Part Numbering

The foundation of any manufacturing system is part numbers. Yet, very little thought is put into setting up a part numbering system. Every sales order, BOM, TPL, purchase order, inventory transaction, invoice, etc are composed of part numbers so it makes sense to put some thought into your system.

Basically, part numbering concept is split into 2 thoughts

1. **Significant / Descriptive Part Numbering:**

   All characters of part code represent a dimension, type of material, color, etc. or derived from the product / Main assembly /Project or some other factor.

   Part number describe the part as much as possible like PIPE-3/8-4ft for a part number, by looking at the part number you can tell what the part is.

   Instead of relying on the description field in item master, why not encode a partial or full description of the item's characteristics into the part number itself? Then, anyone who knows the code will know all the important parameters of the part,

   Once you have significant part numbers, you must maintain them. Thus, we found ourselves changing part numbers, or creating new bills of materials, or when same item is required for different product /Project, or when item specification changes and therefore it required a different part number, even though the part itself hadn't changed. This system requires a great deal of effort to create and to maintain.

   Disadvantages Descriptive Part Numbering:

   While there are many benefits to using a significant part numbering scheme, this type of scheme also has some shortcomings. For this type of scheme to work well in an organization, employees must be familiar with different kinds of parts. Such a scheme also demands ongoing attention and can introduce delays in your processes.

   Here's why:

- **Training and knowledge required:** These part numbers have meaning and the stakes are high if parts are not properly defined. The person assigning numbers must know how to place a part in the right group. An incorrectly classified part can be misused because of the information implied by the part number.
- **Ongoing maintenance:** A new part that does not fit your current scheme will require an evaluation of the entire scheme and definition of a new part type. The logic of the part numbering system must be understood and carefully maintained, and group sizes must be planned in advance. For example, if all the significant digits in a string (0-9) have been used and there's an eleventh part type that should have a number in that group, what do you do? You need to spend time upfront planning for how to avoid this type of conundrum and how to address any challenges when they arise. When a change is required, you'll need to spend time updating the system and training people on the changes.
- **Process inefficiencies:** You may need a specialist to handle most part numbering if you use a significant scheme. In this case, a single person or group can become a bottleneck. And pulling a part number may require time and discussion, which slows down the design process.

2. Non significant /Non Descriptive Part Numbering:

In this thought process, part No has no significance to Part description, 1 or 2 letters of part name is only prefixed to part code. This results in fewer digits, means faster entry.
Software / ERP can search on partial letters in the description and this is how you can locate the item you want.

The simple rule to follow here is to put the *most significant component of the description first*.

Here are a few examples:

Screw 3/8 Stainless	Not	3/8 Stainless Screw.
Allen key 4MM	Not	4MM ALLEN KEY
GI Pipe OD 33.7X1.6T	Not	OD 33.7X1.6T GI PIPE

Advantages of Non significant part numbering

- **Time savings:** It takes little to no time to pull a sequential number for an item. Assigning a part number can happen fast. You do not have to know anything about the part to give it a number.
- **Little training needed:** If your organization hires new employees they will not need to learn how to define a part number and can focus their attention on other tasks. Assigning a new part number can happen with minimal training.
- **No single point of failure:** To rely on a single person who knows the part numbering system in great detail might mean you sometimes have to wait to assign a part number. With non-significant part numbering, you can easily have multiple people pull part numbers. Your company can continue to run efficiently even if one of them is out sick or leaves the company.
- **Simple maintenance:** It is easy to maintain this type of scheme, as it's essentially a sequential list! You will not have to decide where and how a new part fits into your scheme.

Good, efficient Part Numbering Systems have the following characteristics:

- ✓ Easy to understand – anyone with minimal training should be able to understand and use
- ✓ Provide consistency – ensure that the same things are identified the same way, always
- ✓ Provide unique numbers – to avoid expensive mistakes and confusions by not calling different things the same way
- ✓ Allow for easy retrieval – Easy search by users
- ✓ Identity – ensure tractability

A number of supporting conditions need to be in place to allow the Part Numbering System to be fully effective. Those conditions are not related to the system itself, but are part of the business support and are related to the organizational culture.

Part Numbering System needs to interact well with all depts., Supplier, sub contracting, customer, etc. On the other hand the company's culture needs to have well established and well followed upon practices that can be used in the application of the Part Numbering System. A good

Part Numbering System complemented with good application of those conditions will produce an effective and highly productive workflow for the company.

Those supporting conditions are:

- The company/department culture is lined up for such a system
  - **Training** - ensure that the processes are well defined and the users know how to use them properly,
  - **Discipline** – ensure that the processes are well adhered to by the organization as a whole
- There is adequate software to support the system, which provides:
  - Access control – the users can access areas of the system according to their training and qualifications (administrators, viewers, creators, etc.)
  - Automatic number assignment – it simplifies the assignment of the part numbers and it reduces the possibility of errors (like duplicate or incorrect part numbers, etc.)
  - Tracking the component's history from cradle to grave – this feature is related to the evolution of the design, Product Lifecycle Management (PLM) and to the revisions
  - Good integration to all functions ensures smooth workflow in the company

Revamping Part Numbers

1. Export all part numbers and descriptions into a spreadsheet
2. Clean up your item descriptions. Use proper case - it is easier to read on documents i.e. Stainless Steel Pipe not STAINLESS STEEL PIPE
3. Sort on the description field
4. Add a new column for new part numbers
5. Break up logical groups of parts into categories. A category should have not more than 20 - 30 items. If it has more items, use sub categories.
6. Create a 1 to 2 digit code for each category
7. Begin at the first row of a category and enter the category code along with 005. For example AB005. Enter the second field and input AB010.
8. In Excel you can now highlight the two fields, grab the bottom right corner of the outline and drag down to the end of the category. The result will be part numbers in sequence.
9. Now examine the range of the suffix. If you have 005 up to 095 you could either redo the operation with a two digit suffix or expand the range from 5 to 20 and you would get something like AB020, AB040 etc.
10. The idea of the gaps is to allow you to add new items in the future and maintain the sort on descriptions in alphabetical order.
11. Repeat this for all categories. When you are finished all the categories import these numbers back into your system.