

SPACECRAFT COMPONENTS CORP.

Your Connector Consultant Since 1962

# QPL LISTED CONTACTS

Per AS39029

For Harsh Environments with  
Patented Reverse Clip  
Technology



**SPACECRAFT**  
COMPONENTS CORP.

in  
collaboration  
with



**preci-dip**

# REVOLUTIONARY CONTACT TECHNOLOGY

## HOODED CONTACTS USING THE REVERSE CLIP PATENTED TECHNOLOGY

### CONTACT DESIGN

The contact consists of three parts, manufactured separately from different base materials. This design optimises the performance and selects the most appropriate individual production process:

- Contact body: machined brass.
- Reverse clip: stamped and formed beryllium-copper.
- Hood: deep-drawn stainless steel.

Separate electroplating processes of the body and clip allow the best cost-performance ratio. The assembly of the three parts is carried out on dedicated, fully automated assembly lines.

### ADVANTAGES AND CHARACTERISTICS

- Smaller difference between insertion and extraction forces.
- Reduced dispersion of the force values.
- By using a 6 or 8 contact finger, a superior electrical contact is made at the point of engagement.

### TECHNICAL SPECIFICATIONS

Operating temperature range from -65 to +200°C

#### Contact Body

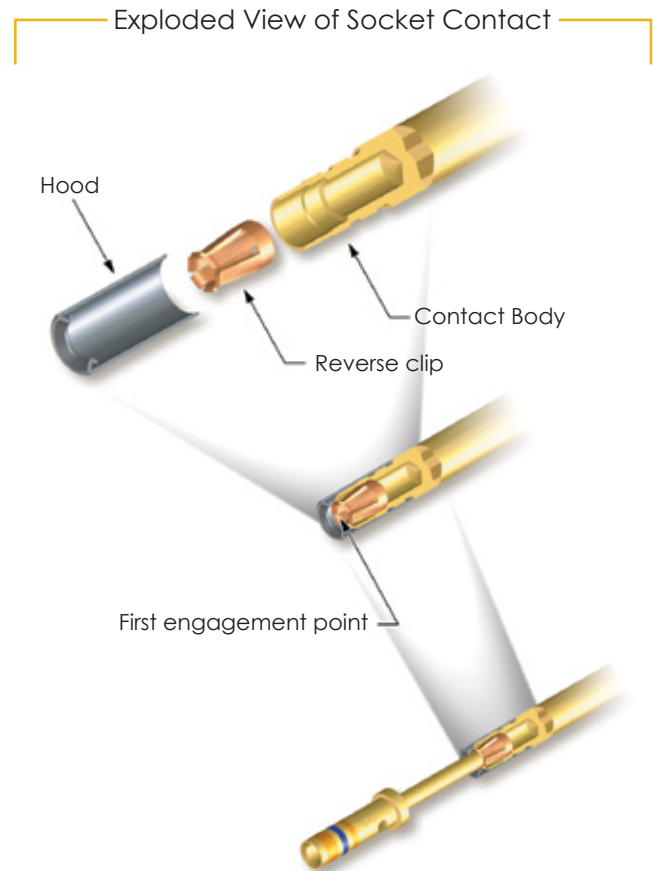
Material:	Machined brass C34500
Overall finish:	Gold plated acc. to ASTM B488, Type II, C, over 2.5 µm Ni

#### Reverse Clip

Material:	BeCu C17200
Overall finish:	Gold plated acc. to ASTM B488, Type II, C, min. 1.27 µm over 2.5 µm Ni

#### Hood

Material:	Corrosion-resistant steel
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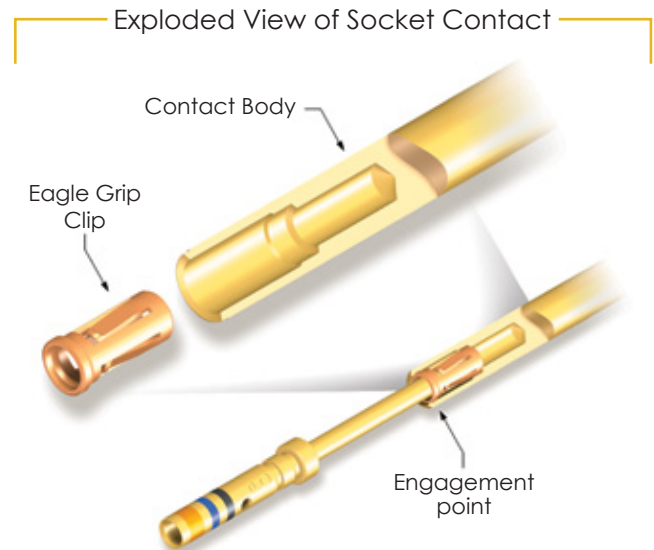
## HOODLESS CONTACTS USING THE EAGLE GRIP CLIP PATENTED TECHNOLOGY

### CONTACT DESIGN

- The hoodless contact consists of two parts: the contact body and the clip (separate pressure member) are made from different base materials.
- The high-speed screw machined contact body is made of brass.
- The use of quality crimping brass renders the annealing operation unnecessary.
- The precision stamped and formed Eagle Grip clip is made of beryllium-copper.
- Separate electroplating processes of the body and clip offer the best cost-performance ratio.
- Automatic assembly lines are designed by our engineers to conduct the body and clip assembly.
- The clip is precisely positioned in the outer shell and firmly held in place between a shoulder and the crimp lip.
- Eagle Grip clip hoodless contacts are presently available in sizes 16, 20 and 22.
- This PRECI-DIP proprietary technology is protected by international patents.

### ADVANTAGES AND CHARACTERISTICS

- 2-piece contact without hood.
- Fully automatic assembly process with in-line mechanical check.
- Localized finish: body and clip are plated separately.
- High surface quality with a stamped and formed clip.
- Precision rolling surface finish in the contact area.
- Better contact redundancy thanks to 3 or 4 contact fingers.
- Limited difference between insertion and extraction mating forces.
- Narrow range of the force values.
- Swiss precision technology.



#### Contact Body

Material:	Machined brass C34500
Overall finish:	Gold plated acc. to ASTM B488, Type II, C, over 2.5 µm Ni

#### Clip

Material:	BeCu C17200
Overall finish:	Gold plated acc. to ASTM B488, Type II, C, min. 1.27 µm Au over 2.5 µm Ni



# SPRING-LOADED CONTACT TECHNOLOGY

## DESCRIPTION AND TECHNICAL SPECIFICATIONS

### FUNCTIONAL PRINCIPLE

PRECIP-DIP spring-loaded contacts consist of a contact body or barrel, a piston and an helical compression spring. Electrical contact is established by the pressure against a fixed, flat area called the pad connector.

### AN EVOLVING LINE

The electrical multipoint connection between the mobile piston and the clip guarantees low, stable electrical resistance values without micro-discontinuities, even when the piston is moving or in case of vibrations, thus assuring maximum reliability.

### CHARACTERISTICS

	Standard Contacts		Improved-Design Contacts		High Reliability Contacts	
	Hollow Piston Design	Slant Piston Design	Polygonal Piston Design	Clip Coaxial Design	Clip In-Line Design	
<b>Environmental</b> Operating temp, range	- 55°C to + 85°C (music wire) / + 125°C (stainless steel)					
<b>Materials (RoHS-Compliant)</b>	Piston Barrel Spring Clip	Gold plated machined brass Gold plated machined brass Gold plated music wire / Stainless steel			Gold plated BeCu C17200	
<b>Mechanical</b>						
Min. diameter	1.1 mm		1.5 mm	1.8 mm		0.8 mm
Min. initial height	2.5 mm		5 mm	4.5 mm		9 mm
Travel / height ratio	Max. 0.3		Max. 0.2	Max. 0.2		Max. 0.15
Max. travel (stroke)	2 mm		2 mm			1.5 mm
Min. initial spring force	0.2 N		0.2 N			0.2 N
Mechanical life*	100,000 cycles		50,000 cycles			40,000 cycles
<b>Electrical</b>						
Contact resistance**	Max. 15 mΩ		Max. 10 mΩ			Max. 20 mΩ
Max. operating current***	1A cont. / 2A peak		3.5A cont. / 7A peak			2A cont. / 4A peak

\* Tested at nominal stroke with perpendicular pad connector area

\*\* Static measurement in halfway position of piston travel

\*\*\* Above max. current values are for single contacts in free air and for 10°C temperature rise.

Values are indicative and may be affected by contact force, static or dynamic applications, shocks or vibrations

## M39029 CONTACTS IN INVENTORY

Part Number	Desc.	Size	Wire Range	Connector Specifications
M39029/4-110	Pin	20	20-24	MIL-DTL-26482 Series 2, AS 81703 Series 3
M39029/4-111	Pin	16	16-20	
M39029/4-113	Pin	12	12-14	
M39029/5-115	Socket	20	20-24	
M39029/5-116	Socket	16	16-20	
M39029/5-118	Socket	12	12-14	
M39029/31-229	Pin	16	16-20	MIL-DTL-26482 Series 1, MIL-DTL-26500
M39029/31-240	Pin	20	20-24	MIL-DTL-26482 Series 1
M39029/32-248	Socket	16	16-20	MIL-DTL-26482 Series 1, MIL-DTL-26500
M39029/32-259	Socket	20	20-24	MIL-DTL-26482 Series 1, MIL-DTL-26500

Part Number	Desc.	Size	Wire Range	Connector Specifications
M39029/56-348	Socket	22D	22-28	MIL-DTL-24308, MIL-DTL-38999 Series I, III & IV
M39029/56-351	Socket	20	20-24	
M39029/56-352	Socket	16	16-20	
M39029/56-353	Socket	12	12-14	
M39029/57-354	Socket	22D	22-28	MIL-DTL-24308, MIL-DTL-38999 Series II, MIL-DTL-55302/71/72/75, MIL-DTL-83733
M39029/58-360	Pin	22D	22-28	MIL-DTL-24308, MIL-DTL-38999 Series I, II, III, IV, MIL-DTL-55302/69, MIL-DTL-83733
M39029/58-363	Pin	20	20-24	
M39029/58-364	Pin	16	16-20	
M39029/58-365	Pin	12	12-14	

## CUSTOM DESIGN CONTACTS

Developing custom solutions from customer concept to actual product is our specialty!

Our group of engineers are experts in providing solutions from a cost-effectiveness

and efficiency standpoint. Experienced with countless standard products and more than 20,000 references underlie the incessant development of exceptional quality products.



Contact Spacecraft to manage your custom designs!





# SPACECRAFT COMPONENTS CORP.

Your Connector Consultant Since 1962



SCP 5015 STYLE CONNECTORS (CATALOG 102)



SCPT 26482 STYLE SC1 38999 SERIES I SC2 38999 SERIES II SC39 38999 SERIES III (CATALOG 202)



SCPB SERIES (CATALOG 302)



CONNECTOR ACCESSORIES (CATALOG 401)



CONNECTORS WITH INTEGRATED BACKSHELLS (CATALOG 601)

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COMING SOON... All Plastic Connectors CATALOG 701



**SPACECRAFT COMPONENTS CORP.**

### Headquarters

3040 Clayton Street  
North Las Vegas, NV 89032

Phone: 702.851.7600  
Fax: 702.851.7620

Email: [salesinfo@spacecraft.com](mailto:salesinfo@spacecraft.com)  
Web: [www.spacecraft.com](http://www.spacecraft.com)

### Florida Office

10732 NW 53<sup>rd</sup> St.  
Sunrise, FL 33351  
Tel: 954.748.4540  
Fax: 954.748.4128

### Arizona Office

519 W. Lone Cactus Dr.  
Suite 401  
Phoenix, AZ 85027  
Tel: 623.580.1162  
Fax: 623.580.1165

### Ohio Office

121 Marrett Farm Rd.  
Union, OH 45322  
Tel: 937.832.1882  
Fax: 888.839.1882

### Italy Office

Spacecraft Components, Sp A  
Milan, Italy  
+39 (335) 719.4512

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