

Screw Analysis of Head Broken in Process

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Abstract: The screw defective products is found in process course. The most important defect is the head broken so it will be paid attention to. In this paper the kind of process is analyzed so that the work harding is the main cause, which is concluded. The present paper is to cause skilled worker and related engineer's attention and advices.

Keywords: process analysis; screw; head broken; burr & crack; engineer

1 Introduction

Many defective productions will be formed in screw manufacturing. For example the uneven forging can form crack & burr and head broken; partial head; small torque; off specification etc. The crack & head broken is primarily unqualified. This affect seriously qualification so that reproduction and scrapping happens. The staff complain because of reproduction and damage of enterprise profit^[1-3]. In order to halt the head broken the cause is to be clarified carefully and not to blunder continuously. staffs having the responsibility are punished to increase technological capacity in order to resolve technological issues. When screws are assembled in a certain preload. After some time the crack even head broken will happen. No reason head broken is this paper emphasis. In general there are two situations to be broken. One is the torque is oversize and the other is the preload torque is small. The former is easy to look for the latter is difficult to know. When the head broken happens in normal, the problems will be considered as below.

2 Analysis and discussion

2.1 Material

Raw material need to be checked before they are enter warehouse with the help of technological staff. Checking will carefully and completely in order to look for the unqualified. To decrease cost damage is a problem. due to mix raw detective property lat staff to look for the crack & burr& with tool so as to observe the ductility. If the property is not enough we should control. If they are not usable we can return to ensure company profits and decrease the damage. before forge process it is proceeded in order to decrease the material diameter which cause work harding to increase ductility. because of force role the crystal form work harding slim texture. This make negatively effects to later forge and rolling. So manufacture and technique division should pay attention to this. we it will be reduced and take small change is land theory. Toe improve workers major capability and raise & make the knowing and tactics crystal in time.

Circle is put for some time and oxide. This is product of oxygen and circle combination of FeO 、 Fe_2O_3 、 Fe_3O_4 & FeSO_4 . with the dilution HCl to wash the Fe circle to ensure the surface fineness. The uneven circle in axis produce forge quality. So the Fe circle don't put so long to ensure the following process. The education to staffs is proceeded responsibly in order to have materials technology. The crisis is also done to those lazy ones for ensuring production qualification.

2.2 Forge

Through phase structures the fiber as crack textures are observed in the interface in forge. This is primarily big change result. This size change is able to produce texture which primarily causes to head broken. Ie forge

work harding result. It causes stress to become high. If diameter is different too big the texture will be produced. It make interface hardness too small to easy broken. So the diameter between head and spigot aren't too big for reducing no incontinous structure is principal. To adopt methos with raising round to reduce sharp place etc is the measure to prevent from crack & burr. However, there are some unchanged the third punch for example the cross punch. It is necessary and difficult to assemble for fastening. Here, in the designing reducing punch depth and thin wall called as dull condition which is made up for as necessary as possible. Most scres fail on thin wall and sharp palce including failure on the texture.

Staffs, education need pay attention to random design to make unqualified in shops. They raise their knowledge to forge structure and prohibit failure of head broken interface and other partial head etc. The education want to be trained by special members so that it raie special capability to of special and reasonable design on the high original forming course. So the trainer need to provide special and necessary know-how and knowledge in order to promote worker's making level, and increase their technology & increase company profits so as to make first grade and form good circulation, for corporation to propose plots to create profits.

To strike screw is for knowing the crack & burr after forging. However there are two problems. One is raw material and the other is forge course. The crack & burr explain the work harding & texture structure. When both have issue the raw material has problem. The raw one is checked by a tool of clamp. When it has crack ductility has problem which is the raw material issue. So key is controlling this Gate. technology and quality dept want to monitor & inspect carefully as to avoid unqualified. As for staffs education and train is proceeded so as to punish staff who has evil even fire and take his responsiblity for educating others. To produce normal circulation to increase visualization and is our task.

The forge forms work harding to become texture which does harm to screws. The primary resolution is to avoid big change in size. The design drawing doesn't make diameter too small to avoid no benefit to structure. Operators pay more attention to process to ensure qualification. Regards to work harding train it is one of important task to promote worker's enthusiasm for reducing human factors. Work harding is primarily cause to reduce ductility, so engineer must give adaptive education to make them know the disadvantage and fit method to resolve. They let them not to aimless making to avoid the unqualified. Modular cut control big length to avoid repeat cut because of low ductility in recrystal. It is better ro control module quality and technology well.

2.3 Heat treatment

The raw material and forge hasn't problem the heat treatment has some issue. Among the quench is serious at this question so the head broken is much. Temper is also a problem not to halt out hardness and in-toughness. There are many failure of crack, burr & head broken after coating. Controlling this process of quench is important to next electroplate. If this course isn't controlled, it will affect later efficiency. Controlling temperature and time is the most important process. It is key to promote temperature and heating time. To cut treat time will produce brittle which is harmful. In the next course if the temper doesn't reduce the difference of in and out brittle it is hard and brittle to form head broken easily and affect the qualification.

The education to staffs need be trageted. It need promote special capability and control the last custom so as to decreasing unqualified. As to rotating heat treatment furnace it has to be creative and improve & specified so as to create devices to be feasible, such as the energy waste to be controlled seriously so as to save energy and capital to have spare to reinvest for upgrading new and high technology. It is to increase equipment technological improvement and upgrade new quench oil and temper material technology. Granting who have workers to creative award activities, it is to proceed positively award so as to promote this link powerfully. Actually it takes to grant award capital increase grade and wage. It need award the staffs contributed to form competitive environment for promoting company profits. The continuous furnace actively to ensure rapid dealing products. It is to decrease their labour to them to study and restudy to promote work efficiently.

2.4 Electroplate

When electroplate is proceeded the screw could be soft with heat, which can reduce strength so that controlling the thickness is important. Don't lengthen the time randomly. To decrease the working time ensure

that the thickness doesn't raise to make qualification. In order not to assemble unqualified e. g. assembly failure (can't assemble) & load issue to be complained by customer. for example failure in fatigue strain. When it is outsource the thickness is controlled seriously for qualified. For Increasing communication to promote technology & common profits , it will be to maintain good communication even with shop. Once the issue occurs to deal in time to avoid unqualified phenomena e. g. keeping too long time to inform.

2.5 Manufacture and Management

The module company need adopt beneficial punch. This should be proposed to conference. As to the unqualified staff the punish is granted even fire them. Cross punch is the most important course we need to increase our knowledge for technological capability and its useful life.

The screw head failure will be found & informed timely. It is resolved actively with technology engineer. It is important for technology and quality engineer to monitor product part. As soon as the unqualified of products and equipment is found the timely information is taken. This course will be important and deal on time for the resolution of technology problem.

2.6 Technological suggestions

According to the content specification of raw materials confirmation trials are proceeded:

- 1) The confirmation trials need do secondly and inspect the more times than in usual check.
- 2) The technology inspection and head failure trials are done in every product stage.
- 3) Worker in the raw shop and worker in forge shop need be educated about material work harding.
- 4) Grants worker in Heat treatment shop to educate, let them know the quench and temper and spirit train

of base principle.

3 Conclusions

Overviews, work harding is the main reason of head failure. As to failure the analysis shall proceed completely and primarily. not to define in the onesided and equalitarianism to promote efficiency for the sake of company. At last it need promote technology and quality capacity. As to worker we need compact and contract, manage strictly and educate technology sharply, is a tactic. In necessary lectures are employed to lecture speciality knowledge and know-how to increase knowledge. In the merge of failure common roles tare strengthened to improve to do good at resolving work harding problem. As to the unqualified staff the punish is given even fired them.

The analysis technology need reform devices and design creativity. It is insisted that it is not to manage leisurely. To reduce the negative effects to corporation profits, it will increase knowledge of technology and improve the technology train. Only if the head broken etc unqualified is defied repeatly, it can promote corporation technological level.

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Brief Biographies

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