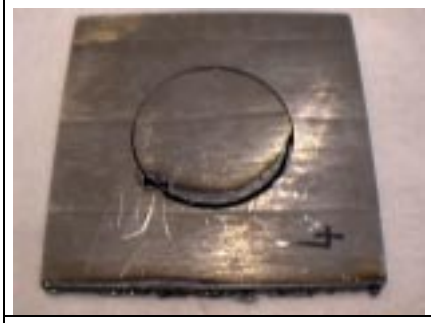
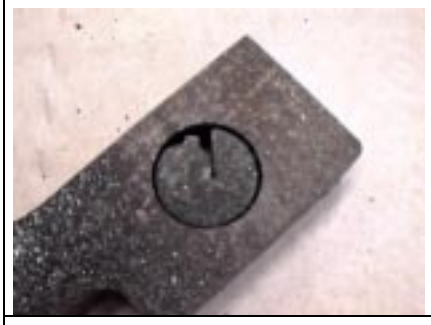
Mild steel technology:

All the following solutions are reliable only if the following conditions are verified:
-Oxygen purity at least 99,95% (or 3.5).
-Lens and nozzle not damaged.
-Good quality material (certified, without oxydation, calamin or paint).
-Laser mode without distortion (air free of acid or solvent).

Problem	Possible reasons	Possible solutions
Bad quality in opposite sides. 	- Lens out of centering. - Nozzle hole close or not circular. - Mirror alignment not perfect.	- Check lens centering. - Check nozzle conditions. - Check beam alignment.
Wide cut at start. 	- Too long or wrong lead-in. - Wrong laser line selection. - Piercing time too long. - Too much heat produced in the cut.	- Check type and length of lead-in. - Check line color. - Check that piercing time is longer not more than 2 sec. of necessary. - Reduce Duty by step of 2-3%.
Wide cut in the entire piece. 	- Pressure too high. - Focal point too high. - Power too high. - Bad quality material.	- Reduce pressure by step of 0.1 bar - Reduce power. - Check focal zero point.

Problem	**Possible reasons**	**Possible solutions**
Material expelled on the surface, welded on the bottom. 	- Power too low. - Speed too high. - Pressure too low.	- Increase power. - Reduce speed. - Increase pressure.
Light burr with angled lines on the bottom. 	- Speed too high. - Power too low. - Pressure too low.	- Reduce speed. - Increase duty cycle by step of 5-10%. - Increase power by step of 100 W. - Increase pressure by step of 0.1-0.2 bar

Problem	**Possible reasons**	**Possible solutions**
Deep lines on cutting side. 	- Too much heat in a small area. - Bad quality material.	- Change cutting sequence. - Change, if possible, material quality.
"Burned paper" effect on the bottom. 	- Pressure too high. - Speed too high.	- Reduce pressure by step of 0.1-0.2 bar. - Reduce speed.
Drop burr and welded material on the bottom. 	- Focal too low. - Pressure too low.	- Increase the focal point by step of 0.1-0.2 mm. - Increase pressure by 0.1-0.2 bar.