POGO Pin Connector
Application introduce
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Pogo pin connector is a special type,
In coming years, pogo pin connector is applied on Electronics device however consumer and commercial of worldwide own brand company. Such as N/B, Cell phone, Tablet PC, GPS and TV etc..., and because Microsoft Windows 8 system-”Surface”, It`s applied a POGO Pin connector to connect it`s keyboard.
POGO Pin made by Piston, Barrel, Spring, It’s connected with Piston and Barrel by Crimping and between them has a spring to become a Pogo pin.

Pogo pin’s slanted design is good helpful for current reliability at the connect inside the pogo pin.

**Standard SPEC:**

- **Stroke:** 1.0~2.2mm
- **Force:** 0.35~0.85N at ½ Stroke
- **Current:** 1~2A Max.
- **Voltage:** 250V
- **Life Cycles:** 10000 ~100000cycles
- **Plating:** 20u” Gold on Plunger
  10u” Gold on Barrel
Hollow Type POGO Pin Structure

Hollow type POGO Pin design for low space. It has drilled a hole inner piston to hold spring, so it could make lower height pogo pin. But this design has a little bit problem of contact resistance, we only suggest apply it at low current or signal transmission.

Stroke: 0.5~1.0mm
Force: 0.35~0.85N at ½ Stroke
Current: 1A Max.
Voltage: 250V
Life Cycles: 10000 ~100000cycles
Plating: 20u” Gold on Plunger
       10u” Gold on Barrel
POGO V.S Spring

Pogo pin`s advantage is reduced space in device design and it has no sliding friction like Spring pin, decrease contact area damage from friction.

Mostly, POGO Pin`s life cycles more than Spring pin`s.

POGO: 10000~100000 times
Spring: 3000~5000 times

Same stroke

Metal PAD

Distance of stroke
POGO Pin description

Notes:

1. Material:
   Housing: Thermoplastic UL 94V-0, Black
   Terminal: Copper Alloy
   Cap: Thermoplastic UL 94V-0, Black

2. Finish:
   Terminal: 20μ” Min. Gold on Contact Area,
   10μ” Min. Gold on Solder Tails, Both
   over 100μ” Min. Nickel Under-plated Overall

3. Spring Pin Force: 0.6N ± 0.15N at Stroke 0.7mm

4. Stroke 1.4mm Max.

5. Order Information:
   D T PE1-011 X 8-02 X 1

   T: RoHS(for High Temperature)

   Amount of Pins
   2: 2 Pins
   9: 9 Pins
   A: 10 Pins
   G: 16 Pins

   Packing Option
   T: Tube
   1: Tube + Cap
   2: Reel + Cap

   Piston plating

   Barrel plating

   Notice of spring force

   Notice of full stroke
How to choose POGO Pin height

Pogo Pin stoke suggestion 0.5mm minimum
The best suggestion is ½ stroke
Do not over full stroke

Working height calculate:

a. Largest working height:
Height of Pogo - minimum 0.5mm

b. The best suggest:
Height of Pogo – The best suggestion ½ Stroke

c. Do not over full stroke:
Height of Pogo - Full stoke

Ex-sample:
Height of POGO =10mm, Full stroke = 3mm
This pogo can be apply in working height at 9.5mm~7mm, The best position is 8.5mm
Design recommend

- Do not less than 15 degree to mating pogo pin
- Do not to mating pogo pin from sideways

Design Recommended
In the plating of blind hold process, the internal of barrel because lot of Air-bubbles make Gold can`t plate on it in that bubbles area. We process by vacuum plating to exclude all the Air-bubbles in water. To ensure we can get good plating inner barrel side.
## CEN POGO pin advantage

**Strengths**

- Good Quality
- Quality control
- Middle price
- In time service
- Quickly reply

**Weaknesses**

- Can`t follow poor quality to reduce cost.
- Preliminary POGO design will take a little bit time to test for good quality.

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We focus on plating inner barrel, to make sure our product has good performance.
CEN POGO contact force and resistance performance

CEN`s POGO test curve

Other`s POGO manufacturer test curve

Some pogo manufacturer seems has not good quality

Force curve as green and purple line, it`s very smooth and stable

Contact resistance curve as blue line, after 0.2mm stroke will under 5mΩ and stable.
<table>
<thead>
<tr>
<th></th>
<th>Single row type</th>
<th>Dual row type</th>
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</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Single row type</td>
<td>Dual row type</td>
</tr>
<tr>
<td><strong>Pitch</strong></td>
<td>2.54mm</td>
<td>2.54 x 2.54mm</td>
</tr>
<tr>
<td><strong>Amount of pins</strong></td>
<td>2~16Pins</td>
<td>4~32Pins</td>
</tr>
<tr>
<td><strong>Pin height</strong></td>
<td>3.5, 4.25, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5mm</td>
<td>3.5, 4.25, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5mm</td>
</tr>
<tr>
<td><strong>Housing height</strong></td>
<td>2.0, 2.8, 2.95, 4.0, 4.5, 4.8mm</td>
<td>2.0, 2.8, 2.95, 4.0, 4.5, 4.8mm</td>
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<tr>
<td><strong>Stroke</strong></td>
<td>1.0~2.2mm</td>
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CEN have a lot of experience in customized connectors. We can provide the best solution and service for our customer.

Right angle type

Cable solder type

DIP type

Longer stroke design

Ground pin choice

Multi-material type: FPC, PCB etc…
How to choose POGO connector

- Appearance
  - Amount of Pin
  - Pitch
  - Working height

- Packing type
  - Process

- Other
  - Parts
  - Terminal type
  - Cost down
  - Life cycles
  - Customer request

- SPEC of Mechanical
  - SPEC of Plating

- Final SPEC
  - Spring Force
  - Height of plastic

CEN-Link has tested our products to make sure they are reliable.

- Temperature & Humidity
- Salt Spray
- Steam Aging
- High-Temperature Oven
- IR Reflow
- Force & Life & Resistant Testing
- Hazardous Substances Analyzer
- X-Ray
- Micro-ohm Meter
- Raise Temperature
- Withstanding Voltage Testing
- 2D Measurement Machine
Medical Tablet

CEN P/N: TPE1-02032-X0XX

Success story
Medical Tablet

CEN P/N: TPR1-01110-70XX
Rugged Handheld Device

CEN P/N:
TPR1-01110-70XX
Rugged & Medical Tablet

Medical Data Terminal
Gladius G0710

Rugged & Medical-grade Mechanical Design

CEN P/N:
TPE0-02735-12T6
Industry Tablet

CEN P/N:
TPE0-02735-12T6

Success story
Handheld PC

CEN P/N:
TPE0-02735-12T6
CEN-Link was established in 1981, we started to sell pogo pin connector over 17 years from 1995. The pogo pin technology comes from Switzerland manufactory, as we know Switzerland has lot of precision industry and famous worldwide. We are stronger in connector design with Switzerland pogo pin technology, and we can provide our customer “Timely service” and ”quickly feedback”, even more competitive price. Finally, we are looking forward to see any opportunities for cooperation with you.
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