

Shot Blasting

Benefits

-  Removal of heat treat scale, forging scale, rust, or other surface contaminants
-  Increased surface area of steel, for subsequent coating operations
-  Polishing
-  Work hardening of the steel's surface

Process

Shot blasting is the process in which a blasting media (shot) is used to clean the surface of steel, eliminating old coatings, rust, scale, etc.

There are multiple styles and sizes of shot blasting equipment, depending on the shape, size, and material of the blasted component.

Tumble Blast:

Tumble blast units use both the mechanical/rotational energy of a large, rotating barrel, and the force created by pelleting the component with an abrasive media. Depending on desired surface finish, different size and material shot is used. The rotation of the barrel helps ensure exposure of all surfaces to the shot media and keeps excess residual material from building up within the equipment. Different drum interior linings, like rubber belts, can be used for smaller parts when part damage is a concern.

Continuous Belt:

Continuous belt shot blasting equipment does not use a large rotating drum (like a tumble blast), but rather a flat and parallel to the ground conveyor belt. This design allows for the shot blasting of long components, like long axle shafts or crankshafts, without distortion concerns. Compared to tumble blast units, this design also helps to prevent part jamming in the blast equipment. Since parts are stationary on a belt, continuous belt blasts do not work well with small parts, or parts with high surface area to volume ratios.

Materials

All types of alloys can be shot blasted. The size and material the shot media is composed of is dependent on the desired final surface condition of the part. Softer components, or components with tighter dimensional requirements, may use less aggressive shot that high hardness, or large components.