

coatings  
for the pole position



axyspeed

# coatings for the pole position

## axyntec : services

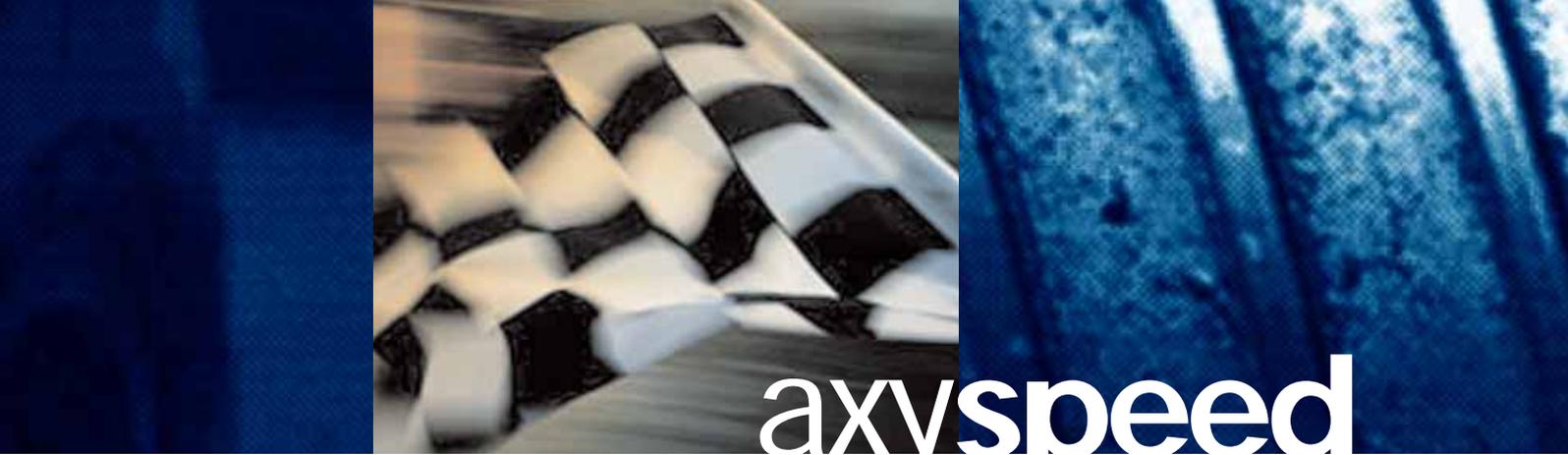
AxynTeC offers as a service provider in the surface and thin film technology **material screenings**, customer specific **coating and process development**, **contract coating** and **coating plants**. With the innovative plasmaimpax process and impax hardware, surface properties like hardness, friction coefficient and wear resistance of components in engine, power train or other tribological systems can be optimized. Operation also during lack of lubrication will be improved by reducing friction and preventing abrasion in the system. As a result engine or system performance as well as durability increase and maintenance cycles can be reduced. This enhancement of surface properties finally results also in a reduction of fuel consumption and exhaust emission.

AxynTeC's technologies allow a **surface modification** by ion implantation processes as well as by a deposition of different **functional coatings**.

## axyprotect : speedmaster

**Diamond-like carbon coatings** (DLC, a:C-H) are a material class with excellent mechanical and chemical properties. The combination of **high hardness**, **low friction coefficient** as well as chemical stability predestine axyprotect to be applied on components in motor and power train systems as well as engineering or medical components and tools. The friction coefficient of **axyprotect** for example is 3 to 10 times lower in contrast to steel alloys or ceramic hard





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coatings. The combination of hardness and low friction is ideal for all tribological systems and the secret of success of this material class. Thus abrasive and adhesive wear can be avoided and components of tribo-systems protected in dry-running situations. The patented **plasmaimpax** technology allows the deposition of compact and chemical inert wear resistant coatings.

friction coefficient (steel, dry):	0.05 - 0.15
hardness (Martens hardness):	12 - 25 GPa
elasticity:	120 - 180 GPa
coating thickness:	1 - 4 $\mu\text{m}$
coating colour:	anthracite-black
chemical resistance:	chemical inert

## axynit : backbone

To increase hardness and wear resistance of components, the axynit-process is a surface modification performed by means of the plasmaimpax technology without a material deposition. The top surface layers of substrate materials will be modified through a three dimensional ion implantation process out of the plasma to increase hardness for example. Such an axynit process can also be used as an additional pre-treatment to support an axyprotect layer on components exposed to very high mechanical stress.

hardness (Martens hardness):	10 - 20 GPa
modification depth:	0.1 - 2 $\mu\text{m}$

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