

Leading Industrial Components

Top class ammunition components and pyrotechnic elements for hunting and sports, defence and law enforcement and business to business



RWS GmbH – Ignition Technology since 1886

The company was founded as Rheinisch-Westfälische Sprengstoff-Actiengesellschaft (RWS) in 1886. With a workforce of 1,500 at two locations in Germany, the ammunition manufacturer is now the European market leader for small caliber ammunition, pyrotechnic elements and components. RWS GmbH is the innovation driver for heavy metal-free primer elements and special use cases. The ammunition manufacturer is the proud holder of over 300 patents.

With a consistent market orientation and targeted investments in plants and research & development, the company has been on a continuous path of growth for many years.

RWS GmbH is part of the Beretta Group.



- Components for Small Arms Ammunition
- Ignition Elements
- Industrial Cartridges
- Explosive Mixtures

Consistently Customer-Focused

A comprehensive portfolio of small caliber and special ammunition addresses the needs of hunters, sport shooters, law enforcement and the armed forces. The range of small caliber ammunition low in harmful substances with NATO qualification for security forces is unique. RWS GmbH draws on its expertise in the ammunition sector and for primer technology to develop technical applications such as cartridges for powder actuated tools and safety systems in the area of industrial pyrotechnics.

Innovation & Technology

As one of Europe's most important ammunition manufacturers, RWS produces all of the components for its own ammunition products in-house. In doing so, the company drives innovation within primer technology. SINTOX, the first low-pollutant and heavy metal-free primer set, was developed over 40 years ago. To this day, the company uses revolutionary energetic components to develop and implement non-toxic concepts that are free of lead and other heavy metals. RWS GmbH applies state-of-the-art manufacturing processes and techniques. All products must undergo extensive testing to uphold the rigorous quality standards. Among other resources, modern test stands with highly specialized measuring equipment and shooting ranges between 10 and 500 m are available for this purpose.

Safety, accuracy and environmental compatibility are the top priorities at RWS. This commitment applies both to manufacturing and the use of products by customers. In line with this, more than €10 million have been invested in safety and environmental protection at the Fürth site in Germany over the past 5 years.



Components for Small Arms Ammunition

Ammunition consists of four components: cartridge case, primer cap, propellant powder and projectile. As one of the most important ammunition manufacturers, RWS GmbH produces all the components for its ammunition products, except for propellant powder. The high quality standards of components make RWS the preferred partner of other ammunition manufacturers who gladly utilise RWS's production know-how.

Cups

Cups are the component necessary for the production of cartridge cases. Cups are pressed from brass strips for cases and projectiles and undergo further finishing processes so that they can be best utilised in the manufacture of cases. The first manufacturing process determines the quality of the cases made from these cups. RWS delivers cups to customer specifications to optimise the further production by the customer.

Primer Caps For Small Arms Ammunition

The quality of the primer caps determines the quality of the ammunition. The compatibility of the primer caps with other ammunition components especially the cartridge case and propellant results in the difference between a mass produced product and one which is specifically matched to a particular system. Only the best ammunition can provide the desired precision from the intended weapon. RWS uses its expertise and know-how to adjust each primer cap to suit specific customer requirements. RWS manufactures Berdan and Boxer primer caps for all current small calibres.

Cartridge Cases

RWS produces not only cartridge cases of the most commonly used calibres for Armed Forces and law enforcement (5.56 mm, 7.62 mm, 9 mm and 12.7 mm) but also a large variety of other cases.

Projectiles

Besides projectiles of the most commonly used calibres for Armed Forces and law enforcement (5.56 mm, 7.62 mm, 9 mm and 12.7 mm) RWS also manufactures a large variety of other special projectiles.

Ignition Elements

Primer caps are applied not only to ignite ammunition but also in other applications, which require fast reaction. In addition to Berdan primer caps and primer caps with an anvil (Boxer) RWS manufactures stab primers, friction primers, electric primers, ignition chains and propellant charge primers. Actuators complete the range of products.

Primer Caps

RWS's primer caps trigger the special ammunition used for explosive disposal waterjet disruptors and initiate the release of oxygen masks in passenger aircraft. Signal ammunition for sea rescue services functions predominantly with friction primer caps from RWS.

Primers for Medium and Large Calibre Ammunition

Electric primer caps from RWS for medium calibre ammunition guarantee a high rate of fire, accuracy and reliability for cannons. By means of applying the so-called metal layer elements RWS has developed a sophisticated technology, which is clearly superior to the conventional systems (gap primers

and primers with bridge wire ignition) and thus has set a new standard for new generation ammunition. Primers and propellant charge primers (with both mechanical and electric triggers) are available in different designs. In addition to ignition chains for 30 mm ammunition, which is standard ammunition for light armoured vehicles and is used in particular for UN missions, propellant charge primers for artillery ammunition e.g. 155 mm play a dominant role in the product portfolio of RWS.

Actuators

Pin pulling or pushing actuators used as pyrotechnical switches complete the product range of RWS. Actuators activate the stabilising fins of a missile and help to minimise the risk of whiplash injuries in road traffic accidents using crash-active headrests.



Industrial Cartridges

Propellant cartridges are used in dynamic devices in which something is moved by means of gas pressure. These are mainly blank cartridges whereby the case of the propellant tank, the powder charge and the primer charge or primer cap is the igniter. The propellant charge is converted into gas in order to move a pin within a pressured chamber. The pin in turn moves or activates another part. In addition to the described cartridges for direct fastening or animal stunning there are also special cartridges for activating ejection seats or defusing explosives. In all applications RWS works closely with system manufacturers and with its pyrotechnical knowhow is able to meet varied requirements.

Direct Fastening

The idea of using the speed and power of ammunition technologies for fast and repetitive fastening processes was first implemented during the Second World War. With the help of powder actuated tools a lot of damaged ships could be repaired much more efficiently than by welding or drilling. A market success of modern pyrotechnical fastening was achieved by the brothers Martin and Eugen Hilti from the Principality of Liechtenstein. In 1953 they launched the first fastening tool shortly after the invention of a pneumatic nail gun in the USA. RWS produces propellants for modern powder actuated tools. These are mainly blank cartridges, which generate a gas pressure in the main device and are used as the actuator. In the fastening tool the blank cartridges activate the thrust of the piston, which drives the respective fastening element, normally a nail, into the specified position with an exact amount of energy. These cartridges from RWS enable direct fastening in just one step. Previously this process required three individual operations of boring a hole, inserting a dowel and tapping a screw.

Animal Stunning Cartridges

At the beginning of the last century the stunning of cattle using a bolt stunner has enabled the humane slaughtering of livestock and still remains the most humane method of stunning today. The increased number of abattoirs has introduced more efficient, if questionable, stunning methods. Therefore, today, cartridge operated bolt stunning tools are predominantly used in small and medium sized slaughter houses. RWS works closely with bolt stunner manufacturers to ensure the cartridges are best suited to the tools.





Explosive Mixtures

The manufacturing of non-toxic primary explosives is a core expertise of RWS. In the 1920s the world's first corrosion-free primer composition was developed with the brand name SINOXID®. In the 1980s the first heavy metal free primer composition followed with the brand name SINTOX®, which even today is still without competition. Today RWS continues to manufacture most of its products where possible with non-toxic (lead and other heavy metal free) primer compositions. Primer Compositions and pyrotechnical primer mixtures from RWS are primarily applied by customers in automotive safety systems (e.g. airbags and seat belt tighteners). Furthermore, there are many other fields of application including the aviation and space industries.

Primary Explosive

- Primary Explosive is the core of an igniter: its task is to dissipate energy into a flame effective due to quick and uniform ignition (time-to-light $\ll 1$ msec).
- RWS production program: Lead styphnate, Benzanate, CaStyp, Diazol, Pikrazol

Booster Charges And Special Mixtures

- RWS Booster Mixtures: B/KNO₃, TIPP
- Auto Ignition Mixtures are used to meet the requirements of official standards regarding transport safety (bonfire test) as specified by e.g. BAM, DOT, etc.
- High Temperature stable Pyrotechnic Mixtures (HTPM) are a newly developed group of pyrotechnical mixtures designed for use in engine compartments or more generally in environments where high thermal stability is required.
- Specific mixtures and developments available upon request.

RWS

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