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### **Re: Report Concerning the Risk of Injury on the Manual Handling of a 63kg Integra Welding Gas Cylinder & 85kg Welding Gas Cylinder.**

A site visit was conducted by myself to assess the risk of injury while performing the task of manually lifting an Integra 63kg & a heavier 83kg industrial welding gas cylinder on to a raised platform, typically the cylinder support tray located on the back of welding machines.

Firstly, the 63kg Integra cylinder, this requires strict adherence to manual handling techniques however, even these if they are observed, are not sufficient to avoid risk of injury from handling this awkward shape. The risk of injury is also increased by factors such as:

1. The height of the individual who is lifting the cylinder, the relative height they have to reach down, to be able to lift the cylinder successfully.
2. The age of the individual concerned
3. The physical Condition of the individual concerned

### **Injuries that could quite possibly be sustained in this procedure are:**

- Prolapsed intervertebral disc in the lumbar area in the age group of 40 years plus, this risk shifts more to possible injury of the individuals who have spondylitic change in the lower back (degenerative change).
- Knee injuries such as patella-femoral inflammation or possible meniscal injuries which would be governed by the individual's height and the depth of flexion they have to achieve with the knee.
- Medical Injuries such as inguinal hernias affecting the abdominal area, this would primarily affect, although not exclusively, operatives in the 40 plus age group.
- Possible upper limb work related disorders affecting the rotator cuff of the shoulder, epicondylitis of the elbow and tendinopathies of the wrist.
- Finally, due to the weight of the object being lifted and the forces caused, neck injuries in the form of cervical prolapsed discs or, once again irritation of spondylosis in the neck – more likely in the 40 year plus age group.
- There is also a risk of injury to the lumbar facet joints in the final stage of the lift where hyper-extension of the spine is required to balance the body weight against the cylinder.

Recovery from these injuries, would take a minimum of six to eight weeks before the individual would be considered possibly fit to return to work and continue performing these duties and once again the high risk of recurrence would be present in particular those who have suffered injuries such as prolapsed discs or tendon injuries. In the age group 40 plus where degenerative change is liable to be present, in these lumbar and cervical spines, there is a very high risk of re-injury, this could be measured at least at 60% plus.

**Secondly with the manual handling of the heavier 85kg cylinder, performing the same task, there is a greater risk of shoulder and upper body disorders.**

Risk of Injury:

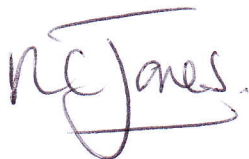
- The rotator cuff of the shoulder, the tendons attached to the epicondyles of the elbows resulting in possible Golfer's or Tennis Elbow and wrist injuries in the form of tendon injuries due to the very awkward nature of the lift.
- Due to the forces being exerted through the neck area, cervical prolapsed intervertebral discs are a very high possibility with this lift along with the possible aggravation of underlying cervical spondylosis (degenerative change).
- Further risk is also subjected to the lumbar spine with the possible further problem of prolapsed intervertebral disc and also due to the hyper-extension of the spine in the lifting technique, the risk of facet joint injuries.

These injuries would take a minimum of six to eight weeks to recover and if there is repeated injury, particularly in the form of the shoulder injuries, this would more than likely lead to surgery due to the degenerative change affecting the rotator cuff in the 50 plus age group, recovery from this would be six months plus.

Returning to these activities following any of injuries would give high risk to the individual operative of recurrence of these injuries in the absence of any manual handling aids being provided.

Clearly marking these cylinders with weights and manual handling instructions would be a simple and cost effective method of highlighting the risks and therefore reducing injuries.

Yours sincerely,



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**Chartered Physiotherapist**

