

Seal faces.

TISTAM® products deliver safe, reliable sealing performance in any application including oil pumping and cracking, gas compression, process gas containment, phase separation or synthesis of chemical substances, pipeline sealing, dairy product filling or compensation of temperature expansion in flue gas systems. Our challenge is to design seals that are able to withstand a wide range of media, different aggregate states and varying pressure and temperature and to provide special solutions for small installation up to seal contact areas of several meters. Every application has its own special requirements profile, and our job is to provide the best sealing solution.

Selecting the proper mechanical seal face material combination is crucial in providing every mechanical seal a prolonged seal life & eliminating any chances of a premature seal failure. TISTAM® Mechanical Seals offers an extensive variety of mechanical seal face materials and gladly offers experienced advice of which mechanical seal face materials are best suited for your exact operating conditions.

Tungsten Carbide.

Tungsten carbide is a carbide ceramic that is used in many products requiring high hardness and toughness. shares many of the same difficulties in manufacturing shapes with other ceramics. WC is readily available in powder form but must be processed into a final shape. Tungsten carbides are most often manufactured as cemented carbides. As a cemented carbide there is no attempt to bond to itself. Rather a secondary metal is added to bind or cement the particles together. This results in a material that has the combined properties of both the carbide and the metal binder. This has been used to an advantage by providing greater toughness and impact strength than possible with alone. One of the primary weaknesses of cemented is its high density.

Silicon Carbide.

In the simplest sense, silicon carbide (SiC) consists of one atom of silicon bonded to one atom of carbon. This results in a tenacious bond that is extremely stable over a wide range of temperatures and chemical environments. It also has other desirable properties such as a high hardness and a high modulus. Unfortunately, it is also a material that is difficult to manufacture in shapes suitable for component design. For many years, a reaction bonding process has been used to manufacture components. More recently, sintering processes have been used. Other methods such as chemical vapor deposition (CVD) or conversion processes are used in areas outside of mechanical seals. Silicon carbide almost never exists in nature This remains one of the most common methods for production of SiC materials. This method results in a mass of large blackish blue crystals that are then crushed into various size particles. The powders are then used for abrasives or secondary SiC processes.

Ceramic Materials.

Ceramics can be defined as nonmetallic, nonorganic materials that usually require high temperature processing. In a general sense, this can refer to everything from pottery and china to carbides and oxides. In an engineering sense, the term generally refers to a class of materials that are characterized by their high hardness, high stiffness, low thermal expansion, and good wear resistance. For mechanical seals, these include silicon carbide, tungsten carbide, and alumina oxide. Other materials such as silicon nitride are used in specialty applications.

Carbon.

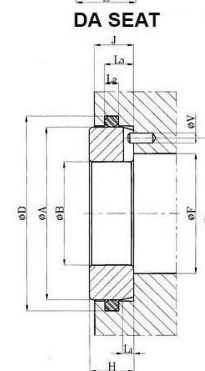
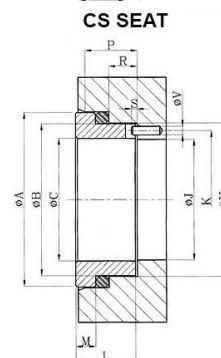
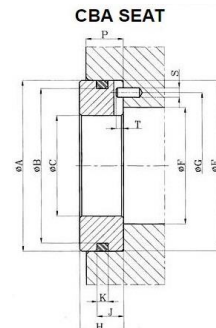
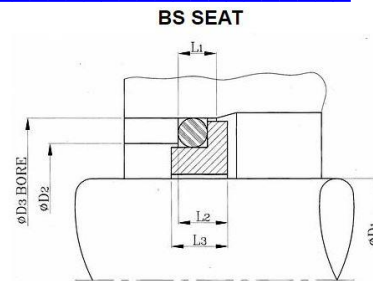
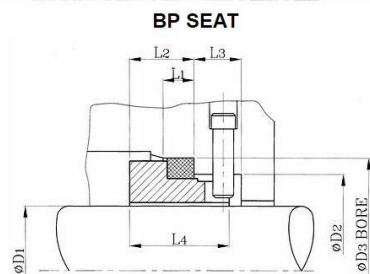
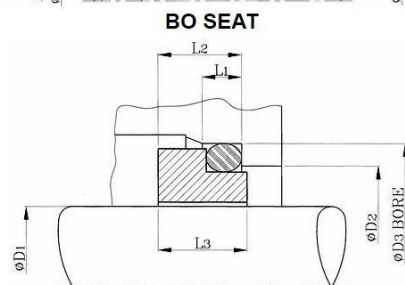
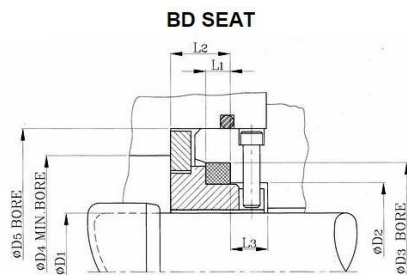
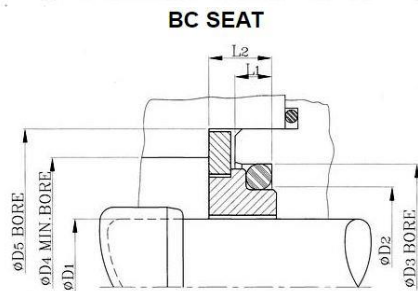
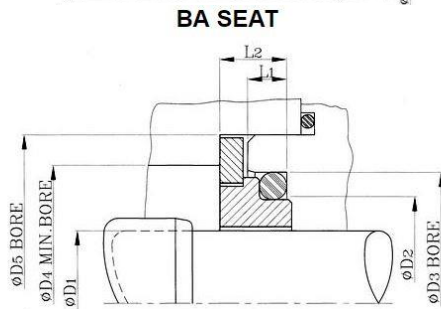
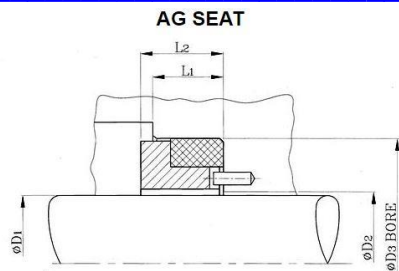
Carbon is one of the most abundant elements on earth. It is the basis for all organic products and processes. It is also an interesting material because it takes on forms from amorphous carbon to graphite to diamonds to fullerenes. Carbon is inert, stable, and can be self-lubricating. It is used in products as varied as pigments, carbon black in rubbers, and electrical brushes. It can take the form of soft carbon graphite powder to hard friction pads. Mechanical carbons used in seal faces are a mixture of amorphous carbon and graphite. The percentages of each help determine the physical properties on the final grade of carbon. In addition to carbon, other elements and compounds are present that affect the properties of the grade of carbon.

Resin Impregnated Carbon.

As the name implies, resin impregnated carbon is a mixture of amorphous carbon/graphite that has been impregnated with a thermo set resin. This is by far the most common type of carbon for mechanical seals used in industry today. While there is a wide variety of specific formulations or grades available, most resin impregnated carbons are capable of operating in a wide range of chemicals from strong bases to strong acids. They possess good frictional properties and an adequate modulus to help control pressure distortions

Antimony Impregnated.

Metallized carbons are available with a variety of metal impregnants including copper, bronze, lead, and antimony. Of these, antimony has proven to be the most successful in seal applications. The addition of antimony has a couple of beneficial effects that can improve seal performance. First, the addition of a metal impregnant increases the strength and modulus of the material. This is beneficial for high pressure applications when a stronger and stiffer material is needed. Antimony impregnated carbons are more resistant to blistering in high viscosity fluids or light hydrocarbons. This has made it the standard grade for many refinery applications. These benefits come at a price. The chemical compatibility of an antimony carbon is limited by the antimony metal. Carbon manufacturers and seal original equipment manufacturers (OEMs) can give guidance on selection of antimony impregnated carbons for specific applications.



DIN24960 SEAT (G,G9,G6....) Available

