

Teacher
London Penland

Subject
Metric Fastener
Standards Comparison

Date
10/10/19

Comparing DIN 125 to ISO 7089/7090

Objective:

- Viewers will learn about the dimensional and hardness differences between DIN 125 and ISOs 7089 and 7090.

Essential Questions:

- How does DIN 125 compare to ISOs 7089 and 7090?
- How is 7089 different from 7090?
- Why the change in hardnesses?

Standards:

- DIN 125 -> ISO 7089/7090

Lesson Plan:

Engage (30 sec)

- What's round, has a hole in the middle, and we all love? ... Washers! (You were thinking doughnuts weren't you?)
- Today we've got Episode 5 of our metric standards comparisons vlog and we are starting our second series on washers.
- Today's lesson is on good ole' plain washers. You wouldn't think there'd be much to learn about them, but actually some very important changes have been made as DIN 125 has been withdrawn, though certainly still available, and replaced by ISO 7089 and ISO 7090. Let's discuss

Explain (2 min)

- The main differences are that the DIN , which had two types has simply been broken into two distinct ISOs, and the hardnesses have changed. There are no significant changes to dimensions between the DIN and ISO standards for these washers.
- First, instead of their being a DIN 125 A and DIN 125 B, there is now ISO 7089 and ISO 7090.
- DIN 125 A, i.e. a plain washer without chamfer, is now ISO 7089
- DIN 125 B, i.e. plain washer with chamfer, is now ISO 7090.
- Just to be clear, "chamfer" is referring to the edge. If an item has chamfer, then there is a slope to the edge, whereas if an item is without chamfer, then there is no slope, just a sharp edge. So ISO 7089 does not have that sloped edge, whereas ISO 7090 does have the sloped edge.
- Second, instead of 140 HV hardness being the standard as it is for DIN 125, the hardnesses are now 200 or 300 HV for ISOs 7089 and 7090 in alloy steel and just 200HV for the ISOs in stainless steel.
- Something that is commonly forgotten (or maybe ignored) is that according to ISO 7089:2000(E), bolts and screws up to and including class 8.8 steel should be using a 200HV washer, whereas bolts and screws of class 10.9 steel should be using a 300HV washer.

Extend (30 sec)

- DIN 125s are common here in the states, whereas the ISOs are not so common, which is where we come in. We specialize in ISOs! If you are looking for a washer for any stainless steel bolt, especially those with higher tensile strength, such as A4-80, then you should have the correct washer (ISO 7089 or 7090 in 200HV stainless steel) to go with it!
- As always, feel free to contact me personally at london@eurolinkfss.com with any questions or, of course, requests for quotes.

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- Also, all of the lesson plans for these episodes are now available on our website eurolinkfss.com. If you go to the news section, then VLOG, they will appear as you scroll down. So feel free to download these lesson plans for your convenience!
- And finally, as I said in the previous episode, a portion of all our sales for the month of October is going to the National Breast Cancer Foundation and you can even get a cool breast cancer T-shirt if you donate \$25 or more (while supplies last!).



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