



MACHINE MAINTENANCE for OPERATORS

COURSE 730: 3 DAYS: Max 4 Candidates

This course provides operators with the basic engineering skills necessary to perform routine product line changes and maintenance tasks, including the removal and replacement of components, cleaning, lubrication and inspection.

PARTICIPANTS

Line operators with little or no engineering skills who wish to take on the responsibility of primary asset care. Operator asset care is the key to reduced downtime and a decrease of emergency repair work by the maintenance team. The course was developed to provide technically competent operators with a real sense of ownership of their production assets. The Mechanical Isolation (Course 620) is recommended for candidates who attend this course.



COURSE PRESENTATION

The course format is very much 'hands on' - the emphasis being on development of sound practical skills within the context of safe working practices.

COURSE OBJECTIVES

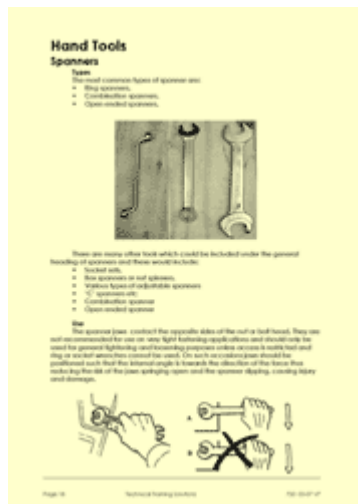
On completion of the course, participants will be able to

- understand the principles of and apply safe working practices to routine maintenance
- understand the importance of correct alignment of motor shafts, pulleys, belts and chains
- understand machine manufacturer's recommended routine maintenance tasks
- select appropriate hand tools and use them correctly and safely
- recognise faulty/worn components
- remove and replace components that require cleaning, lubrication and/or inspection
- identify basic faults
- adopt a logical approach to fault finding.

Successful completion of the course leads to the award of the Technical Training Solutions Certificate of Competence 730: Machine Maintenance for Operators.

What do candidates on the Machine Maintenance for Operators course actually do?

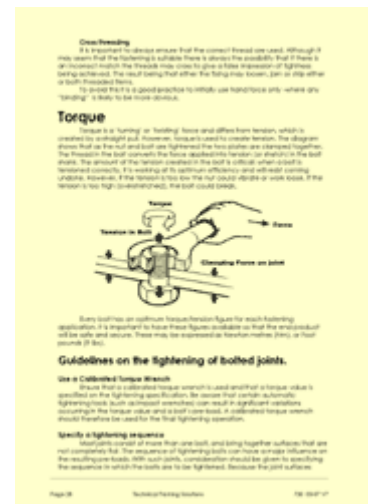
We begin by ensuring that candidates are aware of the various tools available, and the correct ways in which they should be used, bearing in mind their personal safety and avoiding damage to machinery. Candidates have access to a wide range of hand tools on the course and are given clear and concise course notes to reinforce the training exercises.



Page 18 of the course notes, where we teach the candidates about the commonly used tools that they need to be familiar with and how to use them



Page 26 of the course notes, depicting an exercise where candidates have to name and describe the commonly used tools



Page 28 of the course notes, describing the importance of the correct application of torque

Through the use of product handling components such as belts, chains and shafts, student get hands-on experience of alignment, tensioning and first-line maintenance. Students are encouraged to examine bearings and transmission components for signs of wear.



Timing belts analysed by candidates on the course



Shafts and bearings analysed by candidates



Chains analysed by candidates

In addition to understanding the need for lubrication and general wellbeing of machinery, students are given a clear understanding of the health and safety issues connected to their role in the work place. For instance, the responsibility of a duty holder, the safe isolation of equipment and knowing at all times when it is safe (or not safe) to work. Throughout the three-day course a number of practical and written assessments are made in a stress-free manner. Candidates also practice writing clear task instructions, which they exchange with others members of the group. The purpose of these exercises is to illustrate the importance of producing clear and simple information in a logical sequence.

For example, candidates practice selecting the correct tools for tightening various fixings, exploring the issues of incorrect thread matches, cross-threading etc.



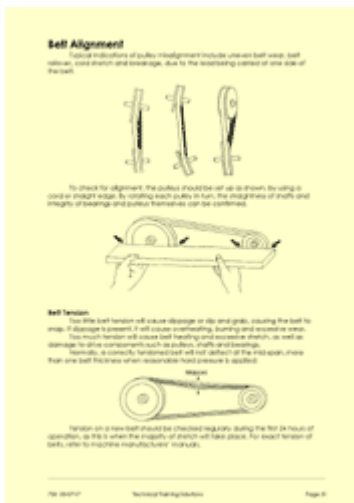
The threads and fixings exercise that candidates practice with

Gaskets are made and placed between flanges to enable students to see for themselves the effects of uneven torque settings.

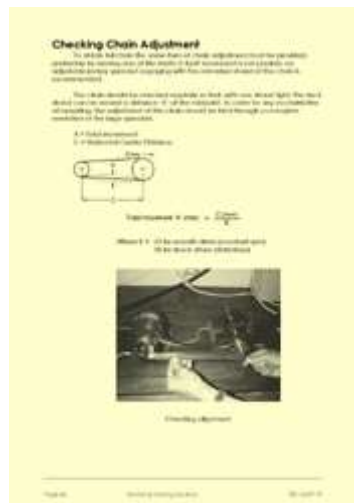


The tightening-torque exercise that candidates practice with

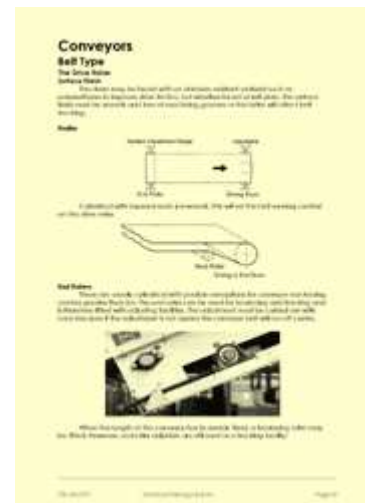
Candidates also gain some practice at producing simple method statements for a range of tasks, using various training rigs. Examples of some pages from the course notes for this section of the course follow:



Page 51 of the course notes, describing the importance of correct belt and pulley alignment



Page 66 of the course notes, which discusses the importance of correct chain tension and alignment



Page 69 of the course notes, describing how conveyor belts are tensioned and aligned

The rigs used require safe isolation before working on them and this issue can therefore be explored before chain and belt change and tensioning exercises are performed.



The isolation rig used on the course



The belt conveyor rig used on the course

We have made an **Example Video** of candidates on the Machine Maintenance for Operators Training Course performing chain alignment and tensioning. To view it please visit our internet page for this course or the address below.



http://www.youtube.com/watch?feature=player_embedded&v=No7cRsuxwmA

If you would like to see some of the equipment used on the Machine Maintenance for Operators course for yourself, then please call us to arrange a visit to our offices in Kent.



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