



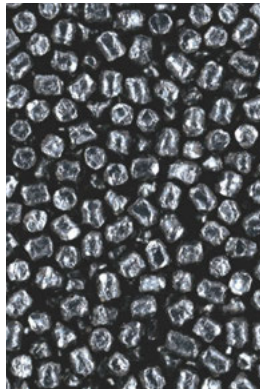
Shot peening media

Cut wire

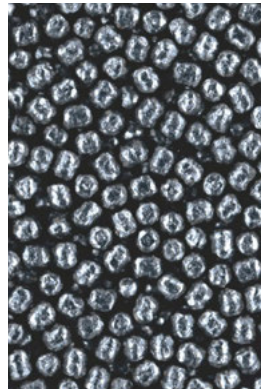
Cylindrical



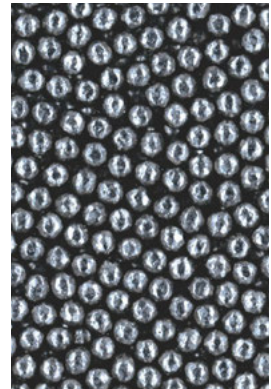
Rounded G1



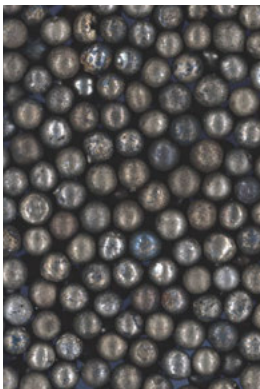
Rounded G2



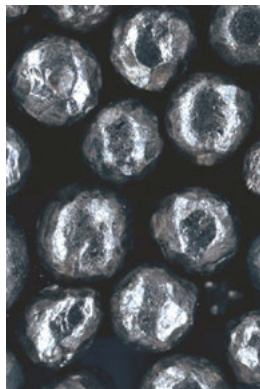
Spherical G3



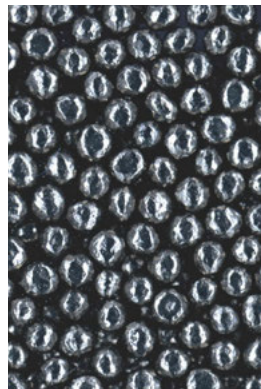
Cast iron



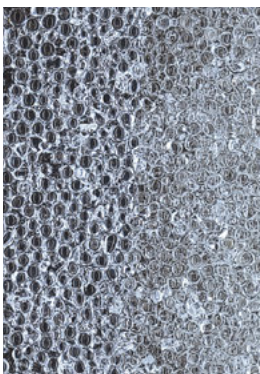
Steel iron



Stainless steel



Glass beads



Ceramic beads



Corundum



Shot peening media

The shot peening media is the tool of shot peening

**The better the shot peening media
the better the result of shot peening**

- The shot peening media should be spherical.
Broken and uneven particles may produce harmful effects.
- The shot peening media should at least have the hardness of the part to be peened, otherwise the compressive residual stress and the depth of compressive stress layer will be significantly reduced.
- The shot peening media should be conditioned to have only particle size to the established limits, otherwise the depth of compressive stress layer will be reduced.
- The shot peening media should be dry, free from dust and clean, otherwise there will be a damping effect and the compressive residual stress will be reduced as well as the depth of compressive stress layer.
Parts also could be unacceptably contaminated.



**acceptable
shot peening media**



**unacceptable
particles**



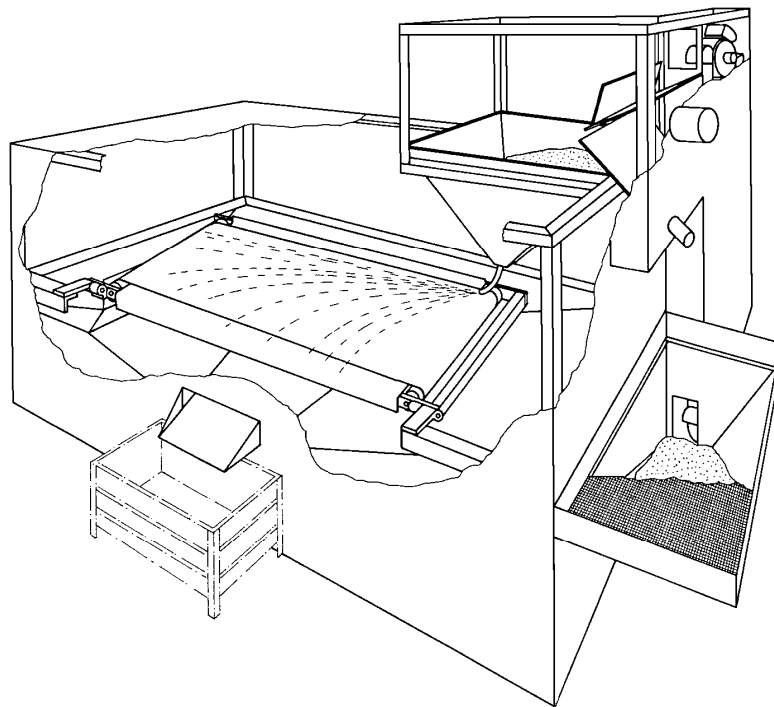
Shot peening media reconditioning

Shot peening media sorter and classifier

To meet the established limits of shape, size and contamination of the shot peening media we have designed and manufactured by our company:

a **shot peening media sorter**, called „**Monoplan**“ and

a **shot peening media classifier**, called „**Drumsizer**“.



„**Monoplan**“ shot peening media sorter

„**Monoplan**“ shot peening media sorter

First the used shot peening media passes through a screen to keep back waste, burrs, fins, wire edges, splinters and other fragments.

Then the shot peening media passes through the media sorter, in which the spherical media is separated from broken and uneven media and dust and fine particles are removed.

The function of the media sorter is based on the different rolling friction of different shapes and sizes of materials.

In the media sorter the shot peening media is transported by an oblique plane belt conveyor. The spherical media will roll by gravity from the oblique plane belt conveyor. However, the broken and uneven media, dust and fine particles will stay on the belt conveyor until they are eventually dropped over the tail pulley.



Shot peening media reconditioning



„Drumsizer“ shot peening media classifier

„Drumsizer“ shot peening media classifier

After passing through the shot peening media sorter used shot peening media passes through the shot peening media classifier, which classifies the shot peening media into several size groups from 0.2 mm to 2 mm.

In the shot peening media classifier, the shot peening media is transported by gravity through an inclined drum sieve with several different mesh sizes, to classify it into several size groups.

Oversized media and large fragments will fall out at the end of the drum sieve.



Verifying the shot peening media

Undersized particles of cut wire and steel shot

The control of undersized particles in the shot peening media is done by sieving.

Weight of test sample = 200 g
 Sieving time = 10 min
 Maximum proportion of undersized particles = 10 %

The following screen sizes are recommended:

Steel shot SAE	Steel shot EN ISO 11124-3 EN ISO 11124-4	Cut wire VDFI 8001	Screen size
S 110	GS-R 0.30 - 0.60	StD-G 0.4	0.20 mm
S 170	GS-R 0.40 - 0.80	StD-G 0.6	0.30 mm
S 230	GS-R 0.60 - 1.00	StD-G 0.8	0.50 mm
S 330	GS-R 0.80 - 1.25	StD-G 1.0	0.71 mm
S 390	GS-R 1.00 - 1.60	StD-G 1.4	0.90 mm
S 460	GS-R 1.25 - 2.00	StD-G 1.6	1.00 mm
S 550	GS-R 1.60 - 2.24	StD-G 2.0	1.40 mm

Unacceptable particles of cut wire and steel shot

The shot peening media should be spherical.

Unacceptable media types are:

- uneven shot
 - shot with a diameter to length ratio $> 1/2$.
 - drop shaped shot, twinned shot, etc.
- sharp edged shot

The visual control of uneven and sharp edged shot could be done by sampling with transparent adhesive tape and using a 20x magnifying glass or a slide projector.

Steel shot SAE	Steel shot EN ISO 11124-3 EN ISO 11124-4	Cut wire VDFI 8001	Maximum proportion of uneven shot	Maximum proportion of sharp edged shot
S 110	GS-R 0.30-0.60	StD-G 0.4	5 %	2.0 %
S 170	GS-R 0.40-0.80	StD-G 0.6	4 %	1.5 %
S 230	GS-R 0.60-1.00	StD-G 0.8	3 %	1.0 %
S 330	GS-R 0.80-1.25	StD-G 1.0	2 %	1.0 %
S 390	GS-R 1.00-1.60	StD-G 1.4	2 %	0.5 %
S 460	GS-R 1.25-2.00	StD-G 1.6	1 %	0.3 %
S 550	GS-R 1.60-2.24	StD-G 2.0	1 %	0.3 %

Unacceptable particles of ceramic beads

Maximum proportion of unacceptable ceramic beads is 10 %.

Unacceptable particles of glass beads

Maximum proportion of unacceptable glass beads is 10 %.