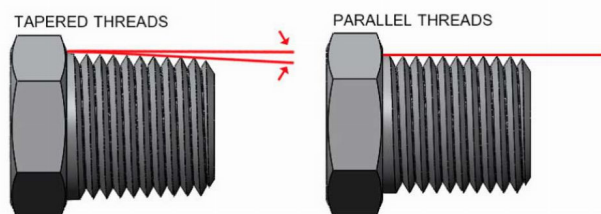


## Fitting.Made.Easy. Technical Bulletin

### Parallel Threads

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OmegaOne manufactures stainless steel hydraulic fittings and adapters in a variety of thread types. There are two main categories of threads which encompass the offering from OmegaOne. The two types of threads are straight or parallel threads and taper threads that both perform and seal differently. This blog covers parallel threads, taper threads are covered in our Technical Bulletin explaining Taper Threads.



A parallel, or straight thread fitting seals using a sealing surface other than the threads. OmegaOne manufactures fittings which utilize three different parallel thread types; SAE Flare, SAE Flareless and SAE Straight Thread or O-Ring Boss (ORB). Parallel thread fittings function simply, by pulling together different components to form a seal, each seal differently. All three thread types are specified in the SAE J514 standard.

#### AN Standard

In the area of parallel threads, you may come across a reference to the AN standard. The AN standard was developed during World War II, to standardize the manufacturing of fittings used on military equipment. The AN is commonly understood to stand for Army-Navy or also Air Force - Navy Aeronautical Standard, each trace back to the same standard. The AN standard in function is the same as the flare style fitting manufactured by OmegaOne. The AN standard will also touch on SAE straight thread and NPT due to the fact that flare fittings must adapt to other connections.

#### SAE J514 Standard

SAE J514 standard and MIL-F-18866 standard specifies the manufacturing of these fittings. OmegaOne manufactures these fittings in accordance with SAE J514. The SAE J514 standard replaces both the MS16142 military specification and the AN Standards, although reference to both MS16142 and AN are still common. SAE J514 fittings are dimensionally identical to AN (Army and Navy) fittings, but are produced to less exacting tolerances and are generally less costly.

### Flare & Flareless

Flare and Flareless fittings for a metal on metal seal. The Flare fittings form a seal when a 37° flare nose connects to a flared tube of opposite angle (74°). The connection is made when a ferrule and nut all used to connect the fitting body with a flared tube. OmegaOne identifies our flare fitting by the name, OmegaFlare.

Flareless fittings for a metal to metal seal in a similar method. A fitting body is used in conjunction with a ferrule and nut to connect with tube. The flareless fitting forms a metal to metal seal with fitting and tube, when the ferrule bites into the tube. Once all the components are assembled. OmegaOne identifies our flare fitting by the name, OmegaBite.

### O-Ring Face Seal

Face Seal fittings also utilize a parallel thread. As with flare and flareless fittings, face seal fittings also function with nut, sleeve and fitting body. A groove is machined into the face of the fitting body to hold an O-ring, which when assembled form a soft seal between the fitting body and tube.

There are two styles of sleeves. The first style of sleeve is a mechanical sleeve which works with tubing which is flared and pressed against the sleeve to form a flat face. The second style is braze, in which the sleeve is brazed onto the tube. Once the sleeve is in place the nut and body thread together with the flat face of the tube or sleeve forming the face seal. OmegaOne identifies our face seal fitting by the name, Omega Seal.

OmegaOne has additional Technical Bulletins discussing how Flare, Flareless and Face Seal fittings function, as well as ideal applications.

### SAE Straight Thread (ORB)

SAE straight threads are also commonly referred O-Ring Boss (ORB). Without the flare, the seal occurs against an O-Ring. This thread type, typically used to thread into a port or manifold. An additional feature found on some straight threads is a bulk head nut (BN) or lock nut. The purpose of the bulk head nut, is to allow the exact positioning of the fitting for alignment with the tube or hose it is connecting to.

### BSPP

British Standard Parallel Port or BSPP O-Ring male connector has straight threads or parallel threads that utilize a synthetic O-Ring to seal against a BSPP female port. There are two styles of BSPP male connectors. First, with

an O-Ring with plated steel retaining washer. The second style uses a bonded seal which has the rubber O-Ring steel retaining washer integrated. Similar to the O-Ring on an SAE straight thread the bonded seal forms the seal against the mating surface.

BSPP is predominant in Europe. As global manufacturing has expanded there is more and more equipment found in the US that is manufactured in Europe and in use in the US. OmegaOne does not stock fittings with BSPP, however, we are capable of producing this thread type and have produced this thread type.

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With further sales and product specification information, contact  
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