Teacher
London Penland

Subject
Metric Fastener Standards Comparison

Date
5/10/21

Special Topic – DIN vs. ISO Standards for Fine Thread Parts

Objective:

- Viewers will learn the common issues seen when converting between DIN and ISO standards as they relate to fine thread products specifically

Essential Questions:

- How are fine thread parts standardized comparatively between the DIN and ISO classification systems?

Standards:

- DIN 934 (Fine) -> ISO 8673 (Fine thread ISO 4032)
- DIN 961 (Fine thread DIN 933) -> ISO 8676 (Fine Thread ISO 4017)
- DIN 960 (Fine thread DIN 931) -> ISO 8765 (Fine Thread ISO 4014)
- DIN 912 (Fine) -> ISO 12474 (Fine Thread ISO 4762)

Lesson Plan:

Engage (30 sec)

- Ohh, that's fine!
- Sorry, I was talking about this hex nut here – it's an ISO 8673.
- Not familiar with standard, eh? Don't worry, most people aren't.
- Actually there are a number of standards that people don't even realize exist. So they go around, trying to find a fine thread or extra fine thread version of a part, using the wrong part number and they get told by sales reps, "That part doesn't exist".
- Technically the sales rep is right, it doesn't, but also... it might.
- Unlike most episodes in which we directly compare two specific standards, today we are talking about a concept.
- The point is to this simple thing: Often ISO standards will have a separate callout for fine thread parts, whereas DIN standards may or may not have separate callouts.
- This confuses a lot of people, so let's explore...

Explain (2 min)

- Have you ever been looking for a fine thread hex nut? I bet you probably have.
- Everything is looking good, until you realize that it's an M10 diameter. Oh snap! Do you remember why this might be a hang-up? (Hint: 10, 12, 14, 22)
- ...
- In case you forgot, at the M10, 12 14 and 22 diameters, DIN 934 and ISO 4032 are actually dimensionally different.
  - Quick review: At M10, 12 and 14, the WAF is approx. 1mm smaller for the ISO hex nut, and typically a bit taller in height. At M22, the height remains taller for the ISO hex nut, but the WAF is actually approx. 2mm wider.
  - If you remember, this is also true for some other hex products, such as hex head cap screws (so DIN 933 to ISO 4017 or DIN 931 to ISO 4014 conversions).
- So, you check with your customer and they come back that they actually need the ISO 4032 dimensions.
- Okay, so now you are looking for an M10 ISO 4032 with fine thread (i.e. M10 – 1.25), except you aren't...
- Unlike DIN 934, in which companies often use product numbers like 934F8810 to denote that it's a fine thread DIN 934, ISO actually splits the standard into two, therefore ISO 4032 is for coarse thread hex nuts, whereas ISO 8673 is for fine thread hex nuts.
- This means that ISO 8673 and ISO 4032 are exactly the same dimensionally, with the ONLY difference being the thread pitch.

Teacher
London Penland

Subject
Metric Fastener Standards Comparison

Date
5/10/21

- The same is true for many other metric fasteners as well.
- For example, DIN 912.
  - In the past, if you wanted DIN 912 with fine thread, you noted that it was fine thread and/or made sure to include the thread pitch in your RFQ.
  - You may remember that DIN 912 converts to ISO 4762, so with that old way of calling out fine thread socket head cap screws, you may be tempted to ask for a fine thread ISO 4762.
  - Well, if the sales reps isn't very savvy on ISO standards (which most are not, even reps with multiple decades of selling them in the industry – no shade, it just actually gets confusing sometimes… i.e. why I made this series), then the rep may say there is not a fine thread ISO 4762 option.
  - This is why I started out by saying the rep may be technically right, but also a bit misinformed.
  - It is correct that ISO 4762 does not have a fine thread option, that's because, just like with our ISO 4032s and ISO 8673s, it has a fine thread specific callout, ISO 12474.
- So, if you are looking for a fine thread socket head cap screw to the ISO standard, then you are not looking for a fine thread ISO 4762, rather you are looking for ISO 12474.
- Now let's hit hex heads real quick and wrap this up.
- Unlike our previous examples, in which 1 DIN standard was broken into 2 ISO standards, hex head cap screws already had separate coarse thread and fine thread standards (i.e. DIN 933 fine thread is DIN 961 and DIN 931 fine thread is DIN 960).
- As mentioned, DIN 933 converts to ISO 4017 and DIN 931 converts to ISO 4017.
- Just like with the DIN standards, the ISO standards maintained their own fine thread call outs.
- So, if you are looking for a full thread hex head cap screw to the ISO standard, then you want ISO 4017, but if you want that bolt to be fine thread, then you are looking for ISO 8676.
- Same for partial thread hex head cap screws. As DIN 931 converts to ISO 4014, the fine thread partial thread hex head cap screw DIN 969 converts to ISO 8765.

Extend (30 sec)

- That's it for today!
- As a review:
  - Just because a DIN callout could be coarse or fine doesn't mean the ISO callout will be. (Reg Flag: If you are looking for an ISO part with fine thread pitch and your vendors are saying it doesn't exist, then it's could be the situation in which the fine thread callout is separate, i.e. like the ISO 4032 vs ISO 8673 divide for hex nuts) – many sales reps are not savvy to this, so this is actually quite likely to happen. You may find yourself paying a lot more for a hex nut having it made simply because no one in the supply chain recognized the ISO for the fine thread version (side note: also, sometimes they can be more rare, so check with them, as they may know to convert it, but simply cannot find it anyways).
  - Some DIN parts already had a fine thread specific callout and this was carried over to the ISO callouts (i.e. DIN 933/DIN 961 -> ISO 4017/ISO 8676).
- As always, if you have any comments, questions or concerns or would like to request a quote for these items or any other hard to find metric fasteners, feel free to contact me directly at **london@eurolinkfss.com**, or give us a call at (864) 801-0505.
- Thank you and be on the lookout for my next article in the next Distributor's Link edition (Summer 2021). Also, feel free to add me as a connection on LinkedIn: **https://www.linkedin.com/in/londonpenland/** or follow me on twitter: **@metricnerd**