Repkon is a provider of turn-key complete production plants for the metal forming sector as well as a designer, manufacturer and supplier of key metal forming machines for the global market, with a well established reputation for outstanding performance. Our advanced in-house research and engineering capabilities in strategic technologies such as flowforming, shear forming, hot spinning, forging and ex-proof presses allows us to serve our customers part and machine needs.

Repkon Activities

- Defence Industry
- Aviation & Aerospace Industry
- Automotive Industry
- Oil & Gas Industry
- Mining Industry
Cartridge Case production using Repkon Free Flowforming Technology presents a superior alternative to conventional multistep press forming operations. This new technique will eliminate expensive consecutive multi step operations such as deep drawing, heat treatment and binderizing, allowing you to produce the brass or steel cartridge cases much faster with much better quality. Using Free Flowforming technology Repkon technology team has produced 122 steel cartridge case with single flow forming pass in less than 3 minutes.

In comparison with the traditional manufacturing techniques, Free Flowforming Technology will improve the final product in the following ways:

- Superior material properties due to cold forging effect hence reduction in cartridge failures.
- Superior geometrical tolerances including the straightness, cylindricity and concentricity.
- Elimination of secondary machining operations, including internal turning by net or near net shape forming.
- Superior internal and external surface quality.
- Increased forming tool and mandrel life due to incremental forming without friction.
- High production numbers and stable production parameters with lesser raw material usage, minimized energy consumption.
- Elimination of micro cracks due to continuous cold forging effect.
- Minimized residual stress due to continuous and smooth forming process.
- Better material hardness variation along wall thickness.

Repkon technology team has achieved to produce the following cartridge case ranges:

- Medium range cartridge case from Ø25mm to Ø40mm steel material
- Large range Ø70mm to Ø155mm from brass or steel material

Flowforming is an advance cold forming technique which is used for production of rotationally symmetric parts using continuous cold forging. This forming technique has been around for more than 50 years but very little development is made on its core technology. Although Flowform technique is being used in wide range of applications in defense industries since many decades, until now it was not possible to produce cartridge case due to technological forming limitations.

Although flow forming has numerous advantages, some of the main ones can be summaries as follows:

- Cold work hardening effect resulting in increased material tensile strength.
- Draped grain structure in the direction of deformation.
- Increased geometrical tolerances.
- Improved internal and external surface quality.

In addition to aforementioned conventional flowforming advantages, Repkon patented free flowforming technique enhances these advantages to a new level. Some of these advantages are given below:

- Increased reduction ratio resulting in much better material strength.
- Forming material under colder condition resulting in much better surface quality.
- Forming material under colder condition resulting higher geometrical tolerances.
- Up to 6 times faster forming speeds.
- Possibility of producing complex multi internal contours.
- Possibility of non-rotational symmetric internal contours.
- Increase in mandrel life due to friction less forming.
- Producing exactly same final part from simaler and lighter preform.

When compared to conventional flowforming, free flowforming technique reduces the number of forming passes required to produce the final part.

- Faster load & unload times when compared with the conventional systems.