Shot peening machine

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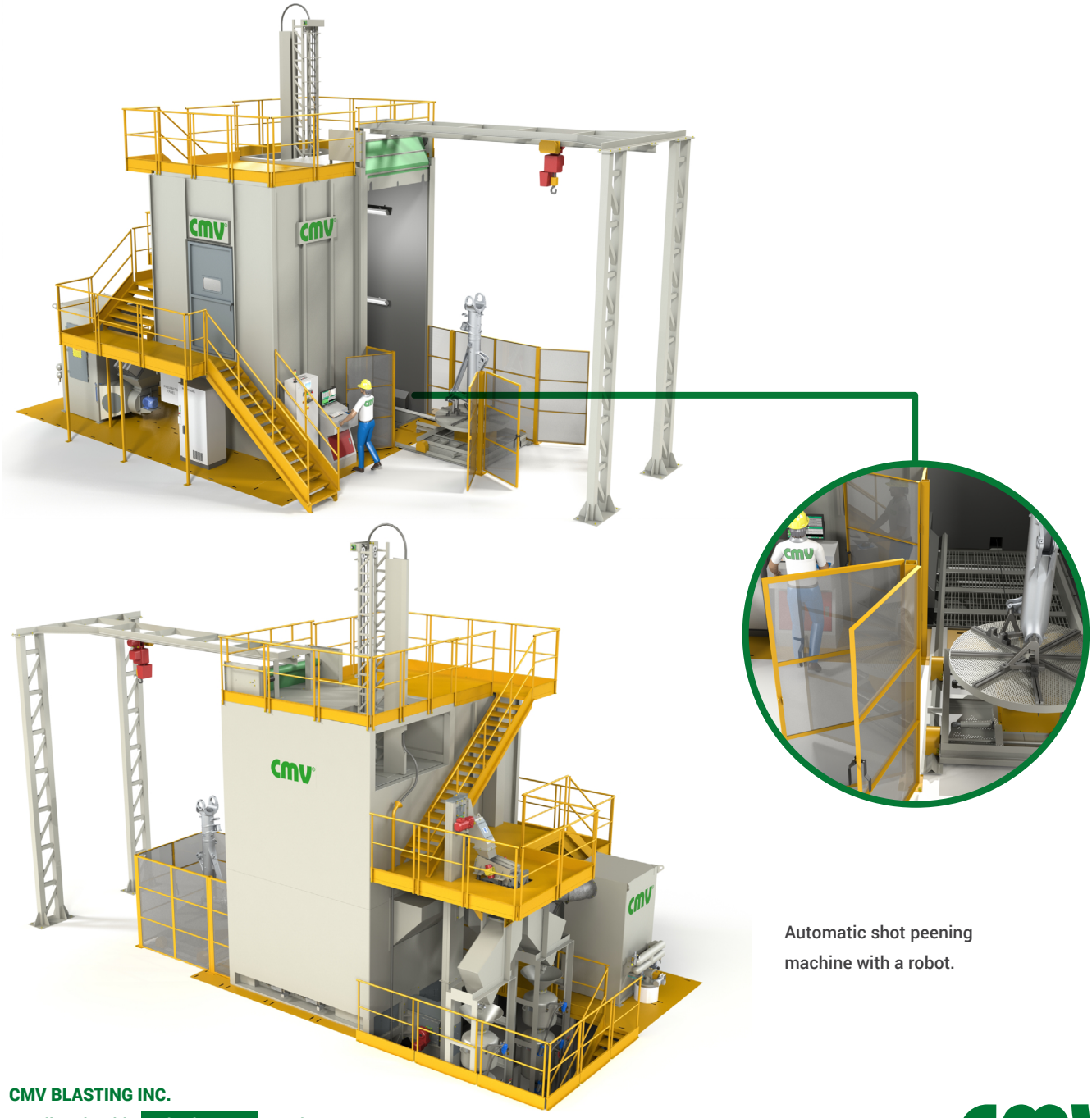
Shot peening is a cold working process used to produce a compressive residual stress layer and modify mechanical properties of metals. It entails impacting a surface with the shot (round metallic, glass, or ceramic particles) with sufficient force to **create plastic deformation.**

It's similar to sandblasting, except that it operates by the plasticity mechanism rather than abrasion: each particle functions as a ball-peen hammer. In practice, **this means that less material is removed by the process and less dust is generated.**

Peening a surface spreads it plastically, causing changes in the mechanical properties of the surface. Shot peening is often called for in aircraft repairs to relieve tensile stresses built up in the grinding process and replace them with beneficial compressive stresses. Depending on the part geometry, part material, shot material, shot quality, shot intensity, shot coverage, shot peening can increase fatigue life up to 1000%.



Automatic shot peening machine with a robot.

CMV BLASTING INC.
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Main differences between shot peening x conventional blasting

- The angle of attack, the release position of the abrasive (spheres) against the workpiece.
- The volume of abrasive launched.
- Abrasive launching speed.
- Abrasive rating (size, roundness).

Some of the benefits

- Improves the resistance to mechanical and thermal fatigues.
- Improves the corrosion and friction resistance.
- Allows to reduce the size and/or weight without compromising the mechanical resistance.
- Eliminates the directional risk of machining or micro-cracks, inhibiting crack propagation.
- Forming (deforming or straightening workpieces, also known as peen forming).

Applications

- **Aerospace industry:** which is the one who mostly uses shot peening, lots of the components of aircraft are treated with shot peening including various components of turbines, structural and landing gear.
- **Automotive industry:** springs, gears, torsion bars, rods, crankshafts, axles and suspension arms.
- **Metalworking industry:** cutting tools, stamping, forging (mostly cold).

We are able to provide not only the equipment but a complete solution for many different applications of shot peening. Beyond producing shot peening equipment systems, by turbine, pressure, suction, wet (in cases where severe restrictions on roughness exists) or a combination of two or more of these systems, are equipped with the most efficient systems to monitor all process variables, CMV has the means to specify the parameters of shot peening and train operators, create process routines, inspection plans, and train shot peening inspectors.

The shot peening equipment we produce meet the process or productivity needs an integrated system with CN, CNC or robotics, both in handling the parts treated as for movement of the nozzles or shot peening guns.

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In addition to these activities, CMV distributes a range of products linked to the shot peening process as:

Shot peening abrasives (beads in different grain sizes, materials, and hardness)

- Glass beads
- Steel slot
- Cut wire shot
- Ceramic beads

Equipment to evaluate the coverage and saturation:

- Almen strips
- Almen strip holders
- Almen gage
- Fluorescent tracers

Components for the machines

- Magna valves
- Blasting nozzles with side outlet
- Rotating nozzles

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