

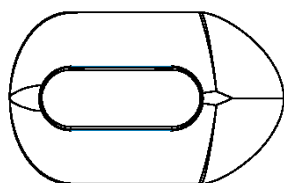
## Prijs berekening

Het product bestaat uit 6 onderdelen waarvan 3 uit plastic en 3 uit metalen. De individuele kosten per onderdeel worden berekent waarna een totaal berekening kan worden gemaakt. De manufacturing kosten zijn gebaseerd op de volgende online bereken tool, samen met gegevens uit Solidworks: <http://www.custompartnet.com/>. De kosten, productiemethode en materiaal worden per onderdeel op de vervolg pagina's verder gespecificeerd.

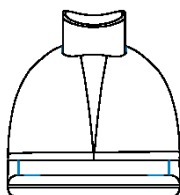
| <b>Totaal Kosten</b> | <i>pps oplage</i><br>100.000 | <i>pps oplage</i><br>250.000 | <i>pps oplage</i><br>500.000 | <i>Totaal</i><br>100.000 | <i>Totaal</i><br>250.000 | <i>Totaal</i><br>500.000 |
|----------------------|------------------------------|------------------------------|------------------------------|--------------------------|--------------------------|--------------------------|
| Knop                 | € 0,05                       | € 0,03                       | € 0,02                       | € 5.400,00               | € 7.000,00               | € 7.500,00               |
| Plastic bovenkant    | € 0,11                       | € 0,05                       | € 0,03                       | € 10.500,00              | € 12.500,00              | € 14.000,00              |
| Plastic onderkant    | € 0,08                       | € 0,04                       | € 0,02                       | € 8.300,00               | € 9.750,00               | € 10.500,00              |
| Metalen onderkant    | € 0,54                       | € 0,35                       | € 0,26                       | € 53.800,00              | € 88.250,00              | € 129.000,00             |
| Metalen bovenkant    | € 0,53                       | € 0,34                       | € 0,26                       | € 53.300,00              | € 85.500,00              | € 128.000,00             |
| Veer                 | € 0,05                       | € 0,03                       | € 0,02                       | € 5.000,00               | € 6.250,00               | € 9.000,00               |
| <b>Totaal</b>        | <b>€ 1,36</b>                | <b>€ 0,84</b>                | <b>€ 0,60</b>                | <b>€ 136.300,00</b>      | <b>€ 209.250,00</b>      | <b>€ 298.000,00</b>      |

## Conclusie

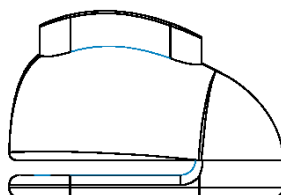
Bij een oplage van 500.000 stuks is een totaal investering nodig van ongeveer €298.000. De beoogde verkoop prijs ligt dan op €3 per stuk waardoor de materiaal en productiekosten van het product op 20% liggen. Overige kosten voor assemblage, verpakking en transport zijn niet meegenomen in de prijsberekening.



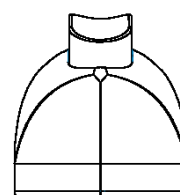
Top



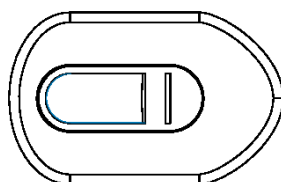
Front



Right



Back



Bottom

## Onderdeel 1 | Knop

### Afmetingen

LxBxH: 37x17x17,6 mm

Maximale dikte: 1mm

### Materiaal

Materiaal: HDPE (High density Polyethyleen)

Kleur: Wit

Kosten materiaal: €1,18 per kg<sup>1</sup>

Massa: 2,57 gram

Materiaal pps: €0,0030

### Productie kosten

Techniek: Injection molding

[Quantity \(optional\):](#)

[Envelope X-Y-Z \(in\):](#)

x

x

[Projected area \(in<sup>2</sup>\):](#)

or

% of envelope

[Projected holes?:](#)



Yes



No

[Tolerance \(in\):](#)



[Surface roughness \(µin\):](#)



[Complexity:](#)



[Show advanced complexity options](#)

[SPI mold class:](#)



[Rapid tooling?:](#)



Yes



No

[Number of cavities:](#)



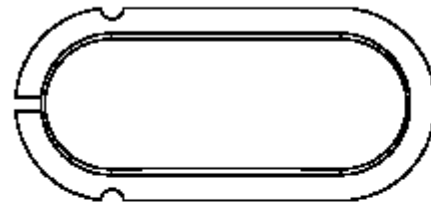
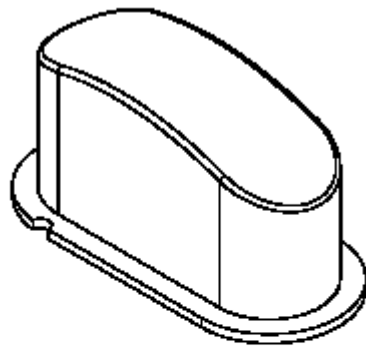
[Mold-making labor \(\\$/hr\):](#)

Tooling:

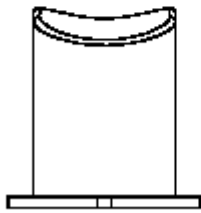
\$5,643 (\$0.056 per part)

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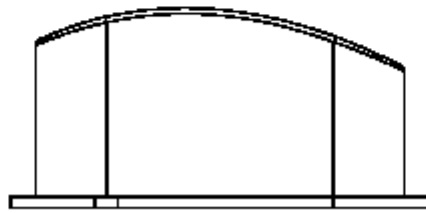
<sup>1</sup> <http://www.kunststofenrubber.nl/grondstofprijzen.html>



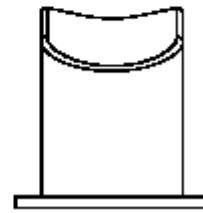
Top



Front



Right



Back

Totaal kosten per knop (voor 100.000+ wordt uitgegaan van SPI mold class 103)

100.000 stuks: €0,054

250.000 stuks: €0,028

500.000 stuks: €0,015

## Onderdeel 2 | Plastic bovenkant

### Afmetingen

LxBxH: 55x34,5x 22,9mm

Maximale dikte: 2mm

### Materiaal

Materiaal: HDPE (High density Polyethyleen)

Kleur: Donkerblauw

Kosten materiaal: €1,18 per kg

Massa: 5,94 gram

Materiaal pps: €0,0070

|  |   |
|--|---|
| <a href="#">Quantity (optional):</a>             | <input type="text" value="100000"/>   |
| <a href="#">Envelope X-Y-Z (in):</a>             | <input type="text" value="2.16"/> x <input type="text" value="0.91"/> x <input type="text" value="1.36"/> |
| <a href="#">Projected area (in<sup>2</sup>):</a> | <input type="text"/> or <input type="text" value="50"/> % of envelope                                     |
| <a href="#">Projected holes?:</a>                | <input type="radio"/> Yes <input checked="" type="radio"/> No   |
| <a href="#">Tolerance (in):</a>                  | <input type="text" value="Not critical (&gt; 0.02)"/>   |
| <a href="#">Surface roughness (µin):</a>         | <input type="text" value="Not critical (Ra &gt; 32)"/>  |
| <a href="#">Complexity:</a>                      | <input type="text" value="Custom"/> <a href="#">Hide advanced complexity options</a>                      |
| <a href="#">Feature count:</a>                   | <input 25="" features")"="" type="text" value("&lt;=""/>  |
| <a href="#">Side cores:</a>                      | <input type="text" value="1"/>  |
| <a href="#">Lifters:</a>                         | <input type="text" value="0"/>  |
| <a href="#">Unscrewing devices:</a>              | <input type="text" value="0"/>  |
| <a href="#">Parting surface:</a>                 | <input type="text" value="2-4 steps or a simple curved surface"/>   |
| <a href="#">SPI mold class:</a>                  | <input type="text" value="Class 104"/>  |
| <a href="#">Rapid tooling?:</a>                  | <input type="radio"/> Yes <input checked="" type="radio"/> No   |

Number of cavities:

Mold-making labor (\$/hr):

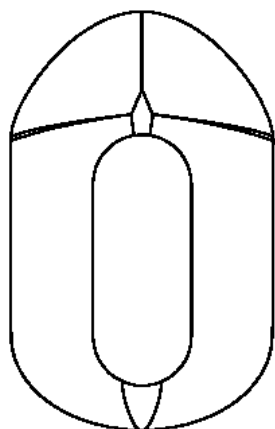
Tooling: \$10,675 (\$0.107 per part)

**Totaal kosten per plastic bovenkant (voor 100.000+ wordt uitgegaan van SPI mold class 103)**

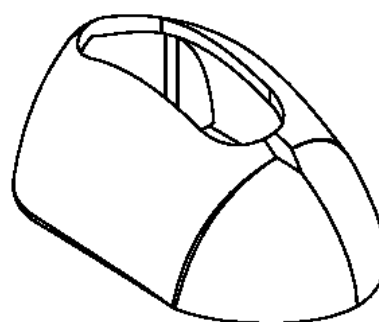
100.000 stuks: €0,105

250.000 stuks: €0,050

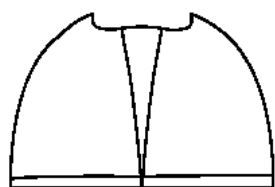
500.000 stuks: €0,028



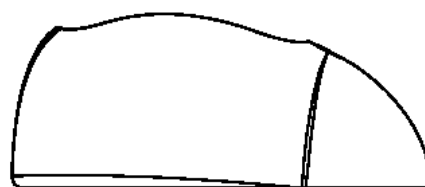
Top



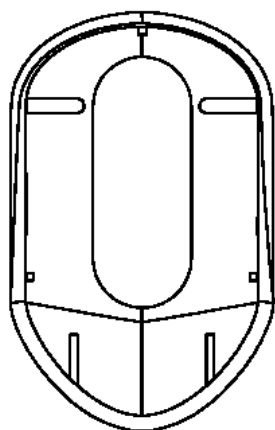
Top - Left - Back



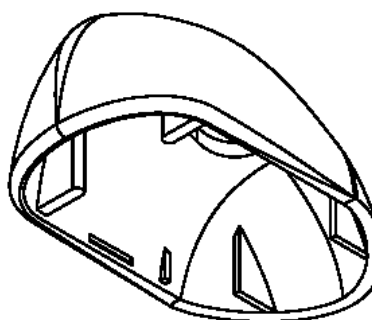
Front



Left



Bottom



Bottom-Right-Front

## Onderdeel 3 | Plastic onderkant

### Afmetingen

LxBxH: 55x34,5x 7,5mm

Maximale dikte: 2mm

### Materiaal

Materiaal: HDPE (High density Polyethyleen)

Kleur: Donkerblauw

Kosten materiaal: €1,18 per kg

Massa: 3,34 gram

Materiaal pps: €0,0039

### Productie kosten

Techniek: Injection molding

[Quantity \(optional\):](#)

[Envelope X-Y-Z \(in\):](#)  x  x

[Projected area \(in<sup>2</sup>\):](#)  or  % of envelope

[Projected holes?:](#)  Yes  No

[Tolerance \(in\):](#)

[Surface roughness \(µin\):](#)

[Complexity:](#)  [Hide advanced complexity options](#)

[Feature count:](#)

[Side cores:](#)

[Lifters:](#)

[Unscrewing devices:](#)

[Parting surface:](#)

Process Parameters

[SPI mold class:](#)

[Rapid tooling?:](#)  Yes  No

[Number of cavities:](#)

[Mold-making labor \(\\$/hr\):](#)

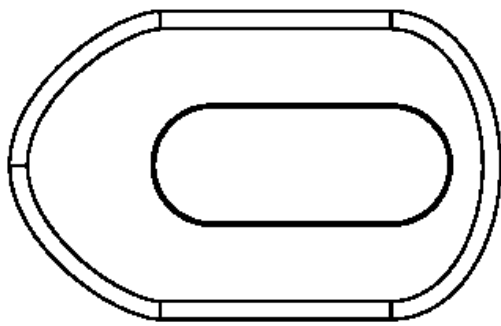
Tooling: \$8,599 (\$0.086 per part)

**Totaal kosten per Plastic onderkant (voor 100.000+ wordt uitgegaan van SPI mold class 103)**

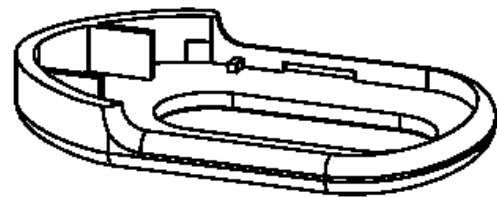
**100.000 stuks: €0,083**

**250.000 stuks: €0,039**

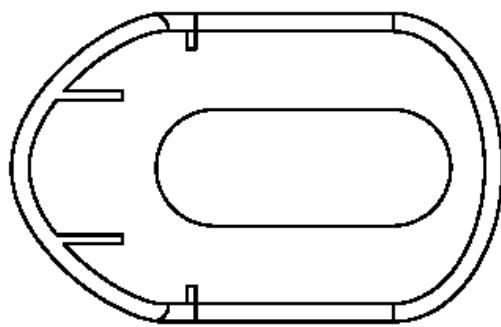
**500.000 stuks: €0,021**



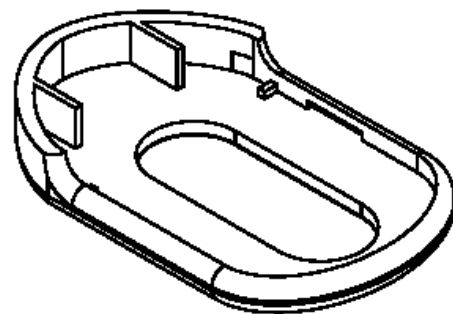
Bottom



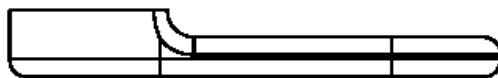
Front-Top-Left



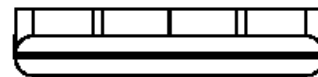
Top



Front-Top-Left



Left



Front

#### Onderdeel 4 | Metalen onderkant

##### Afmetingen

LxBxH: 40x32x 8,5mm

Maximale dikte: 5,5mm

##### Materiaal

Materiaal: Aluminium A360

Kosten materiaal: €3,80 per kg

##### Productie kosten

Techniek: Die Casting



Material: \$4,431 (\$0.044 per part)

Production: \$21,763 (\$0.218 per part)

Tooling: \$32,416 (\$0.324 per part)

**Total: \$58,610 (\$0.586 per part)**

[Quantity:](#)

Material: Aluminum A360.0, Die Cast Browse...

[Envelope X-Y-Z \(in\):](#)  x  x

[Max. wall thickness \(in\):](#)

[Projected area \(in<sup>2</sup>\):](#)  or  % of envelope

[Projected holes?:](#)  Yes  No

[Surface area \(in<sup>2</sup>\):](#)  (optional)

[Volume \(in<sup>3</sup>\):](#)  or  % of envelope

[Tolerance \(in\):](#)

[Surface roughness:](#)

[Complexity:](#)  [Hide advanced complexity options](#)

[Feature count:](#)

[Side-action directions:](#)

[Side cores:](#)

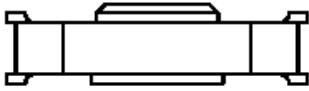
[Parting surface:](#)

**Totaal kosten per Aluminium onderkant**

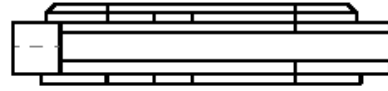
**100.000 stuks: €0,538**

**250.000 stuks: €0,353**

500.000 stuks: €0,258



Back



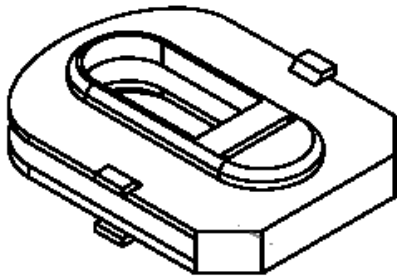
Left



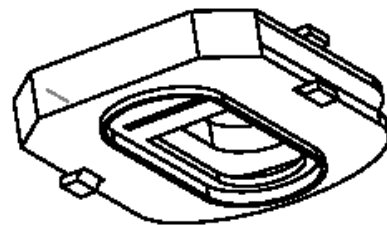
Front



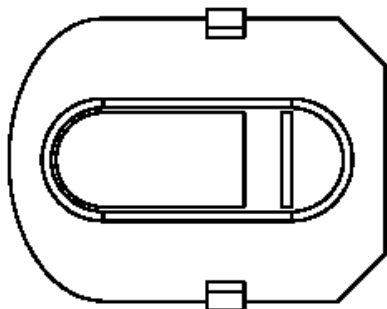
Right



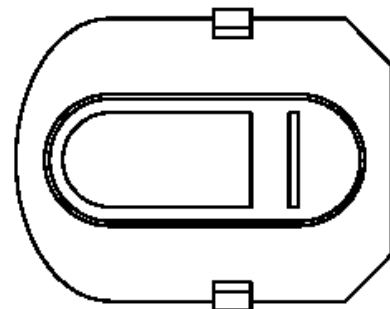
Top-Back-Left



Bottom-Back-Right



Top



Bottom

## Onderdeel 5 | Metalen bovenkant

### Afmetingen

LxBxH: 37x17x 13mm

Maximale dikte: 9,9mm

### Materiaal

Materiaal: Aluminium A360  
Kosten materiaal: €3,80 per kg

## Productie kosten

Techniek: Die Casting

### Process ParametersCost

Material: \$4,431 (\$0.044 per part)

Production: \$24,164 (\$0.242 per part)

Tooling: \$29,478 (\$0.295 per part)

**Total: \$58,073 (\$0.581 per part)**

[Quantity:](#)

Material:

Aluminum A360.0, Die Cast Browse...

[Envelope X-Y-Z \(in\):](#)

x

x

[Max. wall thickness \(in\):](#)

[Projected area \(in<sup>2</sup>\):](#)

or

% of envelope

[Projected holes?:](#)



Yes



No

[Surface area \(in<sup>2</sup>\):](#)

(optional)

[Volume \(in<sup>3</sup>\):](#)

or

% of envelope

[Tolerance \(in\):](#)



[Surface roughness:](#)



[Complexity:](#)



[Hide advanced complexity options](#)

[Feature count:](#)



[Side-action directions:](#)



[Side cores:](#)

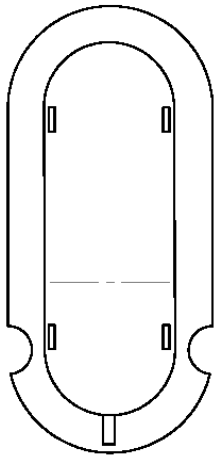
[Parting surface:](#)

**Totaal kosten per Aluminium bovenkant**

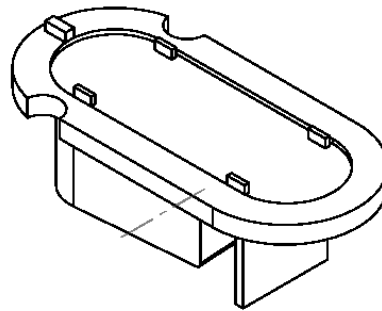
100.000 stuks: €0,533

250.000 stuks: €0,342

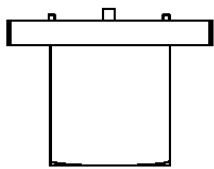
500.000 stuks: €0,256



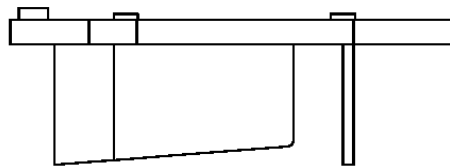
Top



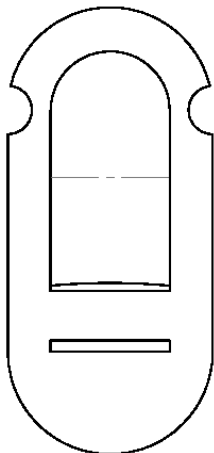
Top-Right-Back



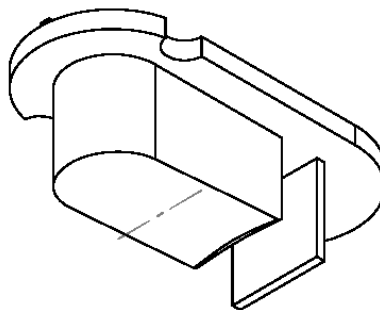
Front



Right



Bottom



Bottom-Front-Right

## Onderdeel 6 | Veer

### Afmetingen

LxBxH: 33x13x 9mm

Maximale dikte: 1mm

### Materiaal

Materiaal: Low alloy steel

Kosten materiaal: €0,60 per kg

Massa: 1,5 gram

Kosten pps: €0,0009

### Productie kosten

Techniek: spring coiling met een CNC machine

Kosten productie onbekend, de prijzen zijn gebaseerd op een schatting.

### Totaal kosten per veer

100.000 stuks: €0,05

250.000 stuks: €0,02

500.000 stuks: €0,01

