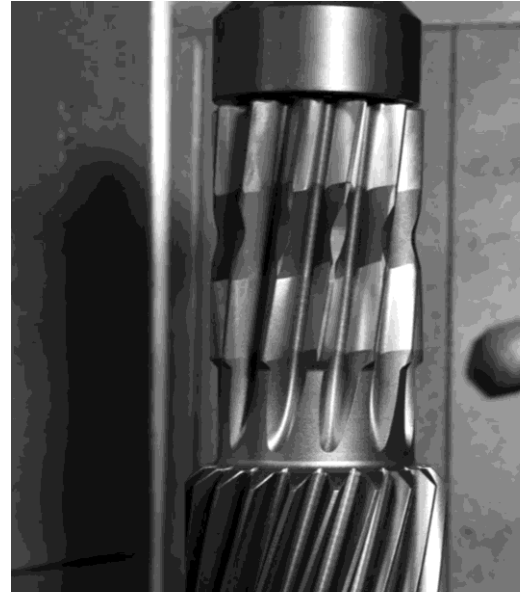




TECHNICAL REPORT

WHAT IS DOUBLE SHOT PEENING?



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Double shot peening is used to improve fatigue strength compared with a conventional shot peening process. Whereas single shot peening uses one abrasive to reach a given intensity range, double shot peening adds a second peening operation with a smaller-diameter abrasive that strikes the surface at a lower intensity than the first pass.

The smaller abrasive generates an additional residual compressive stress of the order of 40% to 50% in the layer closest to the surface, which is where fatigue cracks start. By compressing this surface layer further, the part becomes more resistant to fatigue cracking.

At the same time, rounding off the peaks left by the first peening pass improves the surface finish, giving a smoother, refined surface. In certain parts, such as gears and ring gears, this better finish reduces localised contact stresses on the tooth flanks and therefore extends their service life.

Double shot peening usually uses metallic abrasives of different sizes; in some applications, however, harder abrasives such as ceramic beads may be used for the second peening pass. In carburised gears, for example, the benefit of these abrasives in the second pass is that they are harder than conventional steel shot (55-62 HRC) and than the surface of the carburised part (58-63 HRC).

For further information, please contact our engineering and sales departments, who will advise you on shot peening and on everything related to blasting equipment, processes, finishes, throughput and automation.

Download related catalogues and reports

- [Download Technical Report - Introduction to the shot peening process](#)
- [Download Technical Report - General introduction to the blasting process](#)



Blasting equipment

In Argentina, CYM Materiales designs and manufactures centrifugal wheel and compressed-air blasting equipment: blast rooms and blast cabinets, hanger, table, tumble and belt blast machines, lines for profiles, plates and pipes, and portable units, together with the accessories and consumables each process requires.

The Engineering department surveys the customer's process —part, required output and surface finish— and defines the equipment, the wheel power and the recovery and dust collection system to be used.

CYM Materiales S.A. · Engineering Department · August 2026



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