



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



REPKON MACHINE & TOOL INDUSTRY AND TRADE INC.

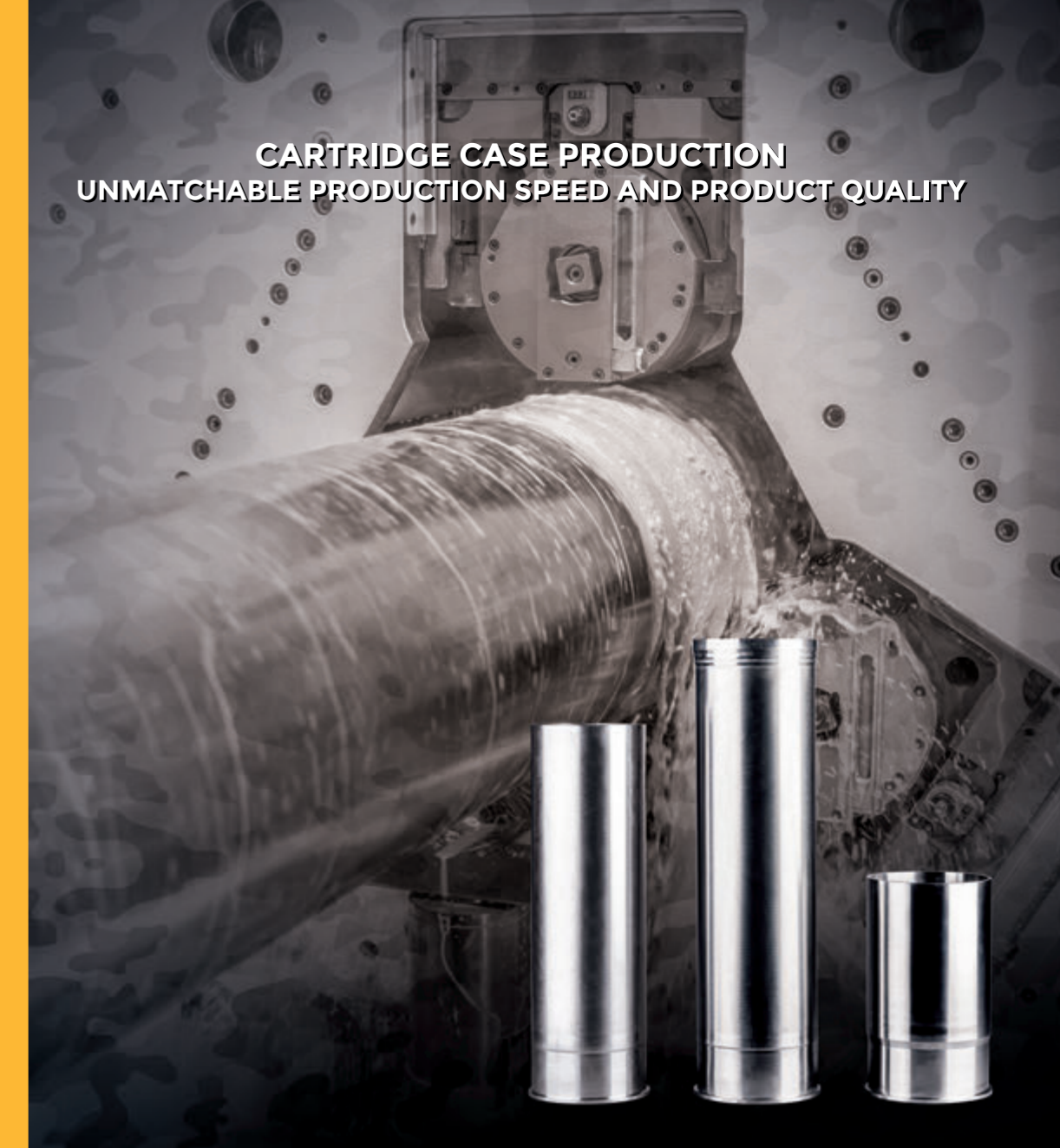
PLANT
BALIBEY MAHALLESİ, FABRIKA SOKAK, NO:1 34980 SİLE, İSTANBUL / TÜRKİYE
PHONE: +90 216 739 59 06 (pbx) FAX: +90 216 739 59 14 E-MAIL: repkon@repkon.com.tr

www.repkon.com.tr

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40 YEARS
OF QUALITY

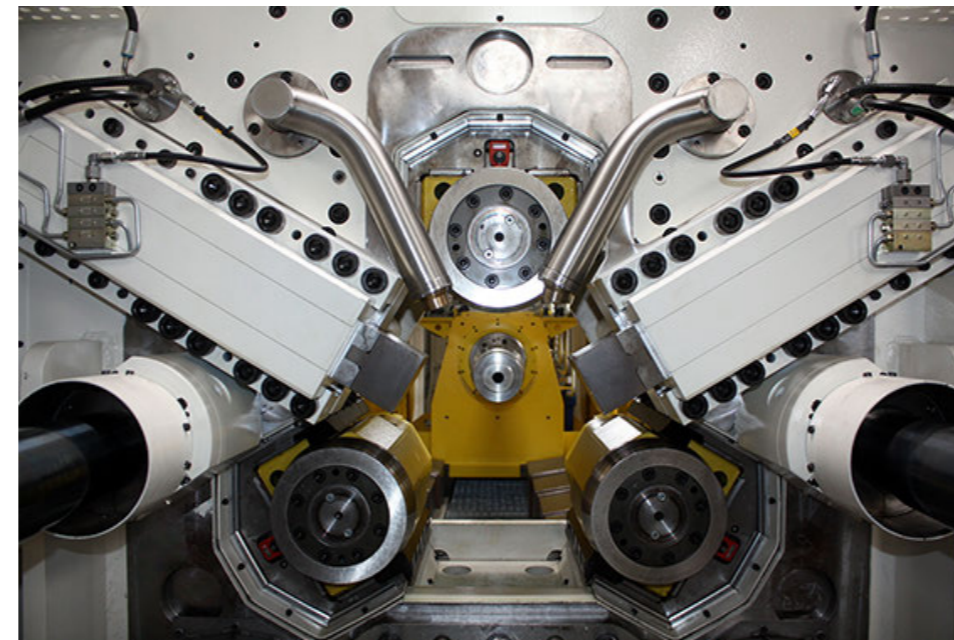
CARTRIDGE CASE PRODUCTION
UNMATCHABLE PRODUCTION SPEED AND PRODUCT QUALITY



REPKON

..setting flowforming 'free'.

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 bonderizing, 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 $\phi 25\text{mm}$ to $\phi 40\text{mm}$ steel material.
- Large range $\phi 70\text{mm}$ to $\phi 155\text{mm}$ from brass or steel material.

Flowforming is an advance cold forming technique which is used for production of rotationally symmetric parts using continues 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 defence 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.
- Drafted 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 frictionless forming.
- Producing exactly same final part from simpler 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.