



Push Pull Connectors

- Rapid

- Secure

- High Performance

Push-Pull connectors



Introduction

This catalogue presents the push-pull connectors ranges for industrial applications.

These products are particularly suitable for high reliability and high quality applications where a simple yet fast method to connect/disconnect is required. Also suitable for high endurance and ease of operation in very limited spaces. The aesthetics of the product allows for perfect integration on front panel equipments.

SOURIAU offers 3 main series of metallic circular connectors :

- **JBX series** basic push-pull series for signal transmission

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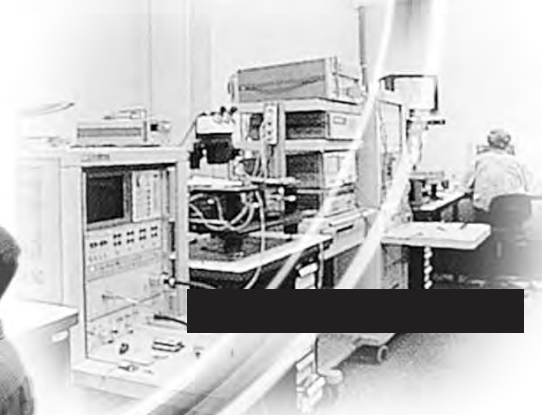
All dimensions are in mm



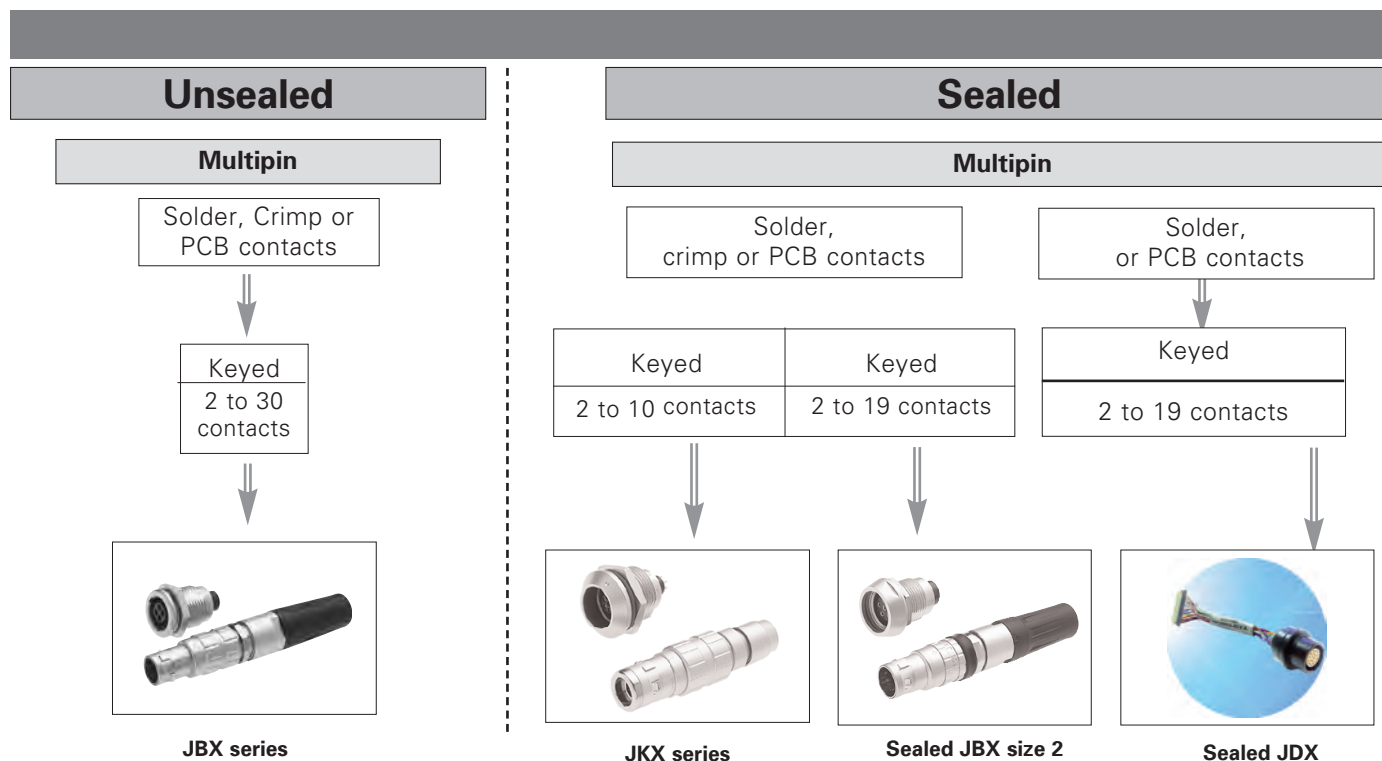
Where and Why **push-pull** ?



- Extremely fast and easy to use
- A thousand matings/unmatings.
- Enhanced appearance to add value to equipment
- Space saving



Selection Guide



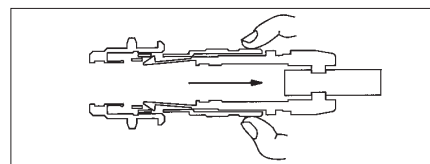
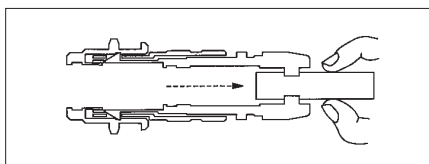
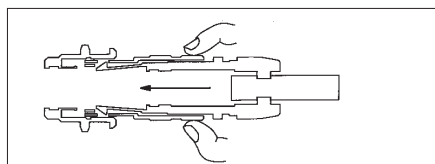
Shell material	Brass	Brass	Brass	Brass and Aluminum
Insulator material	PEEK	PEEK	PEEK	PEEK
Shielding	Shielded (55 dB up to 100 MHz)	Shielded (55 dB up to 100 MHz)	Shielded (55 dB up to 100 MHz)	Shielded (35 dB up to 1GHz)
Endurance	> 1000 cycles	> 1000 cycles	> 1000 cycles	> 2500 cycles
Current rating	up to 30 A	up to 15 A	up to 30 A	up to 30 A
Temperature range	- 40°C ; + 125°C (- 58°F ; + 257°F)	- 40°C ; + 125°C (- 58°F ; + 257°F)	- 40°C ; +125°C (- 40°F ; + 257°F)	- 40°C ; +125°C (- 40°F ; + 257°F)
Protection index	IP 40	IP 68 when mated	IP 67	IP 68 mated and unmated

Push-pull locking system

The locking of the plug into the receptacle is achieved by a simple axial push on the outer shell.

Connection cannot be broken by pulling the cable or any other parts of the plug than the outer shell.

To unmate the plug from the receptacle, just pull axially the outer shell.



Push Pull Connectors



Key features

- Mechanically keyed : ensures correct polarisation and alignment.
- Contact layouts from 2 to 30 contacts.
- Wire gauges range from 30 AWG to 12 AWG.
- High contact density in a small space.
- Contact termination in either crimp, solder, PCB or right angle PCB contacts.



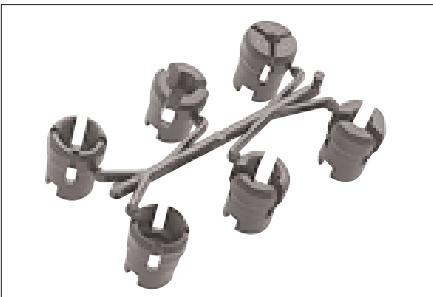
User advantages

Blister packaging



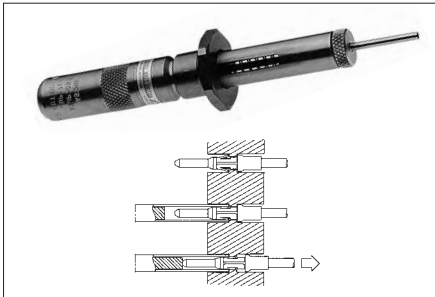
6-collet cluster

Allows a wide range of cable diameter applications for a single connector



Removable contacts

Available crimp versions allow easier



Part number system

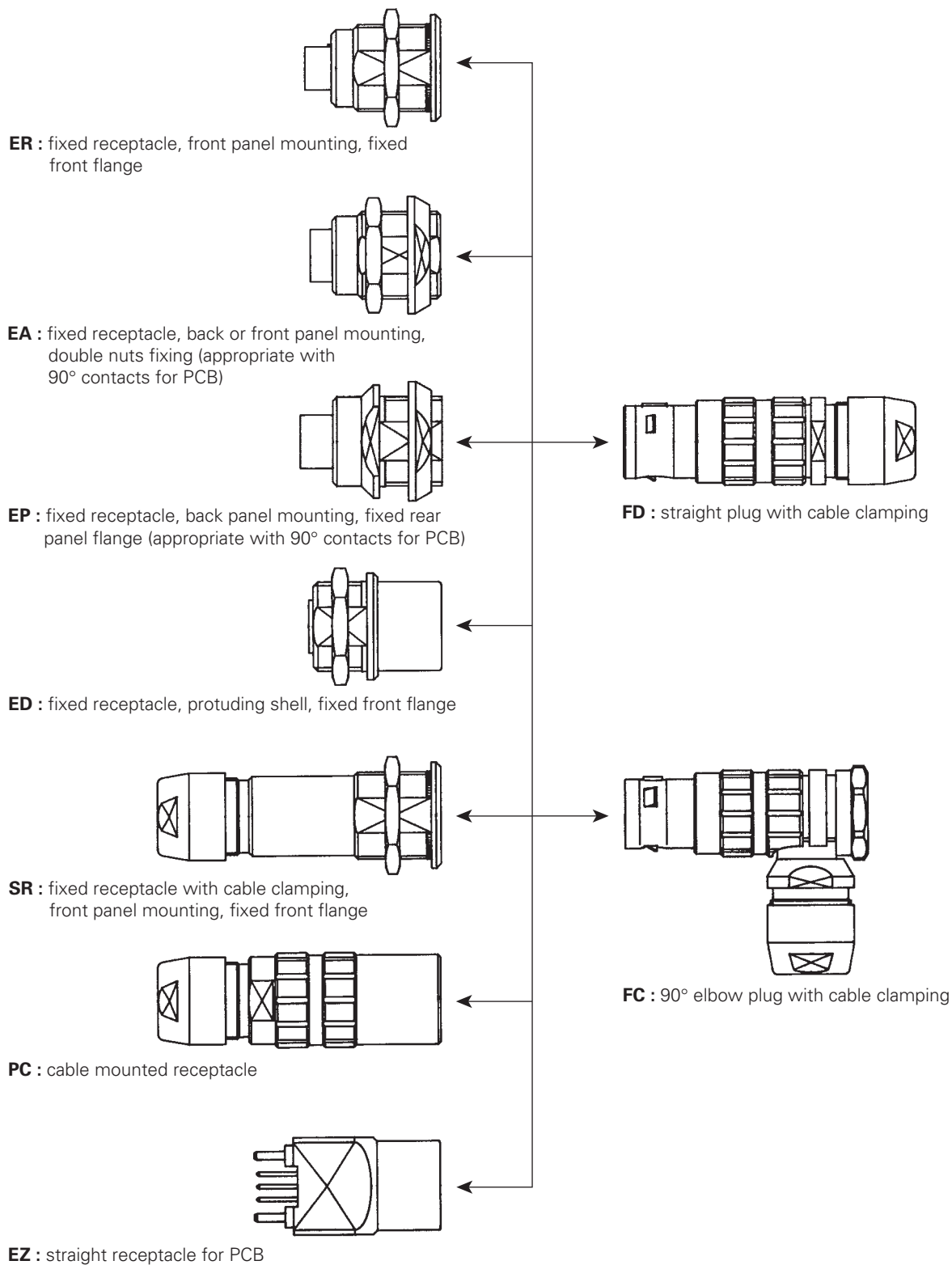
Basic series	JBX	FD	1	G	05	M	C	S	D	S	M
Shell type	FD-FC-ER-EA-SR-PC-ED-EP-EZ										
Shell size	00 - 0 - 1 - 2 - 3										
Keying	G - J - A - B										
Contact layout	02 ----- 30										
Contact type	M : pin F : socket (in relation with keying)										
Contact termination	C : crimp ; S : solder ; P* : straight PCB tails ; Q* : 90° PCB tails										
Material & surface plating	S : Outer shell in brass alloy with chrome over nickel										
	N : Outer shell in brass alloy with black plating (consult Souriau USA)										
	D : Obligatory suffix										
	S : All content dismeters except .05 mm P : 0.5 mm contact only										
Options	M : Connector with backnut for protective boot - Protective boot to order separately page 13										

* For receptacles with female contacts only.

Push Pull Connectors



Shell types



Push Pull Connectors



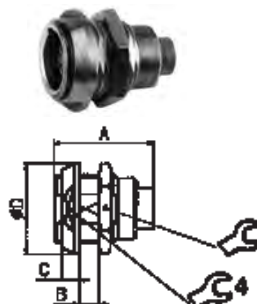
Dimensions

ER : Fixed receptacle,
front panel mounting



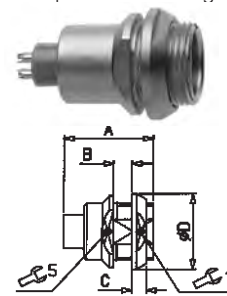
Size	00	0	1	2	3
A	14	19	21	24	28
B	6	8	10	10	12
C	0.8	1.2	1.5	1.8	2.0
Ø D	8	10	14	18	22

EA : Double nut receptacle



Size	0	1	2	3
A	19	21	24	28
B	6.7	8.3	8	9.5
C	2.5	3.2	3.8	4.5
Ø D	12	16	20	24

EP : Fixed receptacle,
back panel mounting

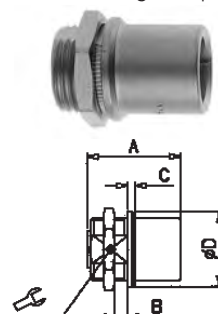


Size	0	1	2
A	19	21	24
B	4.5	6	6.5
C	2.5	3.2	3.8
Ø D	12	16	20



Size	00	0	1	2	3
A	31	39	45	52	62
B	23	29	34	40	47
Ø C	7	10	12	15	18

ED : Protruding receptacle



Size	0	1	2
A	19	21	24
B	3	4.5	6.3
C	1.2	1.5	1.8
Ø D	10	14	18



Size	0	1	2	3
A	38	43	50	59
B	8	10	10	12
C	1.2	1.5	1.8	2
Ø D	10	14	18	22

FC : 90° elbow plug

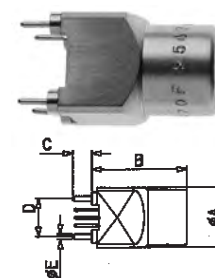


Size	0	1	2	3
A	30.5	36.5	42.5	50.5
B	20.5	25.5	30.5	35.5
C	29.5	33.5	36.5	45
Ø D	10	12	15	18

PC : Cable mounted receptacle



Size	0	1	2	3
A	38	43	50	59
Ø B	10	13	16	19.5



Size	0	1
Ø A	10	12
B	19	21
C	4	4
D	7.62	7.62
Ø E	1.1	1.1

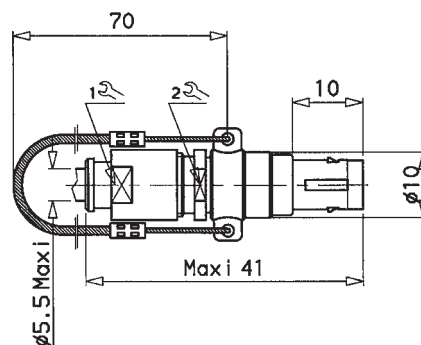
Push Pull Connectors



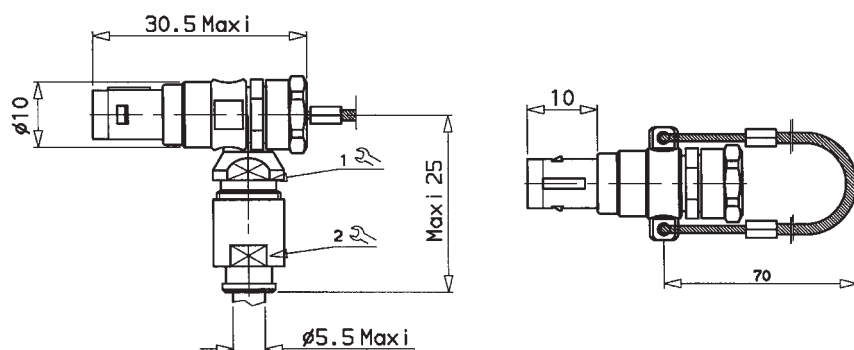
Dimensions

• Special custom shells

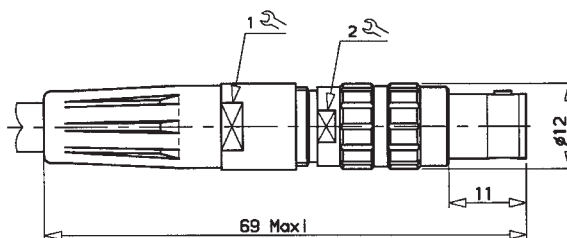
FN : Straight plug,
shell size 0 with a lanyard



FM : 90° elbow plug,
shell size 0 with a lanyard

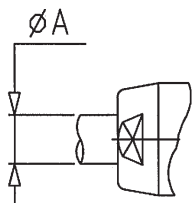


FF : Straight plug,
with no latching shell size 1



Range of cable diameters

With the plastic collet set supplied with the standard product, a wide range of cable diameters is allowed. Find below the maximum and the minimum for each size of shell (for information only because it can change with the cable char-



Size	00	0	1	2	3
ϕA min	1.1	1.5	2.0	3.5	4.9
ϕA Max	3.5	5.5	7.5	9.7	12.0

Push Pull Connectors



Keying

• Keying angles

JBX Series are mechanically keyed to ensure correct alignment of the inserts before the contacts mate.

«G» : **normal inserts** ; 0° keying angle, plugs with pin contacts, receptacles with socket contacts

«J» : **reversed gender inserts** ; twin narrow keys, plugs with socket contacts, receptacles with pin contacts.

Key	G	J			B
		sizes 0 - 1	sizes 2 - 3		sizes 0 - 1
Keying angle	0°	45°	37.5°	30°	60°
Plug					
Receptacle					

• Keyed shells availability

Shell size	Key	ER	EA	ED	EP	EZ	SR	PC	FD	FC
00	G	●							●	
0	G J A B	● ● ● ●	● ●	●	●	●	●	●	● ● ● ●	● ●
1	G J A	● ● ●	● ●	●	●	●	●	●	● ● ●	● ●
2	G J A	● ● ●	● ●	●	●		●	●	● ● ●	● ●
3	G	●	●				●	●	●	●

● Available for JBX Series, Customs can be ordered, contact Product Management.

Push Pull Connectors



Contact layouts

• Multi contact inserts

Shell size	Male insulator viewed from wiring side	Contact layout	Contact types available				Ø Contact	AWG		Max. current rating (A)	Testing voltage (Vrms)	Working voltage (Vdc / Vrms)
			S solder	C crimp	P* straight PCB tails	Q* 90° PCB tails		Solder wire Max.	Crimp wire Max.			
00		04	S				0.5	30	-	2	1000	500/350
0		02	S	C	P	Q	0.9	24	20	10	1400	660/460
		03	S	C	P	Q	0.9	24	20	8	1300	600/420
		04	S	C	P	Q	0.7	26	22	7	1400	660/460
		05	S	C	P	Q	0.7	26	22	6.5	800	400/260
		06	S		P		0.5	28	-	2.5	680	320/220
		07	S		P		0.5	28	-	2.5	680	320/220
1		02	S	C			1.3	20	18	15	1600	760/530
		03	S	C			1.3	20	18	12	1300	600/420
		04	S	C	P	Q	0.9	24	20	10	1900	900/630
		05	S	C	P	Q	0.9	24	20	9	1400	660/460
		06	S	C	P	Q	0.7	26	22	7	1400	660/460
		07	S	C	P	Q	0.7	26	22	7	1400	660/460
		08	S	C	P	Q	0.7	26	22	5	1200	600/420
		10	S				0.5	28	-	2.5	600	300/200

Inserts with fixed non removable contacts

* For receptacles with female contacts only.

Note : Contacts are numbered counter clock wise in the plug and clock wise in the receptacle.

Push Pull Connectors



Contact layouts

Shell size	Male insulator viewed from	Contact layout	Contact types available				Ø Contact	AWG		Max. current rating	Testing voltage	Working voltage (Vdc /
			S solder	C crimp	P* straight	Q* 90°		Solder wire	Crimp wire			
2		02	S	C			2	16	12	30	2100	1000/700
		03	S	C			1.6	18	14	17	1700	830/560
		04	S	C			1.3	20	18	15	2400	1000/800
		05	S	C			1.3	20	18	14	1900	900/630
		06	S	C			1.3	20	18	12	1900	900/630
		07	S	C			1.3	20	18	11	1500	730/500
		08	S	C	P	Q	0.9	24	20	10	1700	830/560
		10	S	C	P	Q	0.9	24	20	8	1700	830/560
		12	S	C	P	Q	0.7	26	22	7	1700	830/560
		16	S	C	P	Q	0.7	26	22	6	1500	730/500
		18	S	C	P		0.7	26	22	5.5	1400	660/460
		19	S	C	P		0.7	26	22	5	1400	660/460
3		03	S	C			2	16	12	25	3600	1600/1200
		04	S	C			2	16	12	25	2500	1100/830

Inserts with fixed non removable contacts

* For receptacles with female contacts.

Note : Contacts are numbered counter clock wise in the plug and clock wise in the receptacle.

Push Pull Connectors



Contact layouts

• Multi contact inserts

Shell size	Male insulator viewed from	Contact layout	Contact types available				Ø Contact	AWG		Max. current rating	Testing voltage	Working voltage (Vdc /
			S solder	C crimp	P* straight	Q* 90°		Solder wire	Crimp wire			
3		07	S	C			1.6	16	12	15	2200	1000/730
		10	S	C			1.3	20	18	12	1400	660/460
		14	S	C	P		0.9	24	20	9	1700	830/560
		18	S	C	P		0.9	24	20	7	1400	660/460
		22	S	C	P		0.7	26	22	5.5	1200	560/400
		30	S	C	P		0.7	26	26	3.5	800	400/260

Inserts with fixed non removable contacts

* For receptacles with female contacts.

Note : Contacts are numbered counter clock wise in the plug and clock wise in the receptacle.

• Voltage Test Procedure

- **The testing voltage** corresponds to the maximum voltage the connector is able to withstand in normal climatic conditions. The value is about 75% of the electrical breakdown voltage. The testing voltage level can be reached several times in connectors life, but never applied for a continuous duration.
- **The working voltage** corresponds to the maximum voltage the connector is able to withstand continuously during its life time, in real environmental conditions, even with high temperature. The value is around 1/3 of the testing voltage.

• Maximum current rating

- **This indicated maximum current rating** corresponds to the maximum current that can be applied **simultaneously on each line of the connector mated pair**, continuously during its life time, in normal climatic conditions.

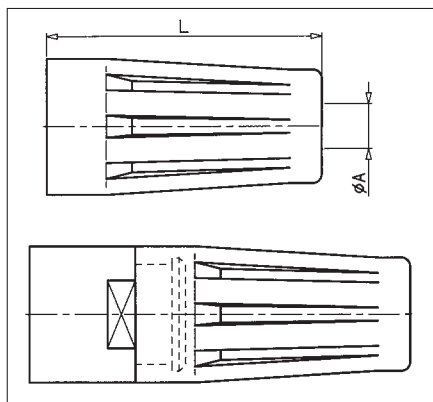
Remark : If the current is applied on only one contact of the layout, then an increased current value can be achieved over a long duration.

Push Pull Connectors



Options

• Protective boot



Part number	Shell size	Dimensions			
		Ø A	L	Ø Cable	
JBX 00 MPN	00	1.5	15	1	3.5
JBX 0 MP*	0	2.2	20	1.5	5.5
JBX 1 MP*	1	2.6	25	2	7.5
JBX 2 MP*	2	4	30	3.5	9.7
JBX 3 MP*	3	5	35	4.9	12

* Color code / In size 00, available only in black

Color code	Colors
A	blue
B	white
G	grey
J	yellow
M	brown
N	black
R	red
V	green
O	orange

Material :

ELASTOLLAN (PUR)

Working temperature :

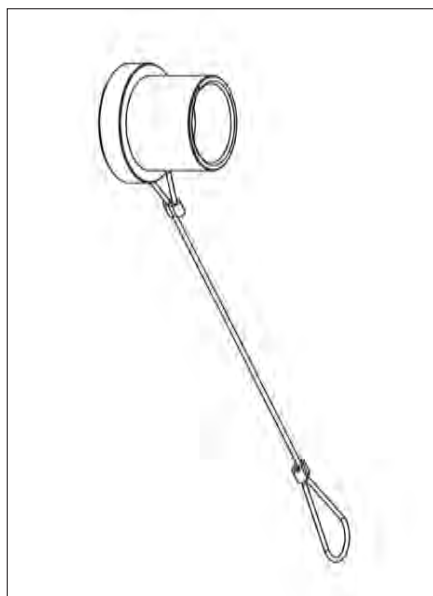
- 40°C ; + 80°C

- 40°F ; + 176°F

Parts that require a protective boot need to be ordered with an M suffix. Protective boots are

With each JBX connector, one protective boot can accept diverse cable diameters thus the end-user can manage various cable diameters without bothering with multiple part numbers.

• Caps : an efficient protection against dust



Part number	Ø
JBX BR0	12
JBX BR1	14
JBX BR2	18
JBX BR3	20

Push Pull Connectors



Technical characteristics



Component	Material	Standard		Surface treatment (µm)		
		ISO	ASTM	Cr	Ni	Au
Outer shell and collet nut	Brass	CuZn40Pb3	C38500/C360	0.1 - 0.6	5 - 8	-
Latching sleeve	Brass	CuZn40Pb3	C38500/C360	-	5 - 8	-
Shielding ring	Brass	CuZn40Pb3	C38500/C360	-	3 - 7	-
Nut	Brass	CuZn40Pb3	C38500/C360	-	5 - 8	-
Half bushes	Brass	CuZn40Pb3	C38500/C360	-	5 - 8	-
Socket contact (1)	Cupro-nickel	CuNi1Pb1P	CDAC19150	-	3 - 5	0.5
Pin contact (1)	Brass	CuZn35Pb2	C35300/C360	-	3 - 5	0.5
Clip	Beryllium copper	CuBe1,9	C17200/C360	-	-	-

(1) Gold thickness as per MIL-G-45204C type 1, class 00.

Component	Material	Color	Working Temperature	
Insert	PEEK + 15%GF	brown	- 50°C + 250°C	- 58°F + 482°F
Collet	PA 6/6 + MoS2	black	- 55°C + 125°C	- 67°F + 257°F

• Mechanical and climatics

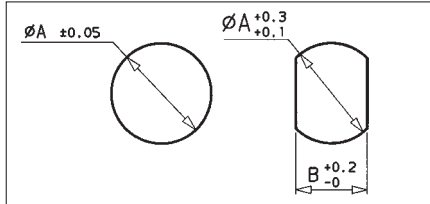
Characteristics	Values	Standard	Method
Endurance	> 1000 cycles (except for 0.7 mm crimp contacts for which endurance is limited to 500 cycles)	MIL-STD 1344A	2016.1
Shock	50 g, duration 6 ms ; contact Ø 0.7 mm and 0.9 mm 100 g, duration 6 ms ; contact Ø 1.3 mm - 1.6 mm and 2 mm	MIL-STD 1344A	2004.1
Vibrations	10 to 2000 Hz γ = 15 g, contact Ø 0.7 mm and 0.9 mm γ = 20 g, contact Ø 1.3 mm - 1.6 mm and 2 mm	MIL-STD 1344A	2005.1
Protection index	IP 40	CEI 529	
Operating temperature	with plastic collets } - 55°C + 125°C - 67°F + 257°F	-	-
	with optional metal collets } - 55°C + 200°C - 67°F + 392°F (only on request, consult SOURIAU)	-	-

Push Pull Connectors



Wiring and assembly instructions

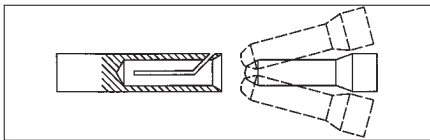
• Panel cutout



Size	00	0	1	2	3
$\varnothing A$	7.1	9.1	12.1	15.1	18.1
B	6.4	8.3	10.6	13.6	16.6

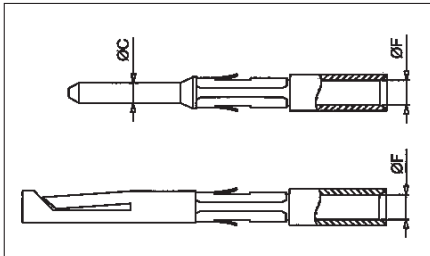
• Removable contacts

Reliable design



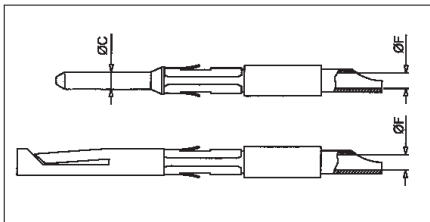
- Conical entry with chamfered edge on the socket contact and smooth slope on the pin contact ensure perfect concentric mating even when handled carelessly.
- The pressure spring of the socket contact maintains a constant force on the pin contact when mated.

Crimp contacts



Contact		Usable cables			Max. current rating (A)	Contact resistance (m Ω)	Endurance (number of cycles)
$\varnothing C$	$\varnothing F$	Core section (mm ²)		AWG			
		min	Max.				
0.7	0.85	0.129	0.326	22-24-26	7	5	500 Max.
0.9	1.1	0.205	0.518	20-22-24	10	3.5	> 1000
1.3	1.4	0.326	0.823	18-20-22	15	3	> 1000
1.6	1.9	0.823	2.081	14-16-18	17	2.5	> 1000
2.0	2.4	1.309	3.309	12-14-16	30	2.5	> 1000

Solder contacts

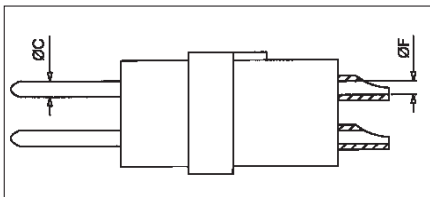


Contact		Usable cables			Max. current rating (A)	Contact resistance (m Ω)	Endurance (number of cycles)
$\varnothing C$	$\varnothing F$	Core section (mm ²)		AWG			
		min	Max.				
0.7	0.7	-	0.30	26	7	5	500 max
0.9	0.8	-	0.21	24	10	3.5	> 1000
1.3	1.1	-	0.60	20	15	3	> 1000
1.6	1.5	-	0.93	18	17	2.5	> 1000
2	1.9	-	1.34	16	30	2.5	> 1000

The conductor bucket on the solder contacts is designed with an angle to form a cup into which the solder can flow easily.

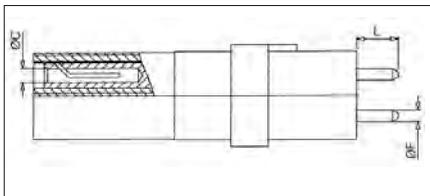
• Fixed contacts

Solder contacts



Contact		Shell size	Usable cables		Max. current rating (A)	Contact resistance (m Ω)	Endurance (number of cycles)
$\varnothing C$	$\varnothing F$		Core section (mm ²) Max.	AWG			
0.5	0.4	00	0.06	30	5	10	> 1000
	0.5	0 - 1	0.096	28			
0.7	0.63	0 - 1 - 2 - 3	0.15	26	7	5	> 1000

Contacts for PCB



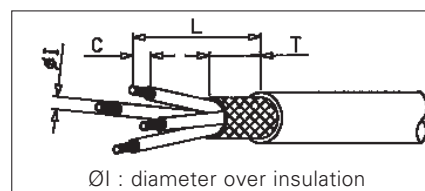
Contacts for PCB		Contact length dimensions "L"	
PCB tail length size 0		dimension "L" 5.5 mm	
0.7 mm female PCB tail length size 0		dimension "L" 3.5 mm	
0.7 mm female PCB tail length size 1		dimension "L" 4.0 mm	
0.7 mm female PCB tail length size 2		dimension "L" 6.0 mm	
0.7 mm female PCB tail length size 3		dimension "L" 6.0 mm	
0.9 mm female PCB tail length size 0		dimension "L" 3.5 mm	
0.9 mm female PCB tail length size 1		dimension "L" 4.0 mm	
0.9 mm female PCB tail length size 2		dimension "L" 6.0 mm	
4.3 mm female PCB tail length size 1 mm		dimension "L" 4.0 mm, dimension "F" 0.7 mm	
4.3 mm female PCB tail length size 2		dimension "L" 6.0 mm, dimension "F" 0.7 mm	

Push Pull Connectors



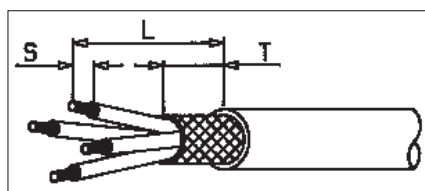
Wiring and assembly instructions

• Cable stripping for connectors with crimp contacts



Shell size	Ø contacts	Ø I	Stripping for FD, SR, PC			Stripping for FC		
			L	C	T	L	C	T
0	0.7	≥ 1.35	15	4	7	19	4	7
		> 1.35		5.5			5.5	
	0.9	≥ 1.6	15	4	7	19	4	7
1	0.7	≥ 1.35	16	4	8	22	4	8
		> 1.35		5.5			5.5	
	0.9	≥ 1.6	16	4	8	22	4	8
2	0.7	≥ 2.1	19	4	9	28	4	9
		> 2.1		5.5			5.5	
	0.9	≥ 1.6	19	4	9	28	4	9
3	0.7	≥ 2.1	25	4	10	35	4	10
		> 2.1		7			7	
	0.9	≥ 1.6	25	4	10	35	4	10
4	0.7	≥ 2.1	25	4	10	35	4	10
		> 2.1		7			7	
	1.3	≥ 2.6	27	5.5	10	35	5.5	10
5	0.7	≥ 2.6	27	5.5	10	35	5.5	10
		> 2.6		8.5			8.5	
	2.0	≥ 3.2	27	5.5	10	35	5.5	10

• Cable stripping for connectors with solder contacts

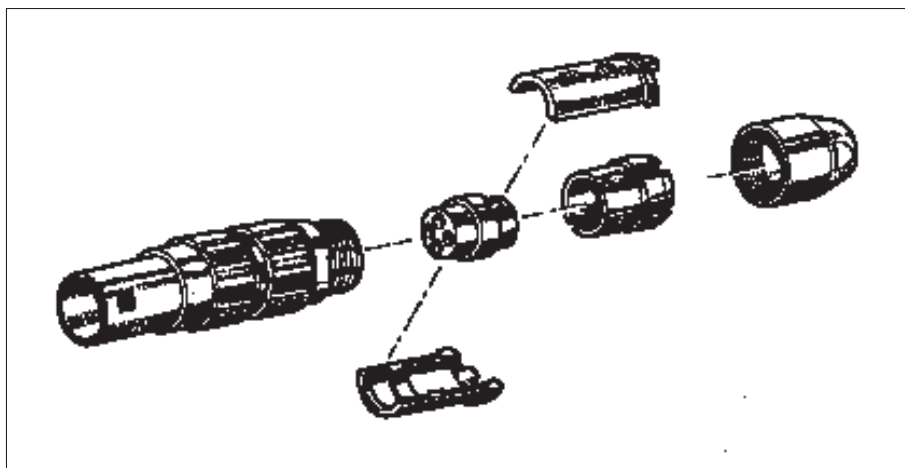


Shell size	Ø Contacts	Stripping for FD, SR, PC			Stripping for FC		
		L	S	T	L	S	T
0	0.5	9	2	4	/	/	/
	0.5	11	2	7	16	2	7
	0.7	12	3	7	16	3	7
1	0.9	12	3	7	16	3	7
	0.5	12	2	8	19	2	8
	0.7	13	3	8	19	3	8
2	0.9	13	3	8	19	3	8
	1.3	13	3.5	8	19	3.5	8
3	0.7	16	3	9	25	3	9
	0.9	16	3	9	25	3	9
	1.3	16	3.5	9	25	3.5	9
4	1.6	18	4	9	25	4	9
	2	18	4	9	25	4	9
5	0.7	20	3	10	30	3	10
	0.9	20	3	10	30	3	10
	1.3	20	3.5	10	30	3.5	10
6	1.6	22	4	10	30	4	10
	2	22	4	10	30	4	10

Push Pull Connectors

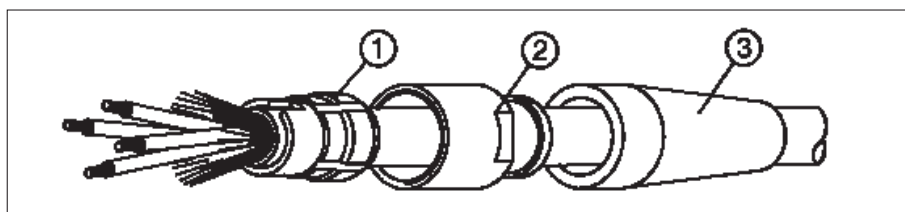


Wiring and assembly instructions : STRAIGHT PLUG



• **Cable stripping** : see page 217

• Connector preparation

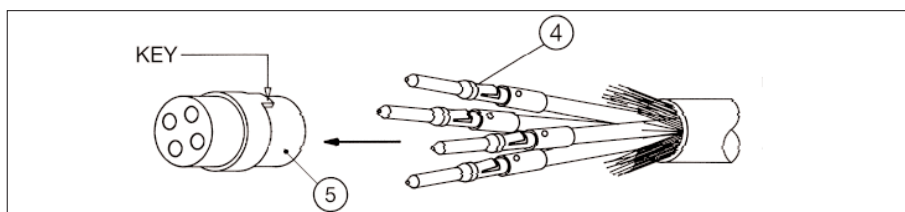


1 - Select the proper collet ①. (see page 217)

2 - Slide the protective boot ③ the back-nut ② and the collet ① onto the cable.

3 - In case of a screened cable, combs out the screen and fold back over the

• Contacts wiring : crimp contacts



1 - Select the proper crimping tool (see page 48) and locator according to the connectors involved.

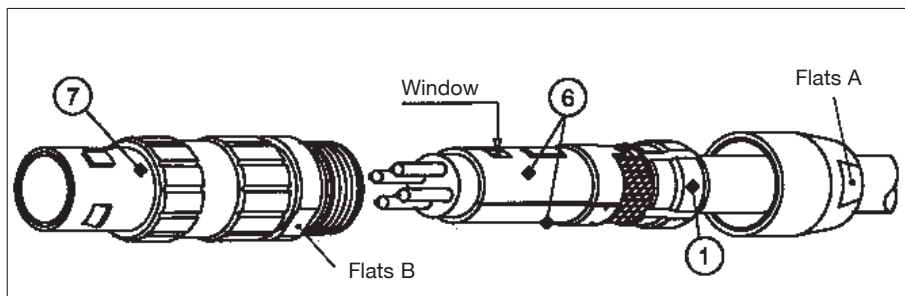
2 - Adjust the tool selector for the corresponding conductor AWG.

3 - Crimp the contacts † and then engage them into the insert cavities ⑤ till clip tightening.

• Contacts wiring : solder contacts

Fixed solder contacts 0.5 mm and 0.7 mm	Removable solder contacts from 0.9 mm to 2 mm
1 - Terminate the bucket contacts using solder method	1 - Solder the conductors to the contact buckets then engage them into the insert cavities ⑤ till clip holding

• Connector assembly



1 - Position 2 half bushes † on the insert ⑤ making sure that the insert key appears through window of one bush.

2 - Position the collet and the half bushes while maintaining the screen. Bush keys are seated in the collet keying slots.

3 - Position all the sub-assembly in the connector housing † making sure to keep sub-assembly aligned.

4 - Install the backnut ② and screw it. Use the two wrenches well positioned on the flats A and B. Place a wrench to grip flats B, use the other wrench to tighten the backnut at the flats A following the torque values on

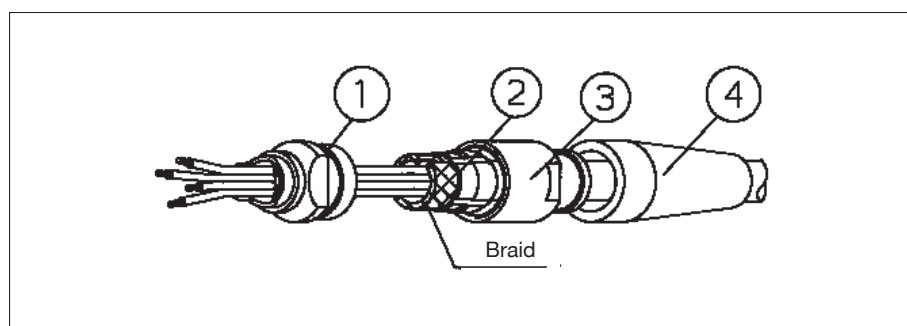
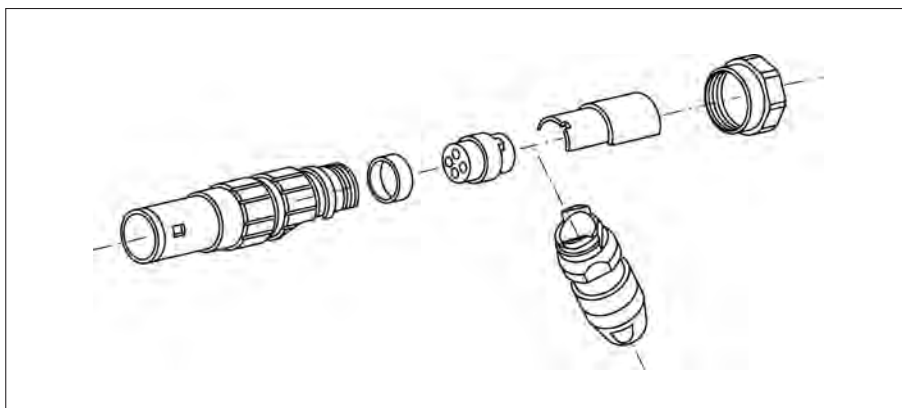
Push Pull Connectors



Wiring and assembly instructions : 90° ELBOW PLUG

• **Cable stripping** : see page 217

• **Connector preparation**



1 - Select the proper collet ② (see page 217).

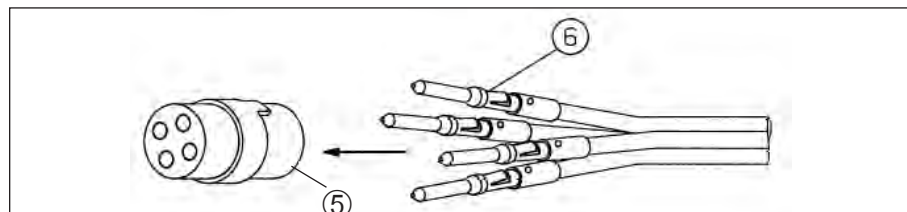
2 - Slide the protective boot †, the backnut ③, the collet ② and the elbow outlet ① onto the cable.

3 - In case of a screened cable, comb out the screen and fold back over the collet ②.

4 - Position in the elbow outlet making sure the anti-rotating keys are well aligned.

5 - Tighten the backnut ③ till bottomed.

• **Contacts wiring : crimp contacts**



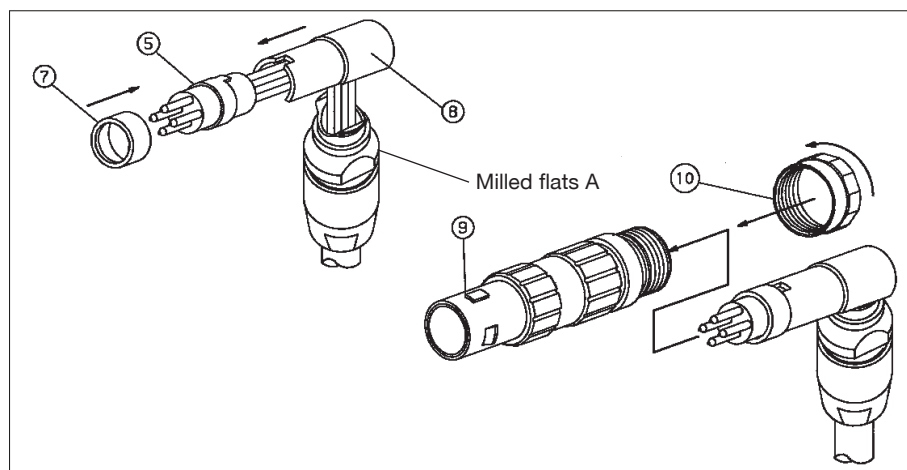
1 - Select the proper crimping tool (see page 49) and positionner according to connectors involved.

2 - Adjust the tool selector for the corresponding conductor AWG.

3 - Crimp the contacts † then engage them into the insert cavities ⑤ till clip tightening.

• **Contacts wiring : solder contacts**

Fixed solder contacts 0.5 mm and 0.7 mm	Removable solder contacts from 0.9 mm to 2 mm
1 - Terminate the bucket contacts using solder method	1 - Solder the conductors to the contact buckets then engage them into the insert cavities ⑤ till clip holding



1 - Position the ring † on the insert ⑤ then engage all in the spacer ⑧.

2 - Position all the sub-assembly in the connector housing ⑨ with milled flats A of the elbow outlet facing to the rear of the plug housing.

3 - Tighten the screw ⑩ at the torque values defined on page 217.

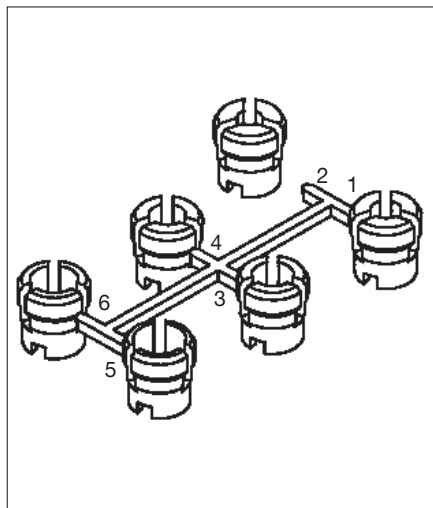
Push Pull Connectors



Wiring and assembly instructions

• Collets selection according to cable diameters

4 or 6 collets per shell size allow a wide range of cable diameters for a single connector ; outer cable diameters are for reference only, since values will change with specific manufacturers cable properties.

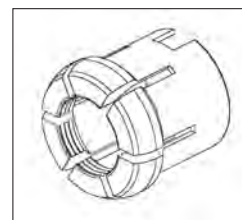


Collet number	Cable diameter				
	Shell size 00	Shell size 0	Shell size 1	Shell size 2	Shell size 3
1	1.1 - 1.9	1.5 - 2.5	2.0 - 2.5	3.5 - 4.7	4.9 - 6
2	2 - 2.8	2.6 - 3.5	2.6 - 3.5	4.8 - 5.7	6.1 - 7.2
3	2.9 - 3.5	3.6 - 4.5	3.6 - 4.5	5.8 - 6.7	7.3 - 8.4
4	-	4.6 - 5.5	4.6 - 5.5	6.8 - 7.7	8.5 - 9.6
5	-	-	5.6 - 6.6	7.8 - 8.7	9.7 - 10.8
6	-	-	6.7 - 7.5	8.8 - 9.7	10.9 - 12.0

• Coupling torques

Tools (jaw dimensions)	7 x 0.5	9 x 0.6	12 x 1	15 x 1	18 x 1	Advised torques* in Nm				
Size	00	0	1	2	3	00	0	1	2	3
	7	11	14	17	21	0.5	0.7	1.3	1.7	2
	6	8	10	13	15	0.7	0.8	1	1.5	2
	6	9	11	14	16	0.7	0.8	1	1.5	2
	-	10	12	15	17	-	0.4 to 0.5		0.5 to 0.7	
	-	10	13	17	20	0.5	0.7	1.3	1.7	2
	-	9	13	15	-	-	-	-	-	-

Metal collet available for all sizes



Discreet application based on cable diameter

Torque values are the maximum allowable for each connector size.

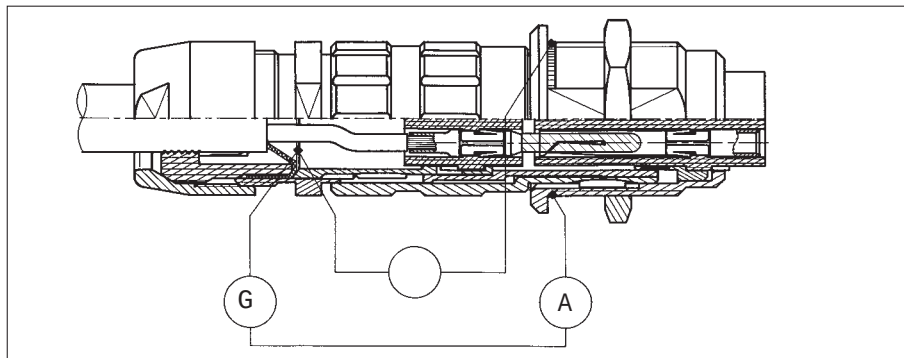
Torque values will vary due to the type and size of the cable used.

*Apply thread lock to back nut prior to assembly.

Note : All the tooling numbers refer to the drawings page 205

• Shielding

Tested according to MIL-STD 1344 A, method 3007

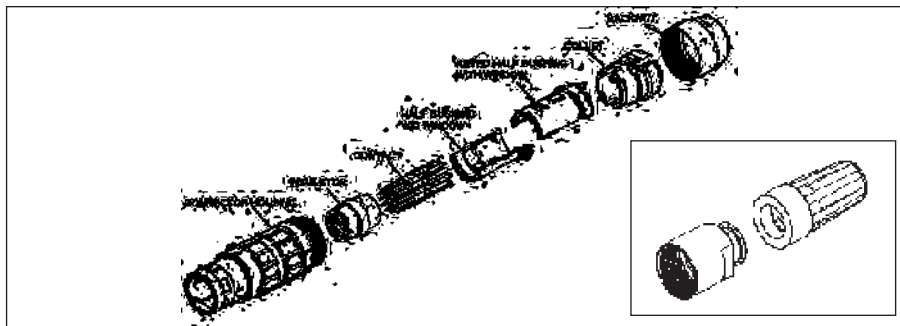


Shell size	Electrical continuity (mΩ)
00	4.5
0	4
1	3
2	2.5
3	2.5

JBX Plug Assembly Instructions

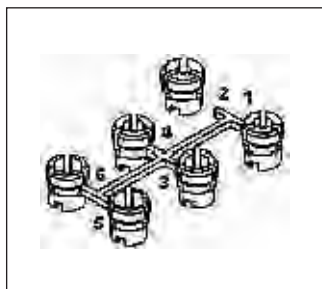


1. Determine what size cable you will be using. Then select the proper collet number for that cable.



• Collets selection according to cable diameter

3 or 5 collets per shell size allow a wide range of cable diameters for a single connector. Cable out diameters are for information only, since values will change with each cable construction.

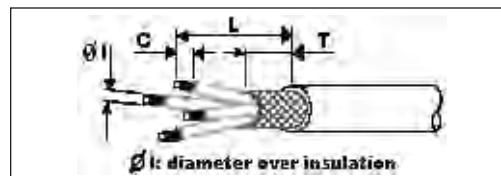


Collet Number	Cable Diameter			
	Shell Size 0	Size 0, Option G	Shell Size 1	Size 1, Option G
1	1.5 - 2.5	—	2 - 2.5	—
2	2.6 - 3.5	—	2.6 - 3.5	—
3	3.6 - 4.5	—	3.6 - 4.5	6.1 - 6.7
4	—	4.6 - 5.5	4.6 - 5.5	6.8 - 7.7
5	—	5.6 - 6	5.6 - 6	7.8 - 8

Collet number 4 in shell size 0 and collet number 6 in shell size 1 are not used

2. Strip the cable and each wire to the required strip length.

• Cable stripping for connectors with crimp contacts

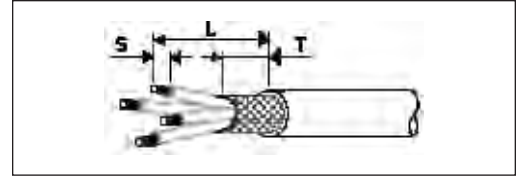


	ø Contacts	ø I	Stripping for FD, SR, PC			Stripping for FC		
			L	C	T	L	C	T
	0.7	□1.35	15	4	7	19	4	7
		>1.35		5.5			5.5	
	0.9	□1.6	15	4	7	19	4	7
		>1.6		5.5			5.5	
	0.7	□1.35	16	4	8	22	4	8
		>1.35		5.5			5.5	
	0.9	□1.6	16	4	8	22	4	8
		>1.6		5.5			5.5	
	1.3	□2.1	16	4	8	22	4	8
		>2.1		5.5			5.5	
	0.7	□1.35	19	4	9	28	4	9
		>1.35		5.5			5.5	
	0.9	□1.6	19	4	9	28	4	9
		>1.6		5.5			5.5	
	1.3	□2.1	19	4	9	28	4	9
		>2.1		5.5			5.5	
	1.6	□2.6	21	5.5	9	28	5.5	9
		>2.6		7			7	
	2.0	□3.2	21	5.5	9	28	5.5	9
		>3.2		7			7	
	0.7	□1.35	25	4	10	35	4	10
		>1.35		7			7	
	0.9	□1.6	25	4	10	35	4	10
		>1.6		7			7	
	1.3	□2.1	25	4	10	35	4	10
		>2.1		7			7	
	1.6	□2.6	27	5.5	10	35	5.5	10
		>2.6		8.5			8.5	
	2.0	□3.2	27	5.5	10	35	5.5	10
		>3.2		8.5			8.5	

JBX Plug Assembly Instructions

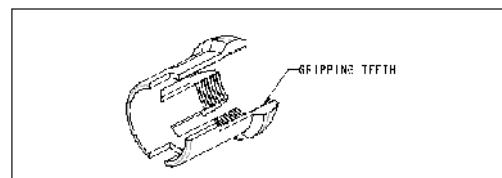
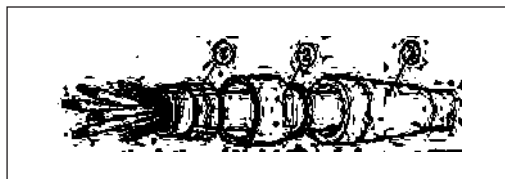


• Cable stripping for connectors with solder contacts



	ø Contacts	Stripping for FD, SR, PC			Stripping for FC		
		L	S	T	L	S	T
00		⑨	②	④	.	.	.
①		11	2	7	16	2	7
		12	3	7	16	3	7
		12	3	7	16	3	7
①		12	2	8	19	2	8
		13	3	8	19	3	8
		13	3	8	19	3	8
		13	3.5	8	19	3.5	8
②		16	3	9	25	3	9
		16	3	9	25	3	9
		16	3.5	9	25	3.5	9
		18	4	9	25	4	9
		18	4	9	25	4	9
③		20	3	10	30	3	10
		20	3	10	30	3	10
		20	3.5	10	30	3.5	10
		22	4	10	30	4	10
		22	4	10	30	4	10

3. When assembling a plug with a protective boot (#3), prep the cable by taking the protective boot and sliding it with the small inside diameter first onto the cable. Then slide the end of the back nut (#2) that has the smaller diameter onto the cable. Next, take the collet (#1) and slide the end with the gripping teeth first onto the cable until the opposite end of the collet is flush with the cut end of the jacket. If the cable has shielding, fold back the braid so that it is covering the outside diameter of the collet. Do not place braid into any area of the alignment slots. Then insure that the braid does not interfere with the alignment slots of the collet.



4. Attach removable contacts to wires:
- If using crimped contacts, crimp the contacts onto the ends of the exposed wires using the proper crimping tool set on the correct AWG wire. (see FIGURE 4.A). After the contact has been crimped to the wire, check each contact to insure that the contact is securely crimped to the wire.

JBX Plug Assembly Instructions



Locator for pin and socket 0.7 - 0.9 mm and 1.3 mm contacts

FIGURE 4.A

	ø Contacts	AWG	Male Contact			Female Contact		
			Souriau P/N	Daniels P/N	Astro P/N	Souriau P/N	Daniels P/N	Astro P/N
0	0.7	22 - 24 - 26	JBX 0 OUT LP07	86 - 223	/	JBX 0 OUT LP07	86 - 224	/
	0.9	20 - 22 - 24	JBX 0 OUT LP09	86 - 225	/	JBX 0 OUT LP09	86 - 226	/
1	0.7	22 - 24 - 26	JBX 1 OUT LP07	86 - 196	642 - 001	JBX 1 OUT LP07	86 - 197	642 - 004
	0.9	20 - 22 - 24	JBX 1 OUT LP09	86 - 198	642 - 002	JBX 1 OUT LP09	86 - 199	642 - 005
	1.3	18 - 20 - 22	JBX 1 OUT LP13	86 - 200	642 - 003	JBX 1 OUT LP13	86 - 201	642 - 006
2	0.7	22 - 24 - 26	JBX 2 OUT LP07	86 - 202	642 - 007	JBX 2 OUT LP07	86 - 203	642 - 010
	0.9	20 - 22 - 24	JBX 2 OUT LP09	86 - 204	642 - 008	JBX 2 OUT LP09	86 - 205	642 - 011
	1.3	18 - 20 - 22	JBX 2 OUT LP13	86 - 206	642 - 009	JBX 2 OUT LP13	86 - 207	642 - 012
3	0.7	22 - 24 - 26	JBX 3 OUT LP07	86 - 217	642 - 014	JBX 3 OUT LP07	86 - 214	642 - 017
	0.9	20 - 22 - 24	JBX 3 OUT LP09	86 - 218	642 - 015	JBX 3 OUT LP09	86 - 215	642 - 018
	1.3	18 - 20 - 22	JBX 3 OUT LP13	86 - 219	642 - 016	JBX 3 OUT LP13	86 - 216	642 - 019

Turret with locator for pin and socket 1.6 mm and 2 mm contacts



Shell Size	ø Contacts	AWG	Male and Female Contacts		
			Souriau P/N	Daniels P/N	Astro P/N
2	1.6	14 - 16 - 18	JBX 2 OUT LT16	TH 564	650 - 030
	2	12 - 14 - 16	JBX 2 OUT LT20	TH 565	650 - 031
3	1.6	14 - 16 - 18	JBX 3 OUT LT16	TH 566	650 - 038
	2	12 - 14 - 16	JBX 3 OUT LT20	TH 567	650 - 035

Crimping Tool

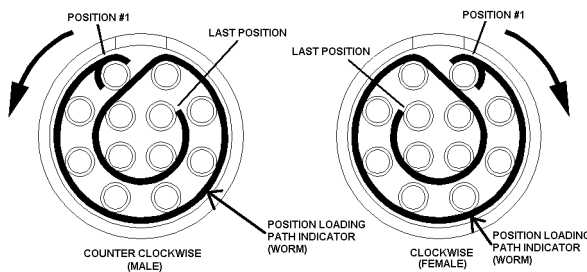
Specifications MIL-C-22520 / 7.01			
	Contacts 0.7 mm - 0.9 mm and 1.3 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/7-01	Daniels: MH860
Specifications MIL-C-22520 / 1.01			
	Contacts 1.6 mm and 2 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/1-01	Daniels: AF8 Buchanan: 615708

- b. If using soldered contacts, prep each wire with flux and then tin dip each exposed wire end. Next pre-load a piece of heat shrink onto the wire (Individual heat shrink tubes are optional). Solder each wire to the solder cup end of the contact. To avoid shorts, make sure that no solder comes in contact with any other contact or wire on the connector. After the contact has been soldered to the wire, check each contact to insure that the contact is securely soldered to the wire. Slide the pre-loaded heat shrink over the solder joint and shrink into place. Do not over-heat the solder joint area as it can cause the solder to re-flow or it could burn the wire insulation.

JBX Plug Assembly Instructions



5. If inserting removable contacts:
- a. Starting with the interface end of the contact, carefully insert each contact into the backside of the insulator that has the position loading path indicator (worm) on it. Start with the end of the position loading path indicator (worm) that has the half circle on it (Position #1). Then follow the position loading path indicator (worm) around the insulator. You will go counter clockwise if using a male contact and clockwise if using a female contact (see diagram below for the position loading path indicator (worm) layout). If the connector has center contacts, it is sometimes easier to start at the end of the position loading path indicator (worm) (last position) and work backwards. This is up to the assembler and the process they are using to insert the contacts. Make sure not to bend the contact when inserting it into the insulator. It is extremely important that the contact is completely seated in to the insulator. For the connector to function properly, the contact should click/snap into place when seated. To confirm the seating of the contact, check each contact for proper seating.

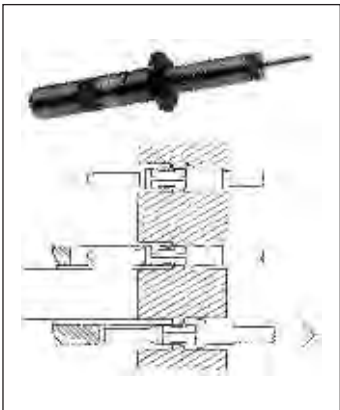


6. Removal of contacts:
- a. Using the proper extraction tool insert the tool over the front of the contact and push contact out. Failure to use the proper extraction tool can result in damage to the contact.

TOOLINGS – JBX – JKX

Manual Extraction Tools

Contacts automatically extracted without pulling on the cable.



The extraction tool is the same for both male and female contacts.

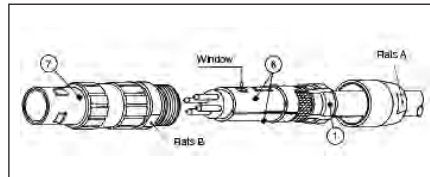
Shell Size	ø Contacts	Souriau Part Number	Astro Part Number
0	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
1	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
2	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115
3	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115

7. Take the keyed half bushing (#6) and place it over the insulator so that the window is lined up with the key on the insulator and the key on the half bushing is pointing to the back of the insulator (position loading path indicator (worm end)). Then take the half bushing without the window (#6) and place on the opposite side of the insulator so that both

JBX Plug Assembly Instructions

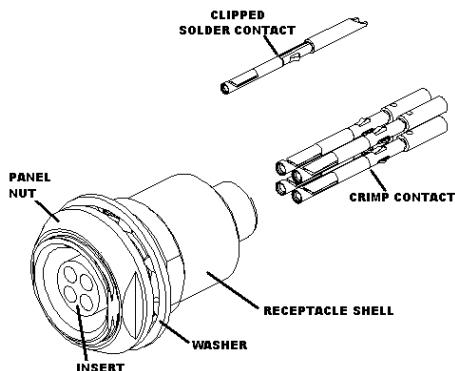


half bushings are aligned with each other.



Problem:	Cause:	Correction:
Contact will not seat in connector, contact backing out.	Wrong wire or insulation size, wrong strip length, poor crimping, broken clips, damaged insulator, removed contact without proper removal tool, bad crimp.	Use correct wire, adjust strip length, strip and re-crimp with new contact, replace insulator, using wrong crimp tool, replace contact.
Bent solder contact	Bent in handling, bent in soldering operation, connector assembled incorrectly. Pins and insulator were inserted into electrical test while unprotected by shell	Replace insert with contacts.
Connector will not release from mating part or operate correctly	Not using flats on latching sleeve and back nut to torque connector, improper assembly of the connector, over mold material inside connector.	Release back nut and re-torque, disassemble and reassemble, replace connector.
Over tightened the back nut.	Connector will not release from mating part or operate correctly, damage connector.	Loosen back nut and retighten.
Collet will not grip cable.	Loose cable in connector.	Check correct collet size is being used.
Connector will not assemble.	Incorrect alignment of key in connector, half bushings, connector housing, insulator, collet, braid in key slots in collet.	Disassemble connector and reassemble connector-aligning keys, relocate braid in collet.
Contact stubbing after mating.	Bent contact and damaged contact, connector-assembled incorrectly.	Re-align contact, replace insert with contacts.
Electrical failure.	Improper crimping, wrong wire strip length, wire loading incorrect location, poor solder joint.	Remove contact with correct removal tool, re-install new contact, and verify strip length.

JBX Receptacle Assembly Instructions

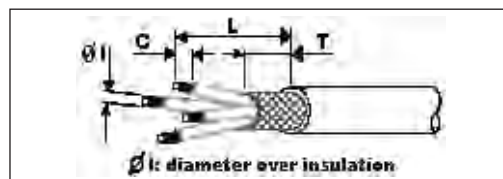


1. Select the proper JBX receptacle and contact size for the specific cable application by using the contact layout chart as depicted in the Push Pull catalog.

2. Strip the cable/wire to the required strip length.

Wiring and assembly instructions

Cable stripping for connectors with crimp contacts

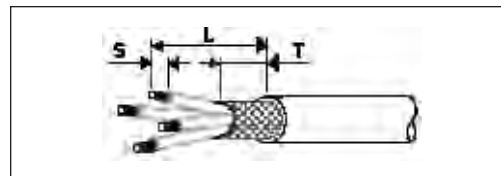


	ø Contacts	ø I	Stripping for FD, SR, PC			Stripping for FC		
			L	C	T	L	C	T
	0.7	□1.35	15	4	7	19	4	7
		>1.35		5.5			5.5	
	0.9	□1.6	15	4	7	19	4	7
		>1.6		5.5			5.5	
	0.7	□1.35	16	4	8	22	4	8
		>1.35		5.5			5.5	
	0.9	□1.6	16	4	8	22	4	8
		>1.6		5.5			5.5	
	1.3	□2.1	16	4	8	22	4	8
		>2.1		5.5			5.5	
	0.7	□1.35	19	4	9	28	4	9
		>1.35		5.5			5.5	
	0.9	□1.6	19	4	9	28	4	9
		>1.6		5.5			5.5	
	1.3	□2.1	19	4	9	28	4	9
		>2.1		5.5			5.5	
	1.6	□2.6	21	5.5	9	28	5.5	9
		>2.6		7			7	
	2.0	□3.2	21	5.5	9	28	5.5	9
		>3.2		7			7	
	0.7	□1.35	25	4	10	35	4	10
		>1.35		7			7	
	0.9	□1.6	25	4	10	35	4	10
		>1.6		7			7	
	1.3	□2.1	25	4	10	35	4	10
		>2.1		7			7	
	1.6	□2.6	27	5.5	10	35	5.5	10
		>2.6		8.5			8.5	
	2.0	□3.2	27	5.5	10	35	5.5	10
		>3.2		8.5			8.5	

JBX Receptacle Assembly Instructions



Wiring and assembly instructions
Cable stripping for connectors with solder contacts



	Ø Contacts	Stripping for FD, SR, PC			Stripping for FC		
		L	S	T	L	S	T
00		⑨	②	④	.	.	.
①		11	2	7	16	2	7
		12	3	7	16	3	7
		12	3	7	16	3	7
①		12	2	8	19	2	8
		13	3	8	19	3	8
		13	3	8	19	3	8
		13	3.5	8	19	3.5	8
②		16	3	9	25	3	9
		16	3	9	25	3	9
		16	3.5	9	25	3.5	9
		18	4	9	25	4	9
		18	4	9	25	4	9
③		20	3	10	30	3	10
		20	3	10	30	3	10
		20	3.5	10	30	3.5	10
		22	4	10	30	4	10
		22	4	10	30	4	10

3. Depending on application and shell type, the nut and washer may be removed before attaching the wires to the contacts.

4. Attach crimped contacts to wires:

- a. If using crimped contacts, crimp the contacts onto the ends of the exposed wires using the proper crimping tool and locator set on the correct AWG wire size (*see FIGURE 4.A*). After the contact has been crimped to the wire, check each contact to insure that the contact is securely crimped.



Locator for pin and socket 0.7 - 0.9 mm and 1.3 mm contacts

	Ø Contacts	AWG	Male Contact			Female Contact		
			Souriau P/N	Daniels P/N	Astro P/N	Souriau P/N	Daniels P/N	Astro P/N
0	0.7	22 - 24 - 26	JBX 0 OUT LP07	86 - 223	/	JBX 0 OUT LP07	86 - 224	/
	0.9	20 - 22 - 24	JBX 0 OUT LP09	86 - 225	/	JBX 0 OUT LP09	86 - 226	/
1	0.7	22 - 24 - 26	JBX 1 OUT LP07	86 - 196	642 - 001	JBX 1 OUT LP07	86 - 197	642 - 004
	0.9	20 - 22 - 24	JBX 1 OUT LP09	86 - 198	642 - 002	JBX 1 OUT LP09	86 - 199	642 - 005
	1.3	18 - 20 - 22	JBX 1 OUT LP13	86 - 200	642 - 003	JBX 1 OUT LP13	86 - 201	642 - 006
2	0.7	22 - 24 - 26	JBX 2 OUT LP07	86 - 202	642 - 007	JBX 2 OUT LP07	86 - 203	642 - 010
	0.9	20 - 22 - 24	JBX 2 OUT LP09	86 - 204	642 - 008	JBX 2 OUT LP09	86 - 205	642 - 011
	1.3	18 - 20 - 22	JBX 2 OUT LP13	86 - 206	642 - 009	JBX 2 OUT LP13	86 - 207	642 - 012
3	0.7	22 - 24 - 26	JBX 3 OUT LP07	86 - 217	642 - 014	JBX 3 OUT LP07	86 - 214	642 - 017
	0.9	20 - 22 - 24	JBX 3 OUT LP09	86 - 218	642 - 015	JBX 3 OUT LP09	86 - 215	642 - 018
	1.3	18 - 20 - 22	JBX 3 OUT LP13	86 - 219	642 - 016	JBX 3 OUT LP13	86 - 216	642 - 019

JBX Receptacle Assembly Instructions



FIGURE 4.A

Turret with locator for pin and socket 1.6 mm and 2 mm contacts



	ø Contacts	AWG	Male and Female Contacts		
			Souriau P/N	Daniels P/N	Astro P/N
2	1.6	14 - 16 - 18	JBX 2 OUT LT16	TH 564	650 - 030
	2	12 - 14 - 16	JBX 2 OUT LT20	TH 565	650 - 031
3	1.6	14 - 16 - 18	JBX 3 OUT LT16	TH 566	650 - 038
	2	12 - 14 - 16	JBX 3 OUT LT20	TH 567	650 - 035

Specifications MIL-C-22520 / 7.01

	Contacts 0.7 mm - 0.9 mm and 1.3 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/7-01	Daniels: MH860

Specifications MIL-C-22520 / 1.01

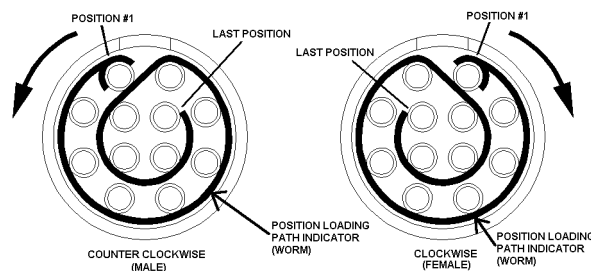
	Contacts 1.6 mm and 2 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/1-01	Daniels: AF8 Buchanan: 615708

Crimping Tool

- b. If using clipped solder contacts, prep each wire with flux and then tin dip each exposed wire end. Next pre-load a piece of heat shrink onto the wire (Individual heat shrink tubes are optional). Solder each wire to the solder cup end of the contact. To avoid shorts, make sure that no solder comes in contact with any other contact or wire on the connector. After the contact has been soldered to the wire, check each contact to insure that the contact is securely soldered to the wire. Slide the pre-loaded heat shrink over the solder joint and shrink into place. Do not over-heat the solder joint area as it can cause the solder to re-flow or it could burn the wire insulation.

5. If inserting terminated contacts:

- a. Starting with the interface end of the contact, insert each contact into the backside of the insulator that has the position loading path indicator (worm) on it. Start with the end of the position loading path indicator (worm) that has the half circle on it (Position #1). Then follow the position loading path indicator (worm) around the insulator. You will go counter clockwise if using a male contact and clockwise if using a female contact (see diagram below for the position loading path indicator (worm) layout). If the connector has center contacts, it is sometimes easier to start at the end of the position loading path indicator (worm) (last position) and work backwards. This is up to the assembler and the process used to insert the contacts. Make sure not to bend the contact when inserting it into the insulator. It is extremely important that the contact is seated in the insulator for the connector to function prop-



erly. The contact should click/snap into place when seated. Check each contact for proper seating.
Removal of contacts:

JBX Receptacle Assembly Instructions



Using the proper extraction tool (See FIGURE 6.A), insert the tool over the front of the contact and push contact out.



Failure to use the proper extraction tool can result in damage to the contact.

Manual extraction tools

Shell Size	ø Contacts	Souriau Part Number	Astro Part Number
0	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
1	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
2	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115
3	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115

The extraction tool is the same for both male and female contacts.

FIGURE 6.A

7. Potting of backend of receptacle with clipped contacts

Clipped contacts are designed to float in the connector so that they self align when mated. It is sometimes necessary to pot the backend of the connector so that the contacts are sealed off from the environment. When this application is needed, it is recommended that the assembler engage a mating connector/alignment tool to the assembly being potted. Once the mating connector/alignment tool is engaged, it must be left engaged until the potting compound has hardened. This will insure that the true position requirements are met. If the application is low volume, a mating connector can be used. If the application is for high volume, it is recommended that an alignment tool be purchased.

Problem:	Cause:	Correction:
Contact will not seat in connector, contact backing out.	Wrong wire or insulation size, wrong strip length, poor crimping, broken clips, damaged insulator, removed contact without proper removal tool, bad crimp.	Use correct wire, adjust strip length, strip and re-crimp with new contact, replace insulator, using correct crimp tool, replace contact.
Bent solder contact	Bent in handling, bent in soldering operation, connector assembled incorrectly.	Re-align contact, replace insert with contacts.
Contact stubbing after mating.	Bent contact and damaged contact, connector-assembled incorrectly.	Re-align contact, replace insert with contacts. If using clipped contacts and receptacle is potted, a mating connector must be applied to the connector that is being potted. This insures that the contacts will be properly aligned.
Electrical failure.	Improper crimping, wrong wire strip length, wire loading incorrect location, poor solder joint.	Remove contact with correct removal tool, re-install new contact, and verify strip length.

Environmentally Sealed Push Pull Connectors



Key features

- Sealed IP 68 (mated connectors)
- Mechanically keyed : ensures correct polarization and alignment.
- Contact arrangements : from 2 to 10 contacts.
- Wire gauge range from 28 AWG to 14 AWG.
- High contact density in a small space.
- Contact termination in either crimp, solder, PC or right angle PCB contacts.



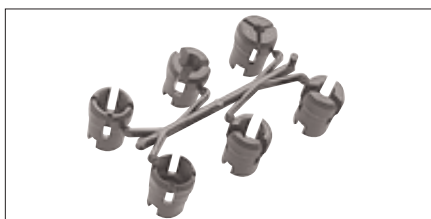
User advantages

Temporary immersion IP 68



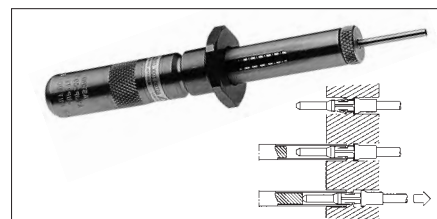
6-collet cluster

Allows a wide range of cable diameter applications for a single connector.



Removable contacts

Crimp versions allow easier wiring and maintenance.



Part number system

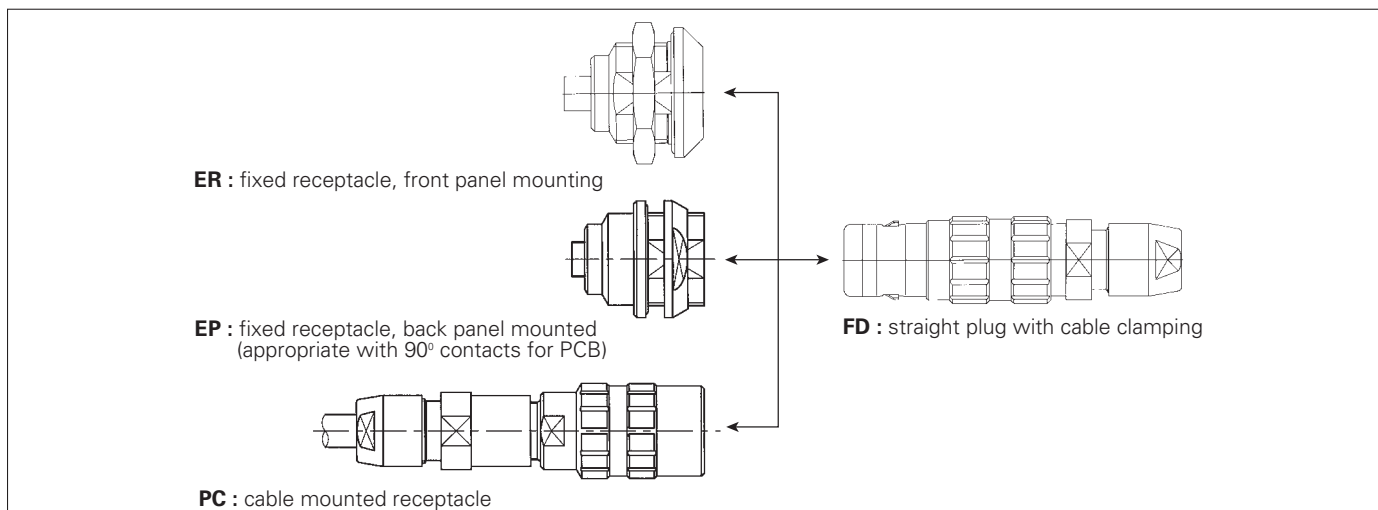
Basic series	JKX	FD	1	G	05	M	C	S	D	S	M
Shell configuration	FD - ER - EP - PC										
Size	0 - 1										
Keying	G										
Contact layouts	02 ----- 10 (see page 33)										
Contact type	M : pin F : socket (in relation with keying)										
Contact termination	C : crimp ; S : solder ; P* : straight PCB tails ; Q* : 90° PCB tails										
Material & surface plating	S : Outer shell in brass alloy with glossy chrome over nickel N : Outer shell in brass alloy with black plating (consult SOURIAU US) D : Obligatory suffix S : All contact diameters except 0.5 mm P : 0.5 mm contacts only										
Options	M : Connector with backnut for protective boot (protective boot to order separately page 34) G : Connector with adaptation to accommodate big cables (Ø 4.5 to 6 in size 0 and Ø 6 to 8 in size 1)										

* For receptacles with female contacts only.

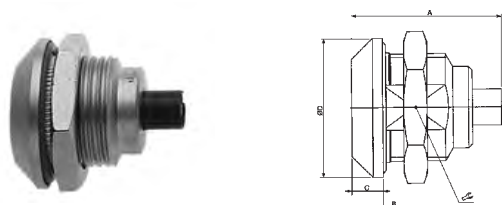
Environmentally Sealed Push Pull Connectors



Shell type

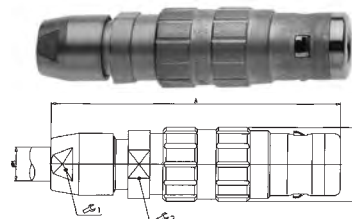


ER : Fixed receptacle, front panel mounting



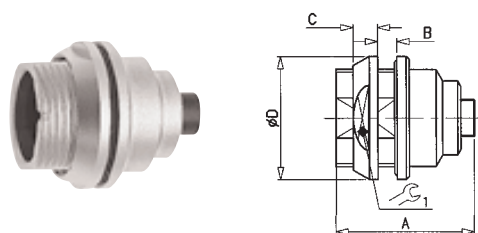
Size	A	B	C	Ø D
0	19.5	4.5	4	18
1	24.5	8.5	4.5	20

FD : Straight plug with cable clamping



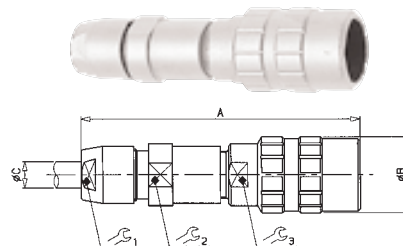
Size	A	Ø B	Ø M
0	47	12	1.5 to 4.5
1	57	15	2 to 6

EP : Fixed receptacle, back panel mounting



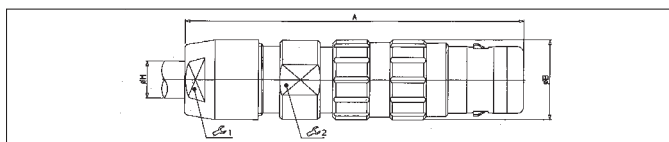
Size	A	B	C	Ø D
0	19.5	4.5	3.2	18
1	24.5	6	4	20

PC : Cable mounted receptacle



Size	A	Ø B	Ø C
0	—	—	—
1	60	16	2 to 6

• Option G : to accomodate bigger cables



Size	A	Ø B	Ø M
0	51	12	4.6 to 6
1	60	15	6 to 8

Environmentally Sealed Push Pull Connectors



Keying

Only G keying is available in standard version (0° keying angle, plugs with pin contacts, receptacles with female contacts) for the shell styles.

Shell size	Key	ER	EP	PC	FD
0	G	●	●	–	●
1	G	●	●	●	●

Contacts

● Concerning the availability of other alternatives, please consult our commercial office.

• Multi contacts inserts

Shell size	Male insulator viewed from wiring side	Contact layout	Available Contact types				Ø Contact	AWG		Max. current rating (A)	Testing voltage (Vrms)	Working voltage (Vdc / Vrms)
			S solder	C crimp	P* straight PCB tails	Q* 90° PCB tails		Solder wire Max.	Crimp wire Max.			
0		02	S	C	P	Q	0.9	24	20	10	1400	660/460
		03	S	C	P	Q	0.9	24	20	8	1300	600/420
		04	S	C	P	Q	0.7	26	22	7	1400	660/460
		05	S	C	P	Q	0.7	26	22	6.5	800	400/260
		06	S		P		0.5	28	-	2.5	680	320/220
		07	S		P		0.5	28	-	2.5	680	320/220
1		02	S	C			1.3	20	18	15	1600	760/530
		03	S	C			1.3	20	18	12	1300	600/420
		04	S	C	P	Q	0.9	24	20	10	1900	900/630
		05	S	C	P	Q	0.9	24	20	9	1400	660/460
		06	S	C	P	Q	0.7	26	22	7	1400	660/460
		07	S	C	P	Q	0.7	26	22	7	1400	660/460
		08	S	C	P	Q	0.7	26	22	5	1200	600/420
		10	S				0.5	28	-	2.5	600	300/200

Inserts with fixed contacts (non removable contacts)

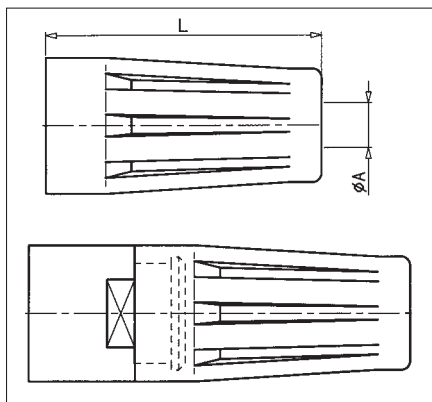
* For receptacles with female contacts

Environmentally Sealed Push Pull Connectors



Options

• Protective boot



Part number	Shell size	Shell size option	Dimensions			
			Ø A	L	Ø Câble	
JBX 0 MP*	0	-	2.2	20	1.5	5.5
JBX 1 MP*	1	0	2.6	25	2	7.5
JBX 2 MP*	-	1	4	30	3.5	9.7

* Color code



Color code	Colors
A	blue
B	white
G	grey
J	yellow
M	brown
N	black
R	red
V	green
O	orange

Material :

ELASTOLLAN (PUR)

Working temperature :

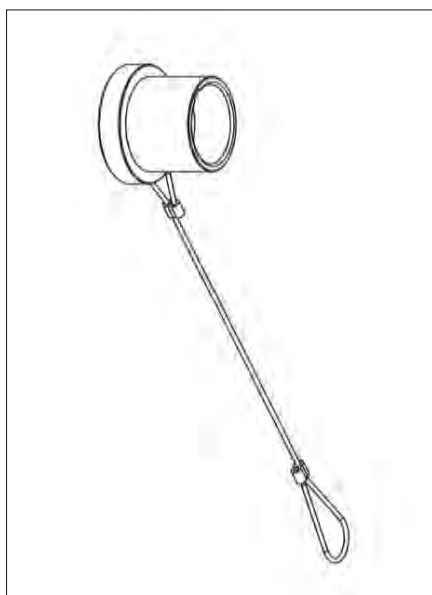
- 40°C ; + 80°C

- 40°F ; + 176°F

Parts that require a protective boot need to be ordered with an M suffix. Protective boots are ordered separately.

With each JKB connector, one protective boot can accept diverse cable diameters thus the end-user can manage various cable diameters without bothering with multiple part numbers.

• Caps : Protect the receptacle to IP68



Part number	Ø
JKX BR0	14
JKX BR1	16

Environmentally Sealed Push Pull Connectors



Technical characteristics

Component	Material	Standard		Surface treatment (µm)		
		ISO	ASTM	Cr	Ni	Au
Outer shell and collet nut	Brass	CuZn40Pb3	C38500/C360	0.1 - 0.6	5 - 8	-
Latching sleeve	Brass	CuZn40Pb3	C38500/C360	-	5 - 8	-
Shielding ring	Brass	CuZn40Pb3	C38500/C360	-	3 - 7	-
Nut	Brass	CuZn40Pb3	C38500/C360	-	5 - 8	-
Tapered washer and half bushes	Brass	CuZn40Pb3	C38500/C360	-	5 - 8	-
Socket contact (1)	Cupro-nickel	CuNi1Pb1P	CDAC19150	-	3 - 5	0.5
Pin contact (1)	Brass	CuZn35Pb2	C38500/C360	-	3 - 5	0.5
Clip	Beryllium copper	CuBe1,9	C17200/C360	-	-	-
(1) Gold thickness as per MIL-G-45204C type 1, class 00.						

Component	Material	Color	Temperature withstanding	
Insert	PEEK + 30%GF	brown	- 50°C + 250°C	- 58°F + 482°F
Collet	PA 6/6 + MoS2	black	- 55°C + 125°C	- 67°F + 257°F
Cable seal	Silicon rubber	red	- 50°C + 250°C	- 58°F + 482°F

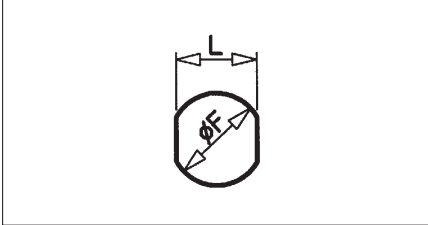
• Mechanical and climatics

Characteristics	Values	Standard	Method
Endurance	> 1000 cycles (except for 0.7 mm crimp contacts for which endurance is limited to 500 cycles)	MIL-STD 1344A	2016.1
Shock	50 g, duration 6 ms ; contact Ø 0.7 mm and 0.9 mm 100 g, duration 6 ms ; contact Ø 1.3 mm - 1.6 mm and 2 mm	MIL-STD 1344A	2004.1
Vibrations	10 to 2000 Hz γ = 15 g, contact Ø 0.7 mm and 0.9 mm γ = 20 g, contact Ø 1.3 mm - 1.6 mm and 2 mm	MIL-STD 1344A	2005.1
Protection index	IP 68 (watertight - 48 hours under 1 m of water)	CEI 529	
Operating temperature	with plastic collets } - 55°C + 125°C - 67°F + 257°F	-	-
	with optional metal collets } - 55°C + 200°C - 67°F + 392°F (only on request, consult SOURIAU)	-	-

Environmentally Sealed Push Pull Connectors



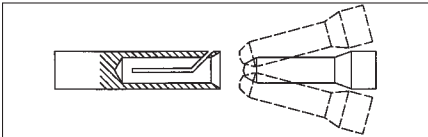
Wiring and assembly instructions



Size	0	1
Ø F	14.1	16.1
L	12.6	14.6

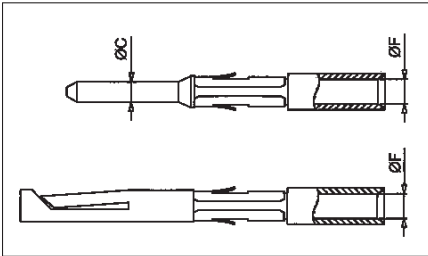
• Removable contacts

Reliable design



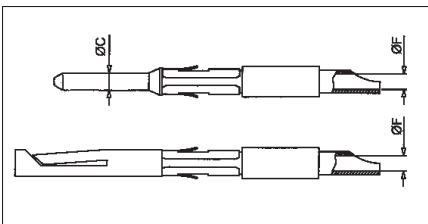
- Conical entry with chamfered edge on the socket contact and smooth slope on the pin contact ensure perfect concentric mating even when handled carelessly.
- The pressure spring of the socket contact maintains a constant force on the pin contact when mated.

Crimp contacts



Contact		Usable cables			Max. current rating (A)	Contact resistance (m?)	Endurance (number of cycles)
Ø C	Ø F	Core section (mm²)		AWG			
		min	Max.				
0.7	0.85	0.129	0.326	22 - 24 -	26	7	5
0.9	1.1	0.205	0.518	20 - 22 -	24	10	3.5
1.3	1.4	0.326	0.823	18 - 20 -	22	15	3

Solder contacts

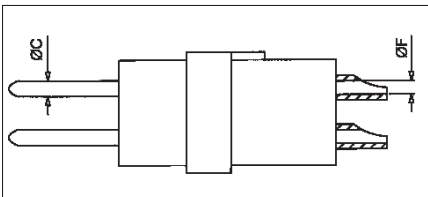


Contact		Usable cables			Max. current rating (A)	Contact resistance (m?)	Endurance (number of cycles)
Ø C	Ø F	Core section (mm²)		AWG			
		min	Max.				
0.9	0.8	–	0.21	24	10	3.5	> 1000
1.3	1.1	–	0.60	20	15	3	> 1000

The conductor bucket on the solder contacts is designed with an angle to form a cup into which the solder can flow easily.

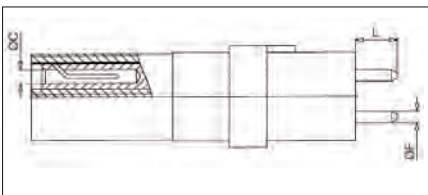
• Fixed contacts

Solder contacts



Contact		Shell size	Usable cables		Max. current rating (A)	Contact resistance (m?)	Endurance (number of cycles)
Ø C	Ø F		Core section (mm ²) Max.	AWG			
0.5	0.5	0 - 1	0.096	28	5	10	> 1000
0.7	0.63	0 - 1	0.15	26	7	5	> 1000

Contacts for PCB



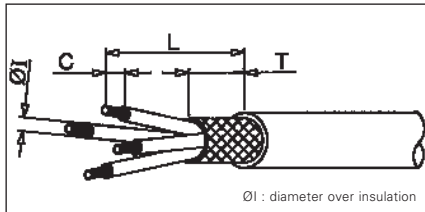
Contact		Shell size	L	Max. current rating (A)	Contact resistance (m?)	Endurance (number of cycles)
Ø C	Ø F					
0.5	0.5	0	5.5	5	10	> 1000
0.7	0.5	0	5	7	5	> 1000
		1	6			
0.9	0.7	0	5	10	3.5	> 1000
		1	6			

Environmentally Sealed Push Pull Connectors



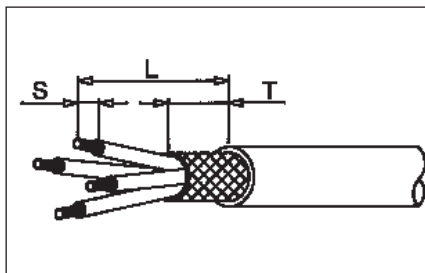
Wiring and assembly instructions

• Cable stripping for connectors with crimp contacts



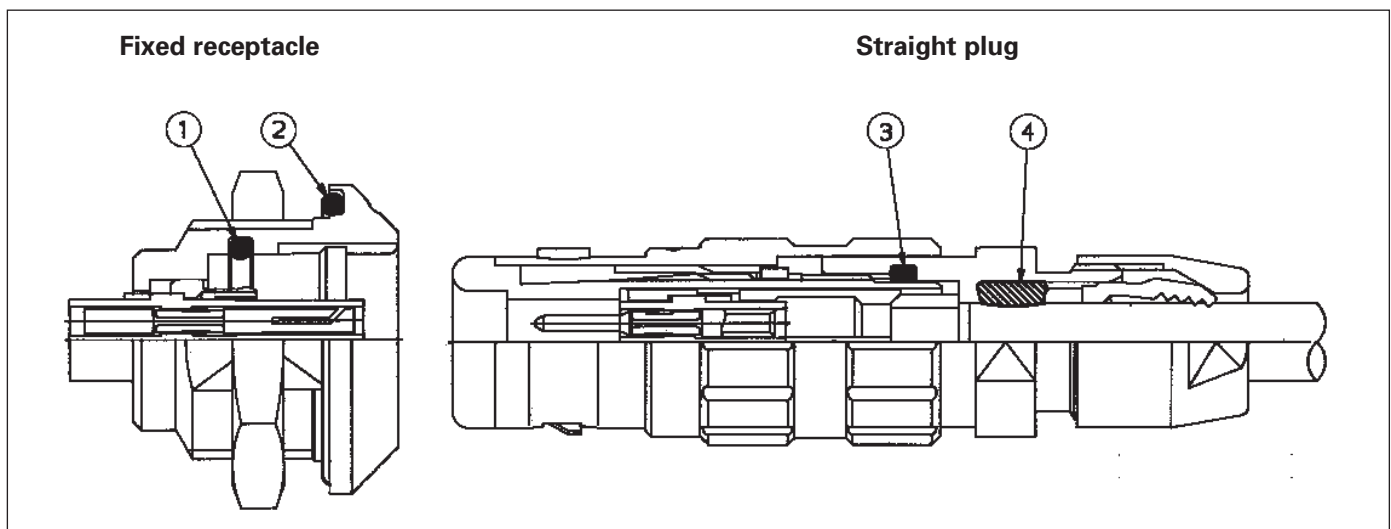
Shell size	Ø Contacts	Ø I	Stripping for FD / PC		
0	0.7	? 1.35	15	4	7
		> 1.35		5.5	
	0.9	? 1.6	15	4	7
		> 1.6		5.5	
1	0.7	? 1.35	17	4	8
		> 1.35		5.5	
	0.9	? 1.6	17	4	8
		> 1.6		5.5	
	1.3	? 2.1	17	4	8
		> 2.1		5.5	

• Cable stripping for connectors with solder contacts



Shell size	Ø Contacts	Stripping for FD / PC		
0				
	0.9	12	3	7
1	0.5	13	2	8
	0.7	14	3	8
	0.9	14	3	8
	1.3	14	3.5	8

• Watertightness design (mated connectors)



- ① : O'ring for sealing between receptacle and plug shell
- ② : O'ring for sealing between receptacle and panel
- ③ : O'ring for sealing between plug body and backshell

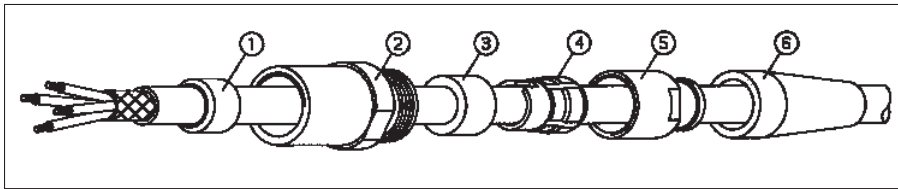
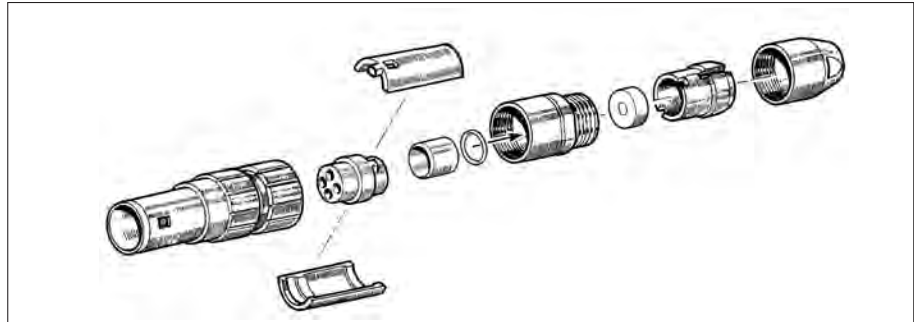
Environmentally Sealed Push Pull Connectors



Wiring and assembly instructions :

• **Cable stripping** : see page 217

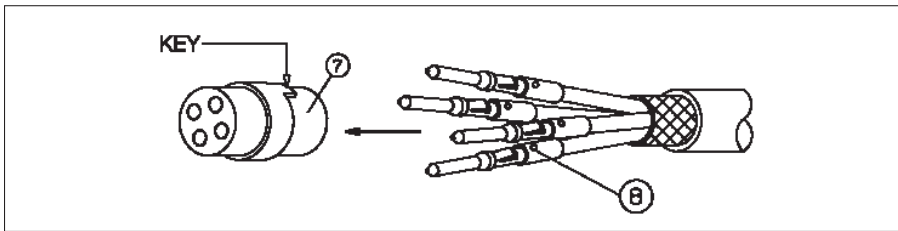
• **Connector preparation**



1 - Select the proper collet † and the cable gland ③ (see page 235).

2 - Slide protective boot †, the backnut ⑤, the collet †, the cable gland ③, the outershell ② and the taper seat ① onto the cable.

• **Contacts wiring : crimp contacts**



1 - Select the proper crimping tool (see page 237) and positionner according to connectors involved.

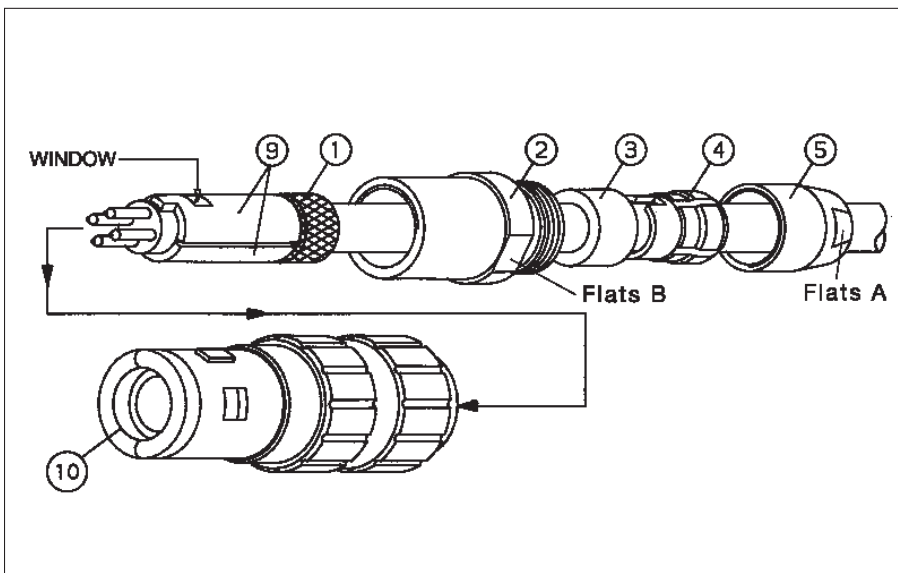
2 - Adjust the tool selector for the corresponding conductor AWG.

3 - Crimp the contacts ⑧ then engage them into the insert cavities † till clip

• **Contacts wiring : solder contacts**

Fixed solder contacts 0.5 mm and 0.7 mm	Removable solder contacts from 0.9 mm to 1.3 mm
1 - Terminate the bucket contacts using solder method	1 - Solder the conductors to the contact buckets them engage them into the insert cavities † till clip tightening

• **Connector assembly**



1 - In case of screened cable, comb out the screen and fold back over the taper seat ①.

2 - Position 2 half bushes ⑨, making sure that the insert key appears through the windows of one bush.

3 - Position the taper seat ① on the half bushes ⑨.

4 - Position all the sub-assembly in connector housing ⑩, making sure to keep the sub-assembly well aligned.

5 - Screw the outershell ② following the torque values on page 235. Install the cable gland ③ and the collet † into the outershell ② then screw the backnut ⑤ till bottoming. Use 2 wrenches well positionned on the flats A and B. Place a wrench to grip flats B, use the other wrench to tighten the backnut at the flats A following the torque values on page 235.

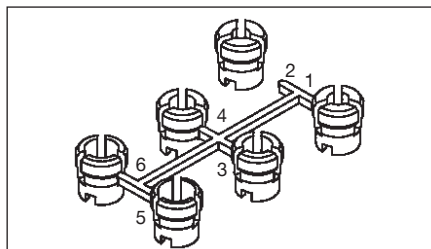
Environmentally Sealed Push Pull Connectors



Wiring and assembly instructions

• Collets selection according to cable diameters

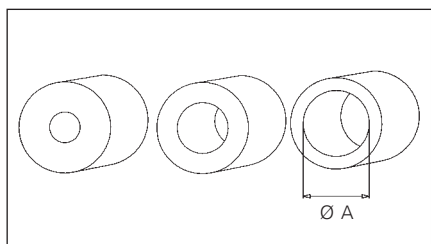
3 or 5 collets per shell size allow a wide range of cable diameters for a single connector. Cable out diameters are for information only, since values will change with each cable construction.



Collet number	Cable diameter			
	Shell size 0	Size 0, option G	Shell size 1	Size 1, option G
1	1.5 - 2.5	-	2 - 2.5	-
2	2.6 - 3.5	-	2.6 - 3.5	-
3	3.6 - 4.5	-	3.6 - 4.5	6.1 - 6.7
4	-	4.6 - 5.5	4.6 - 5.5	6.8 - 7.7
5	-	5.6 - 6	5.6 - 6	7.8 - 8

Collet number 4 in shell size 0 and collet number 6 in shell size 1 are not used.

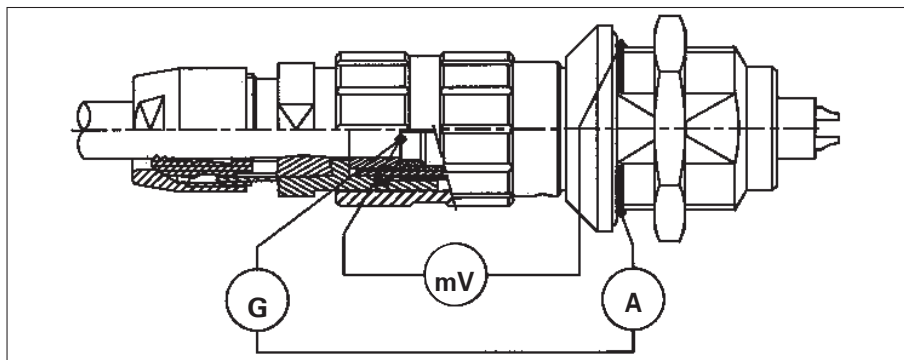
• Glands selection to accommodate cable diameters



Cable gland	Cable diameter			
	Shell size 0	Size 0, option G	Shell size 1	Size 1, option G
2	1.5 - 2.9			
3.5	3 - 4.5			
2.5			2 - 3.4	-
4		4.6 - 4.9	3.5 - 4.9	-
5.5		5 - 6	5 - 6	6.1 - 6.4
7				6.5 - 8

• Shielding

Tested according to MIL-STD 1344 A, method 3007



Shell size	Electrical continuity (m?)
0	4
1	3

• Coupling torques

Advised torque* in Nm				
Size	0	0 (option G)	1	1 (option G)
	1.6	/	1.8	/
	1.5	2	2	2.5
	0.8	0.8	1	1

Torque values are the maximum allowable for each connector size.

Torque values will vary due to the type and size of the cable

Tools (jaw dimensions)	14 x 1		16 x 1	
Size	0	0 (option G)	1	1 (option G)
	17		19	
	8	10	13	
	10	11	12	14

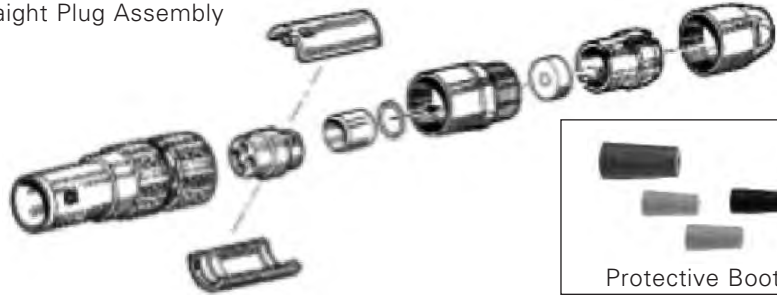
Tool numbers can be found on page 220.

JKX Plug Assembly Instructions



1. Determine what size cable you will be using. Then select the proper collet number for that cable.

Straight Plug Assembly



Protective Boot

• Collets selection according to cable diameter

3 or 5 collets per shell size allow a wide range of cable diameters for a single connector. Cable out diameters are for information only, since values will change with each cable construction.

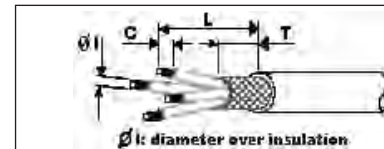


Collet Number	Cable Diameter			
	Shell Size 0	Size 0, Option G	Shell Size 1	Size 1, Option G
1	1.5 - 2.5	—	2 - 2.5	—
2	2.6 - 3.5	—	2.6 - 3.5	—
3	3.6 - 4.5	—	3.6 - 4.5	6.1 - 6.7
4	—	4.6 - 5.5	4.6 - 5.5	6.8 - 7.7
5	—	5.6 - 6	5.6 - 6	7.8 - 8

Collet number 4 in shell size 0 and collet number 6 in shell size 1 are not used

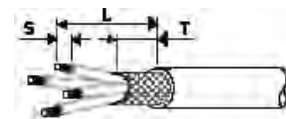
2. Strip the cable and each wire to the required strip length.

• Cable stripping for connectors with crimp contacts



Shell Size	Ø Contacts	Ø I	Stripping for FD/PC		
			L	C	T
0	0.7	□1.35	15	4	7
		>1.35		5.5	
	0.9	□1.6	15	4	7
		>1.6		5.5	
1	0.7	□1.35	17	4	8
		>1.35		5.5	
	0.9	□1.6	17	4	8
		>1.6		5.5	
	1.3	□2.1	17	4	8
		>2.1		5.5	

• Cable stripping for connectors with solder contacts

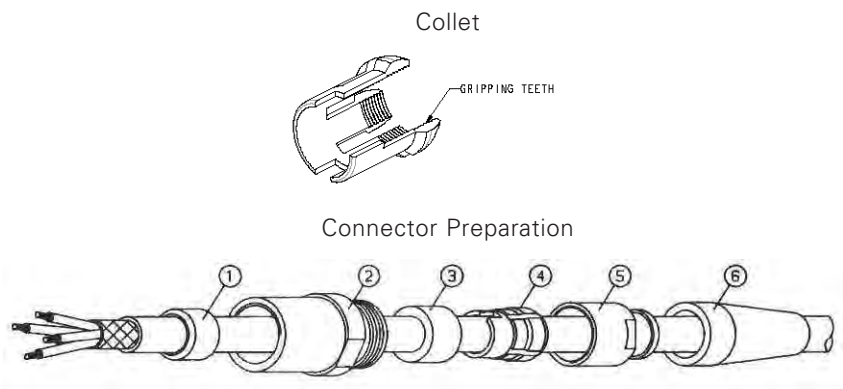


	Ø Contacts	Stripping for FD/PC		
		L	S	T
①		11	2	7
		12	3	7
		12	3	7
①		13	2	8
		14	3	8
		14	3	8
		14	3.5	8

JKX Plug Assembly Instructions



3. When assembling a plug with a protective boot, prep the cable by taking the protective boot (#6) and sliding it with the small inside diameter first onto the cable. Then slide the small diameter end of the back nut (#5) onto the cable. Next, take the collet (#4) and slide the end with the gripping teeth (See below) first onto the cable. Then take a cable gland (#3) and slide it onto the cable. Once the cable gland is in place take an outer shell (#2) and slide it onto the cable with the outside threads going onto the cable first. Then take the flat end of a taper seat (#1) and slide that onto the cable so that the chamfer side is pointing outward.



4. Attach removable contacts to wires:

- a. If using crimped contacts, crimp the contacts onto the ends of the exposed wires using the proper crimping tool set on the correct AWG wire size After the contact has been crimped to the wire, check each contact to insure that the contact is securely crimped to the wire.

Crimping Tool

Specifications MIL-C-22520 / 7.01			
	Contacts 0.7 mm - 0.9 mm and 1.3 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/7-01	Daniels: MH860 Buchanan: 616 336
Specifications MIL-C-22520 / 1.01			
	Contacts 1.6 mm and 2 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/1-01	Daniels: AF8 Buchanan: 615 708

JKX Plug Assembly Instructions



Locator Pin and Socket .07-.09 mm and 1.3 mm contacts



	ø Contacts	AWG	Male Contact			Female Contact		
			Souriau P/N	Daniels P/N	Astro P/N	Souriau P/N	Daniels P/N	Astro P/N
0	0.7	22 - 24 - 26	JBX 0 OUT LP07	86 - 223	/	JBX 0 OUT LP07	86 - 224	/
	0.9	20 - 22 - 24	JBX 0 OUT LP09	86 - 225	/	JBX 0 OUT LP09	86 - 226	/
1	0.7	22 - 24 - 26	JBX 1 OUT LP07	86 - 196	642 - 001	JBX 1 OUT LP07	86 - 197	642 - 004
	0.9	20 - 22 - 24	JBX 1 OUT LP09	86 - 198	642 - 002	JBX 1 OUT LP09	86 - 199	642 - 005
	1.3	18 - 20 - 22	JBX 1 OUT LP13	86 - 200	642 - 003	JBX 1 OUT LP13	86 - 201	642 - 006
2	0.7	22 - 24 - 26	JBX 2 OUT LP07	86 - 202	642 - 007	JBX 2 OUT LP07	86 - 203	642 - 010
	0.9	20 - 22 - 24	JBX 2 OUT LP09	86 - 204	642 - 008	JBX 2 OUT LP09	86 - 205	642 - 011
	1.3	18 - 20 - 22	JBX 2 OUT LP13	86 - 206	642 - 009	JBX 2 OUT LP13	86 - 207	642 - 012
3	0.7	22 - 24 - 26	JBX 3 OUT LP07	86 - 217	642 - 014	JBX 3 OUT LP07	86 - 214	642 - 017
	0.9	20 - 22 - 24	JBX 3 OUT LP09	86 - 218	642 - 015	JBX 3 OUT LP09	86 - 215	642 - 018
	1.3	18 - 20 - 22	JBX 3 OUT LP13	86 - 219	642 - 016	JBX 3 OUT LP13	86 - 216	642 - 019

Turret with locator for pin and socket 1.6 mm and 2 mm contacts



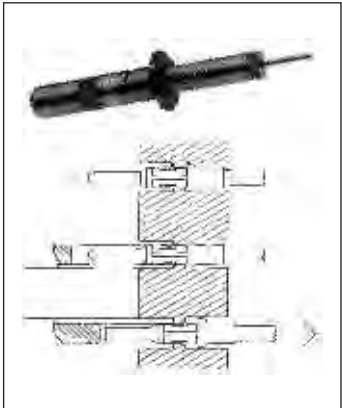
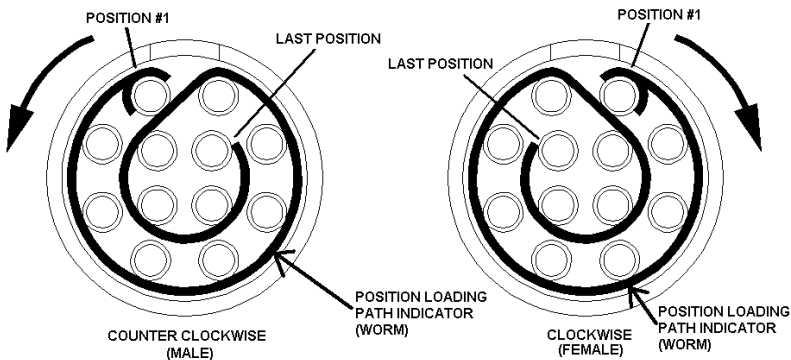
Shell Size	ø Contacts	AWG	Male and Female Contacts		
			Souriau P/N	Daniels P/N	Astro P/N
2	1.6	14 - 16 - 18	JBX 2 OUT LT16	TH 564	650 - 030
	2	12 - 14 - 16	JBX 2 OUT LT20	TH 565	650 - 031
3	1.6	14 - 16 - 18	JBX 3 OUT LT16	TH 566	650 - 038
	2	12 - 14 - 16	JBX 3 OUT LT20	TH 567	650 - 035

b. If using soldered contacts, prep each wire with flux and then tin dip each exposed wire end. Next pre-load a piece of heat shrink onto the wire (Individual heat shrink tubes are optional). Solder each wire to the solder cup end of the contact. To avoid shorts, make sure that no solder comes in contact with any other contact or wire on the connector. After the contact has been soldered to the wire, check each contact to insure that the contact is securely soldered to the wire. Slide the pre-loaded heat shrink over the solder joint and shrink into place. Do not over-heat the solder joint area as it can cause the solder to re-flow or it could burn the wire insulation.

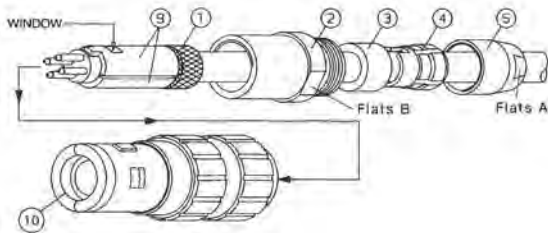
5. If inserting removable contacts:

a. Starting with the interface end of the contact, carefully insert each contact into the backside of the insulator that has the position loading path indicator (worm) on it. Start with the end of the position loading path indicator (worm) that has the half circle on it (Position #1). Then follow the position loading path indicator (worm) around the insulator. You will go counter clockwise if using a male contact and clockwise if using a female contact (see diagram below for the position loading path indicator (worm) layout). If the connector has center contacts, it is sometimes easier to start at the end of the position loading path indicator (worm) (last position) and work backwards. This is up to the assembler and the process they are using to insert the contacts. Make sure not to bend the contact when inserting it into the insulator. It is extremely important that the contact is completely seated in to the insulator. For the connector to function properly, the contact should click/snap into place when seated. To confirm the seating of the contact, check each contact for proper seating.

JKX Plug Assembly Instructions



Shell Size	ø Contacts	Souriau Part Number	Astro Part Number
0	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
1	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
2	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115
3	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115



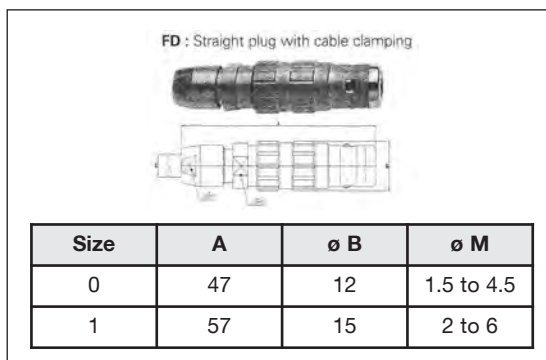
JKX Plug Assembly Instructions



6. Removal of Contacts:

- Using the proper extraction tool insert the tool over the front of the contact and push contact out. Failure to use the proper extraction tool can result in damage to the contact.

7. Take the keyed half bushing (#9)



and place it over the insulator so that the window is lined up with the key on the insulator and the key on the half bushing is pointing to the interface end of the insulator (interface end of connector). Then take the half bushing without the

window (#9) and place on the opposite side of the insulator so that both half bushings are aligned with each other.

Connector Assembly

8. Take the contact assembly that is mounted on the cable and using the red dot as a reference, align the slot on the

Advised torque* in Nm					Tools (jaw dimensions)	14 x 1		16 x 1	
Size	0	0 (Option G)	1	1 (Option G)	Size	0	0 (Option G)	1	1 (Option G)
	1.6	/	1.8	/		17		19	
 ¹	1.5	2	2	2.5	 ¹	8	10		13
 ²	0.8	0.8	1	1	 ²	10	11	12	14

inside of the connector (#10) with the keys on the end of the half bushings (you may need to spin the assembly slightly). Insure that the keys are seated properly by turning

the insulator and contact assembly. If the assembly does not turn, then the keys are correctly aligned. If the assembly does turn, then you must withdraw the assembly & realign the keys.

JKX Plug Assembly Instructions



9. Then push the preloaded taper seat (if a shielded cable is being used, comb out the shielding and fold back over the

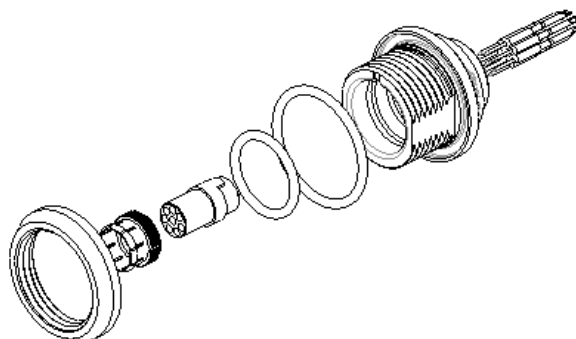
Problem:	Cause:	Correction:
Contact will not seat in connector, contact backing out.	Wrong wire or insulation size, wrong strip length, poor crimping, broken clips, damaged insulator, removed contact without proper removal tool, bad crimp.	Use correct wire, adjust strip length, strip and re-crimp with new contact, replace insulator, using wrong crimp tool, replace contact.
Bent solder contact	Bent in handling, bent in soldering operation,	Replace with new insert and/or contacts.
	Pins and insulator were inserted into electrical test while unprotected by shell	
Connector will not release from mating part or operate correctly	Not using flats on latching sleeve and back nut to torque connector, improper assembly of the connector, over mold material inside connector.	Release back nut and re-torque, disassemble and reassemble, replace connector.
Over tightened the back nut.	Connector will not release from mating part or operate correctly, damage connector.	Loosen back nut and retighten.
Collet will not grip cable.	Loose cable in connector.	Check correct collet size is being used.
Connector will not assemble.	Incorrect alignment of key in connector, half bushings, connector housing, insulator, collet, braid in key slots in collet.	Disassemble connector and reassemble connector-aligning keys, relocate braid in collet.
Contact stubbing after mating.	Bent contact and damaged contact, connector-assembled incorrectly.	Re-align contact, replace insert with contacts.
Electrical failure.	Improper crimping, wrong wire strip length, wire loading incorrect location, poor solder joint.	Remove contact with correct removal tool, re-install new contact, and verify strip length.
Leakage of Seals	Over torque of nut	Disassemble connector and inspect seals

taperseat) and outer shell into the connector housing and thread the outer shell into the housing until it is hand tight and you can feel the o-ring being compressed.

10. Once the outer shell is installed onto the connector housing, apply thread lock to thread area. Then slide the cable glade (#3) collet (#4) and back nut (#5) up until you can manually start the back nut threads onto the threaded end of the connector housing. Tighten the back nut up as far as you can by hand, then take the appropriate wrenches and place the wrenches onto the "A" & "B" flats located on the connector housing. Do not over torque back nut as it can cause connector failure. (See torque requirements listed below)

Coupling Torques

JKX Receptacle Assembly Instructions



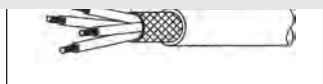
1. Select the proper JKX receptacle and contact size for the specific cable application by using the contact layout chart as depicted in the Push Pull catalog.
2. Strip the cable/wire to the required strip length.

Wiring and Assembly Instructions

• Cable stripping for connectors with crimp contacts

	ø Contacts	ø I	Stripping for FD/PC		
			L	C	T
	0.7	□1.35	15	4	7
		>1.35		5.5	
	0.9	□1.6	15	4	7
		>1.6		5.5	
	0.7	□1.35	17	4	8
		>1.35		5.5	
	0.9	□1.6	17	4	8
		>1.6		5.5	
	1.3	□2.1	17	4	8
		>2.1		5.5	

• Cable stripping for connectors with solder contacts



	ø Contacts	Stripping for FD/PC		
		L	S	T
0	0.5	11	2	7
	0.7	12	3	7
	0.9	12	3	7
1	0.5	13	2	8
	0.7	14	3	8
	0.9	14	3	8
	1.3	14	3.5	8

3. Depending on application and shell type, the nut and washer may be removed before attaching the wires to the contacts.
4. Attach crimped contacts to wires:
 - a. If using crimped contacts, crimp the contacts onto the ends of the exposed wires using the proper crimping tool and locator set on the correct AWG wire size. After the contact has been crimped to the wire, check each contact to insure that the contact is securely crimped.

JKX Receptacle Assembly Instructions



Specifications MIL-C-22520 / 7.01			
	Contacts 0.7 mm - 0.9 mm and 1.3 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/7-01	Daniels: MH860 Buchanan: 616 336
Specifications MIL-C-22520 / 1.01			
	Contacts 1.6 mm and 2 mm	MIL P/N - Souriau P/N	Supplier P/N
		MIL-22520/1-01	Daniels: AF8 Buchanan: 615 708

Crimping Tool

Locator Pin and Socket .07-.09 mm and 1.3 mm contacts



	ø Contacts	AWG	Male Contact			Female Contact		
			Souriau P/N	Daniels P/N	Astro P/N	Souriau P/N	Daniels P/N	Astro P/N
0	0.7	22 - 24 - 26	JBX 0 OUT LP07	86 - 223	/	JBX 0 OUT LP07	86 - 224	/
	0.9	20 - 22 - 24	JBX 0 OUT LP09	86 - 225	/	JBX 0 OUT LP09	86 - 226	/
1	0.7	22 - 24 - 26	JBX 1 OUT LP07	86 - 196	642 - 001	JBX 1 OUT LP07	86 - 197	642 - 004
	0.9	20 - 22 - 24	JBX 1 OUT LP09	86 - 198	642 - 002	JBX 1 OUT LP09	86 - 199	642 - 005
	1.3	18 - 20 - 22	JBX 1 OUT LP13	86 - 200	642 - 003	JBX 1 OUT LP13	86 - 201	642 - 006
2	0.7	22 - 24 - 26	JBX 2 OUT LP07	86 - 202	642 - 007	JBX 2 OUT LP07	86 - 203	642 - 010
	0.9	20 - 22 - 24	JBX 2 OUT LP09	86 - 204	642 - 008	JBX 2 OUT LP09	86 - 205	642 - 011
	1.3	18 - 20 - 22	JBX 2 OUT LP13	86 - 206	642 - 009	JBX 2 OUT LP13	86 - 207	642 - 012
3	0.7	22 - 24 - 26	JBX 3 OUT LP07	86 - 217	642 - 014	JBX 3 OUT LP07	86 - 214	642 - 017
	0.9	20 - 22 - 24	JBX 3 OUT LP09	86 - 218	642 - 015	JBX 3 OUT LP09	86 - 215	642 - 018
	1.3	18 - 20 - 22	JBX 3 OUT LP13	86 - 219	642 - 016	JBX 3 OUT LP13	86 - 216	642 - 019

Turret with locator for pin and socket 1.6 mm and 2 mm contacts



	ø Contacts	AWG	Male and Female Contacts		
			Souriau P/N	Daniels P/N	Astro P/N
2	1.6	14 - 16 - 18	JBX 2 OUT LT16	TH 564	650 - 030
	2	12 - 14 - 16	JBX 2 OUT LT20	TH 565	650 - 031
3	1.6	14 - 16 - 18	JBX 3 OUT LT16	TH 566	650 - 038
	2	12 - 14 - 16	JBX 3 OUT LT20	TH 567	650 - 035

- b. If using clipped solder contacts, prep each wire with flux and then tin dip each exposed wire end. Next pre-load a piece of heat shrink onto the wire (Individual heat shrink tubes are optional). Solder each wire to the solder cup end of the contact. To avoid shorts, make sure that no solder comes in contact with any other contact or wire on the connector. After the contact has been soldered to the wire, check each contact to insure that the contact is securely soldered to the wire. Slide the pre-loaded heat shrink over the solder joint and shrink into place. Do not over-heat

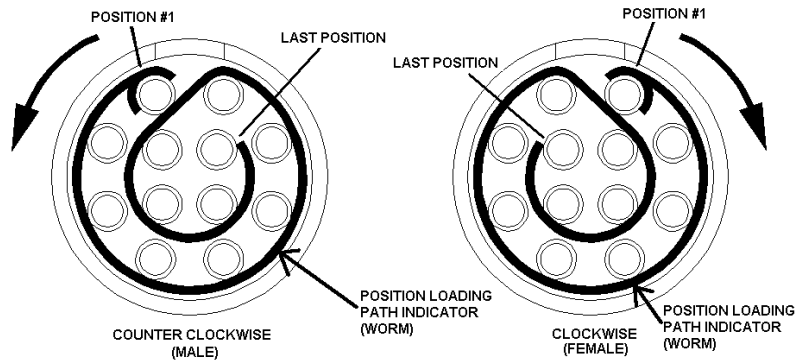
JKX Receptacle Assembly Instructions



the solder joint area as it can cause the solder to re-flow or it could burn the wire insulation.

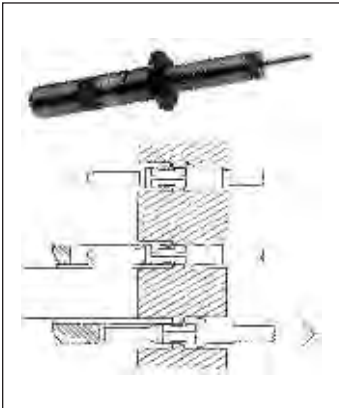
5. If inserting terminated contacts:

- Starting with the interface end of the contact, insert each contact into the backside of the insulator that has the position loading path indicator (worm) on it. Start with the end of the position loading path indicator (worm) that has the half circle on it (Position #1). Then follow the position loading path indicator (worm) around the insulator. You will go counter clockwise if using a male contact and clockwise if using a female contact (see diagram below for the position loading path indicator (worm) layout). If the connector has center contacts, it is sometimes easier to start at the end of the position loading path indicator (worm) (last position) and work backwards. This is up to the assembler and the process used to insert the contacts. Make sure not to bend the contact when inserting it into the insulator. It is extremely important that the contact is seated in the insulator for the connector to function properly. The contact should click/snap into place when seated. Check each contact for proper seating.



6. Removal of contacts:

- Using the proper extraction tool (See FIGURE 6.A), insert the tool over the front of the contact and push contact out. Failure to use the proper extraction tool can result in damage to the contact.



Shell Size	ø Contacts	Souriau Part Number	Astro Part Number
0	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
1	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
2	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115
3	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115

JKX Receptacle Assembly Instructions



Problem:	Cause:	Correction:
Contact will not seat in connector, contact backing out.	Wrong wire or insulation size, wrong strip length, poor crimping, broken clips, damaged insulator, removed contact without proper removal tool, bad crimp.	Use correct wire, adjust strip length, strip and re-crimp with new contact, replace insulator, using correct crimp tool, replace contact.
Bent solder contact	Bent in handling, bent in soldering operation, connector assembled incorrectly.	Replace insert with contacts.
Contact stubbing after mating.	Bent contact and damaged contact, connector-assembled incorrectly.	Re-align contact, replace insert with contacts.
Electrical failure.	Improper crimping, wrong wire strip length, wire loading incorrect location, poor solder joint.	Remove contact with correct removal tool, re-install new contact, and verify strip length.

Trouble shooting

Push Pull Connectors sealed version size 2



Key features

- Sealed IP 67 (mated connectors)
- Mechanically keyed : ensure correct polarisation and alignment.
- Contact arrangements : from 2 to 19 contacts.
- Wire gauge range from 26 AWG to 12 AWG.
- High contact density in a small space.
- Contact termination in either crimp, solder, or PCB contacts.



User advantages

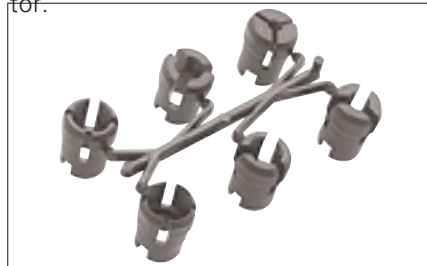
Wet environment

Splash proof IP 67



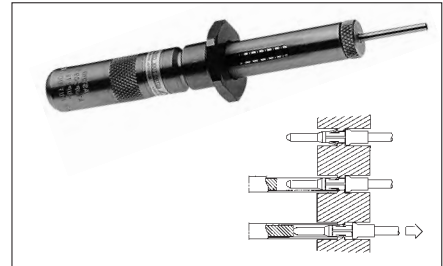
6-collet cluster

Allows a wide range of cable diameter applications for a single connector.



Removable contacts

Crimp versions allow easier wiring and maintenance.



Part number system

Basic series	JBX	FE	2	G	12	M	C	S	D	S	R
Shell type	FE-EC-PE-SE										
Shell size	2										
Keying	G										
Contact layouts	02 ----- 19										
Contact type	M : pin F : socket (in relation with keying)										
Contact termination tails	C : crimp ; S : solder ; P* : straight PCB tails ; Q* : 90° PCB										
Material & surface plating	S : Outer shell in brass alloy with chrome over nickel										
	N : Outer shell in brass alloy with black plating (consult Souriau US)										
	D : Obligatory suffix										
	S : Obligatory suffix										
Option	R : Red dot (possible for FE, PE, HH, HHE only)										

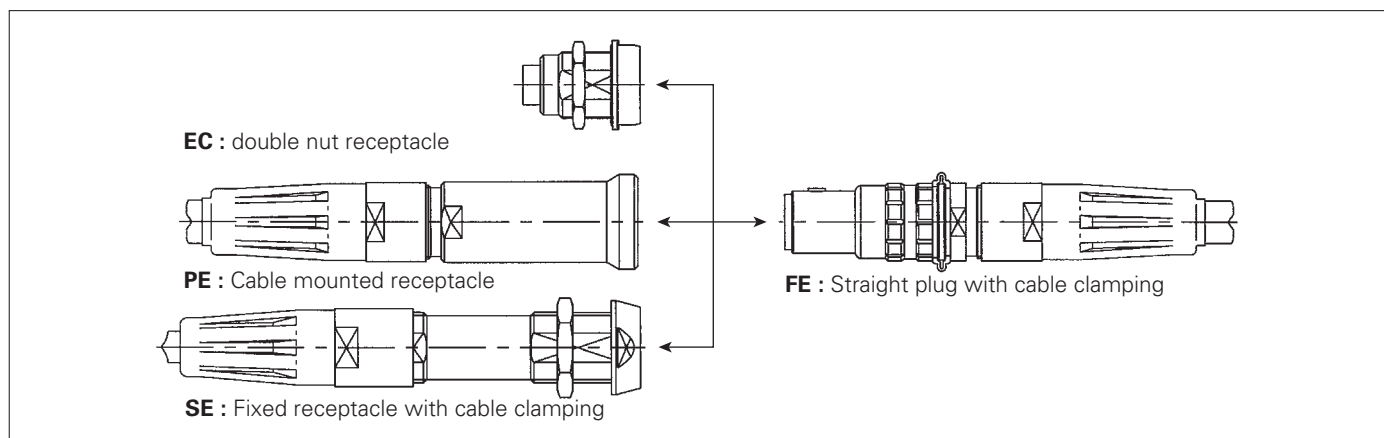
* For receptacles with female contacts only.

Push Pull Connectors sealed version size 2

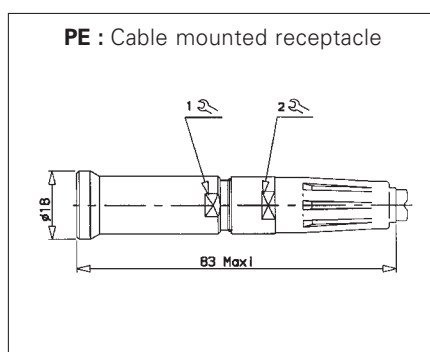
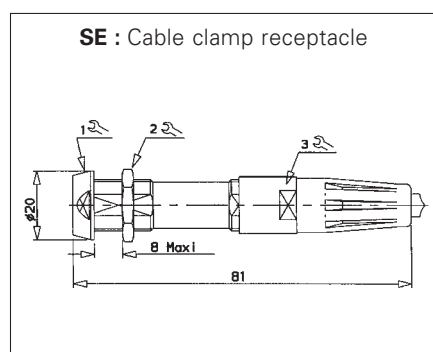
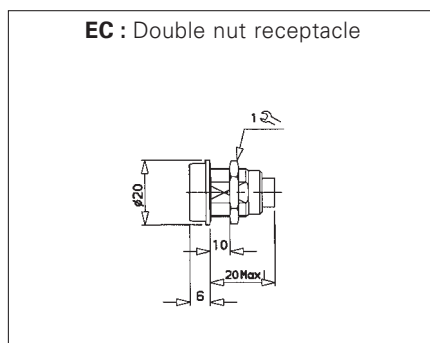
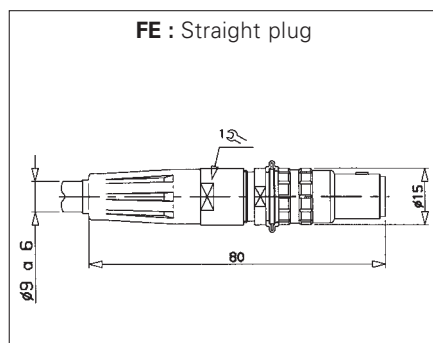


Shell type

• Available sealed JBX, Size 2



• Dimensions



Note 1 : For the plug, the cable clamp receptacle and the free receptacle, a black protective boot is included in the P/N.

Push Pull Connectors sealed version size 2



Keying

Only G keying is available in standard version (0° keying angle, plugs with pin contacts, receptacles with female contacts) for the different types of shells.

Contact layouts

• Multi contact inserts

Shell size	Male insulator viewed from	Contact layout	Available Contact types				Ø Contact	AWG		Max. current rating	Testing voltage	Working voltage (Vdc /
			S solder	C crimp	P* straight	Q* 90°		Solder wire	Crimp wire			
2		02	S	C			2	16	12	30	2100	1000/700
		03	S	C			1.6	18	14	17	1700	830/560
		04	S	C			1.3	20	18	15	2400	1000/800
		05	S	C			1.3	20	18	14	1900	900/630
		06	S	C			1.3	20	18	12	1900	900/630
		07	S	C			1.3	20	18	11	1500	730/500
		08	S	C	P	Q	0.9	24	20	10	1700	830/560
		10	S	C	P	Q	0.9	24	20	8	1700	830/560
		12	S	C	P	Q	0.7	26	22	7	1700	830/560
		16	S	C	P	Q	0.7	26	22	6	1500	730/500
		18	S	C	P		0.7	26	22	5.5	1400	660/460
		19	S	C	P		0.7	26	22	5	1400	660/460

 Inserts with fixed non removable contacts

* For EC receptacles with female contacts.

Push Pull Connectors sealed version size 2



Technical characteristics

The technical characteristics are the same as for the standard JBX series except the following ones:

• Material - Specific additional elements

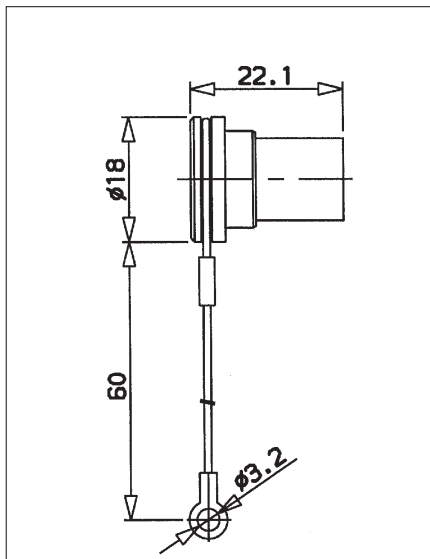
Component	Material	Color	Working temperature	
Seals	Nitrile & Silicon rubber	O'ring = black plug seal = black	- 40°C ; + 250°C	- 58°F ; + 482°F
Protective boot	Elastollan (PUR)	Black	- 40°C ; + 80°C	- 40°F ; + 176°F

• Mechanical and climatics - Specific additional elements

Characteristics	Values	
Protection index	IP 67 (Splashproof - 1/2 hour under 1 m of water)	
Operating temperature	- 40°C ; + 80°C	- 40°F ; + 176°F

Options

• Cap: Part-number = JBX BR2 022 : an efficient protection against water



Wiring and assembly instructions

• Panel cutout

The panel cutout is the same as for the JBX size 2 shells except for the HC (or HCE) type for which it corresponds to the JBX size 3 shells.

• Range of cable diameter: from 6 to 9 mm

• Operation to add during the plug assembly:

Deposit of watertight thread glue between the backnut (② on the drawing p215) and the connection shell († on the drawing p215).

Sealed Breakaway Connector



Souriau JDX Breakaway Connectors



Key Features

Breakaway design eliminates the need for a manually operated latching system

Mates and un-mates quickly and prevents injury to the user or equipment if the cable becomes entangled.

Sealed to IP68.
Two shell sizes, 2 to 19 positions.
Contact termination solder & PCB.
Custom cable assemblies.

Part Numbering System

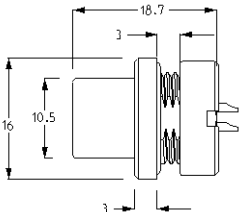
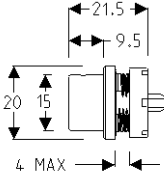
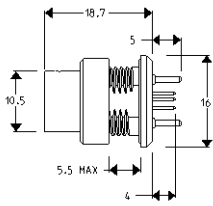
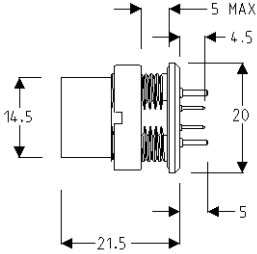
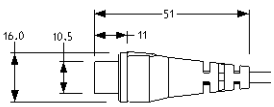
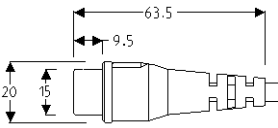
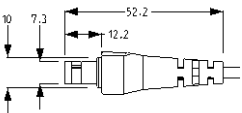
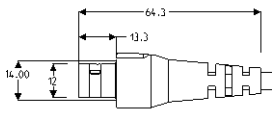
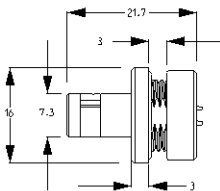
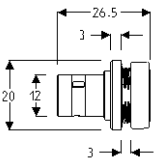
Basic Series	JDX	FD	2	T	05	M	S	N	R
Shell Type	FD-EP-EZ-PC								
Shell Size	0 - 2								
Keying	T & U								
Contact Layout	Size 0; 2, 3, 4, 5, 6, 7, 8 Size 2; 2, 3, 4, 5, 6, 7, 8, 10, 12, 16, 18, 19								
Contact Type	M : pin F : socket								
Contact Termination	S: solder ; P: PCB								
Surface Plating	N : Outer shell, brass alloy with black chrome over nickel S : Outer shell, brass alloy with chrome over nickel								
Orientation	Red dot								

FD & PC are only sold as part of a cable assembly.
Contact Souriau for information on custom cable assemblies.

Sealed Breakaway Connector



JDX Shell Styles

Size 0	Size 2
EP: Fixed receptacle front panel mounted, fixed flange 	EP: Fixed receptacle front panel mounted, fixed flange 
EZ: Straight PCB mounted receptacle 	EZ: Straight PCB mounted receptacle 
PC: Straight cable mounted receptacle 	PC: Straight cable mounted receptacle 
FD: Straight cable mounted plug 	FD: Straight cable mounted plug 
FA: Front panel mounted plug 	FA: Front panel mounted plug 

Sealed Breakaway Connector



Contact Layouts

Shell Size	Male Insulator Viewed From	Contact Layout	Solder	PCB	Contact Diameter mm	Solder Wire MAX	MAX Current Rating	Test Voltage (Vrms)	Working Voltage (Vrms)
0		02	S	P	0.9	24	10	1400	660/460
		03	S	P	0.9	24	8	1300	600/420
		04	S	P	0.7	26	7	1400	660/460
		05	S	P	0.7	26	6.5	800	400/260
		06	S	P	0.5	30	2.5	680	320/220
		07	S	P	0.5	30	2.5	680	320/220
		08	S	P	0.5	30	2.5	680	320/220
2		02	S		2	16	30	2100	1000/700
		03	S		1.6	18	17	1700	830/560
		04	S	P	1.3	20	15	2400	1000/800
		05	S	P	1.3	20	14	1900	900/630
		06	S	P	1.3	20	12	1900	900/630
		07	S	P	1.3	20	11	1500	730/500
		08	S	P	0.9	24	10	1700	830/560
		10	S	P	0.9	24	8	1700	830/560
		12	S	P	0.7	26	7	1700	830/561
		16	S	P	0.7	26	6	1500	730/500
		18	S	P	0.7	26	5.5	1400	660/460
		19	S	P	0.7	26	5	1400	660/460

Non- removable contacts

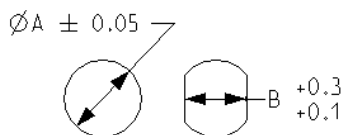
• Voltage Test Procedure

- **The testing voltage** corresponds to the maximum voltage the connector is able to withstand in normal climatic conditions. The value is about 75% of the electrical breakdown voltage. The testing voltage level can be reached several times in connectors life, but never applied for a continuous duration.
- **The working voltage** corresponds to the maximum voltage the connector is able to withstand continuously during its life time, in real environmental conditions, even with high temperature. The value is around 1/3 of the testing voltage.

Keying Options	
Size 0	Size 2
T & U	T & U

Key	T	U
Plug & Receptacles		

Sealed Breakaway Connector



Size	0	2
A	12.1	16.1
B	10.6	14.6

Technical Characteristics

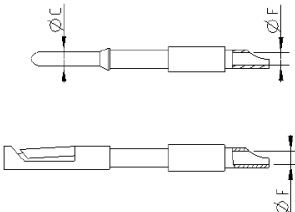
Component	Material	Standard	Surface Treatment (um)		
			Cr	Ni	Au
Shell	Brass	C38500/C3600	0.1 - 0.6	5 - 8	
Shell	Aluminum, Contact Souriau for Availability & Part Number	AISI 7075-T6	0.1 - 0.6	5 - 8	
Nut	Brass	C38500/C3600	0.1 - 0.6	5 - 8	
Nut	Aluminum, Contact Souriau for Availability & Part Number	AISI 7075-T6	0.1 - 0.6	5 - 8	
Pin Contact	Brass	C38500/C3600		3 - 5	0.5
Socket Contact	Copper Nickel	CAD C 19150		3 - 5	0.5
Clip	Beryllium Copper	17200			
Shielding Ring	Copper Alloy (Proprietary)	—		3 - 7	

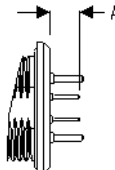
Mechanical, Climatic & Electrical

Characteristics	Values	Standard	Method
Endurance	>2,500 cycles	Mil-Std-1344A	2016.1
Insulation resistance	>500M ohm	ANSI-EIA-364-D	21
EMI Shielding	(60dB min. up to 100MHz) (35dB min. up to 1GHz)	ANSI-EIA-364-D	66
Thermal Shock	- 40 C to + 125 c 5 cycles	ANSI-EIA-364-D	32
Mechanical Shock	300 g, 3ms	ANSI-EIA-364-D	27
Vibrations	10 to 2000 HZ y = 15 g	Mil-Std-1344A	2005.1
Random Vibrations		ANSI-EIA-364-D	28, test concision 4
Altitude Immersion	3 cycles (3*30min),		3
Humidity	240 hours @ 40 C 90%RH	ANSI-EIA-364-D	31
Resistance to Fluids	Kerosene JP8 (NATO code F34) Gasoline ASTM D 4814* Mineral oil	ANSI-EIA-364-D	10
Protection index	IP68 mated & un-mated	IEC 529	14.2.8
Operating temperature	- 40 C to + 125 c 5 cycles		

Sealed Breakaway Connector



Solder Contacts2								
	Contact		Usable Cables Core Section (mm) AWG			Max Current Rating (A)	Contact Resistance (mΩ)	Endurance # of Cycles
	C	F						
	0.5	0.5	min	max	28	5	10	>1,000
	0.7	0.63	—	0.3	26	7	5	>1,000
	0.9	0.8	—	0.21	24	10	3.5	>1,000
	1.3	1.1	—	0.6	20	15	3	>1,000
	1.6	1.5	—	0.93	18	17	2.5	>1,000
	2	1.9	—	1.34	16	30	2.5	>1,000

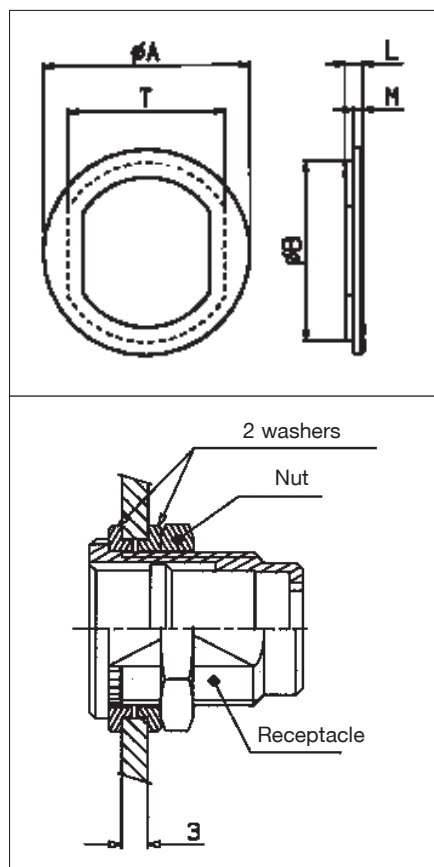
PCB Contacts		
	0.5 mm female PCB tail length size 0	Dimension "L" 4 mm
	0.7 mm female PCB tail length size 0	Dimension "L" 4 mm
	0.9 mm female PCB tail length size 0	Dimension "L" 4 mm
	0.7 mm female PCB tail length size 2	Dimension "L" 6.0 mm
	0.9 mm female PCB tail length size 2	Dimension "L" 6.0mm
	1.3 mm female PCB tail length size 2	Dimension "L" 6.0 mm

Push-Pull connectors



Accessories JBX

• Insulating washer



Part number	Shell size	Ø A	B	L	M	N	T	E
JBX 00 RI N	00	10	8.8	1.8	1	0.8	8	4.4
JBX 0 RI*	0	12	10.8	1.8	1	0.8	9.9	6.4
JBX 1 RI*	1	16	13.8	1.8	1	0.8	12.2	8.4
JBX 2 RI*	2	21	17.8	2.2	1.2	0.8	16.2	8.2
JBX 3 RI*	3	25	21.8	2.2	1.2	0.8	20.2	10.1

* Washer colors as protective boots.
In size 00, available only in black.

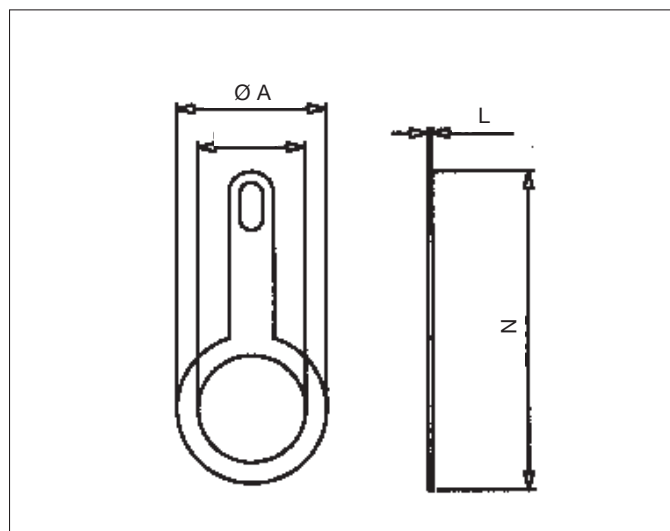
Material : PA 6/6

Working temperature : - 40°C ; + 125°C

Using 2 washers for receptacle / panel insulating

Be careful : usable for the JAX and JBX series but not for sealed connectors (JKX and sealed JBX size 2).

• Grounding washer



Part number	Shell size	Dimensions			
		Ø A	Ø B	L	N
JAX RA 00 251	00	10	7.2	0.3	21.5
JAX RA 0 251	0	13	9.1	0.3	24
JAX RA 1 251	1	16	12.2	0.3	24
JAX RA 2 251	2	21	15.1	0.8	35
JAX RA 3 251	3	25	18.1	0.8	37

Material : - Brass
- Nickel plated (3 µm)

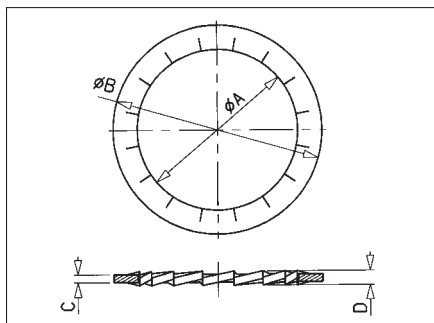
Be careful : usable for the JBX series but not for sealed connectors (JKX and sealed JBX size 2).



Push-Pull connectors

Accessories JBX

• Locking washer



Part number	Shell size	Dimensions			
		ϕA	ϕB	C	D
JAX RE 00	00	7.3	10	0.5	1
JAX RE 0	0	9.2	12.5	0.6	1
JAX RE 1	1	12.2	16	0.6	1

Piece parts JBX-JKX

• Crimp contacts (if ordered separately)

Shell size	ϕ contact	Part Number	
		Crimp pin	Crimp socket
0	0.9	JBX 0 CT MC 09	JBX 0 CT FC 09
	0.7	JBX 0 CT MC 07	JBX 0 CT FC 07
1	1.3	JBX 1 CT MC 13	JBX 1 CT FC 13
	0.9	JBX 1 CT MC 09	JBX 1 CT FC 09
	0.7	JBX 1 CT MC 07	JBX 1 CT FC 07
2	2	JBX 2 CT MC 20	JBX 2 CT FC 20
	1.6	JBX 2 CT MC 16	JBX 2 CT FC 16
	1.3	JBX 2 CT MC 13	JBX 2 CT FC 13
	0.9	JBX 2 CT MC 09	JBX 2 CT FC 09
	0.7	JBX 2 CT MC 07	JBX 2 CT FC 07
3	2	JBX 3 CT MC 20	JBX 3 CT FC 20
	1.6	JBX 3 CT MC 16	JBX 3 CT FC 16
	1.3	JBX 3 CT MC 13	JBX 3 CT FC 13
	0.9	JBX 3 CT MC 09	JBX 3 CT FC 09
	0.7	JBX 3 CT MC 07	JBX 3 CT FC 07

• Solder contacts (if ordered separately)

Shell size	ϕ contact	Part Number	
		Solder pin	Solder socket
0	0.9	JBX 0 CT MS 09	JBX 0 CT FS 09
1	1.3	JBX 1 CT MS 13	JBX 1 CT FS 13
	0.9	JBX 1 CT MS 09	JBX 1 CT FS 09
2	2	JBX 2 CT MS 20	JBX 2 CT FS 20
	1.6	JBX 2 CT MS 16	JBX 2 CT FS 16
	1.3	JBX 2 CT MS 13	JBX 2 CT FS 13
	0.9	JBX 2 CT MS 09	JBX 2 CT FS 09
3	2	JBX 3 CT MS 20	JBX 3 CT FS 20
	1.6	JBX 3 CT MS 16	JBX 3 CT FS 16
	1.3	JBX 3 CT MS 13	JBX 3 CT FS 13
	0.9	JBX 3 CT MS 09	JBX 3 CT FS 09

Solder contacts of 0.5 mm and 0.7 mm of diameter not available separately (always fixed into the insulator).

Push-Pull connectors



Piece parts JBX-JKX

• Inserts for removable solder and crimp contacts (if ordered separately)

Shell size	Insert	Insert Part Number	
		Pin contacts	Socket contacts
0	02	JBX 0 BI 02 MS	JBX 0 BI 02 FS
	03	JBX 0 BI 03 MS	JBX 0 BI 03 FS
	04	JBX 0 BI 04 MS	JBX 0 BI 04 FS
	05	JBX 0 BI 05 MS	JBX 0 BI 05 FS
1	02	JBX 1 BI 02 MS	JBX 1 BI 02 FS
	03	JBX 1 BI 03 MS	JBX 1 BI 03 FS
	04	JBX 1 BI 04 MS	JBX 1 BI 04 FS
	05	JBX 1 BI 05 MS	JBX 1 BI 05 FS
	06	JBX 1 BI 06 MS	JBX 1 BI 06 FS
	07	JBX 1 BI 07 MS	JBX 1 BI 07 FS
2	08	JBX 1 BI 08 MS	JBX 1 BI 08 FS
	02	JBX 2 BI 02 MS	JBX 2 BI 02 FS
	03	JBX 2 BI 03 MS	JBX 2 BI 03 FS
	04	JBX 2 BI 04 MS	JBX 2 BI 04 FS
	05	JBX 2 BI 05 MS	JBX 2 BI 05 FS
	06	JBX 2 BI 06 MS	JBX 2 BI 06 FS
	07	JBX 2 BI 07 MS	JBX 2 BI 07 FS
	08	JBX 2 BI 08 MS	JBX 2 BI 08 FS
	10	JBX 2 BI 10 MS	JBX 2 BI 10 FS
	12	JBX 2 BI 12 MS	JBX 2 BI 12 FS
3	16	JBX 2 BI 16 MS	JBX 2 BI 16 FS
	18	JBX 2 BI 18 MS	JBX 2 BI 18 FS
	19	JBX 2 BI 19 MS	JBX 2 BI 19 FS
	03	JBX 3 BI 03 MS	JBX 3 BI 03 FS
	04	JBX 3 BI 04 MS	JBX 3 BI 04 FS
	07	JBX 3 BI 07 MS	JBX 3 BI 07 FS
	10	JBX 3 BI 10 MS	JBX 3 BI 10 FS
	14	JBX 3 BI 14 MS	JBX 3 BI 14 FS
	18	JBX 3 BI 18 MS	JBX 3 BI 18 FS
	22	JBX 3 BI 22 MS	JBX 3 BI 22 FS
	30	JBX 3 BI 30 MS	JBX 3 BI 30 FS

Insert for pin contacts



Insert for socket contacts



• Inserts with fixed solder contacts (if ordered separately)

Shell size	Insert	Insert Part Number	
		Pin contacts	Socket contacts
0	04	JBX 00 BI 04 MPS	JBX 00 BI 04 FPS
	04	JBX 0 BI 04 MSS	JBX 0 BI 04 FSS
	05	JBX 0 BI 05 MSS	JBX 0 BI 05 FSS
	06	JBX 0 BI 06 MPS	JBX 0 BI 06 FPS
1	07	JBX 0 BI 07 MPS	JBX 0 BI 07 FPS
	07	JBX 1 BI 07 MSS	JBX 1 BI 07 FSS
	08	JBX 1 BI 08 MSS	JBX 1 BI 08 FSS
2	10	JBX 1 BI 10 MPS	JBX 1 BI 10 FPS
	12	JBX 2 BI 12 MSS	JBX 2 BI 12 FSS
	16	JBX 2 BI 16 MSS	JBX 2 BI 16 FSS
	18	JBX 2 BI 18 MSS	JBX 2 BI 18 FSS
	19	JBX 2 BI 19 MSS	JBX 2 BI 19 FSS
3	22	JBX 3 BI 22 MSS	JBX 3 BI 22 FSS
	30	JBX 3 BI 30 MSS	JBX 3 BI 30 FSS

Insert for pin contacts



Insert for socket contacts



Push-Pull connectors

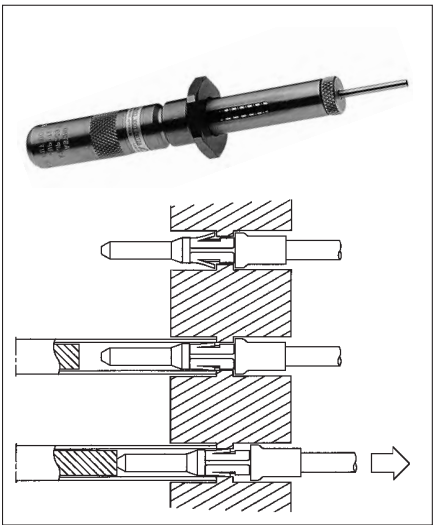


Toolings JBX - JKX

• Manual extraction tools

Contacts automatically extracted

The extraction tool is similar for both male and female contacts.



Shell size	Ø Contacts	SOURIAU Part number	ASTRO Part number
0	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
1	0.7	JBX OUT DC 07	ATJP2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
2	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115
3	0.7	JBX OUT DC 07	ATJP 2045
	0.9	JBX OUT DC 09	ATJP 2057
	1.3	JBX OUT DC 13	ATJP 2077
	1.6	JBX OUT DC 16	ATJP 2095
	2.0	JBX OUT DC 20	ATJP 2115

The contact is automatically extracted without the need of pulling onto the cable.

Push-Pull connectors



Toolings JBX - JKX

• Crimping tool



Specifications MIL-C-22520 / 7.01

Contacts 0.7 mm - 0.9 mm and 1.3 mm	MIL P/N - SOURIAU P/N	Supplier P/N
	MIL-22520/7-01	Daniels : MH860 Buchanan : 616 336



Specifications MIL-C-22520 / 1.01

Contacts 1.6 mm and 2 mm	MIL P/N - SOURIAU P/N	Supplier P/N
	MIL-22520/1-01	Daniels : AF8 Buchanan : 615 708

• Locator for pin and socket 0.7 - 0.9 mm and 1.3 mm contacts



Shell size	Ø contacts	AWG	Male contact			Female contact		
			SOURIAU P/N	DANIELS P/N	ASTRO P/N	SOURIAU P/N	DANIELS P/N	ASTRO P/N
0	0.7	22 - 24 - 26	JBX 0 OUT LP07	86 - 223	/	JBX 0 OUT LS07	86 - 224	/
	0.9	20 - 22 - 24	JBX 0 OUT LP09	86 - 225	/	JBX 0 OUT LS09	86 - 226	/
1	0.7	22 - 24 - 26	JBX 1 OUT LP07	86 - 196	642 - 001	JBX 1 OUT LS07	86 - 197	642 - 004
	0.9	20 - 22 - 24	JBX 1 OUT LP09	86 - 198	642 - 002	JBX 1 OUT LS09	86 - 199	642 - 005
	1.3	18 - 20 - 22	JBX 1 OUT LP13	86 - 200	642 - 003	JBX 1 OUT LS13	86 - 201	642 - 006
2	0.7	22 - 24 - 26	JBX 2 OUT LP07	86 - 202	642 - 007	JBX 2 OUT LS07	86 - 203	642 - 010
	0.9	20 - 22 - 24	JBX 2 OUT LP09	86 - 204	642 - 008	JBX 2 OUT LS09	86 - 205	642 - 011
	1.3	18 - 20 - 22	JBX 2 OUT LP13	86 - 206	642 - 009	JBX 2 OUT LS13	86 - 207	642 - 012
3	0.7	22 - 24 - 26	JBX 3 OUT LP07	86 - 217	642 - 014	JBX 3 OUT LS07	86 - 214	642 - 017
	0.9	20 - 22 - 24	JBX 3 OUT LP09	86 - 218	642 - 015	JBX 3 OUT LS09	86 - 215	642 - 018
	1.3	18 - 20 - 22	JBX 3 OUT LP13	86 - 219	642 - 016	JBX 3 OUT LS13	86 - 216	642 - 019

• Turret with locator for pin and socket 1.6 mm and 2 mm contacts



Shell size	Ø contacts	AWG	Male and female contacts		
			SOURIAU P/N	DANIELS P/N	ASTRO P/N
2	1.6	14 - 16 - 18	JBX 2 OUT LT16	TH 564	650 - 030
	2	12 - 14 - 16	JBX 2 OUT LT20	TH 565	650 - 031
3	1.6	14 - 16 - 18	JBX 3 OUT LT16	TH 566	650 - 038
	2	12 - 14 - 16	JBX 3 OUT LT20	TH 567	650 - 035

Custom Connector and Cable Assemblies



Examples of custom designs derivated from standard connectors lines

- **Watertight receptacles**



- **JBX series**, Custom Receptacle Design

- **Black conductive plating**



- **JKX series**, black chrome plating

Push-Pull connectors



Request form please fill in and fax to SOURIAU - Customer service

Name : Tel number : Fax number :

Title : E-mail :

Company :

Address :

Applications :

- ☐ Medical ☐ Audio ☐ Video ☐ Instrumentation ☐ Nuclear physics
☐ GPS ☐ Transportation ☐ Metrology ☐ Other

Detailed description of end product, unit or application

.....

Connector description :

- ☐ Series : ☐ Shell configuration :
☐ Shell size : ☐ Protective boot : ☐ Color :
☐ Number of contacts :
☐ Type of contacts : ☐ Solder ☐ Crimp ☐ Printed circuit ☐ 90° printed circuit
☐ Conductor AWG : ☐ Coax type : ☐ Other :

Electrical :

- ☐ Working voltage (AC/DC) : ☐ Current rating :
☐ Impedance (Ohms) : ☐ SWR : ☐ Frequency :
☐ Contact resistance : ☐ Shielding :
☐ Fibre optics : ☐ Multimode ☐ Monomode

Environment :

- ☐ Temperature : ☐ Protection index (IP --) :
☐ Outside environment :
 ☐ Clear ☐ Splash proof ☐ Sterilization
 ☐ Dirt ☐ Fluids ☐ Radiation
 ☐ Chemicals ☐ Waterproof ☐ Gases
 ☐ Salt waterspray

Projections :

- ☐ Prototype quantity : ☐ Delivery date :
☐ Preseries quantity : ☐ Delivery date :
☐ Production quantity : ☐ Delivery date :



Push-Pull connectors

• Millimeters / Inches

(mm)	(inches)	(mm)	(inches)	(mm)	(inches)
0.1	0.00394	8.2	0.32308	38.0	1.49720
0.2	0.00788	8.4	0.33096	38.5	1.51690
0.3	0.01182	8.6	0.33884	39.0	1.53660
0.4	0.01576	8.8	0.34672	39.5	1.55630
0.5	0.01970	9.0	0.35460	40.0	1.57600
0.6	0.02364	9.2	0.36248	40.5	1.59570
0.7	0.02758	9.4	0.37036	41.0	1.61540
0.8	0.03152	9.6	0.37824	41.5	1.63510
0.9	0.03546	9.8	0.38612	42.0	1.65480
1.0	0.03940	10.0	0.39400	42.5	1.67450
1.1	0.04334	10.5	0.41370	43.0	1.69420
1.2	0.04728	11.0	0.43340	43.5	1.71390
1.3	0.05122	11.5	0.45310	44.0	1.73360
1.4	0.05516	12.0	0.47280	44.5	1.75330
1.5	0.05910	12.5	0.49250	45.0	1.77300
1.6	0.06304	13.0	0.51220	45.5	1.79270
1.7	0.06698	13.5	0.53190	46.0	1.81240
1.8	0.07092	14.0	0.55160	46.5	1.83210
1.9	0.07486	14.5	0.57130	47.0	1.85180
2.0	0.07880	15.0	0.59100	47.5	1.87150
2.1	0.08274	15.5	0.61070	48.0	1.89120
2.2	0.08668	16.0	0.63040	48.5	1.91090
2.3	0.09062	16.5	0.65010	49.0	1.93060
2.4	0.09456	17.0	0.66980	49.5	1.95030
2.5	0.09850	17.5	0.68950	50.0	1.97000
2.6	0.10244	18.0	0.70920	51.0	2.00940
2.7	0.10638	18.5	0.72890	52.0	2.04880
2.8	0.11032	19.0	0.74860	53.0	2.08820
2.9	0.11426	19.5	0.76830	54.0	2.12760
3.0	0.11820	20.0	0.78800	55.0	2.16700
3.1	0.12214	20.5	0.80770	56.0	2.20640
3.2	0.12608	21.0	0.82740	57.0	2.24580
3.3	0.13002	21.5	0.84710	58.0	2.28520
3.4	0.13396	22.0	0.86680	59.0	2.32460
3.5	0.13790	22.5	0.88650	60.0	2.36400
3.6	0.14184	23.0	0.90620	61.0	2.40340
3.7	0.14578	23.5	0.92590	62.0	2.44280
3.8	0.14972	24.0	0.94560	63.0	2.48220
3.9	0.15366	24.5	0.96530	64.0	2.52160
4.0	0.15760	25.0	0.98500	65.0	2.56100
4.1	0.16154	25.5	1.00470	66.0	2.60040
4.2	0.16548	26.0	1.02440	67.0	2.63980
4.3	0.16942	26.5	1.04410	68.0	2.67920
4.4	0.17336	27.0	1.06380	69.0	2.71860
4.5	0.17730	27.5	1.08350	70.0	2.75800
4.6	0.18124	28.0	1.10320	71.0	2.79740
4.7	0.18518	28.5	1.12290	72.0	2.83680
4.8	0.18912	29.0	1.14260	73.0	2.87620
4.9	0.19306	29.5	1.16230	74.0	2.91560
5.0	0.19700	30.0	1.18200	75.0	2.95500
5.2	0.20488	30.5	1.20170	80.0	3.15200
5.4	0.21276	31.0	1.22140	85.0	3.34900
5.6	0.22064	31.5	1.24110	90.0	3.54600
5.8	0.22852	32.0	1.26080	100.0	3.94000
6.0	0.23640	32.5	1.28050	200.0	7.88000
6.2	0.24428	33.0	1.30020	400.0	15.76000
6.4	0.25216	33.5	1.31990	600.0	23.64000
6.6	0.26004	34.0	1.33960	800.0	31.52000
6.8	0.26792	34.5	1.35930	1000.0	39.40000
7.0	0.27580	35.0	1.37900	1200.0	47.28000
7.2	0.28368	35.5	1.39870	1600.0	63.04000
7.4	0.29156	36.0	1.41840	2000.0	78.80000
7.6	0.29944	36.5	1.43810	3200.0	126.08000
7.8	0.30732	37.0	1.45780		

• °C/°F

(°C)	(°F)
- 70	- 94
- 65	- 85
- 55	- 67
- 50	- 58
- 40	- 40
0	32
37	98.6
80	176
125	257
150	302
170	338
200	392
250	482

• Pressure conversion

bar	psi	mmHg (torr)
10	145.0	7600
5	72.5	3800
2	29.0	1520
1	14.5	760
0.5	7.2	380

mbar	psi	torr (mmHg)
100	1.4	76
50	0.72	38
10	0.14	7.6
1.32	0.019	1