
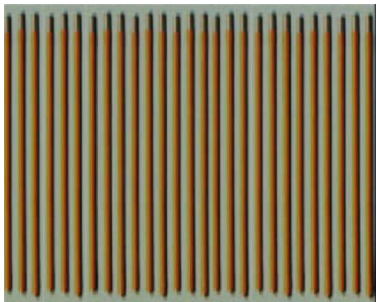


## Independent survey

This survey is set up by an independent dutch diving company. They were not totally convinced about the results of the PVL cutting torch. Therefore they tested the torch with two divers in the harbour of Roermond (NL) and with seven divers in a pool in Weert (NL). To get clear test results each diver had to do the same job with a PVL Torch as he did with a traditional torch. Each diver noticed his observations and a final calculation completed the survey. After this survey, the company immediately bought a PVL Torch for each of their diving teams.

### Tested devices

<u>PVL CUTTING TORCH</u>	<u>OXY/THERMIC CUTTING TORCH</u>
 <p><i>REQUIRED MATERIAL</i></p> <ul style="list-style-type: none"> <li>• PVL Torch</li> <li>• Hoses 100 metre Gas regulator</li> <li>• Oxygen O2 per m<sup>3</sup></li> <li>• Gas mixture per 79ltr</li> <li>• Underwater igniter</li> </ul>	 <p><i>REQUIRED MATERIAL</i></p> <ul style="list-style-type: none"> <li>• Oxy/Thermic torch</li> <li>• Hoses &amp; 50mm cable 100 metre</li> <li>• Earth cable 100 metre</li> <li>• Welding generator</li> <li>• Oxygen O2 per m<sup>3</sup></li> <li>• Electrodes per box</li> <li>• Gas regulator</li> <li>• Cut off switch (Knife switch)</li> </ul>
<b>Transportation Weight and Dimensions</b>	
<p>Torch, hoses, regulator &amp; spares.            L x B x H = 58 x 78 x 40            Total Weight = 65kg            MAP Gas bottle            L x B x H = 30 x 30 x 127            Bottle weight = 32kg            Gas weight = 34kg</p>	<p>Torch, cables, switch, regulator &amp; spares.            L x B x H = 120 x 100 x 75            Total Weight = 300kg            Thermic electrodes per box            L x B x H = 50 x 10 x 10            Total Weight = 12kg            DC generator (Powcon)            L x B x H = 84 x 51 x 50            Total Weight = 100kg</p>
<b>Consumption Proportions</b>	
1 Bottle of Gas to 10 bottles of Oxygen	10 Packs of Electrodes to 10 bottles of Oxygen

## Calculations

The test was conducted by cutting through the middle of a 25mm thick and 1.2m long steel plate. The plate was held in a vice and cut horizontally. The time recorded is the actual time taken to cut the steel plate completely into two sections.

	PVL Cutting Torch		Oxy/Thermic Cutting Torch
Material	Steel strip 160x1200x25mm		Steel strip 160x1200x25mm
Initial Oxygen Pressure	180 bar	120 bar	195 bar
Final Oxygen Pressure	160 bar	100 bar	50 bar
Cylinder Capacity	40 ltr	47 ltr	50 ltr
Total O2 Consumption	1740 ltr		7250 ltr
Consumed electrodes	Not applic		19
Time Began	11:56		09:27
Time Finished	12:02		10:08
Total Time	6 min 17 secs		41 mins
Visibility	35 cm		35 cm
Total Cost of Cut	Euro 11.00		Euro 86.00

## Divers conclusions

<i>ADVANTAGES</i>	<i>DISADVANTAGES</i>
<ul style="list-style-type: none"> <li>+ Lightweight &amp; compact for transport</li> <li>+ Low consumable costs</li> <li>+ Easy to ignite</li> <li>+ Simple operation</li> <li>+ Quick cutting in the right conditions</li> <li>+ Good vision of the cut through the material</li> <li>+ No risk from temporary blindness (arceye)</li> <li>+ No power supply required (electricity)</li> <li>+ Equipment does not need to be rust-proof</li> <li>+ Clean, straight cut</li> <li>+ Minimal maintenance &amp; spares</li> <li>+ No excuses relating to torch problems</li> <li>+ Easy to use for unskilled personnel</li> <li>+ Less chance of leaving uncut material (bridges)</li> <li>+ Ability to cut thick material</li> </ul>	<ul style="list-style-type: none"> <li>- Experience and practice is needed to cut some types of bracings</li> <li>- Nearly everything is possible to cut</li> <li>- Louder than the Oxy/Thermic torch</li> <li>- Gas should not be too cold</li> <li>- Gas bottles should be kept in a warm environment</li> </ul>