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Npt vs bsp pdf

While NPT/NPS threads are common in the United States and Canada, BSPT/BSPP (collectively, BSP) threads are widely used in many other countries. I have discovered that my Japanese built injection molding presses mainly have BSP fittings. BSPT -British Standard Pipe Taper BSPP -British Standard Pipe Parallel NPT -National Pipe Taper NPS -National Pipe Straight While the actual specified outside diameters of American National Pipe differly from those of British Standard Pipe, either thread may be reliablely cut on a pipe of its respective trade size. BSPT and BSPP threads are analogous to NPT and NPS threads, respectively. WARNING: Never try to pair a BSP fitting with an NPT or NPS fitting if the pressure-holding power is not at all critical. NPT/NPS and BSP wires are not compatible due to the differences in their wire shapes, and not just the fact that most diametrical sizes have a different pitch. NPT/NPS threads have a 60° inserted angle and have flattened peaks and troughs (this is a Sellers wire shape); BSP wires have a 55° included angle and have rounded peaks and troughs (this is a Whitworth wire shape). NPT and BSP threads (threads per inch, TPI) are listed below. Use a wire meter or count the number of wires that fall into a 1-series to determine the pitch. Note that, strictly speaking, when we use wires per inch, we are actually specifying the inverse of the pitch, pitch being in units of [length] / [peak to peak]. Metric threads are usually specified in the actual pitch, for example 1.5 mm, 2.0 mm, etc. This is the actual length of each wire, peak to peak. Although the term pitch is universally used, albeit loosely, to describe wires per inch, the actual pitch of a 1/4BSP assembly is really 1/19 inch, or 0.0526 inches. Pressure systems in the process industry use different ways of sealing, depending on the geographic region, the size of the pressure system and the environment. There are regional differences in sealing types and industry preferences. For example, many pressure systems on board ships use BSPP adapters, while many applications in the oil and gas industry use NPT fittings. While one seal style is not inherently better than the other each style has its application. NPT Connections NPT (National Pipe Thread) seals are the most popular form of sealing for pressure calibration systems in the US and Canada. NPT male adapters have a taper wire that wedges into the female NPT adapter. They seal because of the out of roundness principle which means that the male extends the female assembly until there is so much force that the connection can hold pressure. One of the challenges with this design is that if you connect stainless steel to stainless steel then or poor lubrication can lead to gauling and damage to the wires. Wire kit is needed to seal, but only 2 turns of wire kit is required. More than that and the seal can leak around the wire kit. Ralston Instruments has Wide variety of male NPT adapters, male Quick-disconnect NPT adapters, male NPT calibrator adapters, female NPT adapters, female NPT meter adapters and female Quick-disconnect NPT meter adapters. BSPT Connections BSPT (British Standard Pipe Taper) is similar to NPT, except that there are significant differences. The angle over the flanks of wires (if you cut the fitting into half-long roads and measured the angle from root to comb to root) is 55 degrees instead of 60 degrees as it is for NPT. Another important difference is that for many BSPT pipe sizes the wire pitch is different from NPT. For example, an NPT male sometimes fits into a BSPT fitting or vice versa, but they will not seal. This is a popular assembly in China and Japan, but is very rarely used in North America unless the equipment to which it is attached was imported. Wire kit is needed to seal the male and female assembly together. Ralston Instruments has adapters for both male BSPT adapters and female BSPT adapters. BSPP Connections BSPP (British Standard Parallel Pipe) is most popular in the UK, Europe, Asia, Australia, New Zealand and South Africa. It is a parallel wire assembly that uses a tied seal ring to do the sealing. This tied ring seal is sandwiched between one shoulder on the male assembly and the face of the female assembly and is squeezed into place. BSPP pressure gauges have a longer male thread and use a copper crush ring that is squeezed between the bottom of the male assembly and the bottom of the female BSPP hole form a busy tight seal. No wire kit is needed to form a seal. Ralston Instruments has male BSPP adapters, female BSPP adapters, female BSPP meter adapters and female BSPP Quick-disconnect meter adapters. NPT wires are common in the United States and a few other countries, BSP wires are widely used in many other countries. BSPT -British Standard Pipe Taper BSPP -British Standard Pipe Parallel NPT -National Pipe Taper NPS -National Pipe Straight While the actual specified outside diameters of American National Pipe differly from those of British Standard Pipe, either thread may be reliablely cut on a pipe of its respective trade size. BSPT equivalent is NPT and BSPP's equivalent is NPS. Never switch wires if it is a high pressure application. NPT/NPS and BSP threads are not compatible due to the differences in their thread shapes, and not just the fact that most sizes have a different pitch. NPT/NPS wires have a 60° angle and have flattened peaks and troughs (Sellers wire shape) where as BSP wires have a 55° angle and have rounded peaks and troughs (Whitworth wire shape). NPT and BSP threads (threads per inch) are listed below. Use a wire meter or count it wires that fall into a 1-set to determine the pitch. Trade Size Pitch (Threads per Inch) NPT/NPS BSP 1/8 27 28 1/4 18 19 3/8 18 19 1/2 14 14 3/4 14 14 14 11 11 11 11 11 1/2 11 11 11/2 11 1/2 11 11 11 11 2 1/2 8 11 3 8 11 3 1/2 11 4 8 11 5 8 11 6 8 11 To the trade size of the wire, first it must be determined whether the wire is tapered or parallel. This is done by measuring the first, fourth/fifth and final full thread. If the diameter increases from the first thread to the last thread on a male thread or decreases from the first to the last thread on a female thread, then the thread is classified as a tapered wire (such as BSPT). If the diameter remains the same from the first to last thread then the wire is classified as a parallel wire (BSPP). Once it is known whether the wire is parallel or tapered, it can be measured to determine that it is the size of the trade. This trade size will not directly represent what is measured, that is. 1/2 BSP is not equal to 1/2 measured. For a parallel thread, each wire can be used to measure for the size of the trade, and for a tapered wire the fourth or fifth full thread is used. This measurement can then be referred to a wire table to adjust it to the trade size. Note: Dimensions may differ slightly between the measurement and size of the trade size due to differences in tolerances in measurements and production. The location, environment, and pressure system can all affect the way a system is shut down. Whether it is a regional difference or a preference for industry, the difference between stainless steel BSP and NPT wires is not about which is better, but rather how it is applied to a printing system. NPT Threads National Pipe Taper Thread (NPT) is most commonly used in the United States (where it was made) and Australia to a lesser extent. Apart from the location, there are some unique features to NPT wires. The male adapters have a taper wire that wedges in the tapered female adapter and seal, due to the flanks of the wires compressing against each other when sufficient torque is applied. Minimal wire kit is needed for this style of wire as too much can lead to leakage. NPT wires in Australia are generally supplied as high pressure fittings where both male and female wires are tapered. However, there are some lower pressure fittings available in Australia as well as 150 # fittings that are male tapered and female parallel. BSP Threads British Standard Pipe Thread (BSP) is, as the name suggests, common in Britain, but is also the most widely used thread in Australia, as well as popular in China and Japan. The difference in this style from wire to NPT is the angle over the flanks of the wire (55 degrees instead of 60) and the fact that some pipe sizes for BSP wire range from NPT wire (21/2 & 6), which means that the two cannot be exchanged. Like the NPT 150 # fittings, the BSP 150 # fittings are tapered and feminine parallel. BSP wires are most commonly used in Australia as lower pressure 150# fittings, but are also available as high pressure fittings where the mating halves are both tapered. You can buy more here and find out more about stainless steel BSP fittings and the differences or buy our full range of stainless steel fittings here. Here. Here.

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