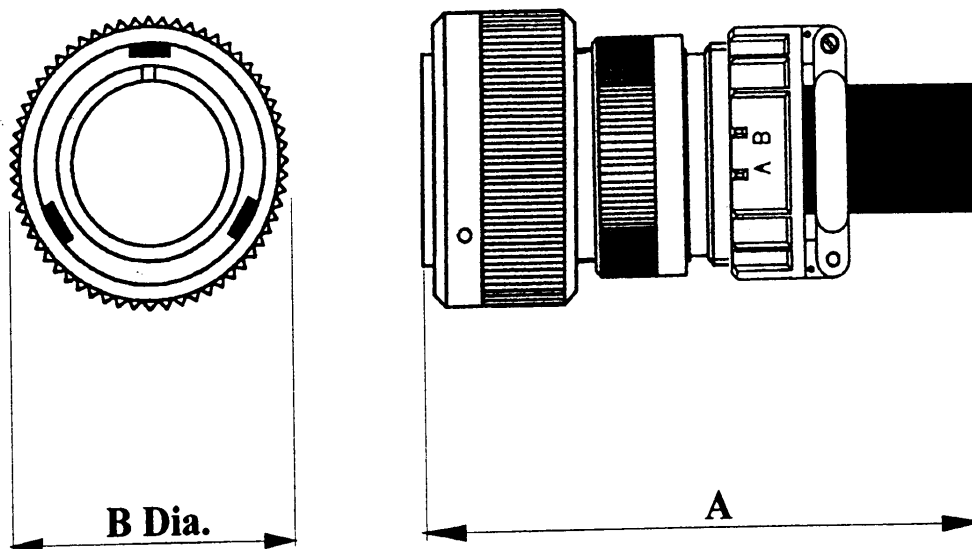


Shell Size	Dim A	Dim B Dia.	Dim C
18	81.6	37.3	118.65
22	86.8	44.2	122.1
24	94.6	47.7	123.85
28	94.6	54.5	127.25
32	103.9	61.4	140.7
36	109.9	68	144
40	116.5	74	137

All dimensions are mm maximum.

ALSTOM Transport Preferred Range. Dimensions of Connector/Backshell Assembly.

Free Connector + Armoured Cable Adaptor, Clamp & Bushing.

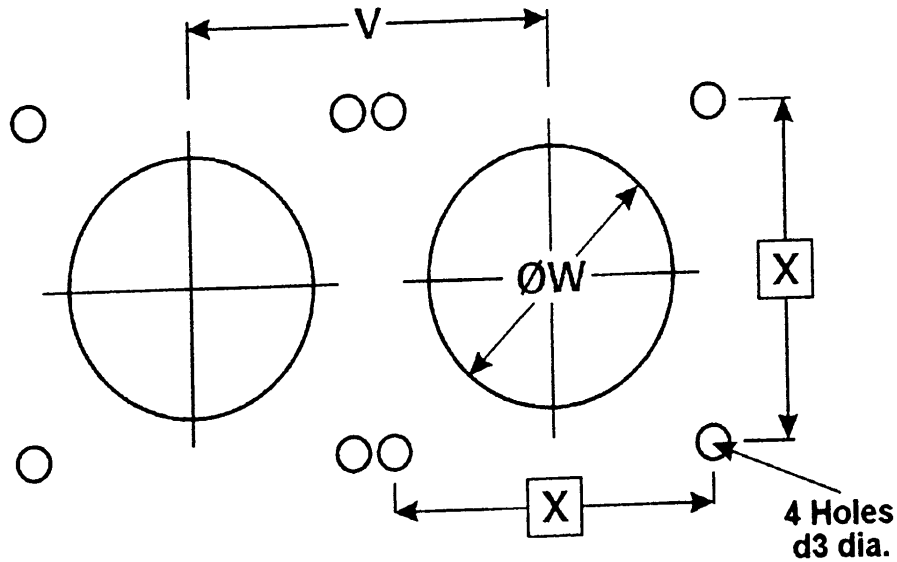


Shell Size	Dim A	Dim B Dia.
18	130	37.3
22	125.5	44.2
24	112.6	47.7
28	112.6	54.5
32	111.5	61.4
36	111.5	68
40	108.8	74

All dimensions are mm maximum.

ALSTOM Transport Preferred Range.

Fixed Connector Panel Mounting Dimensions.



Shell Size	Dim V	Dim W	Dim X	d3 dia.
18	38.3	31.18	27	3.4
22	45.2	37.78	31.8	3.4
24	48.7	41.28	34.9	3.9
28	55.5	47.08	39.7	3.9
32	62.4	53.78	44.5	4.5
36	69	59.98	49.2	4.5
40	75	66.4	55.5	4.5

All dimensions in mm

Maximum Panel Thickness, Cap Head Screws = 3.3 mm

Maximum Panel Thickness, Countersunk Screws = 7 mm